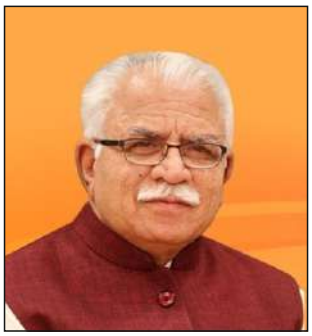
HARYANA

SCHEDULE OF RATES

2021



Chief Minister
Haryana

Message

In a progressive, industrialized and welfare state like Haryana, the increasing role and contribution of Public Works Departments (PWDs) can hardly be overemphasized. Over the years, the span of public works has stretched beyond traditional domains. Given the pace of industrial advancement of the state, demand for infrastructure has grown manifold and public works have come to constitute a sizable chunk of annual Government spending.

Haryana Schedule of Rates (HSR) was last revised in the year 1988. Thereafter the ceiling premiums on basic rates were fixed from time to time as per requirement. But merely updating the HSR was not enough and it has been a long-pending need to revise the HSR to bring it up-to date to the present day requirements. The revision has also become necessary with the introduction of the new GST tax regime. Further, new materials and construction techniques have come to be used extensively in public civil works. These reasons were the driving force for the decision to undertake the huge exercise of HSR revision.

I am confident that HSR 2021, in its new *avatar* shall emerge as an enabling mechanism that would guide the implementation of civil works of the Government in a standardised manner. I am happy to share that a chapter in HSR 2021 has been specifically dedicated to new technologies.

Needless to emphasize, HSR 2021 reflects the good work done by many dedicated officers and a number of other professionals, without whose contribution, it would not have acquired the present shape. I place on record my appreciation for the work done by Sh. Rakesh Manocha, former Advisor, PWD (B&R) & former Engineer-in-Chief PWD(B&R) Haryana, Sh. G.D. Goel, Engineer-in-Chief (Roads), Sh. Rajeev Aggarwal, Engineer-in-Chief (Buildings), Sh. Nihal Singh, Secretary General HaRRIDA, of PW (B&R) Department, Sh. Rakesh Chauhan, Engineer-in-Chief (I&WRD) and Sh. D.R. Yadav, Engineer-in-Chief (PHED) for taking up the work as a passion. Moreover, as the publication of new HSR is not the end but rather the beginning of a journey in a new form, I am sure that the engineering departments shall keep on working to further improve the HSR as per requirement from time to time.

It gives me immense pleasure to dedicate HSR 2021 to the people of Haryana.

Manohar Lal

Deputy Chief Minister
Haryana

Message

Haryana Schedule of Rates is an important document having widespread effect on the overall construction industry in the state of Haryana. The rates derived from this document are used by government departments as well as private construction industry as a tool for estimation. Being such an important document, change of taxation rules, introduction of new techniques in construction industry, introduction of various laws concerning environment etc. created a need to re-draft HSR 1988 to present day requirements.

Haryana has always been a progressive, industrialized and welfare state where role and contribution of Public Works Departments (PWDs) has been a key factor in the development. State has grown manifold in recent past with construction of public buildings, roads, bridges, canals and water supply services etc. in government sector as well as private sector. Annual government spending on infrastructure has also increased considerably.

I congratulate all the engineers and professional who have contributed to the development of HSR 2021 by incorporating the present day taxation and new items. The HSR 2021 caters to present day environmental compliance requirements as well as also takes into account new items introduced in construction industry. With HSR 2021 a long pending demand of contractors and construction industries to re-draft HSR to the present day requirements has been fulfilled. HSR 2021 shall emerge as an enabling mechanism that would provide and guide the construction works of government as well as private sector in a standard manner.

It gives me immense pleasure to dedicate HSR 2021 to the people of Haryana.

Dushyant Chautala

FOREWORD

Haryana Schedule of Rates (HSR) was last published in 1988 which is an illustrative and comprehensive document for uniform economic base to all the Engineering Departments, Boards / Corporations / Agencies and Private Sector Organizations working with the Haryana Government for the purpose of cost estimation of construction activities.

The maiden issue was published in the year 1962 and was revised subsequently in the year 1988 and thereafter ceiling premiums were provided from time to time as and when required.

In the year 2019, foreseeing the current and future requirements, technological advances and modified tax structure due to introduction of GST, the necessity to update HSR in a comprehensive way was felt and the Government constituted a Committee headed by Sh. Rakesh Manocha, Advisor PWD B&R, with EIC's of PWD B&R, IWRD and PHED as members, on 12.11.2019 to take up the revision of HSR to the present-day requirements. The committee laid the path to be taken to revise the HSR and while doing so, current market rates have been taken into consideration.

Rates depicted for various finished items in this version of HSR are derived by considering the effect of 12 % GST. Keeping in view that different rates of GST are applicable on construction works by Government departments and Board / Corporations etc., XLS version of HSR has been developed where the effect of GST as applicable for different departments can be inserted in the input file to work out the rates of finished items with the impact of GST.

Many new items of work have been included, thereby avoiding the need for Non schedule items to the best possible. The current form of HSR 2021 is available in soft format also which shall enable the Engineers and their staff to save time in calculations. This will also facilitate the derivation of part items, composite items and revision / updating of HSR in future.

We are thankful to all the Engineer-in-Chief's, Chief Engineers, Superintending Engineers, Executive Engineers and other drawing and clerical staff members of all Haryana Government Departments for their valuable contributions and support for finalizing this edition of HSR 2021.

The contribution of Sh. Rakesh Manocha, Member (Schedule Road Tribunal), Engineer-in-Chief (Retd.), Ex Advisor to PWD (B&R) Govt. of Haryana, remain the pivotal basis for framing this edition of HSR 2021.

Following Engineers and officials of different departments have also contributed to development of new form of HSR 2021:

Haryana PWD B&R	
Sh. V B Dahiya	Engineer-in-Chief (Elect. Mech. & Horticulture)
Sh. Arvind Kumar	Engineer-in-Chief (HSIIDC)
Sh. Parveen Dhaka	Chief Engineer
Sh. Chander Mohan	Chief Engineer
Sh. Balraj Singh	Chief Engineer
Sh. Sanjeet Kumar	Chief Engineer
Sh. Mahesh Kumar	Chief Engineer
Sh. Anil Kumar Dahiya	Superintending Engineer
Sh. Yogesh Mehra	Superintending Engineer
Sh. Rakesh Ahuja	Superintending Engineer
Sh. Sukhbir Singh	Executive Engineer
Sh. Surender Deswal	Executive Engineer
Sh. Surender Dalal	Executive Engineer
Sh. Rajeev Jain	Executive Engineer
Sh. Gazal Kumar	Executive Engineer
Sh. Tilak Raj Gupta	Executive Engineer
Sh. Zile Singh	Executive Engineer
Sh. Nagender	Executive Engineer
Sh. Ritesh Gupta	Assistant Engineer
Sh. Krishnottar	Assistant Engineer (Retd)
Sh. Devinder Sharma	CHD (Retd)
Sh. Rakesh Kumar,	CHD
Sh. Rakesh Dua	CHD
Sh. Vivek Gupta	CHD
Sh. Deepak Sharma	HDM

Haryana Irrigation & Water Resource Department	
Sh. Rakesh Chauhan	Engineer-in-Chief
Sh. Sandeep Bishnoi	Chief Engineer
Sh. M L Rana	Chief Engineer
Sh. Rakesh Kumar Sood	Superintending Engineer
Sh. Parmod Kumar	Executive Engineer

Haryana Public Health Engineering Department	
Sh. D. R. Yadav	Engineer-in-Chief
Sh. D. S. Dahiya Sh. Paramjit Singh	Chief Engineer Superintending Engineer
Sh. Ashok Sharma	Superintending Engineer
Sh. Anil Chauhan	Executive Engineer
Sh. Siya Ram	CHD (Retd.)

We on behalf of all user departments extend special thanks to Sh. P K Aggarwal, Director and Sh. B S Malik, Director, Indian Consulting Engineers Pvt. Ltd., Gurugram who have imparted their expertise in analyzing the existing HSR (1988), designing the new concept of this Schedule of Rates and finalizing the analysis of rates for about 10,000 items and sub-items spread over 35 chapters.

Suggestions for improvement and correction if any, in this Haryana Schedule of Rates 2021 are always welcome.

We are sure that this HSR 2021 will be quite helpful to all the concerned in construction industry carrying out development works in the State of Haryana.

This HSR 2021 has been issued with the approval of the Direction Committee of Chief Engineers, in the meeting held on 31.03.2021.

Nihal Singh **Secretary General** **(HARIDA) & MD HSRDC**	**Rajeev Aggarwal** **Engineer-in-Chief** **(Buildings),**	**G.D. Goel** **Engineer-in-Chief** **(Roads),**

Important Note

Rates depicted for various finished items in this version of HSR are derived by considering the effect of 12 % GST. Keeping in view that different rates of GST are applicable on construction works by Government departments and Board / Corporations etc., XLS version of HSR has been developed where the effect of GST as applicable for different departments can be inserted in the input file to work out the rates of finished items with the impact of GST.

CONTENTS

CHAPTER NO. 1

WAGES and WORKING CHARGES of MACHINERY

CHAPTER 1.0 - WAGES and PLANT & MACHINERY

NOTES :

1. State Govt. Department of Labour under the Minimum Wages Act w.e.f. 01.09.2020 and the wages notified by the O/o Deputy Commissioner.

2. All classes of labour, which are likely to be employed in any branch of the Public Works Department have been included in this chapter. The terms and conditions as notified under Minimum Wages Act are applicable. These rates are exclusive of GST, labour cess, contractor's profit and overhead expenses.

3.These Labour rates shall be adopted for analyzing the rates for various items of work.

4. Hire charges of machinery are based on the market rates as gathered in the year 2020– 2021. The rates include all the operational and maintenance charges such as cost of fuels, lubricants, stores, establishment, depreciation and interest charges.

5. In case machinery is provided by the department, the cost/charges/rentals as in the chapter, shall be recovered from the contractor.

6. The rates are for estimation purposes and not for hiring of private machinery from the market for which competitive tenders/quotations shall be called and approval of the appropriate competent authority shall be obtained.

7. These rates are exclusive of GST, contractor's profit, labour welfare cess.

CHAPTER 1.0- WAGES AND WORKING CHARGES OF MACHINERY

A. LABOUR

Note :-These rates are exclusive of GST, contractor's profit and over heads etc.

Unique Code	Description	Unit	Rate (INR)
LB001	Bandhani	day	436
LB002	Bhisti	day	364
LB003	Blacksmith 1st class	day	376
LB004	Blacksmith 2nd class	day	364
LB005	Carpenter 1st class	day	376
LB006	Carpenter 2nd class	day	364
LB007	Chowkidar	day	376
LB008	Beldar	day	364
LB009	Coolie	day	364
LB010	Fitter (grade 1)	day	376
LB011	Assistant Fitter or 2nd class Fitter or Fitter (grade 2)	day	364
LB012	Mali (Semi-Skilled)	day	401
LB013	Glazier	day	376
LB014	Mason (for plaster of paris work) 1st class	day	458
LB015	Mason 1st class	day	458
LB016	Mason 2nd class	day	415
LB017	Mason (for plain stone work) 2nd class	day	415
LB018	Mason (for ornamental stone work) 1st class	day	458
LB019	Driver for (Road roller, concrete mixer, Trucks etc.)	day	458
LB020	Mate	day	364
LB021	Sewer man	day	364
LB022	Mistry	day	376
LB023	Painter 1st class	day	376
LB024	Rock Excavator	day	364
LB025	Rock Breaker	day	364
LB026	Rock Hole Driller	day	364
LB027	Stone Chiseller	day	364
LB028	Sprayer (for bitumen, tar etc.)	day	364
LB029	Skilled Beldar (for floor rubbing etc.)	day	376
LB030	White Washer	day	364
LB031	Nozzle man/ gun man	day	376
LB032	Mason (average)	day	415
LB033	Carpenter (average)	day	364
LB034	Operator (Pile/ Special machine)	day	364
LB035	Skilled torch operator for laying tack	day	364
LB036	Technician	day	415
LB037	Helper (Technician)	day	364
LB038	Security guard without gun (8 hours shift duty per day)	day	436
LB039	Security guard with gun (8 hours shift duty per day)	day	458
LB040	Fitter Beldar	each	364
LB041	Tailor 2nd Class	each	364
LB042	Pump Operators	day	364
LB043	Helper / Chowkidar	day	364
LB044	Electrician	day	500

Unique Code	Description	Unit	Rate (INR)
	IRRIGATION LABOUR		
LB045	Dresser	each	364
LB046	Skilled staff for operating DGPS/Drone for surveying	per day	1000
	HORTICULTURE LABOUR		
LB047	Mali	each	401
LB048	Mali for maintenance	per month	10428
LB049	Skilled surveying helper	per day	415
LB050	Total Station Surveyor	per day	766
	ELECTRICAL LABOUR		
LB051	Wireman	day	376
LB052	Cable jointer	day	376
LB053	Lineman	day	376
LB054	Khallasi	day	364
LB055	Welder	day	376
	LABOUR FOR ROAD WORK		
LB056	Blacksmith (IInd class)	day	364
LB057	Blacksmith (Ist class)/ Welder/ Plumber/ Electrician	day	376
LB058	Blaster (Stone cutter)	day	364
LB059	Carpenter I Class	day	376
LB060	Chiseller (Head Mazdoor)	day	364
LB061	Driller (Jumper)	day	364
LB062	Diver	day	862
LB063	Fitter	day	376
LB064	Mason (IInd class)	day	415
LB065	Mason (Ist class)	day	458
LB066	Mate / Supervisor	day	364
LB067	Mazdoor (unskilled)	day	364
LB068	Mazdoor/Dresser (Semi Skilled)	day	364
LB069	Mazdoor/Dresser/Sinker (Skilled)	day	364
LB070	Medical Officer	day	1500
LB071	Painter I class	day	376
LB072	Para medical personnel	day	750
LB073	Bhisti	day	364
	Job Charges		
JB001	Fabrication of uPVC extruded casement/ sliding windows and doors including drilling holes, fixing of fittings & hardware, hire charges of drill machine and electricity charges etc.	sqm	350
JB002	Installation of uPVC extruded casement/ sliding windows and doors including scaffolding	sqm	350
JB003	Fixing of self-supported arch shaped galvalume/ Zincalume steel sheet roofing including unloading, making seam, corrugations, hoisting, fixing complete including	sqm	150
JB004	Fixing HI Rib sheets	sqm	30
JB005	Grinding of granite i/c hiring charges of grinding/moulding machine.	sqm	150
	Horticulture Works		
JB006	Preliminary Watering charges	1000 litres	5
JB007	Ploughing and Dragging swagha with tractor	per day	5000
JB008	Rolling or ramming of ground turf	sqm	1

Unique Code	Description	Unit	Rate (INR)
	PHED Works		
	Job work for cleaning of sewer lines by bucket type sewer machine including cost of diesel/lubricants complete in all respects for the following sizes of sewer:		
JB009	**200 mm i/d**	per metre	145
JB010	**250 mm i/d**	per metre	160
JB011	**300 mm i/d**	per metre	201
JB012	**350 mm i/d**	per metre	225
JB013	**400 mm i/d**	per metre	260
JB014	**450 mm i/d**	per metre	340
JB015	**500 mm i/d**	per metre	355
JB016	**600 mm i/d**	per metre	420
JB017	**750 mm i/d**	per metre	453
JB018	**900 mm i/d**	per metre	487
JB019	**1050 mm i/d**	per metre	578
JB020	**1300 mm i/d**	per metre	624
JB021	**1800 mm i/d**	per metre	751
	Labour cost for lowering ISi marked ERW Cage Type Vee Wire Wound Screens in bore wells as per IS: 8110-2000		
JB022	200x6.40mmx0.75mm/0.50mm i/d	per metre	100
JB023	250x8.00mmx0.75mm/0.50mm i/d	per metre	120
	Labour cost for lowering Stainless steel Cage Type Vee Wire Wound Screens in bore wells complete in all respects including tools & plants, etc.		
JB024	200x8.0x0.50mm/200x8.0x0.75mm/200x8.0x1.0mm/200x6.3x0.50mm/200x6.3x0.75mm	per metre	100
JB025	250x7.3x0.50mm/250x7.3x0.75mm/250x8.2x0.50mm/250x8.2.x0.75mm	per metre	120
JB026	Labour cost for lowering 273.10mm outer dia ERW steel pipes for housing pipe in 4 to 7 Meters random length into bore well	per metre	120
JB027	Labour cost for lowering 219.10mm outer dia ERW steel pipes for housing pipe in 4 to 7 Meters random length into bore well	per metre	100

B. HIRE CHARGES OF PLANTS & MACHINERY

Unique Code	Description	Unit	Rate (INR)
PM001	Hire charges of Concrete Mixer 0.25 to 0.40 cum with Hopper	day	2650
PM002	Hire charges of Diesel Road Roller - 8 to 10 tonne	day	3200
PM003	Production cost of concrete by batch mix plant	cum	350
PM004	Hire charges of Diesel Truck - 9 tonne	day	2000
PM005	Hire charges of Spraying machine including electric charges	day	250
PM006	Pumping charges of concrete including Hire charges of pump, piping work &	cum	210
PM007	Hire charges of Derrick monkey rope	day	750
PM008	Hire charges of Pump set of capacity 4000 litres/hour	day	700
PM009	Vibrator (Needle type 40 mm)	day	900
PM010	Machine for rubbing of floors	day	300
PM011	Hire and running charges of tipper	day	7800
PM012	Hire and running charges of loader	day	8000
PM013	Hand Grinder for mirror polish	day	250
PM014	Hydraulic Excavator (3D) with driver and fuel	day	12000
PM015	Hire and running charges of light crane	day	8200
PM016	Hire and running charges of bentonite pump	day	3500
PM017	Hire and running charges of crane 20 tonne capacity	day	10100
PM018	Carriage of concrete by transit mixer	km/cum	30
PM019	Hire and running charges of Generator 250 KVA	day	*5200*
PM020	Steam curing by using boiler /Heater	cum	500
PM021	Stressing Machine (jack with pump)	day	11500
PM022	Cutting saw machine	day	1350
PM023	Strands Roller machinery for laying strands	day	*3500*
PM024	Bed master (Pulling strands)	day	*3000*
PM025	Mobile crane	day	7500
PM026	Tractor with trolley	day	6984
PM027	Air compressor 250 cfm with two leads for pneumatic cutters / hammers	day	3650
PM028	Joint cutting machine with 2-3 blades	day	2650
PM029	Hire and running charges of crane up to 40 tonne capacity	day	11800
PM030	Water tanker 5000 litre	day	3300
PM031	Air compressor	hour	400
PM032	Hire and running charges of crane up to 80 tonne capacity	day	24500
PM033	Concrete Paver finisher with 40 HP Motor and sensor	hour	3000
PM034	Generator 100 KVA/125 KVA (without fuel)	hour	600
PM035	Cost for crane having capacity 50MT	day	14600
PM036	Excavation of Diaphragm wall by Mechanical Grab	sqm	1300
PM037	Hire charges of diesel truck - 9 tonne (without POL)	day	1500
PM038	Using cost of Ultra Violet Radiation tube	hour	189
PM039	Compressor, gun, rubber pipes & other accessories- hire charge of plant & machinery i/c necessary fuel	day	4000
PM040	Hire Charges of Suction Jetting machine 2200 PSI machine i/c POL and operator	day	15000
PM041	Hire charges of Drill machine up to 30 mm dia	day	160
PM042	Hire charges of sand blasting equipment	day	160
PM043	Hire charges of compressor	day	420
PM044	Welding charges of shear key to existing reinforcement	each	2
PM045	Hire charges of plant and Machinery that can inject 350 kg/day	day	200
PM046	Hire charges for spray pump (Horticulture)	hour	20

Unique Code	Description	Unit	Rate (INR)
PM047	Hire charges brush cutter	hour	100
PM048	Hiring of tractor with shrub master	hour	450
	Notes :- 1. Above hire - charges include cost of services of operating staff, Cost of lubricating oil, diesel / Petrol/ Kerosene oil , other consumables for running the plant and machinery and excluding GST. 2. The hire charges of plant machinery on per day basis are for single shift of eight working hours.		
	Hiring instruments for Irrigation works		
PM049	Hire charges of DGPS	per day	1800
PM050	Transport Vehicle i/c fuel	per day	1400
PM051	Lodging Boarding charges for skilled staff	per day	1500
PM052	Hire charges Drone	per day	8000
PM053	Processing of data and printing of drawings	per km	3500
PM054	Hire charges of Total Station and DGS	per day	2000
PM055	Hire charges for JCB with bucket capacity of 0.4 cum with fuel and driver	per day	5600
PM056	Hire charges for JCB with bucket capacity of 0.4 to 0.75 cum with fuel and driver	per day	6400
PM057	Hire charges for JCB with bucket capacity more than 0.75 cum with fuel and driver	per day	8000
PM058	Hire charge of stitching machine	per day	50
PM059	Hire charge of manual trolley	par day	100
PM060	Hire charge of generator 3 KVA	per hour	40
PM061	Hire charge of 40 quintal. Boat	per day	1400
PM062	Hiring & Running Charges of Electric Cutter	per day	150
PM063	Running charge of pump (3.5 kilolitre)	per kilolitre	80
	Machinery used in Road and Bridges Work		
PM064	Air Compressor 250	hour	420
PM065	Batching and Mixing Plant (a) 30 cum capacity	hour	2200
PM066	Batching and Mixing Plant (b) 15 - 20 cum capacity	hour	1500
PM067	Bitumen Pressure Distributor	hour	1647
PM068	Bitumen Boiler oil fired	hour	708
PM069	Concrete Paver Finisher with 40 HP Motor	hour	6000
PM070	Concrete Pump of 45 & 30 cum capacity	hour	1278
PM071	Concrete Mixer (a) 0.4/0.28 cum	hour	487
PM072	Crane (a) 80 tonnes	hour	5240
PM073	Cranes b) 35 tonnes	hour	2280
PM074	Cranes c) 3 tonnes	hour	1032
PM075	Dozer D - 80 - A 12	hour	2625
PM076	Emulsion Pressure Distributor	hour	1300
PM077	Front End loader 1 cum bucket capacity	hour	700
PM078	Generator (a) 125 KVA	hour	600
PM079	Generator(b) 63 KVA	hour	500
PM080	GSB Plant 50 cum	hour	1050
PM081	Hot mix Plant - 120 TPH capacity	hour	13000
PM082	Hot mix Plant - 100 TPH capacity	hour	8500
PM083	Hydraulic Chip Spreader	hour	2115
PM084	Hydraulic Excavator of 1 cum bucket	hour	2200
PM085	Integrated Stone Crusher 200 HP	hour	14744
PM086	Kerb Casting Machine	hour	450
PM087	Mastic Cooker	hour	1500

Unique Code	Description	Unit	Rate (INR)
PM088	Mechanical Broom Hydraulic	hour	1009
PM089	Motor Grader 3.35 metre blade	hour	2800
PM090	Mobile slurry seal equipment	hour	3520
PM091	Paver Finisher Hydrostatic with sensor control 100 TPH	hour	4500
PM092	Paver Finisher Mechanical 100 TPH	hour	2000
PM093	Piling Rig with Bentonite Pump	hour	3500
PM094	Pneumatic Road Roller	hour	2370
PM095	Pneumatic Sinking Plant	hour	3765
PM096	Prestressing Jack with Pump & access	day	3950
PM097	Road marking machine	hour	1000
PM098	Smooth Wheeled Roller 8 tonne	hour	800
PM099	Tandem Road Roller	hour	1500
PM100	Tipper - 5 cum	hour	800
PM101	Transit Mixer 4.0/4.5 cum	hour	1200
PM102	Transit Mixer 4/4.5 cum	tonne.km	12.77
PM103	Tractor	hour	170
PM104	Tractor with Rotavator	hour	200
PM105	Tractor with Ripper	hour	250
PM106	Truck 5.5 cum per 10 tonnes	hour	250
PM107	Vibratory Roller 8 tonne	hour	2000
PM108	Water Tanker	hour	500
PM109	Continuous Type HMP (Drum type) 40-60 HMP	hour	5800
PM110	Air compressor with pneumatic chisel attachment for cutting hard clay.	hour	655
PM111	Boat to carry at least 20 persons	hour	929
PM112	Cement concrete batch mix plant @ 75 cum per hour	hour	2200
PM113	Cold milling machine @ 20 cum per hour	hour	11412
PM114	Crane 5 tonne capacity	hour	1075
PM115	Crane 10 tonne capacity	hour	1181
PM116	Crane 15 tonne capacity	hour	1218
PM117	Crane 20 tonne capacity	hour	1400
PM118	Crane 40 T capacity	hour	1980
PM119	Crane with grab 0.75 cum capacity	hour	1042
PM120	Compressor with guniting equipment along with accessories	hour	420
PM121	Epoxy Injection gun	hour	362
PM122	Generator 33 KVA	hour	718
PM123	Generator 100 KVA	hour	1600
PM124	Generator 250 KVA	hour	3600
PM125	Induction, deinduction and erection of plant and equipment including all components and accessories for pneumatic method of well sinking.	hour	8200
PM126	Joint Cutting Machine with 2-3 blades (for rigid pavement)	hour	420
PM127	Jack for Lifting 40 tonne lifting capacity.	day	2880
PM128	Piling rig Including double acting pile driving hammer (Hydraulic rig)	hrs	17687
PM129	Plate compactor	hour	420
PM130	Texturing machine (for rigid pavement)	hour	2400
PM131	Truck Trailer 30 tonne capacity	hour	500
PM132	Truck Trailer 30 tonne capacity	t.km	4
PM133	Vibrating Pile driving hammer complete with power unit and accessories.	hour	17687
PM134	Wet Mix Plant 100 TPH	hour	1200

Unique Code	Description	Unit	Rate (INR)
PM135	Wet Mix Plant 75 TPH	hour	1000
PM136	Tractor with trolley	day	6984
PM137	Tipper 10 tonne capacity	tonne-km	3
PM138	Water tanker6 KL capacity	hour	250
PM139	Pile Integrity testing equipment	day	3000
PM140	Screed Vibrator	day	800
PM141	Plate Vibrator	day	1200
PM142	Vaccum Pump with mat & Power Floater	day	3000

CHAPTER NO. 2

BASIC RATE of MATERIALS

2.0 : BASIC RATE OF MATERIALS

NOTES :-

1. These rates are exclusive of GST, contractor's profit, over heads, labour cess and carriage etc.

2. The rates of these items as given in the Schedule of Rates include the cost of land and water. Where land and water are given free of cost as in case of canal lining works in the Department of Water Resources or any other department, the rates shall be suitably reduced.

3. Rates given in this chapter are at the source of supply and do not include carriage to the site of work. In case of deviation from this practice has been made, it has been specifically mentioned in the description of the item.

4. The rates for stone, bajri, crushed aggregates, sand etc., include royalty and malkana / cost payable to the owner and nothing extra is payable over and above the rates for these items. The rates for Tor Steel/Structural Steel provided in this chapter are for ISi marked steel.

5. Paints: - In case of paints, rates for branded paints such as Nerolac, Asian, Berger and equivalent classes have been provided.

6. Measurement of materials: - While making measurements for supply of materials like boulder, aggregate, etc., suitable deduction for voids shall be made as per PWD Specifications, CPWD Specifications and MORT&H specifications.

CHAPTER 2.0- BASIC RATE OF MATERIALS

Note: These rates are exclusive of GST, contractor's profit and over heads and carriage etc.

Unique Code	Description	Unit	Rate (INR)
	Building Materials		
B0001	Blasting powder	kg	40
B0002	Blasting fuse (fuse wire)	each	15
B0003	Safeda ballies 125 mm diameter	metre	40
B0004	Hollock ballies 125 mm diameter	metre	35
B0005	Fly ash	cum	4
B0006	Kerosene oil	litre	50
B0007	Diesel	litre	72
B0008	Petrol	litre	81
B0009	Mobil oil	litre	220
B0010	Chlorpyriphos 20% E.C. / Lindane 20% E.C.	litre	170
B0011	Brick Aggregate (Single size) : 20 mm nominal size	cum	400
B0012	Brick Aggregate (Single size) : 40 mm nominal size	cum	400
B0013	Brick Aggregate (Single size) : 63 mm nominal size	cum	300
B0014	Over burnt (Jhama) Brick Aggregate: 90 mm to 40 mm size	cum	300
B0015	Stone Aggregate (Single size) : 63 mm nominal size	cum	350
B0016	Stone Aggregate (Single size) : 50 mm nominal size	cum	350
B0017	Stone Aggregate (Single size) : 40 mm nominal size	cum	600
B0018	Stone Aggregate (Single size) : 25 mm nominal size	cum	600
B0019	Stone Aggregate (Single size) : 20 mm nominal size	cum	600
B0020	Stone Aggregate (Single size) : 12.5 mm nominal size	cum	600
B0021	Stone Aggregate (Single size) : 10 mm nominal size	cum	600
B0022	Stone Aggregate (Single size) : 06 mm nominal size	cum	600
B0023	Paving bitumen of grade VG-10 of approved quality	tonne	32000
B0024	Bitumen grade PMB - 40	tonne	32500
B0025	Blown type petroleum bitumen of penetration 85/25 of approved quality	tonne	32500
B0026	Bitumen hot sealing compound : grade A	kg	28
B0027	Bitumen solution primer of approved quality	litre	45
B0028	Curing compound	litre	38
B0029	Portland Cement (OPC-43 Grade)	tonne	4940
B0030	Coal (steam)	quintal	440
B0031	Cement Concrete Jali 50 mm thick	sqm	400
B0032	Cement Concrete Jali 40 mm thick	sqm	350
B0033	Cement Concrete Jali 25 mm thick	sqm	275
B0034	Copper plate	kg	527
B0035	Unslaked lime	quintal	300
B0036	Coarse sand (zone III)	cum	650
B0037	Fine sand (zone IV)	cum	600
B0038	Tangri river sand including cost of royalty	cum	600
B0039	Sand zone V (Jamuna)	cum	600
B0040	Average rate of Mild steel round bars for reinforcement	quintal	4900
B0041	Twisted steel/ deformed TMT bars Fe-500D	quintal	5000
B0042	Bolts and nuts up to 300 mm in length	quintal	4800

Unique Code	Description	Unit	Rate (INR)
B0043	Bolts and nuts above 300 mm in length	quintal	5100
B0044	Surkhi	cum	600
B0045	Welding by electric plant	cm	2
B0046	Hard drawn steel wire	quintal	5500
B0047	Mild steel flat strap fitting	quintal	5020
B0048	Plum	cum	600
B0049	50 mm thick interlocking paver blocks (M-30)	sqm	300
B0050	60 mm thick interlocking paver blocks (M-30)	sqm	340
B0051	80 mm thick interlocking paver blocks (M-35)	sqm	400
B0052	100 mm thick interlocking paver blocks (M-35)	sqm	420
B0053	Strips-Aluminium fluted 3.15 mm thick and 150 mm wide	metre	278
B0054	Strips Aluminium fluted 3.15 mm thick and 200 mm wide	metre	360
B0055	1 mm thick Stainless Steel Cover plate grade 304	kg	275
B0056	Coupler 16 mm dia	each	30
B0057	Coupler 20 mm dia	each	39
B0058	Coupler 25 mm dia	each	70
B0059	Coupler 28 mm dia	each	80
B0060	Coupler 32 mm dia	each	110
B0061	Complete Roof Joint of 100 mm	metre	2800
B0062	Complete Roof Joint of 150 mm	metre	3200
B0063	Complete Roof Joint of 200 mm	metre	4000
B0064	Epoxy adhesive	kg	150
B0065	Floor Joint of 100 mm	metre	3100
B0066	Floor Joint of 150 mm	metre	4000
B0067	Floor Joint of 200 mm	metre	5400
B0068	Wall Joint of 100 mm	metre	2400
B0069	Wall Joint of 150 mm	metre	2800
B0070	Wall Joint of 200 mm	metre	3400
B0071	Bentonite of 35 kg per pile	tonne	2960
B0072	Plasticizer / super plasticizer	kg	36
B0073	Wall form panel 1250x500 mm	each	860
B0074	Tie bolt 12 mm dia 100 mm length	each	38
B0075	Tie bolt 12 mm dia 150 mm length	each	48
B0076	Tie bolt 20 mm dia 150 mm length	each	57
B0077	Tie bolt 20 mm dia 225 mm length	each	67
B0078	Spring coil 12 mm	each	15
B0079	Plastic cone 12 mm dia	each	17
B0080	Corner angle 45x45x5 mm 1.50 m long	each	240
B0081	Corner angle 45x45x5 mm 2.50 m long	each	255
B0082	100 mm channel shoulder 2.5 m long	each	910
B0083	Double clip (bridge clip)	each	76
B0084	Single clip	each	59
B0085	M.S. tube 40 mm dia	metre	215
B0086	Wall form panel 1250x450 mm	each	860
B0087	Column clamp 450x1070 mm	each	965

Unique Code	Description	Unit	Rate (INR)
B0088	Prop 2 m (2-3.5 m)	each	635
B0089	Adjustable span ESO+SI (2.35-3.40)	each	1480
B0090	Adjustable telescopic prop 3 m (2.02-3.75 m)	each	955
B0091	Beam clamp 300-380 mm (450-1070 mm)	each set	355
B0092	Prop 4 m	each	910
B0093	Double coupler	each	46
B0094	Water proof ply 12 mm thick	sqm	517
B0095	Stop end tubes for diaphragm wall 600 mm dia.	sqm	5
B0096	Driving end tubes for diaphragm wall 600 mm dia.	sqm	72
B0097	Seam bolts and nuts 6 mm dia and 25 mm long	10 nos.	10
B0098	Fibre reinforced by organic fibres and/or inorganic synthetic fibres cement corrugated sheet 6 mm thick	sqm	225
B0099	Fibre reinforced by organic fibres and/or inorganic synthetic fibres cement close fitting adjustable ridge	metre	210
B0100	Fibre reinforced by organic fibres and/or inorganic synthetic fibres cement corrugate serrated adjustable ridge	metre	210
B0101	Fibre reinforced by organic fibres and/or inorganic synthetic fibres cement plain wing adjustable ridge	metre	210
B0102	Fibre (high impact poly propylene reinforced) cement unserrated adjustable ridge for hips	metre	210
B0103	Fibre reinforced by organic fibres and/or inorganic synthetic fibres cement corrugated apron piece	metre	200
B0104	Fibre reinforced by organic fibres and/or inorganic synthetic fibres cement eaves filler piece	each	175
B0105	Fibre reinforced by organic fibres and/or inorganic synthetic fibres cement north light curves	metre	280
B0106	Fibre reinforced by organic fibres and/or inorganic synthetic fibres cement ventilator curves	each	310
B0107	Fibre reinforced by organic fibres and/or inorganic synthetic fibres cement barge boards boards 6 mm thick	metre	400
B0108	Fibre reinforced by organic fibres and/or inorganic synthetic fibres cement ridge finial	pair	165
B0109	Fibre reinforced by organic fibres and/or inorganic synthetic fibres cement special north light curves	each	555
B0110	Fibre reinforced by organic fibres and/or inorganic synthetic fibres cement S type louvers	each	260
B0111	Multi purpose fibre reinforced by organic fibres and/or inorganic synthetic fibres cement board 6 mm thick	sqm	210
B0112	Multi purpose fibre reinforced by organic fibres and/or inorganic synthetic fibres cement board 8 mm thick	sqm	220
B0113	6 mm thick heavy duty fibre cement board	sqm	470
B0114	8mm thick heavy duty fibre cement board	sqm	300
B0115	9 mm thick heavy duty fibre cement board	sqm	625
B0116	12.5 mm thick Gypsum plaster board	sqm	170
B0117	6 mm thick multipurpose cement bonded wood particle board conforming to IS : 14276	sqm	195
B0118	8 mm thick multipurpose cement bonded wood particle board conforming to IS : 14276	sqm	215

Unique Code	Description	Unit	Rate (INR)
B0119	Factory made light weight composite non asbestos fibre reinforced aerated cement sandwiched wall/roof panel (50mm thick). The outer face on both sides of the panels will be non asbestos fibre cement board (minimum 4mm thick) confirming to IS 14862:2000	sqm	634
B0120	Factory made light weight non asbestos fibre reinforced aerated cement sandwiched wall/roof panel (75mm thick). The outer face on both sides of the panels will be non asbestos fibre cement board (minimum 5mm thick) confirming to IS 14862:2000	sqm	789
B0121	2mm thick sim pad	each	10
B0122	5mm thick sim pad	each	15
B0123	10mm thick sim pad	each	25
B0124	Bajri	cum	900
B0125	Bamboo 25 mm dia 2.5 metre long	score	1000
B0126	Bamboo 25 mm dia 3.0 metre long	score	1200
B0127	Bhusa	quintal	500
B0128	Bitumen felt fibre base (vegetable or animal):As per IS 7193 Grade I	sqm	70
B0129	Bitumen felt :Type 3 grade 1	sqm	70
B0130	Coal Tar	litre	28
B0131	White face insulating board: 12 mm thick	sqm	235
B0132	Natural colour insulating board: 12 mm thick	sqm	210
B0133	Flame retardant face insulating board: 12 mm thick	sqm	320
B0134	Flame retardant face insulating, Impregnated fibre board 12 mm thick	sqm	375
B0135	Flat pressed 3 layer particle board (medium density) Grade 1, 12 mm thick	sqm	288
B0136	Extra for veneered particle board with Teak veneering on one side and commercial veneering on other side	sqm	230
B0137	Extra for veneered particle board with Commercial veneering on both sides	sqm	155
B0138	Extra for veneered particle board with Teak veneering on both sides	sqm	500
B0139	Integral crystalline slurry	kg	238
B0140	Integral crystalline admixture	kg	272
B0141	Crystalline mortar	kg	215
B0142	Integral crystalline dry shake	kg	360
B0143	Swellable type water stop tape	metre	365
B0144	Primer for swellable type water stop tape	litre	1540
B0145	Polymer modified adhesive mortar	kg	15
B0146	Brick bats	cum	400
B0147	White Cement	tonne	11200
B0148	Marble dust/ powder	cum	1130
B0149	Mud (dry)	cum	165
B0150	Through and bond stone	100 nos.	5000
B0151	Stone for masonry work	cum	900
B0152	Stone for pitching 15 cm x 22.5 cm	cum	600
B0153	Stone dust	cum	800
B0154	Common burnt clay F.P.S. (non modular) bricks class designation 7.5	1000 nos.	4600
B0155	Common burnt clay modular bricks class designation 7.5	1000 nos.	5060
B0156	Common burnt clay F.P.S. (non modular)bricks tile class designation 10	1000 nos.	5000
B0157	Common burnt clay modular bricks class designation 12.5	1000 nos.	5060
B0158	F.P.S. (non modular) clay fly ash bricks class designation 7.5	1000 nos.	4140

Unique Code	Description	Unit	Rate (INR)
B0159	Fly ash bricks conforming to I.S. 12894	1000 nos.	4140
B0160	Extruded burnt Flyash clay sewer bricks conforming to I.S 4885	1000 nos.	4780
B0161	Calcium Silicate Bricks machine moulded conforming to I.S. 4139	1000 nos.	4780
B0162	Machine moulded perforated common burnt clay FPS (non modular) bricks of class designation 12.5	1000 nos.	5060
B0163	Machine moulded common burnt clay FPS (non modular) bricks of class designation 12.5	1000 nos.	5060
B0164	Machine moulded common burnt clay modular perforated bricks of class designation 12.5	1000 nos.	5060
B0165	Machine moulded common burnt clay tile bricks of class designation 12.5	1000 nos.	5060
B0166	Fire Bricks	1000 nos.	20000
B0167	Fire Cement	tonne	1850
B0168	RCC Jali 25mm thick	sqm	400
B0169	Autoclaved aerated cement (AAC) blocks	cum	2300
B0170	Decorative plywood 4 mm	sqm	320
B0171	Copper pins 6 mm dia 7.5 cm long	each	10
B0172	Red sand stone block	10 cudm	32
B0173	Red sand stone slab 30 mm thick (un-dressed)	sqm	100
B0174	Red sand stone slab 40 mm thick (un-dressed)	sqm	100
B0175	Red sand stone slab 45 mm to 50 mm thick (un-dressed)	sqm	110
B0176	Red sand stone gang saw cut 30 mm thick	sqm	200
B0177	White sand stone slab 40 mm thick (un-dressed)	sqm	120
B0178	White sand stone slab 75 mm thick (un-dressed)	sqm	450
B0179	Kota stone slab 20 mm to 25 mm thick (semi-polished)	sqm	280
B0180	Kota stone slab 25mm thick (rough chiselled)	sqm	260
B0181	Cutting marble or sand stone slab up to 50 mm thick by mechanical device	metre	10
B0182	15 mm thick Unistone tiles	sqm	700
B0183	Granular sand particles mixed with araldite pasted on each side to form interlocking arrangement with cement plaster	sqm	45
B0184	Weather Sealant - Non Staining (600 ml)	each	325
B0185	Weather Sealant - Normal (300 ml)	each	98
B0186	MS Brackets/Aluminium Alloy Brackets	kg	100
B0187	Silicon Gasket in kg (Above 50 g / m)	kg	465
B0188	EPDM Gasket in kg (Above 60 g / m)	kg	150
B0189	Anchor Fastener - M10	each	10
B0190	SS Bolt with washer of different sizes for structural glazing / ACP Cladding	each	35
B0191	SS Screws of sizes for structural glazing / ACP Cladding	each	3
B0192	Protective Tape	metre	20
B0193	GI flashing - 1.2 mm Thick	kg	59
B0194	4 mm thick ACP	sqm	1100
B0195	8 mm thick granite stone tiles (mirror polished of all shades)	sqm	700
B0196	8 mm thick marble tiles (polished) Raj Nagar	sqm	400
B0197	Rawl plug 50 mm (designation 10 No.)	each	25
B0198	Table rubbed polished stone 18 mm thick (75x50cm) Agaria Marble stone - 18 mm thick	sqm	1620
B0199	Table rubbed polished stone 18mm thick (75x50cm) Granite stone-18 mm thick	sqm	1620
B0200	Granite of any colour, 18 mm thick (slab area up to 0.50 sqm)	sqm	1500

Unique Code	Description	Unit	Rate (INR)
B0201	Granite of any colour, 18 mm thick (slab area above 0.50 sqm)	sqm	1700
B0202	Expandable fastener with plastic sleeve and M.S. screws : 25 mm long	each	10
B0203	Expandable fastener with plastic sleeve and M.S. screws : 32 mm long	each	10
B0204	Expandable fastener with plastic sleeve and M.S. screws : 40 mm long	each	13
B0205	Expandable fastener with plastic sleeve and M.S. screws. 50 mm long	each	14
B0206	Gun metal cramp	kg	315
B0207	Cramp Gun metal 25x6x300 mm	each	80
B0208	Stainless steel cramp	kg	290
B0209	Wedge expansion hold fastener 1/4" or 6 mm	each	11
B0210	Wedge expansion hold fastener 3/8" or 10 mm	each	11
B0211	Wedge expansion hold fastener 1/2" or 12 mm	each	27
B0212	8mm thick (mirror polished tiles machine cut edge) Raj Nagar white	sqm	500
B0213	Raj nagar plain white marble (table rubbed and polished) 18 mm thick (slab area up to 0.50 sqm)	sqm	575
B0214	Raj nagar plain white marble (table rubbed and polished) 18 mm thick (slab area more than 0.50 sqm)	sqm	600
B0215	Soffit cleat (Size 27x37x25x1.60 mm)	each	4
B0216	Stainless steel cramps(weight 260 grams) with nuts, bolts and washer for dry stone cladding	each	100
B0217	8 mm thick Calcium silicate perforated tiles of size 595 x595 mm	sqm	833
B0218	Pig lead	kg	130
B0219	Plug	each	10
B0220	Standard holder bat clamps for sand cast iron or cast iron pipes 150 mm dia	each	45
B0221	Sand Cast iron plain shoe 150 mm dia	each	285
B0222	Galvanised steel plain sheets	quintal	5500
B0223	Standard quality hard board sheet 3 mm thick	sqm	135
B0224	Standard quality hard board sheet 4.5 mm thick	sqm	210
B0225	Galvanised steel bolts & nuts 6 mm dia and 25 mm long round head with slots	10 nos.	38
B0226	Galvanised steel bolts & nuts 10 mm dia and 125 mm long round head with slots	each	9
B0227	Galvanised steel bolts & nuts 10 mm dia and 27 cm long both sides threaded with 4 galvanised steel nuts	each	20
B0228	Galvanised steel bolts 10 mm dia and 7 cm long with nuts	each	6
B0229	Galvanised steel J or L hooks 8 mm dia	10 nos.	120
B0230	Mild steel bolts 6 mm dia and 25 mm long with hexagonal head	10 nos.	10
B0231	Erection Bolts (Minimum 04 No. for each element)	each	25
B0232	Precast heat resistant terrace tiles (size 300x300 mm) and 20 mm thick	sqm	409
B0233	G.I. Limpet washer	100 nos.	21
B0234	Bitumen washer	100 nos.	30
B0235	G.I. plain washer thick	100 nos.	35
B0236	G.I. plain washer thin	100 nos.	21
B0237	G.I. plain washer for seam bolts	100 nos.	32
B0238	Water proofing materials	kg	35
B0239	PVC Bend 100 dia	each	60
B0240	PVC Bend 150 dia	each	120
B0241	100 mm dia PVC pipe	metre	130
B0242	150 mm dia PVC pipe	metre	250
B0243	Mangalore Tile 200mmx125mmx10mm	each	4

Unique Code	Description	Unit	Rate (INR)
B0244	Rib profiled galvalume/ Zincalume steel sheet	kg	70
B0245	Galvalume/ Zincalume light hangers for electrical conducts	each	50
B0246	Turbo ventilators 24 with accessories	each	4500
B0247	Polycarbonate sheet 2mm thick	sqm	1200
B0248	Polycarbonate sheet 1.25 mm thick	sqm	600
B0249	Anchor bolts	each	200
B0250	Epoxy and rubber paint	litre	2000
B0251	Self-tapping screw with hex head	each	2
B0252	Polyvinyl chloride sheet 400 micron thick	sqm	40
B0253	Stone ware spouts 100 mm dia 60 cm long	each	40
B0254	Galvanised steel corrugated sheets	quintal	6800
B0255	12.5 mm thick tapered edge plain gypsum plaster board confirming to IS 2095 (Part 1):2011	sqm	155
B0256	12.5 mm thick tapered edge gypsum fire resistant board	sqm	200
B0257	Galvanised Steel ceiling section (size 80x26x0.50 mm)	metre	56
B0258	Galvanised Steel perimetre Channel (Size 20x27x30x0.50 mm)	metre	32
B0259	Galvanised Steel intermediate Channel (Size 15x45x15x0.90 mm)	metre	48
B0260	Galvanised Steel angle hanger (Ceiling angle) (Size 25x10x0.50 mm)	metre	22
B0261	Galvanised Steel connecting clips (2.64 mm dia and 230 mm long GI wire)	each	6
B0262	Galvanised Steel soffit cleat (Size 27x37x25x0.60 mm)	each	4
B0263	Joint filler	kg	26
B0264	Joint finisher	kg	23
B0265	Joint tape roll	roll	100
B0266	Dash fastener / Chemical fastener	each	14
B0267	All drive screws (for gypsum board)	100 nos.	58
B0268	Primer (for gypsum board)	litre	85
B0269	12.5 mm thick Fully perforated gypsum board	sqm	410
B0270	12.5 mm thick tapered edge moisture resistant plain gypsum plaster board confirming to IS 2095 (Part 1):2011	sqm	275
B0271	PU Primer	sqm	60
B0272	40 mm (average) PU spray having 40-45 kg/m3 density	sqm	400
B0273	GI wire netting 3/4" x 24 G	sqm	26
B0274	Expanded polystyrene type N- Normal 50 mm thick	sqm	125
B0275	Expanded polystyrene type - SE 50 mm thick	sqm	150
B0276	C.I. grating 150 mm dia, weighing not less than 440 gm	each	27
B0277	U-PVC pipes (working pressure 4 kg / cm^2) Single socketed pipe 75 mm dia	metre	70
B0278	U-PVC pipes (working pressure 4 kg / cm^2) Single socketed pipe 110 mm dia	metre	130
B0279	U-PVC pipes (working pressure 4 kg / cm^2) Single socketed pipe 150 mm dia	metre	180
B0280	U-PVC pipes (working pressure 4 kg / cm^2) Rubber (Seal) Ring 75 mm dia	each	8
B0281	U-PVC pipes (working pressure 4 kg / cm^2) Rubber (Seal) Ring 110 mm dia	each	11
B0282	U-PVC pipes (working pressure 4 kg / cm^2) Rubber (Seal) Ring 150 mm dia	each	15
B0283	uPVC coupler for UPVC drainage pipes 75 mm	each	18
B0284	uPVC coupler for UPVC drainage pipes 110 mm	each	39
B0285	uPVC coupler for UPVC drainage pipes 150 mm	each	60
B0286	uPVC push fit coupler (single) 75 mm thick	each	18
B0287	uPVC push fit coupler (single) 110 mm thick	each	32

Unique Code	Description	Unit	Rate (INR)
B0288	uPVC push fit coupler (single) 150 mm thick	each	45
B0289	uPVC single equal Tee (without door) 75x75x75 mm	each	46
B0290	uPVC single equal Tee (without door) 110x110x110 mm	each	81
B0291	uPVC single equal Tee (without door) 150x150x150 mm	each	120
B0292	uPVC single equal Tee (with door) 75x75x75 mm	each	59
B0293	uPVC single equal Tee (with door) 110x110x110 mm	each	92
B0294	uPVC single equal Tee (with door) 150x150x150 mm	each	125
B0295	UPVC bend 87.5° 75 mm bend	each	35
B0296	UPVC bend 87.5° 110 mm bend	each	59
B0297	UPVC bend 87.5° 150 mm bend	each	85
B0298	UPVC plain shoe 75 mm bend	each	27
B0299	UPVC plain shoe 110 mm bend	each	47
B0300	UPVC plain shoe 150 mm bend	each	70
B0301	UPVC pipe clip 75 mm bend	each	10
B0302	UPVC pipe clip 110 mm bend	each	15
B0303	UPVC pipe clip 150 mm bend	each	20
B0304	Resin Bonded Glass wool 16 kg/m³ : 50 mm thick	sqm	100
B0305	Resin Bonded Glass wool 24 kg/m³ : 50 mm thick	sqm	143
B0306	Resin Bonded Glass wool 48 kg/m³ : 12 mm thick	sqm	110
B0307	Resin Bonded Glass wool 48 kg/m³ : 25 mm thick	sqm	135
B0308	Resin Bonded Glass wool 48 kg/m³ : 50 mm thick	sqm	175
B0309	Fibre glass tissue reinforcement Type II Grade i	sqm	82
B0310	Pressed clay tiles 20mm thick 250x250 mm size	1000 nos.	8000
B0311	P.T.M.T. Grating square slit 150 mm	each	67
B0312	Calcium Silicate tegular edged ceiling tiles 595x595 mm and 15 mm thick on edges	sqm	685
B0313	Galvanised Steel main Tee ceiling section Size 24x38x0.33 mm (3 metre long)	each	95
B0314	Galvanised Steel perimeter wall Angle Size 24 x 24 x 0.40 mm (3.00 metre long)	each	50
B0315	Galvanised Steel intermediate cross T section Size 24 x 25 x 0.33mm (1.2 metre long)	each	32
B0316	Galvanised Steel intermediate cross T section Size 24 x 25 x 0.33mm (0.6 metre long)	each	16
B0317	Wooden screws with plastic rawl plugs 35x8 mm	each	1
B0318	Galvanised MS 8mm outer diameter M-6 dash fastener 25mm long	each	25
B0319	GI Metal Tile Clip in Plain Bevelled edge global white colour tiles of size 600x600 mm and 0.5 mm thick	sqm	575
B0320	GI Metal Tile Clip in perforated Bevelled edge global white colour tiles of size 600x600 mm and 0.5 mm thick	sqm	640
B0321	GI Metal Tile Lay-in Plain Tegular edge global white colour tiles of Size 595x595 mm and 0.5 mm thick	sqm	510
B0322	GI Metal Tile Lay-in perforated Tegular edge global white colour tiles of Size 595x595 mm and 0.5 mm thick	sqm	600
B0323	PVC Laminated Gypsum Tiles (Square edge) of Size 595x595 mm and 12.5 mm thick	sqm	720
B0324	Gypsum Tiles Fully perforated Square edge of Size 595x595 mm and 12.5 mm thick	sqm	310
B0325	Spring T-section 24x34x0.45 mm (3.00 meter long)	metre	190
B0326	C Wall angle section 20x30x20x0.50 mm (3.00 meter long)	metre	95

Unique Code	Description	Unit	Rate (INR)
B0327	Main C Carrier Size 10x38x10x0.70 mm (3.00 meter long)	metre	115
B0328	Spring T-connector	each	5
B0329	C Carrier Connector	each	11
B0330	C Suspension Clip	each	8
B0331	Wire Coupling Clip	each	9
B0332	Main T ceiling sections 24x38x0.3 mm (3 metre long)	each	100
B0333	perimeter wall angle 24 x 24 x 0.3 mm (3 metre long)	each	72
B0334	Intermediate cross T-Section 24x25x0.3 mm (1.2 m long)	each	30
B0335	Intermediate cross T-Section 24x25x0.3 mm (0.6 m long)	each	5
B0336	Hanger rod 4 mm thick	each	7
B0337	Adjustment clip 85x30x0.8 mm	each	4
B0338	Galvanised MS L-shape level adjuster of size 85x25x2 mm	each	12
B0339	UV stabilised 2 mm thick plain FRP sheet	sqm	430
B0340	UV stabilised 2 mm thick corrugated FRP sheet	sqm	485
B0341	Mangalore ridge tiles 20 mm thick	each	8
B0342	Mangalore tiles 20 mm thick	each	8
B0343	Precoated galvanised iron profile sheet 0.50 mm TCT	sqm	350
B0344	Precoated galvanised steel plain ridges 0.50 mm TCT and 500-600mm wide	metre	210
B0345	Precoated galvanised steel flashings/aprons 0.50 mm TCT and up to 600mm wide	metre	210
B0346	Precoated galvanised steel gutter 600mm overall girth	metre	420
B0347	Precoated galvanised steel north light curves	metre	230
B0348	Precoated galvanised steel barge board (up to 300mm)	metre	215
B0349	Precoated galvanised steel crimp curve	sqm	230
B0350	Marble chips up to 4 mm and down size White & black	quintal	180
B0351	Marble chips large size above 4 mm White & black	quintal	250
B0352	Black colour dark shade pigment	kg	70
B0353	Red, chocolate, orange, buff or yellow (red oxide of iron) light shade pigment	kg	60
B0354	Green or blue medium shade pigment	kg	56
B0355	Glass strip 4 mm thick 40 mm deep	metre	20
B0356	Precast terrazzo tiles 22 mm thick (light shade)	sqm	270
B0357	Precast terrazzo tiles 22 mm thick (medium shade)	sqm	250
B0358	Precast terrazzo tiles 22 mm thick (dark shade)	sqm	230
B0359	Chequered terrazzo tiles 22 mm thick (light shade)	sqm	260
B0360	Chequered terrazzo tiles 22 mm thick (medium shade)	sqm	280
B0361	Chequered terrazzo tiles 22 mm thick (dark shade)	sqm	240
B0362	18 mm thick Flamed finish granite stone slab	sqm	1000
B0363	18 mm thick Italian Marble stone slab, Perlato (slab area up to 0.5 sqm).	sqm	3209
B0364	Glass mosaic tiles (20 mm x 20 mm x 4 mm)	sqm	2049
B0365	Tile fixing chemical adhesive	kg	9
B0366	Cement Polymer Grout Compound	kg	16
B0367	Acid for cleaning tiles	litre	18
B0368	PVC Tiles 2mm thick	sqm	375
B0369	PVC Tiles 3mm thick	sqm	425
B0370	PVC Flooring 1.5mm thick	sqm	300
B0371	PVC Flooring 2.0mm thick	sqm	340

Unique Code	Description	Unit	Rate (INR)
B0372	PVC Flooring 2.5mm thick	sqm	375
B0373	PVC Flooring 3.0mm thick	sqm	400
B0374	PVC Flooring 4.0mm thick	sqm	425
B0375	PVC Flooring 5.0mm thick	sqm	450
B0376	Glass strip 5.5 mm thick 40 mm deep	metre	28
B0377	Glass strip 4 mm thick 32 mm deep	metre	16
B0378	Glass strip 4 mm thick 25 mm deep	metre	13
B0379	Glass strip 3 mm thick 40 mm deep	metre	15
B0380	Glass strip 3 mm thick 32 mm deep	metre	12
B0381	Glass strip 3 mm thick 25 mm deep	metre	10
B0382	PVC strip 40mm wide 4mm thick	metre	50
B0383	PVC strip 40mm wide 5.5mm thick	metre	60
B0384	Plane coloured Linoleum (3.2mm)	sqm	450
B0385	Stone dowel 10mmx5mmx2.5cm	each	6
B0386	Grass pavers	sqm	950
B0387	Baroda Green Marble	sqm	600
B0388	Covel stone 150mmx150mm	sqm	1250
B0389	Baker rod	metre	25
B0390	Aluminium Strip 40 mm wide and 2 mm thick	kg	240
B0391	Truf Paver (500 x 500 x 40 mm)	sqm	500
B0392	Ceramic Tiles Pieces for Crazy Flooring	quintal	135
B0393	White marble makrana second quality plain veined stone pieces for crazy flooring	quintal	150
B0394	FS800H Grade Flooring Panel (Size 600 mm x600 mm x32 mm)	each	750
B0395	Zinc Electroplated Pedestals - 300 mm	each	140
B0396	Zinc Electroplated Pedestals - 450 mm	each	200
B0397	Zinc Electroplated Tube Stinger	each	66
B0398	Machine Screw for Fixing	each	2
B0399	Polysulphide Sealant	kg	335
B0400	Hardener Adhesive	kg	42
B0401	Cutting groove in RCC (75mmx10mm)	metre	105
B0402	White marble slab Makrana second quality plain veined 18 mm thick	sqm	1430
B0403	Pink marble slab plain 18 mm thick	sqm	645
B0404	Udaipur green marble slab plain 18 mm thick	sqm	620
B0405	Black Zebra marble slab plain 18 mm thick	sqm	900
B0406	Acid Proof cement	tonne	7800
B0407	400 G polythene sheet	sqm	14
B0408	Chequered precast cement concrete tiles 22 mm thick using marble chips of size 6mm - Light shade using white cement	sqm	400
B0409	White marble Raj Nagar plain 18 mm thick up to 0.50 sqm area	sqm	600
B0410	Acid and alkali resistant tiles 300x300 mm size, 10 mm thick	10 nos.	520
B0411	Precast chequered cement tiles 22 mm thick Dark shade using ordinary cement	sqm	225
B0412	Precast chequered cement tiles 22 mm thick medium shade using 50% white cement 50% ordinary cement	sqm	335
B0413	Hardening compound	litre	38
B0414	Ceramic Glazed Tiles 1st quality 300 x 300 mm in all shades and designs of White, Ivory, grey, Fume Red brown etc.	sqm	209

Unique Code	Description	Unit	Rate (INR)
B0415	Ceramic Glazed Tiles 1st quality 300 x 300 in all shades designs except White, Ivory, Grey, Fume Red Brown etc.	sqm	260
B0416	Rectified Ceramic Glazed Tiles 1st quality 300 x 300 mm or more in all shades designs White, Ivory, Grey, Fume Red Brown etc.	sqm	340
B0417	Rectified Ceramic Glazed Tiles 1st quality 300 x 300 mm or more in all shades designs except White, Ivory, Grey, Fume Red Brown etc.	sqm	400
B0418	Agaria White marble slab plain 18 mm thick	sqm	1100
B0419	Vitrified floor tile 50x50 cm conforming to IS 15622:2006 group (B1a)	sqm	490
B0420	Vitrified floor tile 60x60 cm conforming to IS 15622:2006 group (B1a)	sqm	600
B0421	Vitrified floor tile 80x80 cm conforming to IS 15622:2006 group (B1a)	sqm	750
B0422	Vitrified floor tile 100x100 cm conforming to IS 15622:2006 group (B1a)	sqm	900
B0423	"Border tiles 200x75mm size	each	16
B0424	Epoxy Grout	kg	371
B0425	High polymer modified quickset tile adhesive	kg	9
B0426	White Cement based primer modified with high performance polymers	kg	60
B0427	Ready mixed polymer modified based on grey cement/ white cement tile adhesive	kg	13
B0428	White cement based polymer modified self curing compound in powder form	kg	15
B0429	Glue	kg	75
B0430	Dehradun white lime	quintal	600
B0431	Satna lime	quintal	370
B0432	Dry hydrated lime (factory made)	quintal	290
B0433	Silicon and acrylic emulsion	litre	130
B0434	Acrylic distemper 1st quality , having VOC content less than 50 grams/ litre	kg	36
B0435	Acrylic emulsion, having VOC content less than 50 grams/ litre	litre	94
B0436	Premium acrylic emulsion of interior grade, having VOC content less than 50 grams/ litre	litre	220
B0437	Ready mixed pink or grey primer on wood work (hard and soft wood) having VOC content less than 50 grams/ litre	litre	105
B0438	Water thinnable cement primer for interior wall surface, having VOC content less than 50 grams/ litre	litre	50
B0439	Exterior primer	kg	140
B0440	Dry distemper	kg	30
B0441	Ist quality Acrylic distemper(Ready mix) having VOC content less than 50 grams/ litre	kg	50
B0442	Linseed oil (double boiled)	litre	200
B0443	Distemper primer	litre	70
B0444	Pink primer (for wood)	litre	105
B0445	White cement based putty	kg	13
B0446	Aluminium paint	litre	150
B0447	Acid proof paint (chocolate or black)	litre	225
B0448	Anticorrosive bituminous paint (black)	litre	100
B0449	Black Japan paint	litre	90
B0450	Enamel paint	litre	165
B0451	Floor enamel paint in all shades except green	litre	250
B0452	Synthetic enamel paint in black or chocolate shade	litre	170
B0453	Synthetic enamel paint in all shades except black or chocolate shade	litre	160
B0454	Plastic acrylic emulsion paint	litre	200

Unique Code	Description	Unit	Rate (INR)
B0455	100% Premium acrylic dirt resistance, Silicone additives exterior paint	litre	270
B0456	Acrylic Exterior Primer	litre	100
B0457	Roofing paint for iron sheets in red colour	litre	120
B0458	White lead	kg	170
B0459	Water proofing cement paint	kg	38
B0460	Wax polish (ready made)	kg	230
B0461	Ordinary varnish	litre	100
B0462	Superior copal varnish	litre	115
B0463	Superior spar varnish	litre	115
B0464	Oil type wood preservative	litre	130
B0465	Putty for wood work	kg	30
B0466	Premixed super white gypsum plaster	kg	6
B0467	Plaster of Paris	kg	5
B0468	Shellac	kg	300
B0469	Spirit	litre	48
B0470	Crushed stone 2.36 mm to 12.5 mm size	cum	800
B0471	Wire nails	kg	58
B0472	Wire mesh (rabbit)	sqm	42
B0473	Coal tar	tonne	3200
B0474	Soap cake	each	25
B0475	Solignum paint 2nd quality	litre	120
B0476	Creosote	litre	90
B0477	Aluminium primer	litre	110
B0478	Red oxide Zinc chromate primer	litre	110
B0479	Copper acetate	kg	285
B0480	Hydrochloric acid	kg	33
B0481	Copper chloride	kg	270
B0482	Copper nitrate	kg	210
B0483	Ammonium chloride	kg	20
B0484	High Albedo paint	kg	230
B0485	Epoxy paint	litre	230
B0486	Fire retardant paint	litre	260
B0487	Melamine polish	litre	280
B0488	Multi surface paint	litre	255
B0489	Acrylic exterior paint	litre	170
B0490	Premium Acrylic exterior paint	litre	180
B0491	Textured exterior paint	litre	240
B0492	Primer for cement paint	litre	70
B0493	Special Primer (C.W.)	litre	140
B0494	Metal Primer (U.G.)	litre	90
B0495	Synthetic polyester triangular fibre of length 12 mm, effective diameter 10-40 microns and specific gravity of 1.34 to 1.40	kg	365
B0496	Synthetic polyester triangular fibre of length 6 mm, effective diameter 10-40 microns and specific gravity of 1.34 to 1.40	kg	400
B0497	Brass butt hinges (light/ordinary type) : 125x70x4 mm	10 nos.	775
B0498	Brass butt hinges (light/ordinary type) : 100x70x4 mm	10 nos.	625

Unique Code	Description	Unit	Rate (INR)
B0499	Brass butt hinges (light/ordinary type) : 75x40x2.5 mm	10 nos.	380
B0500	Brass butt hinges (light/ordinary type) : 50x40x2.5 mm	10 nos.	155
B0501	Brass butt hinges (heavy type) : 125x85x5.5 mm(0.70 kg)	10 nos.	1309
B0502	Brass butt hinges (heavy type) : 100x85x5.5 mm(0.56 kg)	10 nos.	997
B0503	Brass butt hinges (heavy type) :75x65x4.0 mm (weighing not less than 0.20 kg)	10 nos.	838
B0504	Brass parliamentary hinges 150x125x27x5 mm	10 nos.	2610
B0505	Brass parliamentary hinges 125x125x27x5 mm	10 nos.	2300
B0506	Brass parliamentary hinges 100x125x27x5 mm	10 nos.	2090
B0507	Brass parliamentary hinges 75x100x20x3.2 mm	10 nos.	1870
B0508	Brass tower bolt (barrel type) 250x10 mm	each	257
B0509	Brass tower bolt (barrel type) 200x10 mm	each	205
B0510	Brass tower bolt (barrel type) 150x10 mm	each	154
B0511	Brass tower bolt (barrel type) 100x10 mm	each	103
B0512	Brass handles 125 mm with plate 175x32 mm	each	144
B0513	Brass handles 100 mm with plate 150x32 mm	each	133
B0514	Brass handles 75 mm with plate 125x32 mm	each	103
B0515	Brass door latch 300x16x5 mm weighing not less than 0.380 kg	each	185
B0516	Brass door latch 250x16x5 mm weighing not less than 0.350 kg	each	175
B0517	Brass mortice latch and lock 100x65 mm with 6 levers and a pair of brass lever handles	each	400
B0518	Brass mortice latch 100x65mm with a pair of brass lever handles	each	310
B0519	Brass casement window fastener	each	45
B0520	Brass casement stays (straight peg type) 300 mm weighing not less than 0.33 kg	each	126
B0521	Brass casement stays (straight peg type) 250 mm weighing not less than 0.28 kg	each	100
B0522	Brass casement stays (straight peg type) 200 mm weighing not less than 0.24 kg	each	95
B0523	Brass hasps and staples (safety type) 150 mm	10 nos.	740
B0524	Brass hasps and staples (safety type) 115 mm	10 nos.	670
B0525	Brass hasps and staples (safety type) 90 mm	10 nos.	575
B0526	Brass night latch	each	610
B0527	Brass cupboard knob or wardrobe knob 50 mm	each	36
B0528	Brass screws 50 mm	100 nos.	220
B0529	Brass screws 40 mm	100 nos.	170
B0530	Brass screws 30 mm	100 nos.	140
B0531	Brass screws 25 mm	100 nos.	100
B0532	Brass screws 20 mm	100 nos.	95
B0533	plastic sleeves for screw	each	2
B0534	75mm SS fancy handles for kitchen cabinet	10 No..	255
B0535	100mm SS fancy handles for kitchen cabinet	10 nos.	455
B0536	125mm SS fancy handles for kitchen cabinet	10 nos.	640
B0537	Chromium plated Brass handles 125 mm with plate 175 x32 mm	each	160
B0538	Chromium plated Brass handles 100 mm with plate 150 x 32 mm	each	140
B0539	Chromium plated Brass handles 75mm with plate 125x32 mm	each	125
B0540	Chromium plated Brass mortice latch and lock 100x65 mm with 6 levers and a pair of brass lever handles	each	470
B0541	Chromium plated brass casement window fastener	each	90

Unique Code	Description	Unit	Rate (INR)
B0542	Chromium plated Brass casement stays (straight peg type) 300 mm weighing not less than 0.33 kg	each	140
B0543	Chromium plated Brass casement stays (straight peg type) 250 mm weighing not less than 0.28 kg	each	120
B0544	Chromium plated Brass casement stays (straight peg type) 200 mm weighing not less than 0.24 kg	each	100
B0545	Chromium plated Brass Night latch	each	500
B0546	Chromium plated Brass Wardrobe Knob 50 mm	each	80
B0547	Chromium plated Brass screws 50 mm	100 nos.	300
B0548	Chromium plated Brass screws 40 mm	100 nos.	290
B0549	Chromium plated Brass screws 30 mm	100 nos.	240
B0550	Chromium plated Brass screws 25 mm	100 nos.	180
B0551	Chromium plated Brass screws 20 mm	100 nos.	160
B0552	Chromium plated Brass curtain rod 12 mm dia 1.25mm thick	metre	185
B0553	Chromium plated Brass curtain rod 20 mm dia 1.25mm thick	metre	260
B0554	Chromium plated Brass curtain rod 25 mm dia 1.25mm thick	metre	340
B0555	Bright finished or black enamelled mild steel butt hinges 125x65x 2.12 mm	10 nos.	135
B0556	Bright finished or black enamelled mild steel butt hinges 100x58x 1.90 mm	10 nos.	80
B0557	Bright finished or black enamelled mild steel butt hinges 75x47x 1.70 mm	10 nos.	56
B0558	Bright finished or black enamelled mild steel butt hinges 50x37x 1.50 mm	10 nos.	49
B0559	Nickel plated bright finished mild steel piano hinges 1 mm thick 25 mm wide	metre	39
B0560	Bright finished or black enamelled mild steel screws 50 mm	100 nos.	75
B0561	Bright finished or black enamelled mild steel screws 40 mm	100 nos.	60
B0562	Bright finished or black enamelled mild steel screws 30 mm	100 nos.	45
B0563	Bright finished or black enamelled mild steel screws 25 mm	100 nos.	36
B0564	Bright finished or black enamelled mild steel screws 20 mm	100 nos.	30
B0565	Bright finished or black enamelled mild steel bolts and nuts 50x6 mm	each	5
B0566	Oxidised mild steel butt hinges 125x65x2.12 mm	10 nos.	130
B0567	Oxidised mild steel butt hinges 100x58x1.90 mm	10 nos.	85
B0568	Oxidised mild steel butt hinges 75x47x1.70 mm	10 nos.	63
B0569	Oxidised mild steel butt hinges 50x37x1.50 mm	10 nos.	53
B0570	Oxidised mild steel parliamentary hinges 150x125x27x2.8 mm	10 nos.	334
B0571	Oxidised mild steel parliamentary hinges 125x125x27x2.8 mm	10 nos.	309
B0572	Oxidised mild steel parliamentary hinges 100x125x27x2.8 mm	10 nos.	231
B0573	Oxidised mild steel parliamentary hinges 75x100x20x2.24 mm	10 nos.	196
B0574	Oxidised mild steel single acting spring hinges 150 mm	each	138
B0575	Oxidised mild steel single acting spring hinges 125 mm	each	118
B0576	Oxidised mild steel single acting spring hinges 100 mm	each	98
B0577	Oxidised mild steel double acting spring hinges 150 mm	each	157
B0578	Oxidised mild steel double acting spring hinges 125 mm	each	135
B0579	Oxidised mild steel double acting spring hinges 100 mm	each	118
B0580	Nickel plated mild steel piano hinges 1 mm thick 35 mm wide	metre	44
B0581	Oxidised mild steel sliding door bolt 300x16 mm	each	93
B0582	Oxidised mild steel sliding door bolt 250x16 mm	each	84
B0583	Oxidised mild steel door latch 300x20x6 mm	each	49
B0584	Oxidised mild steel door latch 250x20x6 mm	each	39

Unique Code	Description	Unit	Rate (INR)
B0585	Oxidised mild steel tower bolt (barrel type) 250x10 mm	each	43
B0586	Oxidised mild steel tower bolt (barrel type) 200x10 mm	each	34
B0587	Oxidised mild steel tower bolt (barrel type) 150x10 mm	each	29
B0588	Oxidised mild steel tower bolt (barrel type) 100x10 mm	each	20
B0589	Oxidised mild steel handles 125 mm	each	20
B0590	Oxidised mild steel handles 100 mm	each	15
B0591	Oxidised mild steel handles 75 mm	each	12
B0592	Oxidised mild steel hasps and staples (safety type) 150 mm	10 nos.	128
B0593	Oxidised mild steel hasps and staples (safety type) 115 mm	10 nos.	108
B0594	Oxidised mild steel hasps and staples (safety type) 90 mm	10 nos.	79
B0595	Oxidised mild steel screws 50 mm	100 nos.	76
B0596	Oxidised mild steel screws 40 mm	100 nos.	62
B0597	Oxidised mild steel screws 30 mm	100 nos.	49
B0598	Oxidised mild steel screws 25 mm	100 nos.	36
B0599	Oxidised mild steel screws 20 mm	100 nos.	32
B0600	Anodised Aluminium butt hinges 125x75x4 mm	10 nos.	560
B0601	Anodised Aluminium butt hinges 125x63x4 mm	10 nos.	393
B0602	Anodised Aluminium butt hinges 100x75x4 mm	10 nos.	393
B0603	Anodised Aluminium butt hinges 100x63x3.2 mm	10 nos.	270
B0604	Anodised Aluminium butt hinges 100x63x4 mm	10 nos.	324
B0605	Anodised Aluminium butt hinges 75x63x4 mm	10 nos.	275
B0606	Anodised Aluminium butt hinges 75x63x3.2 mm	10 nos.	226
B0607	Anodised Aluminium butt hinges 75x45x3.2 mm	10 nos.	196
B0608	Anodised Aluminium sliding door bolt 300x16 mm	each	147
B0609	Anodised Aluminium sliding door bolt 250x16 mm	each	128
B0610	Anodised Aluminium tower bolt (barrel type) 300x10 mm	10 nos.	580
B0611	Anodised Aluminium tower bolt (barrel type) 250x10 mm	10 nos.	481
B0612	Anodised Aluminium tower bolt (barrel type) 200x10 mm	10 nos.	383
B0613	Anodised Aluminium tower bolt (barrel type) 150x10 mm	10 nos.	304
B0614	Anodised Aluminium tower bolt (barrel type) 100x10 mm	10 nos.	226
B0615	Anodised Aluminium handles 125 mm with plate 175 x 32 mm	10 nos.	324
B0616	Anodised Aluminium handles 100 mm with plate 150 x 32 mm	10 nos.	275
B0617	Anodised Aluminium handles 75mm with plate 125 x 32 mm	10 nos.	231
B0618	Anodised Aluminium kicking plate 50 cm long 100x3.15 mm	each	142
B0619	Block board construction flush door with teak wood ply on both faces 35 mm thick	sqm	1800
B0620	Block board construction flush door with teak wood ply on both faces 30 mm thick	sqm	1600
B0621	Block board construction flush door with teak wood ply on both faces 25 mm thick	sqm	1400
B0622	Block board construction flush door with commercial ply on both faces 35 mm thick	sqm	950
B0623	Block board construction flush door with commercial ply on both faces 30 mm thick	sqm	900
B0624	Block board construction flush door with commercial ply on both faces 25 mm thick	sqm	890
B0625	Block board construction flush door lipping 25 mm thick	sqm of door area	300
B0626	Square vision panel in Block board construction flush door not exceeding 0.10 sqm	sqm of door area	130
B0627	Circular vision panel in Block board construction flush door	sqm of door area	135

Unique Code	Description	Unit	Rate (INR)
B0628	Decorative type louvers in Block board construction flush door	sqm of door area	265
B0629	Rebate cutting in block board construction flush door	sqm of door area	70
B0630	Mild steel expanded metal 20x60 mm strands 3.25 mm wide 1.60 mm thick	sqm	280
B0631	Hard drawn steel wire fabric 75 x 25 mm mesh of weight not less than 7.75 kg/sqm	sqm	430
B0632	Superior class teak wood such as Dandeli, Balarshah or Malabar in planks	10 cudm	1100
B0633	First class Kail wood in planks	10 cudm	300
B0634	Second class Kail wood in scantling	10 cudm	260
B0635	Second class Kail wood in planks	10 cudm	260
B0636	First class teak wood in scantling	10 cudm	880
B0637	First class teak wood in planks	10 cudm	850
B0638	Second class teak wood in scantling	10 cudm	776
B0639	Second class teak wood in planks	10 cudm	791
B0640	Extra for selected planks of second class teakwood	10 cudm	150
B0641	Marandi wood in planks	10 cudm	440
B0642	Marandi wood in scantling	10 cudm	430
B0643	Second class deodar wood in planks	10 cudm	500
B0644	Sal wood in scantling	10 cudm	600
B0645	Kiln seasoned selected sheesham wood planks	10 cudm	650
B0646	Extra for selected planks of first class teakwood	10 cudm	150
B0647	SS mosquito Jali(12x26) grade 304	sqm	450
B0648	P&F of Roller blinds on windows complete with push up & down arrangement as per approved design / colour.	sqm	1800
B0649	Aluminium Jali 7mm thick, 75mmx75mm opening	sqm	1000
B0650	Anodizing Aluminium Jali	sqm	110
B0651	6mm thick toughened glass along with powder coated pipe (3.5" x 1.75")	sqm	3250
B0652	Stay 6"x 8mm welding rod	each	27
B0653	MS thread rod 8 mm dia with bolt and washer	metre	140
B0654	UPVC frame including GI reinforcement	sqm	2500
B0655	UPVC openable shutter / sash including GI reinforcement, glazing beading	sqm	3500
B0656	6mm toughened clear glass	sqm	600
B0657	5mm annealed clear glass	sqm	350
B0658	Glass sealing with 12mm air gap	sqm	350
B0659	Cost of 6 mm outer glass having U value 1.8, solar factor 0.35 right transmission 49%	sqm	1000
B0660	6mm annealed plain glass	sqm	400
B0661	Cost of double sided acrylic foam tape 12mm x 6mm	metre	40
B0662	Powder coated Aluminium Handles 200 mm	each	88
B0663	Powder coated Aluminium Tower bolt (100x10mm)	each	84
B0664	Powder coated Sliding Bolt 250 x 16 mm	each	305
B0665	Float glass panes of nominal thickness 4 mm (weight not less than 10 kg/sqm)	sqm	300
B0666	Float glass panes of nominal thickness 5 mm (weight not less than 12.50 kg/sqm)	sqm	500
B0667	Float glass panes of nominal thickness 6 mm (weight not less than 15 kg/sqm)	sqm	540
B0668	Float glass panes of nominal thickness 8 mm (weight not less than 20.00 kg/sqm)	sqm	610
B0669	Ply wood 5 ply with commercial ply on both faces 6 mm thick	sqm	300
B0670	12 mm commercial ply	sqm	500

Unique Code	Description	Unit	Rate (INR)
B0671	Oxidised mild steel pull bolt lock (locking bolt) of size 85 mm x 42 mm with screws, bolts, nuts and washers complete	each	60
B0672	Brass cupboard lock 6 levers of approved quality, 40 mm size	each	55
B0673	Brass cupboard lock 6 levers of approved quality, 50 mm size	each	85
B0674	Brass cupboard lock 6 levers of approved quality, 65 mm size	each	90
B0675	Brass cupboard lock 6 levers of approved quality, 75 mm size	each	105
B0676	Brass hanging type door stopper 150 mm	each	75
B0677	Hydraulic door closer bottle type M.S. body with necessary accessories and screws complete	each	673
B0678	Anodised Aluminium hanging type door stopper	each	19
B0679	Anodised Aluminium pull bolt lock (locking bolt) of size 85 mm x 42 mm with screws, bolts, nuts and washers complete	each	46
B0680	Anodised Aluminium Casement stay 250 mm	each	32
B0681	Hollock wood in scantling	10 cudm	350
B0682	Nickled Chromium Brass cupboard lock 40 mm size	each	60
B0683	Nickled Chromium Brass cupboard lock 50 mm size	each	70
B0684	Nickled Chromium Brass cupboard lock 65 mm size	each	95
B0685	Nickled Chromium Brass cupboard lock 75 mm size	each	120
B0686	Ply wood 5 ply with teak ply on both faces 9 mm thick	sqm	850
B0687	Ply wood 5 ply with teak ply on one face and commercial ply on another face 9 mm thick	sqm	870
B0688	Ply wood 7 ply with teak ply on one face and commercial ply on another face 9 mm thick	sqm	950
B0689	Extra for selected planks of second class deodar wood	10 cudm	110
B0690	Kiln seasoning of timber	cum	700
B0691	Hollock wood in planks	10 cudm	380
B0692	Weather/structural non sag elastomeric PU sealant (600ml Sausage) for joints in RCC/ Brick/ Stone/ wood/ Ceramic/ Gypsum/ Aluminium work complying to ASTM C920, DIN 18540-F & ISO 11600 incl all taxes	each	532
B0693	SS Screws - # 8 x 19	each	6
B0694	Glass panes of required thickness having 120 minutes of fire resistance both integrity and radiation control (EI 120) and minimum 20 minutes of insulation (EI 20)	sqm	25000
B0695	G.I U beading of 1.6 mm thick G.I sheet with ceramic tape.	metre	245
B0696	Ceramic tape 5 x20 mm size	metre	410
B0697	Door Frame of size 80mm x 50mm with 37mm wide single rebate for 35mm door shutter	metre	545
B0698	Door Frame of size 125mm x 60mm with 37mm wide single rebate for 35mm door shutter	metre	710
B0699	PO 407 (Outer Frame Section 72mm x 55mm)	metre	460
B0700	AC 474 (Outer frame corner bracket) made of Nylon/Polypropylene	each	44
B0701	AC 419 (Mullion Caps) made of Nylon/Polypropylene	each	40
B0702	PO 507 (Outer Frame Section 98mm x 50mm)	metre	550
B0703	AC 574 (Outer frame corner bracket) made of Nylon/Polypropylene	each	44
B0704	AC 319 / 320 (Mullion Caps) made of Nylon/Polypropylene	each	40
B0705	PO 810 (Glass Shutter Section 47mm x 20mm) 2*2(1.145+.530)+1.05	metre	320
B0706	AC 355 (Glass Shutter corner bracket) made of Nylon/Polypropylene	each	34
B0707	AC 3201 (Pivot Hinges) made of S.S	each	120
B0708	AC 4235 (Glass Shutter handles) made of PVC	each	48

Unique Code	Description	Unit	Rate (INR)
B0709	AC 9200 (Friction Stay) made of M.S Powder Coated	each	220
B0710	GE New (Glass Shutter Gasket) made of EPDM	metre	46
B0711	PO 231 (Mesh Shutter Section 40mm x 20mm) 2*2(1.145+.530)+1.05	metre	293
B0712	S.S wire mesh 32 gauge fly mesh with 144 holes per square Inch including 10% wastage	sqm	520
B0713	AC 455 (Mesh Shutter corner bracket) made of Nylon/Polypropylene	each	24
B0714	PO 209 (Spoon Profile Section) 18mm x 6mm	metre	56
B0715	AC 2235 (Mesh Shutter handle) made of PVC	each	37
B0716	AC 200 (Self Latches) made of M.S	each	24
B0717	PO 179 E (Fixed Bead Section 12mm x 12mm) 2*2(0.685+0.530)=4.86metre 2(1.685+1.83)=7.03 11.89+5%	metre	84
B0718	ECO Fixed Gasket made of EPDM	metre	46
B0719	PO 153 (Glass Shutter Section 46mm x 46mm) 2*2(1.145+.530)+1.05	metre	384
B0720	AC 255 (Glass Shutter corner bracket) made of Nylon/Polypropylene	each	34
B0721	AC 9201 (Friction Hinges) made of M.S Powder Coated	each	410
B0722	AC 7235 (Glass Shutter handles) made of Aluminium Powder Coated	each	90
B0723	PO 179 E (Fixed Bead Section 25mm x 18mm)	metre	131
B0724	M.S powder coated 100mm but hinges 2mm thick	each	21
B0725	1.2mm thick CRCA electroplated stiffner	each	17
B0726	M.S hold fast with split and tail welded to stiffner plate 200mm long	each	34
B0727	Receiver for aldrop (PVC)	each	5
B0728	Galvanised steel tie rods 50mm x 25mm	metre	82
B0729	CV 1742 S.S Screws for outer frame	each	1
B0730	CV 1800 wall fixing M.S Screws 100mm long & S8R80 wall fixing PVC caps	each	5
B0731	CV 1719 S.S Screws for glazed shutter	each	2
B0732	CV 1706 S.S Screws for handle receiver	each	1
B0733	CV 1728 S.S Screws for Mesh shutter	each	1
B0734	Self Drilling S.S Screws 8 x 16	each	2
B0735	CV 1716 S.S Screws for Mesh Pivot hinges	each	1
B0736	Fabrication of aluminium doors/ windows	kg	22
B0737	Fixing the Aluminium jali complete in all respect	sqm	75
B0738	Toughening of glass	sqm	250
B0739	Hoisting Charges	cum	450
B0740	Sawing charges	cum	850
B0741	Galvanized iron (1.6 ± 0.2 mm) thick reinforcement for small series casement window/door frame, sash, mullion & small series sliding window frame	metre	66
B0742	Galvanized iron (1.6 ± 0.2 mm) thick reinforcement for big series casement window/door frame, sash, mullion, big & small series sliding window frame	metre	71
B0743	Galvanized iron (1.6 ± 0.2 mm) thick reinforcement for big series casement door sash	metre	97
B0744	Galvanized iron (1.6 ± 0.2 mm) thick reinforcement for big series sliding window / door sash	metre	86
B0745	G.I fasteners 100 x 8 mm	each	14
B0746	Brass 100mm mortice latch and lock with 6 levers without pair of handles	each	210
B0747	pair of Anodised Aluminium lever handles for 100 mm mortice latch and lock	each	215
B0748	Chromium plated brackets (curtain rods)	each	7

Unique Code	Description	Unit	Rate (INR)
B0749	Galvanised wire mesh of average width of aperture 1.4 mm and nominal dia of wire 0.63 mm	sqm	250
B0750	Frosted glass sheet of nominal thickness 4 mm (weighing not less than 10 kg/sqm)	sqm	460
B0751	Nickel plated M.S. pipe 25 mm dia	metre	76
B0752	Nickel plated M.S. pipe 20 mm dia	metre	72
B0753	Nickel plated M.S. Brackets for curtain rod 20 mm	each	7
B0754	Nickel plated M.S - Brackets for curtain rod 25 mm	each	8
B0755	Oxidised mild steel screws 35 mm	100 nos.	48
B0756	Teak wood lipping of size 25x3 mm in pelmets	metre	14
B0757	Flat pressed 3 layer and graded particle board (medium density) Grade 1 conforming to IS : 3087 - 18 mm thick	sqm	480
B0758	Aluminium tee channel (heavy duty) with rollers and stop end	metre	100
B0759	Aluminium hanging floor door stopper with twin rubber & stopper	each	40
B0760	Hydraulic door closer tubular type Aluminium section body	each	560
B0761	Oxidised M.S.casement stay (straight peg type) 300 mm not less than 0.33 kg	each	35
B0762	Oxidised M.S.casement stay (straight peg type) 250 mm not less than 0.28 kg	each	30
B0763	Oxidised M.S. casement stay (straight peg type) 200 mm not less than 0.24 kg	each	25
B0764	Factory made 35 mm thick shutters with laminated veneer lumber styles & rails and panels of 12 mm thick plain type-I, medium density flat pressed three layer, graded particle board (FPT-I) as per IS:3087 bonded with BWP type synthetic resin adhesive, as per IS:848	sqm	1540
B0765	Factory made 35 mm thick shutters with laminated veneer lumber styles & rails and panels of 12 mm thick both sides prelaminated type-I, medium density flat pressed three layer, graded particle board (FPT-I) as per IS:3087 bonded with BWP type synthetic resin adhesive, as per IS:848	sqm	1720
B0766	Factory made 35 mm thick shutters with laminated veneer lumber styles & rails and panels of 12 mm thick one side prelaminated type-I, and other side balancing lamination, medium density flat pressed three layer, graded particle board (FPT-I) as per IS:3087 bonded with BWP type synthetic resin adhesive, as per IS:848	sqm	1910
B0767	Factory made 30 mm thick shutters with laminated veneer lumber styles & rails and panels of sheet glass using 10 kg/ sqm glass panes	sqm	1620
B0768	Factory made 35 mm thick shutters with laminated veneer lumber styles & rails and panels of galvanised wire gauge with average width of aperture 1.4 mm in both directions with wire of dia 0.63 mm	sqm	1620
B0769	Factory made 30 mm thick shutters with laminated veneer lumber styles & rails and panels of galvanised wire gauge with average width of aperture 1.4 mm in both directions with wire of dia 0.63 mm	sqm	1430
B0770	Laminated veneer lumber manufactured in factory in frames of doors, windows	10 cudm	700
B0771	Oxidised M.S. safety chain (weighing not less than 450 gms) for door	each	57
B0772	25 mm thick particle board	sqm	460
B0773	Second class teak wood lipping 25 mm wide x 12 mm thick	metre	29
B0774	25 mm thick melamine faced prelaminated three layer particle board	sqm	900
B0775	For flush door shutters Extra for providing teak veneering on one side instead of commercial veneering	sqm	330
B0776	Cadmium plated full threaded steel screws (30x4 mm dia)	100 nos.	27
B0777	Aluminium washer 2 mm thick 15 mm dia	100 nos.	10
B0778	12 mm M.S. 'U' beading	metre	14
B0779	Dash hold fastener 12.5 mm dia, 50 mm long with 6 mm dia bolt	each	11
B0780	Anodising 15 microns on aluminium sections	kg	38
B0781	EPDM Gasket for uPVC window/door	metre	19

Unique Code	Description	Unit	Rate (INR)
B0782	Anodising 25 microns on aluminium sections	kg	48
B0783	Powder coating 50 microns on aluminium sections	kg	61
B0784	Polyester powder coating 50 microns on aluminium sections	kg	67
B0785	Double action hydraulic floor spring with stainless steel cover plate	each	1500
B0786	6 mm dia G.I. adjustable hangers including clips (up to 1.2 m length)	each	20
B0787	Double action hydraulic floor spring with brass cover plate	each	1620
B0788	Aluminium single cleat of size 30x32x3 mm	each	14
B0789	Aluminium grip strip of size 50x12x2 mm	each	11
B0790	25 mm thick prelaminated flush door shutter both side decorative	sqm	800
B0791	Aluminium U beading	kg	210
B0792	Glass sheet (Pin headed) 4 mm thick	sqm	305
B0793	Veneered particle board with commercial veneering on both sides 12 mm thick	sqm	480
B0794	Prelaminated particle board with one side decorative and other side balancing lamination, flat pressed 3 layer & graded (medium density) Grade i, Type II conforming to IS : 12823 (exterior grade) 12 mm thick	sqm	540
B0795	Prelaminated particle board with one side decorative and other side balancing lamination, flat pressed 3 layer & graded (medium density) Grade I, Type II conforming to IS : 12823 (exterior grade) 18 mm thick	sqm	650
B0796	Prelaminated particle board with one side decorative and other side balancing lamination, flat pressed 3 layer & graded (medium density) Grade I, Type II conforming to IS : 12823 (exterior grade) 25 mm thick	sqm	900
B0797	Prelaminated particle board with both sides decorative lamination, flat pressed 3 layer & graded (medium density) Grade I, Type II conforming to IS : 12823 (exterior grade) 12 mm thick	sqm	575
B0798	Oxidised M. S. hinges finished with nickel plating 50 mm (Over all width)	metre	40
B0799	Oxidised M. S. hinges finished with nickel plating 65 mm (Over all width)	metre	52
B0800	PTMT handle 125x34x24 mm	each	24
B0801	PTMT handle 150x34x24 mm	each	24
B0802	PTMT butt hinges 75x60x10 mm	each	33
B0803	PTMT butt hinges 100x75x10 mm	each	43
B0804	PTMT Tower bolt 152x42x18 mm	each	48
B0805	PTMT Tower bolt 202x42x18 mm	each	67
B0806	PTMT door catcher 72x42 mm	each	24
B0807	Coir veneered board 4 mm thick	sqm	290
B0808	Coir veneered board 6 mm thick	sqm	385
B0809	Coir veneered board 12 mm thick	sqm	670
B0810	Coir veneered board 18 mm thick	sqm	1000
B0811	Hire charges of Drill machine up to 30 mm dia	day	160
B0812	24 mm thick Factory made shutters with style, rails and panels of PVC extruded sections in white, grey or wooden finish	sqm	1086
B0813	30 mm thick Factory made shutters with style, rails and panels of PVC extruded sections in white, grey or wooden finish	sqm	1249
B0814	Factory made PVC rigid foam panelled shutter i/c carriage	sqm	1547
B0815	Factory made PVC rigid foam panelled shutter as per IS : 4020 i/c carriage	sqm	1547
B0816	Factory made PVC rigid foam sheet 1 mm thick	sqm	156
B0817	48mmX40mmX1.5mm thick Factory made door frame of PVC extruded sections in white, grey or wooden finish	metre	126
B0818	Factory made door frame PVC extruded sheet i/c carriage	metre	252

Unique Code	Description	Unit	Rate (INR)
B0819	Factory made door frame of size 50x47 mm with wall thickness 5 mm made of single piece extruded profile	metre	299
B0820	Fire rated door frame made with 1.6 mm thick G.I sheet (120 minutes fire rating)	metre	1000
B0821	Fire rated door shutter made with 1.6 mm thick G.I sheet (120 minutes fire rating)	sqm	5000
B0822	Powder coated M.S. butt hinges 100 mm X58 mmX1.9 mm	10 nos.	123
B0823	SS ball bearing of size 100 x89x3mm	each	450
B0824	Zinc alloy (white powder coated) 3D Hinges for uPVC door	each	451
B0825	Zinc alloy (white powder coated) handles with zinc plated mild steel multi point locking having transmission gear, cylinder with keeps and one side key for uPVC casement door	each set	2296
B0826	Zinc alloy (white powder coated) handles along with zinc plated mild steel multi point locking having transmission gear with keeps for uPVC sliding window	each set	1394
B0827	Zinc alloy (white powder coated) handles with key along with zinc plated mild steel multi point locking having transmission gear with keeps for uPVC sliding door	each set	1150
B0828	uPVC extruded (small series) casement window frame size 47x50mm	metre	258
B0829	uPVC extruded (small series) casement window sash/window mullion size 47x68 mm	metre	283
B0830	uPVC extruded glazing bead of appropriate dimension for small series casement window Sash	metre	98
B0831	uPVC extruded (big series) casement window frame size 67x60 mm	metre	320
B0832	uPVC extruded (big series) casement door frame size 67x64 mm	metre	361
B0833	uPVC extruded (big series) casement window sash/window mullion/door mullion size 67x80 mm	metre	426
B0834	uPVC extruded (big series) casement door sash size 67x110 mm	metre	517
B0835	uPVC extruded glazing bead of appropriate dimension for big series casement window/door sash	metre	123
B0836	uPVC extruded glazing bead of appropriate dimension for small series sliding window sash	metre	60
B0837	uPVC extruded glazing bead of appropriate dimension for big series of sliding window/ door sash	metre	85
B0838	uPVC extruded (small series) 2 track sliding window frame size 52x44 mm	metre	285
B0839	uPVC extruded (big series) 2 track sliding window/door frame size 67x50mm	metre	385
B0840	uPVC extruded (small series) 3 track sliding window frame size 92x44 mm	metre	380
B0841	uPVC extruded (big series) 3 track sliding window/door frame size 116x45mm	metre	530
B0842	uPVC extruded (small series) 2 track sliding window sash/3 track sliding window sash size 32x60mm	metre	265
B0843	uPVC extruded (big series) 2 track sliding window sash size 46x62mm	metre	325
B0844	uPVC extruded (big series) 3 track sliding window sash size 46x62mm	metre	325
B0845	uPVC extruded interlock of appropriate dimension for small series sliding window sash	metre	80
B0846	uPVC extruded interlock of appropriate dimension for big series sliding window/ door sash	metre	90
B0847	uPVC extruded inline adaptor of appropriate dimension for big series sliding window/door sash	metre	90
B0848	uPVC extruded 2 track sliding door sash/ 3 track sliding door sash (big series) size 46x82mm	metre	350
B0849	Stainless steel screws 50 mm	100 nos.	270
B0850	Stainless steel screws 40 mm	100 nos.	190
B0851	Stainless steel screws 30 mm	100 nos.	140
B0852	Stainless steel screws 20 mm	100 nos.	110

Unique Code	Description	Unit	Rate (INR)
B0853	Stainless steel butt hinges 125x64x1.9 mm IS : 12817 marked	10 nos.	265
B0854	Stainless steel butt hinges 100x58x1.9 mm IS : 12817 marked	10 nos.	235
B0855	Stainless steel butt hinges 75x47x1.8 mm IS : 12817 marked	10 nos.	160
B0856	Stainless steel butt hinges 50x37x1.5 mm IS : 12817 marked	10 nos.	135
B0857	Stainless steel butt hinges (heavy weight) 125x64x2.5 mm IS :12817 marked	10 nos.	350
B0858	Stainless steel butt hinges (heavy weight) 100x60x2.5 mm IS :12817 marked	10 nos.	255
B0859	Stainless steel butt hinges (heavy weight) 75x50x2.5 mm IS :12817 marked	10 nos.	205
B0860	M.S. heavy weight butt hinges 125x90x4.0 mm IS: 1341 marked.	10 nos.	210
B0861	M.S. heavy weight butt hinges 100x75x3.5 mm IS: 1341 marked	10 nos.	160
B0862	M.S. heavy weight butt hinges 75x60x3.1 mm IS: 1341 marked	10 nos.	95
B0863	M.S. heavy weight butt hinges 50x40x2.5 mm IS : 1341 marked	10 nos.	80
B0864	Weather Silicon sealant	cartridge	100
B0865	Stainless steel screws 30 mm x4 mm	100 nos.	32
B0866	Hermetically sealed double glazed unit made with 6 mm thick clear float glass both side having 12 mm air gap	sqm	2150
B0867	Stainless steel (SS 304 grade) adjustable friction window stay 205 x 19 mm	each	172
B0868	Stainless steel (SS 304 grade) adjustable friction window stay 255 x 19 mm	each	222
B0869	Stainless steel (SS 304 grade) adjustable friction window stay 355 x 19 mm	each	195
B0870	Stainless steel (SS 304 grade) adjustable friction window stay 510 x 19 mm	each	525
B0871	Stainless steel (SS 304 grade) adjustable friction window stay 710 x 19 mm	each	900
B0872	Masking tape	metre	2
B0873	Aluminium casement window fastener (Anodised AC 15)	each	44
B0874	Aluminium casement window fastener (powder coated)	each	47
B0875	Aluminium casement window fastener (polyester powder coated)	each	46
B0876	Aluminium round shape handle (anodised AC 15) outer dia 100 mm	each	53
B0877	Aluminium round shape handle (powder coated) outer dia 100 mm	each	56
B0878	Aluminium round shape handle (polyester powder coated) outer dia 100 mm	each	60
B0879	Stainless steel screws 25 mm x4 mm	100 nos.	38
B0880	1 mm thick 35 mm wide bright finished stainless steel piano hinges	metre	42
B0881	8 mm thick tapered edge calcium silicate board	sqm	265
B0882	10 mm thick calcium silicate board	sqm	420
B0883	Telescopic drawer channels 300 mm long	set	230
B0884	Stainless steel roller for sliding arrangement in racks/ cupboards/cabinets shutter	each	9
B0885	50 mmX42 mmX2 mm thick Factory made door frame of PVC extruded sections in white, grey or wooden finish	metre	160
B0886	25 mm thick factory made PVC flush door shutter i/c carriage	sqm	1700
B0887	Factory made glass reinforced plastic door frame 90x45 mm i/c carriage	metre	467
B0888	30 mm thick factory made glass fibre reinforced plastic panel door shutter i/c carriage	sqm	2326
B0889	30 mm thick factory made solid PVC profile panelled door single piece extruded profile decorative finish (wood grain printed on both side)	sqm	2100
B0890	Factory made solid PVC door frame 60 x 30 mm i/c carriage	metre	315
B0891	30 mm thick factory made solid PVC profile panelled door single piece extruded profile non decorative finish	sqm	2000
B0892	Fibre glass reinforced plastic chajja	sqm	3000
B0893	Magnetic catcher triple strip vertical type	each	24
B0894	Magnetic catcher double strip horizontal type	each	18

Unique Code	Description	Unit	Rate (INR)
B0895	100 mm mortice lock with 6 levers for aluminium door	each	375
B0896	2nd class teak wood moulded beading or Taj beading/ornamental bleeding of size 18X5 mm	metre	28
B0897	Ceiling sections 0.55 mm thick having a knurled web of 51.55 mm and two flanges of 26 mm each with lips of 10.55 mm	metre	35
B0898	perimeter channel having one flange of 20 mm and another flange of 30 mm with thickness of 0.55 mm and web of length 27 mm	metre	22
B0899	Nylon sleeves & wooden screws (40 mm)	each	2
B0900	Counter sunk ribbed head screw 25 mm	100 nos.	68
B0901	12 mm thick marine plywood conforming to IS: 710	sqm	695
B0902	12 mm thick fire retardant plywood conforming to IS: 5509	sqm	850
B0903	1.5 mm thick decorative laminated sheet	sqm	365
B0904	1.0 mm thick decorative laminated sheet	sqm	280
B0905	30 mm thick factory made glass fibre reinforced plastic flush door shutter	sqm	2675
B0906	35 mm thick factory made solid panel PVC door shutter of single piece extruded profile non decorative finished (Matt finished)	sqm	2150
B0907	35 mm thick factory made solid panel PVC door shutter of single piece extruded profile decorative finished (wood grain finished)	sqm	2600
B0908	Stainless steel wire gauge (Grade-304) aperture 1.4 mm and 0.50mm dia wire	sqm	400
B0909	Factory made door frame fire rated (60 minutes) made with 16 SWG G.I. Sheet of section 143 mm x 57 mm duly filled with vermiculite based concrete mix	metre	1050
B0910	Fire rated door shutter made with 16 SWG G.I. sheet (60 minutes) without panel	sqm	4500
B0911	Panic Bar / latch (Double point)	each	5200
B0912	65 mm x 55 mm x 2 mm thick Factory made door frame of PVC extruded section in white, grey or wooden finish	metre	355
B0913	37 mm thick Factory made shutter with style, rails and panels of PVC extruded section in white or grey finish i/c carriage	sqm	2400
B0914	75 mm x 53 mm x 2.0 mm thick Factory made door frame of PVC extruded section in white, grey or wooden finish	metre	400
B0915	37 mm thick Factory made fusion welded shutter with style, rails and panels of PVC extruded section in wooden finish	sqm	2600
B0916	Zinc alloy (white powder coated) touch lock with hook for wire mesh shutter	each	120
B0917	Zinc alloy (white powder coated) casement handle for uPVC window/door	each	130
B0918	Zinc alloy (white powder coated) touch lock with hook for uPVC window/door	each	105
B0919	Zinc alloy body with single nylon roller (weight bearing capacity to be 40 kg) for uPVC sliding window	each	56
B0920	Stainless Steel (SS - 304) with adjustable double nylon roller (weight bearing capacity to be 120 kg) for uPVC sliding door/window	each	95
B0921	Zinc alloy (white powder coated) crescent lock for uPVC sliding door/window	each	115
B0922	Stainless steel friction hinge of size 200 mm x 19 x 1.9 mm for uPVC windows	each	205
B0923	Stainless steel friction hinge of size 250 mm x 19 x 1.9 mm for uPVC windows	each	230
B0924	Stainless steel friction hinges (SS-304 grade) size 300 x 19 x 1.9 mm for uPVC window	each	245
B0925	Stainless steel friction hinges (SS-304 grade) size 350 x 19 x 1.9 mm for uPVC window	each	345
B0926	Stainless steel friction hinges (SS-304 grade) size 400 x 19 x 1.9 mm for uPVC window	each	365
B0927	Glass panes of required thickness having 60 minutes of fire resistance both integrity and radiation control (EI 60) and minimum 20 minutes of insulation (EI 20)	sqm	22500
B0928	Wool pile/ weather pile strip for uPVC sliding window	metre	20

Unique Code	Description	Unit	Rate (INR)
B0929	Aluminium Grill as per IS 1868	kg	260
B0930	Stainless steel dash fastener of 8 mm dia and 75 mm long bolt	each	15
B0931	Toughened glass 12 mm thickness	sqm	1747
B0932	Pulley 25 mm dia	each	48
B0933	Rolling shutter made of 80x1.25 mm machine rolled laths	sqm	1200
B0934	Top cover for rolling shutters 1.25 mm thick	metre	800
B0935	27.5 cm long wire spring grade No. 2 for rolling shutters	each	300
B0936	Ball bearing for rolling shutters	each	260
B0937	Extra for mechanical devices chain and cranked operation for operating rolling shutters: exceeding 10.00 sqm and up to 16.80 sqm area of door	sqm	800
B0938	Extra for mechanical devices chain and cranked operation for operating rolling shutters: exceeding 16.80 sqm area of door	sqm	800
B0939	Mild steel round bar 12 mm dia and below	quintal	4900
B0940	Mild steel round bar above 12 mm dia	quintal	4800
B0941	Mild steel square bars	quintal	4900
B0942	Structural steel such as tees, angles channels and R.S. joists	quintal	5000
B0943	Flats up to 10 mm in thickness	quintal	4900
B0944	Flats exceeding 10 mm in thickness	quintal	5000
B0945	Mild steel plates	quintal	5200
B0946	Steel glazed door, window/ ventilator, all members viz. F7D, F4B, K11 and K12B etc.	kg	54
B0947	Mild steel sheets of 1.00 mm thickness for tanks	quintal	5000
B0948	Mild steel hooks	each	32
B0949	Mild steel rivets	quintal	5000
B0950	Iron pintels including welded pin	each	37
B0951	Steel beading 10x10x1.6mm (box type)	metre	27
B0952	Welding by gas plant	cm	2
B0953	20 mm dia holding down bolts	quintal	6100
B0954	Mild steel sheets with bolts and nuts to rest on pintels	each	120
B0955	Supply and Fixing of Tensile Sheet Shed 650GSM sheet with M.S Iron pipe Frame Pole 125mm Heavy Truss M.S Pipe 60mm Heavy, Membrane M.S Pipe 50mm Heavy, Complete With cost of Painting and Labour for Fixing Paint Complete in all Respects	sqm	4000
B0956	Carbon Steel galvanised (min 5 micron) dash fastener (min 5 micron) of 10 mm dia double threaded 6.8 grade counter sunk head screw comprising of 10 mm dia polyamide PA 6 grade sleeve. Size 10mm x 60 mm	10 nos.	260
B0957	Carbon Steel galvanised (min 5 micron) dash fastener (min 5 micron) of 10 mm dia double threaded 6.8 grade counter sunk head screw comprising of 10 mm dia polyamide PA 6 grade sleeve. Size 10mm x 80 mm	10 nos.	300
B0958	Carbon Steel galvanised (min 5 micron) dash fastener (min 5 micron) of 10 mm dia double threaded 6.8 grade counter sunk head screw comprising of 10 mm dia polyamide PA 6 grade sleeve. Size 10 mm x 120 mm	10 nos.	365
B0959	Carbon Steel galvanised (min 5 micron) dash fastener (min 5 micron) of 10 mm dia double threaded 6.8 grade counter sunk head screw comprising of 10 mm dia polyamide PA 6 grade sleeve. Size 10mm x 140 mm	10 nos.	450
B0960	Carbon Steel galvanised (min 5 micron) dash fastener (min 5 micron) of 10 mm dia double threaded 6.8 grade counter sunk head screw comprising of 10 mm dia polyamide PA 6 grade sleeve. Size 10mm x 160 mm	10 nos.	575
B0961	Rolling shutters of 80x0.90 mm laths	sqm	1300

Unique Code	Description	Unit	Rate (INR)
B0962	Rolling shutters of 80x1.2 mm laths	sqm	1375
B0963	Top cover of Rolling shutters 0.90 mm thick	metre	450
B0964	Top cover of Rolling shutters 1.20 mm thick	metre	560
B0965	Extra for providing grilled rolling shutters with 8 mm dia M.S. rod	sqm	500
B0966	Mild steel tubes hot finished welded type	kg	65
B0967	Mild steel tubes hot finished seamless type	kg	75
B0968	Mild steel tubes electric resistant or induction butt welded	kg	55
B0969	Stainless steel (Grade-304)hollow section round/square tubes	kg	220
B0970	Stainless steel bolts/square bar and plates	kg	115
B0971	Pressed steel door frames (mild steel sheet 2.00 mm) Profile "B"	metre	220
B0972	Pressed steel door frames (mild steel sheet 2.00 mm) Profile "C"	metre	240
B0973	Pressed steel door frames (mild steel sheet 2.00 mm) Profile "E"	metre	260
B0974	Circular C.I. Box for ceiling fan internal dia 140 mm, 73 mm height, top lid of 1.5mm thick MS sheet	each	52
B0975	Pulley 40 mm dia	each	30
	Material used for Irrigation Works		
B0976	Empty Cement bags	each	5
B0977	Polythene 20 Micron	kg	150
B0978	150 mm dia (ID) PVC corrugated pipe	metre	200
B0979	MS plates, angles, channels etc. i/c fabrication	kg	90
B0980	Oiling of shutters	sqm	1
B0981	GI plate & aluminium lid (hinged)	each	35
B0982	Tar felt Joint filler board 20 mm thick	sqm	456
B0983	LDPE Sheet 1000 micron [(940 gm per sqm)	sqm	210
B0984	LDPE Sheet 500 micron	sqm	110
B0985	Air entraining admixture	kg	80
B0986	Epoxy Mortar	kg	205
B0987	GI wire of various diameters	quintal	4800
B0988	Stitching roll (Nylon)	each	50
B0989	Geo bag (0.55mx0.65m(130 GSM woven geo bag made up of VT 1300) Weight 90 gm)	each	85
B0990	Geo bag (0.762mx0.508m(130 GSM woven geo bag made up of VT 1300) Weight 95 gm)	each	93
B0991	Geo bag (1.09mx0.69m(200 GSM PPMFwoven geo bag made up of VT 2000 Weight 310 gm)	each	160
B0992	Geo Textile Tube of VT-3300, size 20 mx3.0m dia	metre	9389
B0993	Filling cost for 20m long 3 m dia tube (Cubic content 145 cum)	cum	246
B0994	P.P.Rope Gabian (1.8mx1.2mx0.5) 150x150 mm mesh, 9 mm dia, 4 strands, made up of woven Rope poly propylene multifilament, (42 gm/meter+8%) Woven Rope poly propylene multifilament	each	1500
B0995	P.P.Rope Gabian (1.8mx1.8mx0.5) 150x150 mm mess size, made up of 9 mm x 4 strands (42 gm/meter+8%) Woven Rope poly propylene multifilament	each	2500
B0996	Pregalvanized high tensile steel confirming to IS:277-199	kg	90
B0997	Steel weld mesh	sqm	150
B0998	Silicon based Joint Sealant for Tiles	kg	160
B0999	Rubber base Adhesive	kg	223
B1000	Cementitious polymer base adhesive confirming to EOTA ETAG 004 (European Technical Approval)	kg	34

Unique Code	Description	Unit	Rate (INR)
B1001	Polypropylene mechanical fastener with plastic pin confirming to EOTA ETAG 014 (European Technical Approval) having dia 10mm & L=200mm	each	30
B1002	Moisture cure Polyurethane Foam	750 ml	600
B1003	PVC Corner Bead of size 25mmx25mm fixed with glass fibre mesh (100mm x 100mm)	metre	90
B1004	Cementitious polymer base coat confirming to EOTA ETAG 004 (European Technical Approval)	kg	40
B1005	Fibreglass mesh with alkali-resistant coating having mass per unit area ≥145 g/m2, mesh size: 3.9x4.0 mm ±10%	sqm	75
B1006	50mmx50mm hardwood plug	each	75
B1007	Pre-laminated with decorative lamination on both side exterior Grade-I MDF Board 12 mm thick confirming to IS:14587	sqm	460
B1008	Pre-laminated with decorative lamination on both side exterior Grade-I MDF Board 18 mm thick confirming to IS:14587	sqm	597
B1009	Pre-laminated with decorative lamination one side and other side balancing lamination exterior Grade-I MDF Board 25 mm thick confirming to IS: 14587	sqm	860
B1010	Pre-laminated with decorative lamination one side and other side balancing lamination exterior Grade-I MDF Board 12 mm thick confirming to IS:14587	sqm	430
B1011	Pre-laminated with decorative lamination one side and other side balancing lamination exterior Grade-I MDF Board 18 mm thick confirming to IS:14587	sqm	565
B1012	PVC edge bending tape 2.00 mm thick	metre	20
B1013	Pre laminated both side solid foam uPVC profile (45x20mm)	metre	130
B1014	Solid foam uPVC sheet 20mm thick pre laminated on both side	sqm	2090
B1015	PVC edge beading	metre	31
B1016	Expandable fastener with plastic sleeve	each	5
B1017	Vapour barrier	sqm	175
B1018	Expanded poly ethylene Foam sheet 4mm thick of Density 40kg/m3	sqm	18
B1019	High Density expanded poly ethylene (EPE) Foam 1mm thick	sqm	9
B1020	Bamboo wood Tile Flooring 14mm thick of minimum size 1800mm x130mm	sqm	3470
B1021	Bamboo wood Quarter Round 18mm thick of size 1900mm x 18mm	metre	112
B1022	Bamboo wood door reducer 14mm thick of size 1900mm x 44mm	metre	255
B1023	Bamboo wood Skirting 14mm thick of Size 1900mm x 85mm	metre	300
B1024	Bamboo wood Tile Wall Cladding 10mm thick of size 1900mm x 135mm	sqm	3385
B1025	Bamboo wood T-mold 14mm thick of size 1900mm x 44mm	metre	250
B1026	Bamboo wood Threshold 14mm thick of size 1900mm x 44mm	metre	255
B1027	Bamboo wood shutter of doors	10 cudm	1700
B1028	Bamboo wood panelling (10mm thick)	10 cudm	1680
B1029	Superior class Bamboo wood door frame 65 mm thick,	10 cudm	1675
B1030	Bamboo Mat corrugated sheets 3.5 to 4mm thick conforming to IS 15476:2004	sqm	2648
B1031	Bamboo Mat Ridge cap 3.5 to 4mm thick conforming to IS 15476:2004	metre	2570
B1032	3mm thick Bamboo Mat Board conforming to IS 13958:1994	sqm	1508
B1033	4mm thick Bamboo Mat Board conforming to IS 13958:1994	sqm	1738
B1034	6mm thick Bamboo Mat Board conforming to IS 13958:1994	sqm	2098
B1035	9mm thick Bamboo Mat Board conforming to IS 13958:1994	sqm	2688
B1036	12mm thick Bamboo Mat Board conforming to IS 13958:1994	sqm	3115
B1037	Concealed zinc coated hinges 19-20 mm thick with mounting plate	10 nos.	420
B1038	Zycoprime / equivalent	litre	210
B1039	Zycosil / equivalent	litre	1800

Unique Code	Description	Unit	Rate (INR)
B1040	Elastobar / equivalent	kg	300
B1041	Expanded Polystyrene insulation board 120 mm thick confirming to IS 4671-1984, Fire retardant property self-extinguishing type as per EN 13501-1	sqm	800
B1042	GI Main T ceiling section 30x25x0.3 mm (3 metre long)	each	187
B1043	GI perimeter wall angle 25x25x0.4 mm (3 metre long)	each	157
B1044	GI Intermediate cross T section 25x25x0.3 mm (1.2 metre long)	each	72
B1045	GI Intermediate cross T section 25x25x0.3 mm (0.6 metre long)	each	34
B1046	Gypsum panel 666 X 500 X 100 mm size	sqm	480
B1047	Bonding plaster for Gypsum panel	kg	25
B1048	Scaffolding net made of high density polyethylene UV stabilized having density 100 gm/sqm	sqm	22
B1049	Bi-Axial Extruded GeoGrids of Minimum Tensile Strength 15 kN/m in the longitudinal and transverse direction	sqm	100
B1050	Bi-Axial Extruded GeoGrids of Minimum Tensile Strength 20kN/m in the longitudinal and transverse direction	sqm	115
B1051	Bi-Axial Extruded GeoGrids of Minimum Tensile Strength 30kN/m in the longitudinal and transverse direction	sqm	185
B1052	Bi-Axial Extruded GeoGrids of Minimum Tensile Strength 40kN/m in the longitudinal and transverse direction	sqm	275
B1053	Geosynthetic Drainage with two filtering nonwoven geotextiles having a "W" configuration as longitudinal parallel channels. Minimum thickness to be 7.2mm, with two filtering UV stabilized polypropylene nonwoven geotextile of minimum thickness of 0.75mm having pores of 150 micron and tensile strength of 8.0 kN/m and having plane flow capacity of 2.1 L / (m.s) at hydraulic gradient of 1.0 & 20 kPa pressure, tensile strength of 18 kN/m , with mass per unit area of 740 gsm.	sqm	530
B1054	Geosynthetic Drainage Composite having thermo bonding a draining core - HDPE geonet comprises of two sets of parallel overlaid ribs integrally connected to have a rhomboidal shape with a polyethylene film and a nonwoven geotextile having mass per unit area 130 g/m2 and tensile strength of 8.0 kN/m having in plane flow capacity of 0.7 L / (m.s) at hydraulic gradient of 1.0 & 20 kPa pressure and tensile strength of 13.5 kN/m , with mass per unit area of 830 gsm,	sqm	630
B1055	Synthetic GeoGrids having Ultimate tensile strength- 100 kN/m	sqm	220
B1056	Synthetic GeoGrids Ultimate tensile strength- 150 kN/m	sqm	230
B1057	Synthetic GeoGrids Ultimate tensile strength- 200 kN/m	sqm	320
B1058	Synthetic GeoGrids Ultimate tensile strength- 250 kN/m	sqm	355
B1059	Synthetic GeoGrids Ultimate tensile strength- 300kN/m	sqm	365
B1060	Synthetic GeoGrids Ultimate tensile strength- 350kN/m	sqm	370
B1061	Synthetic GeoGrids Ultimate tensile strength- 400kN/m	sqm	475
B1062	Synthetic GeoGrids Ultimate tensile strength- 500kN/m	sqm	535
B1063	Synthetic GeoGrids Ultimate tensile strength- 600kN/m	sqm	550
B1064	Synthetic GeoGrids Ultimate tensile strength- 700kN/m	sqm	685
B1065	Synthetic GeoGrids Ultimate tensile strength- 800kN/m	sqm	750
B1066	Synthetic GeoGrids Ultimate tensile strength- 900kN/m	sqm	900
B1067	Synthetic GeoGrids Ultimate tensile strength- 1000kN/m	sqm	1025
B1068	Synthetic GeoGrids Ultimate tensile strength- 1100kN/m	sqm	1000
B1069	Synthetic GeoGrids Ultimate tensile strength- 1200kN/m	sqm	1088
B1070	Fuel wood	quintal	500
B1071	Blades	each	20
B1072	C.P. Brass Extension Nipple (1/2"x2" size)	each	40
B1073	40 mm G.I. Plug	each	30

Unique Code	Description	Unit	Rate (INR)
B1074	Bleaching powder	quintal	1650
B1075	Surface box for stop cock	each	125
B1076	Surface box for sluice valve	each	240
B1077	Surface box for water meter	each	250
B1078	C.I. bracket for wash basin and sinks	pair	88
B1079	8 mm dia C.P. Brass/ S.S. Jet with flexible tube up to 1 metre long with S.S. triangular plate for European type W.C.	each	200
B1080	C.P.brass chain with 32 mm dia rubber plug	each	40
B1081	C.P.brass chain with 40 mm dia rubber plug	each	40
B1082	Clamps and M.S. stays including bolts and nuts for 100 mm pipe	each	68
B1083	M.S. Holder bat clamp of approved design for 100 mm S.C.I. pipe	each	30
B1084	M.S. Holder bat clamp of approved design for 75 mm S.C.I. pipe	each	27
B1085	Clamps and M.S. stays including bolts and nuts for 50 mm pipe	each	35
B1086	Clamps and M.S. stays including bolts and nuts for 75 mm pipe	each	37
B1087	Clearing eye with chain and lid 100 mm dia	each	44
B1088	Clearing eye with chain and lid 150 mm dia	each	50
B1089	Brass bib-cock 15 mm dia	each	210
B1090	Brass bib-cock 20 mm dia	each	225
B1091	Brass stop-cock 15 mm dia	each	210
B1092	Brass stop-cock 20 mm dia	each	225
B1093	15mm C. P. brass swan neck tap (one way)	each	1000
B1094	15mm C. P. brass swan neck tap (two way)	each	2100
B1095	15mm C. P. brass swan neck tap (three way)	each	2500
B1096	Mosquito proof coupling of approved design	each	30
B1097	25 litres electric water heater (vertical)	each	6000
B1098	30 litres electric water heater (vertical)	each	7000
B1099	35 litres electric water heater (vertical)	each	8000
B1100	40 litres electric water heater (vertical)	each	9000
B1101	50 litres electric water heater (vertical)	each	10000
B1102	70 litres electric water heater (vertical)	each	11500
B1103	80 litres electric water heater (vertical)	each	12500
B1104	90 litres electric water heater (vertical)	each	13500
B1105	100 litres electric water heater (vertical)	each	15000
B1106	140 litres electric water heater (vertical)	each	17000
B1107	C.I. cover and frame 300x300 mm inside	each	477
B1108	C.I. cover without frame 300x300 mm inside i/c cover of 4.50 kg	each	477
B1109	Rectangular cover 455x610 mm with frame (low duty)	each	1400
B1110	Rectangular cover 455x610 mm without frame (low duty)	each	910
B1111	500 mm dia cover with frame (medium duty)	each	4400
B1112	500 mm dia cover without frame (medium duty)	each	2300
B1113	C.I. mouth, brass ferrule 15 mm dia	each	140
B1114	C.I. mouth, brass ferrule 20 mm dia	each	160
B1115	C.I. mouth, brass ferrule 25 mm dia	each	220
B1116	Vitreous china foot rests 250x130x30 mm	pair	100
B1117	C.I. grating 100x100 mm	each	40
B1118	C.I. grating 150x150 mm	each	54

Unique Code	Description	Unit	Rate (INR)
B1119	C.I. grating 180x180 mm	each	65
B1120	S.C.I. gully or nahani grating 100 mm dia	each	25
B1121	Rubber insertions for 75 mm dia pipe joints	each	16
B1122	Rubber insertions for 100 mm dia pipe joints	each	18
B1123	Rubber insertions for 125 mm dia pipe joints	each	20
B1124	Rubber insertions for 150 mm dia pipe joints	each	20
B1125	Rubber insertions for 200 mm dia pipe joints	each	25
B1126	Rubber insertions for 250 mm dia pipe joints	each	40
B1127	Rubber insertions for 300 mm dia pipe joints	each	45
B1128	Mirror of superior make glass 60x45 cm	each	400
B1129	Vitreous china pedestal for wash basin	each	900
B1130	S & S.C.I. standard specials up to 300 mm dia (heavy class)	quintal	3600
B1131	Flanged C.I. standard specials up to 300 mm dia (heavy class)	quintal	5500
B1132	Flush pipe with union spreaders and clamps all in C.P. brass for single stall	each	270
B1133	Flush pipe with union spreaders and clamps all in C.P. brass for double stall	each	400
B1134	Flush pipe with union spreaders and clamps all in C.P. brass for range of three stall	each	520
B1135	Flush pipe with union spreaders and clamps all in C.P. brass for range of four stall	each	600
B1136	Flush pipe and spreaders G.I. for single set of one squatting plate urinal	each	175
B1137	Flush pipe and spreaders G.I. for range of two squatting plates urinal	each	250
B1138	Flush pipe and spreaders G.I. for range of three squatting plates urinal	each	300
B1139	Flush pipe and spreaders G.I. for range of four squatting plates urinal	each	390
B1140	G.I. pipes 15 mm dia	metre	85
B1141	G.I. pipes 20 mm dia	metre	112
B1142	G.I. pipes 25 mm dia	metre	160
B1143	G.I. pipes 32 mm dia	metre	205
B1144	G.I. pipes 40 mm dia	metre	238
B1145	G.I. pipes 50 mm dia	metre	295
B1146	G.I. pipes 65 mm dia	metre	380
B1147	G.I. pipes 80 mm dia	metre	475
B1148	40 mm G.I. pipe flange	each	200
B1149	25 mm G.I. pipe flange	each	140
B1150	20 mm G.I. pipe flange	each	120
B1151	15 mm G.I. pipe flange	each	100
B1152	G.I. back (jam) nuts 25 mm dia	each	15
B1153	G.I. back (jam) nuts 65 mm dia	each	25
B1154	G.I. Bend 32 mm	each	80
B1155	G.I. Socket 32 mm	each	140
B1156	G.I. tees (equal) 25 mm	each	50
B1157	G.I. tees (equal) 65 mm	each	452
B1158	G.I. inlet connection	each	60
B1159	S.C.I. soil, waste and vent single socketed pipe 1.80 metres long: 75 mm dia	each	1050
B1160	S.C.I. soil, waste and vent single socketed pipe 1.80 metres long:100 mm dia	each	1135
B1161	S.C.I. soil, waste and vent single socketed pipe 1.80 metres long:150 mm dia	each	1750
B1162	S.C.I. plain bend 75 mm dia	each	210
B1163	S.C.I. plain bend 100 mm dia	each	258

Unique Code	Description	Unit	Rate (INR)
B1164	S.C.I. plain bend 150 mm dia	each	460
B1165	S.C.I. bend with access door 75 mm dia	each	240
B1166	S.C.I. bend with access door 100 mm dia	each	300
B1167	S.C.I. plain single equal junctions 75x75x75 mm dia	each	278
B1168	S.C.I. plain single equal junctions 100x100x100 mm dia	each	360
B1169	S.C.I. single equal junctions 75x75x75 mm dia with access door	each	320
B1170	S.C.I. single equal junctions 100x100x100 mm dia with access door	each	405
B1171	S.C.I. plain double equal junctions 75x75x75x75 mm dia	each	382
B1172	S.C.I. plain double equal junctions 100x100x100x100 mm dia	each	590
B1173	S.C.I. double equal junctions 75x75x75x75 mm dia with access door	each	500
B1174	S.C.I. double equal junctions 100x100x100x100 mm dia with access door	each	715
B1175	Slotted cowl (terminal guard) 75 mm dia	each	191
B1176	Slotted cowl (terminal guard) 100 mm dia	each	239
B1177	G.I. Union 15 mm nominal bore	each	45
B1178	G.I. Union 20 mm nominal bore	each	72
B1179	G.I. Union 25 mm nominal bore	each	120
B1180	G.I. Union 32 mm nominal bore	each	160
B1181	G.I. Union 40 mm nominal bore	each	215
B1182	G.I. Union 50 mm nominal bore	each	260
B1183	G.I. Union 65 mm nominal bore	each	550
B1184	G.I. Union 80 mm nominal bore	each	600
B1185	Polyethylene water storage tank with cover and suitable locking arrangement	per litre	6
B1186	Sand cast iron S&S plain single unequal junctions: 100x100x75 mm dia	each	494
B1187	Sand cast iron S&S single unequal junctions: 100x100x75 mm dia with access door	each	550
B1188	Sand cast iron S&S plain double unequal junctions: 100x100x75x75 mm dia	each	615
B1189	Sand cast iron S&S double unequal junctions: 100x100x75x75 mm dia with access door	each	700
B1190	Sand cast iron heel rest bend 75 mm dia	each	274
B1191	Sand cast iron heel rest bend 100 mm dia	each	347
B1192	S.C.I. single equal invert branch of required degree 75x75x75 mm dia	each	320
B1193	S.C.I. single equal invert branch of required degree 100x100x100 mm dia	each	410
B1194	S.C.I. double equal invert branch of required degree 75x75x75x75 mm dia	each	410
B1195	S.C.I. double equal invert branch of required degree 100x100x100x100 mm dia	each	550
B1196	S.C.I. single unequal invert branch of required degree 100x100x75 mm dia	each	495
B1197	S.C.I. double unequal invert branch of required degree 100x100x75x75 mm dia	each	570
B1198	S.C.I. door pieces 75 mm dia	each	283
B1199	S.C.I. door pieces 100 mm dia	each	475
B1200	S.C.I. collar 75 mm dia	each	177
B1201	S.C.I. collar 100 mm dia	each	246
B1202	Unplasticised P.V.C. connection pipe with brass union 30 cm long 15 mm bore	each	30
B1203	Unplasticised P.V.C. connection pipe with brass union 30 cm long 20 mm bore	each	35
B1204	Unplasticised P.V.C. connection pipe with brass union 45 cm long 15 mm bore	each	35
B1205	Unplasticised P.V.C. connection pipe with brass union 45 cm long 20 mm bore	each	48
B1206	R.C.C. pipes NP2 class 100 mm dia	metre	160
B1207	R.C.C. pipes NP2 class 150 mm dia	metre	172

Unique Code	Description	Unit	Rate (INR)
B1208	R.C.C. pipes NP2 class 200 mm dia	metre	254
B1209	R.C.C. pipes NP2 class 250 mm dia	metre	286
B1210	R.C.C. pipes NP2 class 300 mm dia	metre	391
B1211	R.C.C. pipes NP2 class 350 mm dia	metre	484
B1212	R.C.C. pipes NP2 class 450 mm dia	metre	660
B1213	R.C.C. pipes NP2 class 1400 mm dia	metre	3190
B1214	R.C.C. pipes NP2 class 1600 mm dia	metre	3670
B1215	R.C.C. collars NP2 class 100 mm dia	each	24
B1216	R.C.C. collars NP2 class 150 mm dia	each	28
B1217	R.C.C. collars NP2 class 250 mm dia	each	40
B1218	R.C.C. collars NP2 class 300 mm dia	each	44
B1219	R.C.C. collars NP2 class 450 mm dia	each	80
B1220	RCC pipe 450 mm dia NP-3 spigot	metre	1624
B1221	RCC pipe 600 mm dia NP-3 spigot	metre	2355
B1222	RCC pipe 900 mm dia NP-3 spigot	metre	3762
B1223	RCC pipe 450 mm dia NP-4 spigot	metre	1733
B1224	RCC pipe 600 mm dia NP-4 spigot	metre	2310
B1225	RCC pipe 900 mm dia NP-4 spigot	metre	4494
B1226	Stoneware pipes grade A (60 cm long) 100 mm dia	each	74
B1227	Stoneware pipes grade A (60 cm long) 150 mm dia	each	114
B1228	Stoneware pipes grade A (60 cm long) 200 mm dia	each	146
B1229	Stoneware pipes grade A (60 cm long) 250 mm dia	each	225
B1230	Stoneware pipes grade A (60 cm long) 300 mm dia	each	328
B1231	Fire clay kitchen sink: 600x450x250 mm	each	1283
B1232	White vitreous china laboratory sink 450x300x150 mm	each	1500
B1233	White vitreous china laboratory sink 600x450x200 mm	each	2500
B1234	White plastic seat (solid) with lid C.P. brass hinges and rubber buffers	each	400
B1235	Black plastic seat (solid) with lid C.P. brass hinges and rubber buffers	each	310
B1236	Shower rose C.P. brass for 15 to 20 mm inlet 100 mm dia	each	100
B1237	Shower rose C.P. brass for 15 to 20 mm inlet 150 mm dia	each	125
B1238	Spun yarn	kg	50
B1239	15 mm C.P. brass tap	each	207
B1240	Oxidized gas tap including cost of nipple (one way)	each	270
B1241	Oxidized gas tap including cost of nipple (two way)	each	400
B1242	Oxidized gas tap including cost of nipple (three way)	each	540
B1243	Oxidized gas tap including cost of nipple (four way)	each	680
B1244	C.P. brass toilet paper holder of standard size	each	225
B1245	Centrifugally SCI(spun) S & S P or S trap	each	300
B1246	C.I. trap for standard urinal with vent arm with operating and other couplings in C.P. brass: 50 mm dia	each	170
B1247	C.I. trap for standard urinal with vent arm with operating and other couplings in C.P. brass: 80 mm dia	each	225
B1248	C.P. brass trap 40 mm dia	each	300
B1249	100 mm S.C.I. trap with vent heel	each	320
B1250	100 mm S.C.I. trap with 100 mm inlet and 100 mm outlet	each	271
B1251	100 mm S.C.I. trap with 100 mm inlet and 75 mm outlet	each	218

Unique Code	Description	Unit	Rate (INR)
B1252	S.W. gully trap P type 100x100 mm	each	100
B1253	S.W. gully trap P type 150x100 mm	each	130
B1254	S.W. gully trap P type 180x150 mm	each	225
B1255	50 mm i/d outlet plain Nahani trap	each	400
B1256	75 mm i/d outlet plain Nahani trap	each	480
B1257	Vitreous china lipped front urinal	each	460
B1258	Vitreous china squatting plate urinal	each	1053
B1259	H.P. or L.P. ball valve with polythene floats: 15 mm dia	each	210
B1260	H.P. or L.P. ball valve with polythene floats: 20 mm dia	each	235
B1261	H.P. or L.P. ball valve with polythene floats: 25 mm dia	each	230
B1262	20 mm dia Gunmetal gate valve with wheel	each	325
B1263	Brass full way valve with C.I. wheel (screwed end) 25 mm dia	each	350
B1264	Brass full way valve with C.I. wheel (screwed end) 32 mm dia	each	410
B1265	Brass full way valve with C.I. wheel (screwed end) 40 mm dia	each	480
B1266	Brass full way valve with C.I. wheel (screwed end) 50 mm dia	each	620
B1267	Brass full way valve with C.I. wheel (screwed end) 65 mm dia	each	1080
B1268	Brass full way valve with C.I. wheel (screwed end) 80 mm dia	each	1620
B1269	Gunmetal non-return valve-horizontal (screwed end) 25 mm dia	each	330
B1270	Gunmetal non-return valve-horizontal (screwed end) 32 mm dia	each	450
B1271	Gunmetal non-return valve-horizontal (screwed end) 40 mm dia	each	560
B1272	Gunmetal non-return valve-horizontal (screwed end) 50 mm dia	each	820
B1273	C.I. sluice valve (with caps) class I: 100 mm dia	each	3993
B1274	C.I. sluice valve (with caps) class I : 125 mm dia	each	4290
B1275	C.I. sluice valve (with caps) class I: 150 mm dia	each	6177
B1276	C.I. sluice valve (with caps) class I : 200 mm dia	each	9845
B1277	C.I. sluice valve (with caps) class I : 250 mm dia	each	15455
B1278	C.I. sluice valve (with caps) class I: 300 mm dia	each	18810
B1279	Vitreous china flat back wash basin 630x450 mm	each	725
B1280	Vitreous china angle back wash basin 600x480 mm	each	725
B1281	Vitreous china angle back wash basin 400x400 mm	each	425
B1282	C.P. brass waste 32 mm	each	80
B1283	C.P. brass waste 40 mm	each	95
B1284	Vitreous china Indian type W.C. pan of size 580 mm	each	450
B1285	Vitreous china Orissa type W.C. pan of size 580 mm	each	1200
B1286	Vitreous china pedestal type water closet	each	1000
B1287	Bolts and nuts 16 mm dia 60 mm long	each	11
B1288	Bolts and nuts 16 mm dia 65 mm long	each	12
B1289	Bolts and nuts 20 mm dia 65 mm long	each	15
B1290	Bolts and nuts 20 mm dia 70 mm long	each	17
B1291	Bolts and nuts 20 mm dia 75 mm long	each	16
B1292	White vitreous china dual purpose closet (Anglo Indian W.C.) suitable for use as squatting pan or European type water closet as per manufacturer's specifications	each	2500
B1293	Floor mounted white vitreous china double trap syphonic WC with 10 litre cistern and all fittings & fixtures, seat cover etc	each	9500
B1294	Vitreous china foot rests 250x125x25 mm	pair	100
B1295	Bidet suite in vitreous chinaware 38 cm (white)	each	10500

Unique Code	Description	Unit	Rate (INR)
B1296	Bidet suite in vitreous chinaware 38 cm (single colour)	each	12000
B1297	Bidet suite in vitreous chinaware 38 cm (mixed colour)	each	21000
B1298	C.P. Bidet fittings four taps holes basin mixer with pop up waste complete	per set	12500
B1299	C. P. brass bath tub mixer 20 mm with telephonic shower	each	1800
B1300	C.P. brass Tooth Brush holder	each	120
B1301	C.P. brass Tooth Brush-cum-Tooth Paste holder	each	180
B1302	C. P. brass tumbler-cum-tooth brush holder	each	250
B1303	Tooth brush and tumbler holder (Vitreous China-white)	each	100
B1304	Tooth brush and tumbler holder (Vitreous China-Single Colour)	each	150
B1305	Fibre glass Bath tub (Swan) with Grip handles 1800mm x 750mm	each	3000
B1306	Fibre glass Bath tub (Swan) with Grip handles 1650mm x 750mm	each	2900
B1307	Fibre glass Bath tub (Swan) with Grip handles 1650mm x 700mm	each	2800
B1308	Fibre glass Bath tub (Swan) with Grip handles 1575mm x 750mm	each	2700
B1309	Fibre glass Bath tub (Swan) with Grip handles 1500mm x 750mm	each	2600
B1310	Fibre glass Bath tub (Swan) with Grip handles 1450mm x 700mm	each	2500
B1311	C.P. Coat and hat hook (one way)	each	60
B1312	C.P. Coat and hat hook (two way)	each	80
B1313	C.P. Coat and hat hook (three way)	each	100
B1314	Aluminium Coat and hat hook (One way)	each	75
B1315	Aluminium Coat and hat hook (Two way)	each	100
B1316	Aluminium Coat and hat hook (Three way)	each	125
B1317	Division Plate 680 mmx330 mm (Vitreous Chinaware) (White)	each	600
B1318	Division Plate 680 mmx330 mm (Single Colour) (Vitreous Chinaware)	each	700
B1319	Division Plate 680 mmx330 mm (Mixed Colour) (Vitreous Chinaware)	each	750
B1320	Division Plate 835mm x 355 mm (Vitreous Chinaware) (White)	each	800
B1321	Division Plate 835mm x 355 mm (Single Colour) (Vitreous Chinaware)	each	900
B1322	Division Plate 835mm x 355 mm (Mixed Colour)(Vitreous Chinaware)	each	1000
B1323	CP grating 100mm dia	each	100
B1324	Oval Wash Basin	each	1100
B1325	Carnival Wall hanging WC	each	5165
B1326	Carnival WC Seat Cover	each	920
B1327	Providing cistern with concealed knob	each	3750
B1328	Health Faucet	each	1238
B1329	Angle valve	each	550
B1330	Swan neck pillar cock	each	1743
B1331	Bottle trap	each	1363
B1332	Soap Dish	each	498
B1333	Towel Ring	each	552
B1334	Toilet paper holder	each	872
B1335	Glass Self F5005301	each	2470
B1336	CP Nipple 12mm dia 150mm length	each	130
B1337	CP Nipple 12mm dia 75mm length	each	75
B1338	CP Nipple 12mm dia 50mm length	each	50
B1339	Flush Cock 32 mm dia	each	2754
B1340	Gunmetal non-return valve - vertical (screwed end) 25 mm dia	each	350

Unique Code	Description	Unit	Rate (INR)
B1341	Gunmetal non-return valve - vertical (screwed end) 32 mm dia	each	500
B1342	Gunmetal non-return valve - vertical (screwed end) 40 mm dia	each	700
B1343	Gunmetal non-return valve - vertical (screwed end) 50 mm dia	each	900
B1344	Vitreous china Surgeon type wash basin of size 660x460 mm	each	1000
B1345	Vitreous chinaware drinking fountain (white)	each	2500
B1346	Vitreous chinaware drinking fountain (single colour)		3500
B1347	Vitreous chinaware drinking fountain (mixed colour)		5000
B1348	C.P. Brass fountain fittings complete set	per set	5000
B1349	Vitreous chinaware plain channel 600 mm x 1580 mm (White)	each	1100
B1350	Vitreous chinaware plain channel 600 mm x 1580 mm (Single colour)	each	1400
B1351	600x120 mm glass shelf with anodised aluminium angle frame, C.P. brass brackets and guard rail of standard size	each	250
B1352	Vitreous china flat back wash basin 550x400 mm	each	545
B1353	C.I. sluice valve (with caps) class II : 100 mm dia	each	2160
B1354	C.I. sluice valve (with caps) class II : 125 mm dia	each	2560
B1355	C.I. sluice valve (with caps) class II : 150 mm dia	each	3200
B1356	C.I. sluice valve (with caps) class II : 200 mm dia	each	7120
B1357	C.I. sluice valve (with caps) class II : 250 mm dia	each	11600
B1358	C.I. sluice valve (with caps) class II : 300 mm dia	each	14560
B1359	15 mm Battery Based Sensor Pillar Cock	each	5800
B1360	C.P. Brass union 40mm dia	each	200
B1361	C.C.I. (spun) socketed soil, waste and vent pipe 1.80 metres long:100 mm dia	each	1200
B1362	C.C.I. (spun) socketed soil, waste and vent pipe 1.80 metres long:75 mm dia	each	1100
B1363	S.C.I. S&S bends with access door 100 mm dia	each	300
B1364	S.C.I. S&S bends with access door 75 mm dia	each	250
B1365	S.C.I. S&S bend 100 mm dia	each	265
B1366	S.C.I. S&S bend 75 mm dia	each	195
B1367	S.C.I. S&S heel rest sanitary bend 100 mm dia	each	296
B1368	S.C.I. S&S heel rest sanitary bend 75 mm dia	each	250
B1369	S.C.I. S&S single equal junctions 100x100x100 mm	each	472
B1370	S.C.I. S&S single equal junctions 75x75x75 mm	each	330
B1371	S.C.I. S&S single equal junctions with access door 100x100x 100 mm	each	495
B1372	S.C.I. S&S single equal junctions with access door 75x75x75 mm	each	373
B1373	S.C.I. S&S double equal junctions 100x100x100x100 mm	each	620
B1374	S.C.I. S&S double equal junctions 75x75x75x75 mm	each	462
B1375	S.C.I. S&S double equal junctions with access door 100x100x100x100 mm	each	615
B1376	S.C.I. S&S double equal junctions with access door 75x75x75x75 mm	each	480
B1377	S.C.I. S&S single unequal junctions 100x100x75 mm	each	570
B1378	S.C.I. S&S single unequal junctions with access door 100x100x75 mm	each	640
B1379	S.C.I. S&S double unequal junctions 100x100x75x75 mm	each	800
B1380	S.C.I. S&S double unequal junctions with access door 100x100x75x75 mm	each	850
B1381	S.C.I. S&S single equal invert branch of required degree 100x100x100 mm dia	each	425
B1382	S.C.I. S&S single equal invert branch of required degree 75x75x 75 mm dia	each	323
B1383	S.C.I. S&S double equal invert branch of required degree 100x100x100x100 mm dia	each	530
B1384	S.C.I. S&S double equal invert branch of required degree 75x75x75x75 mm dia	each	425

Unique Code	Description	Unit	Rate (INR)
B1385	S.C.I. S&S single unequal invert branch of required degree 100x100x75 mm dia	each	545
B1386	S.C.I. S&S double unequal invert branch of required degree 100x100x75x75 mm dia	each	725
B1387	S.C.I. S&S, 75 mm offset for 75 mm dia pipe	each	225
B1388	S.C.I. S&S, 150 mm offset for 75 mm dia pipe	each	285
B1389	S.C.I. S&S, 150 mm offset for 100 mm dia pipe	each	390
B1390	S.C.I. S&S, 114 mm offset for 75 mm dia pipe	each	300
B1391	S.C.I. S&S, 114 mm offset for 100 mm dia pipe	each	383
B1392	S.C.I. S&S, 152 mm offset for 75 mm dia pipe	each	358
B1393	S.C.I. S&S, 152 mm offset for 100 mm dia pipe	each	455
B1394	S.C.I. S&S door pieces 100 mm dia	each	400
B1395	S.C.I. S&S door pieces 75 mm dia	each	295
B1396	S.C.I. S&S, Slotted Cowl (Terminal Guard) 100 mm	each	264
B1397	S.C.I. S&S, Slotted Cowl (Terminal Guard) 75 mm	each	210
B1398	S.C.I. S&S, collars 100 mm	each	279
B1399	S.C.I. S&S, collars 75 mm	each	170
B1400	S.C.I. S&S, 75 mm offset for 75 mm dia pipe	each	218
B1401	S.C.I. S&S, 75 mm offset for 100 mm dia pipe	each	363
B1402	Vitreous china toilet paper holder of standard size	each	100
B1403	560 mm dia cover with frame (Heavy duty)	each	9000
B1404	560 mm dia cover without frame (Heavy duty)	each	5000
B1405	Vitreous china flat back wash basin 450x300 mm	each	310
B1406	Vitreous china 10 litres low level cistern without fittings	each	715
B1407	Vitreous china 10 litres low level cistern with fittings	each	1240
B1408	Wall mounted water closet of size 780 x 370x690 mm	each	6000
B1409	Adjustable Vitreous China Cistern with fittings of flushing capacity 3/6/9 litre adjustable to 4 litre/8litre)	each	1900
B1410	White Vitreous China Waterless Urinal of size 600x330x315 mm	each	9650
B1411	Cistern with fittings for Waterless Urinal	each	2290
B1412	Battery based infrared sensor operated white Vitreous Urinal of aprox.size 610x390x370 mm	each	4500
B1413	S.C.I. Tee 150 mm	each	570
B1414	Stainless steel kitchen sink - with drain board 510x1040 mm bowl depth 250 mm	each	2480
B1415	Stainless steel kitchen sink - with drain board 510 x 1040 mm bowl depth 225 mm	each	3000
B1416	Stainless steel kitchen sink - with drain board 510 x 1040 mm bowl depth 200 mm	each	2800
B1417	Stainless steel kitchen sink - with drain board 510x1040 mm bowl depth 178 mm	each	2500
B1418	Stainless steel kitchen sink - without drain board 610x510 mm bowl depth 200 mm	each	1800
B1419	Stainless steel kitchen sink - without drain board 610x460 mm bowl depth 200 mm	each	1200
B1420	Stainless steel kitchen sink - without drain board 470x420 mm bowl depth 178 mm	each	1050
B1421	Coloured Orissa pattern W.C. pan 580x440 mm	each	1750
B1422	Coloured Pedestal type W.C. pan 580x440 mm (European type)	each	800
B1423	Coloured Vitreous china 10 lit. low level cistern	each	1000
B1424	Coloured (other than black) solid P.V.C. seat in European W.C. pan	each	390
B1425	Circular shape 450 mm dia Mirror with Plastic moulded frame	each	430
B1426	Rectangular shape 453x357 mm Mirror with Plastic moulded frame	each	290
B1427	Oval shape 450x350 mm (outer dimensions) Mirror with Plastic moulded frame	each	340

Unique Code	Description	Unit	Rate (INR)
B1428	Rectangular shape 1500x450 mm Mirror with Plastic moulded frame	each	670
B1429	Hard board 6 mm thick	sqm	115
B1430	Semi Rigid PVC waste pipe for sink and wash basin 32 mm dia with length not less than 700 mm i/c PVC waste fittings	each	25
B1431	Semi Rigid PVC waste pipe for sink and wash basin 40 mm dia with length not less than 700 mm i/c PVC waste fittings	each	33
B1432	Flexible (coil shaped) PVC waste pipe for sink and wash basin 32mm dia with length not less than 700 mm i/c PVC waste fittings	each	35
B1433	Flexible (coil shaped) PVC waste pipe for sink and wash basin 40 mm dia with length not less than 700 mm i/c PVC waste fittings	each	35
B1434	Flexible CP connection for geysers / wash basins	each	60
B1435	Bottle Trap	each	620
B1436	CP Brass Single lever telephonic wall mixer of approved make	each	4500
B1437	Pressure releasing valve for geysers	each	250
B1438	Coloured High density polyethylene / poly propylene 10 lit. (full flush) capacity controlled low level flushing cistern with fittings	each	550
B1439	White Vitreous china 10 litre (full flush) capacity controlled low level flushing cistern with all fittings	each	700
B1440	Coloured Vitreous china 10 litre (full flush) capacity controlled low level flushing cistern with all fittings	each	1150
B1441	S.W. intercepting trap 100 mm dia	each	185
B1442	S.W. intercepting trap 150 mm dia	each	240
B1443	Rectangular shape 600x450 mm precast R.C.C. manhole cover with frame - L.D. - 2.5	each	625
B1444	Square shape 450x450 mm precast R.C.C. manhole cover with frame - L.D. - 2.5	each	535
B1445	Circular shape 450 mm dia precast R.C.C. manhole cover with frame - L.D. - 2.5	each	535
B1446	Rectangular shape 500x500 mm precast R.C.C. manhole cover with frame - M.D. - 10	each	620
B1447	Circular shape 500 mm dia precast R.C.C. manhole cover with frame- M.D.-10	each	535
B1448	Circular shape 560 mm dia precast R.C.C. manhole cover with frame - H.D. - 20	each	830
B1449	Circular shape 560 mm dia precast R.C.C. manhole cover with frame - E.H.D. - 35	each	1100
B1450	C.P. Brass bibcock 15 mm	each	290
B1451	C.P. Brass long Nose bibcock 15 mm	each	430
B1452	C.P. Brass long body bibcock 15 mm	each	385
B1453	C.P. Brass stop cock (concealed) 15 mm	each	430
B1454	C.P. Brass angle valve 15 mm	each	375
B1455	Flushing Cistern P.V.C. 10 litre capacity (low level) (White) (with fittings, accessories and flush pipe)	each	575
B1456	P.V.C. automatic flushing cistern 5 litre capacity	each	470
B1457	P.V.C. flushing cistern 5 litre capacity	each	400
B1458	P.V.C. automatic flushing cistern 10 litre capacity	each	510
B1459	15 mm C.P. brass tap with elbow operation lever	each	430
B1460	White glazed fire clay draining board 600x450x25 mm	each	525
B1461	G.I. flush pipe and C.P. brass spreader including C.P. connecting pipe Single lipped urinal	each	445
B1462	G.I. flush pipe and C.P. brass spreader including C.P. connecting pipe Range of two lipped urinals	each	765
B1463	G.I. flush pipe and C.P. brass spreader including C.P. connecting pipe Range of three lipped urinals	each	1050

Unique Code	Description	Unit	Rate (INR)
B1464	G.I. flush pipe and C.P. brass spreader including C.P. connecting pipe Range of four lipped urinals	each	1430
B1465	White vitreous china clay half stall urinal flat back 580x380x350 mm or angle back 450x375x350 mm with waste fittings as per IS:2556	each	865
B1466	Precast R.C.C. grating with frame 500x450 mm horizontal grating	each	620
B1467	Precast R.C.C. grating with frame 450x100 mm vertical grating	each	235
B1468	15 mm PTMT bib cock	each	71
B1469	15 mm PTMT bib cock with flange (fancy)	each	105
B1470	15 mm PTMT bib cock long body with flange	each	116
B1471	15 mm dia PTMT stop cock (male thread)	each	71
B1472	20 mm dia PTMT stop cock	each	97
B1473	PTMT pillar cock	each	125
B1474	PTMT push cock 15 mm dia	each	62
B1475	PTMT push cock 12 mm dia 20 mm BSP	each	57
B1476	PTMT grating 100 mm dia	each	20
B1477	PTMT Pillar cock (fancy) 15 mm foam flow	each	138
B1478	125 mm grating with waste hole	each	30
B1479	Rectangular type with openable circular lid 150 mm size 18 mm high with 100 mm dia (110 gm)	each	118
B1480	Double acting air valve 50 mm	each	3715
B1481	Double acting air valve 80 mm	each	4525
B1482	Double acting air valve 100 mm	each	5910
B1483	Water meter (including testing charges) 80 mm	each	2030
B1484	Water meter (including testing charges) 100 mm	each	3143
B1485	Water meter (including testing charges) 150 mm	each	4765
B1486	Water meter (including testing charges) 200 mm	each	5145
B1487	Dirt box strainer 80 mm	each	2680
B1488	Dirt box strainer 100 mm	each	4370
B1489	Dirt box strainer 150 mm	each	5540
B1490	Dirt box strainer 200 mm	each	7860
B1491	PTMT - Waste Coupling 31/32 mm	each	34
B1492	PTMT - Waste Coupling 38/40 mm	each	48
B1493	PTMT - Bottle Trap 31/32 mm	each	210
B1494	PTMT - Bottle Trap 38/40 mm	each	220
B1495	PTMT Ball Cock 15mm complete with Epoxy Coated Aluminium Rod & H.D. Ball	each	100
B1496	PTMT Ball Cock 20mm complete with Epoxy Coated Aluminium Rod & H.D. Ball	each	135
B1497	PTMT Ball Cock 25mm complete with Epoxy Coated Aluminium Rod & H.D. Ball	each	290
B1498	PTMT Ball Cock 40mm complete with Epoxy Coated Aluminium Rod & H.D. Ball	each	480
B1499	PTMT Ball Cock 50mm complete with Epoxy Coated Aluminium Rod & H.D. Ball	each	870
B1500	PTMT Angle Stop cock with Flange 15 mm	each	100
B1501	PTMT Swivelling shower 15 mm	each	70
B1502	PTMT Liquid Soap Container of 400 ml capacity	each	105
B1503	PTMT - Towel Ring 215x200x37 mm	each	130
B1504	PTMT - Towel Rail (450 mm long)	each	135
B1505	PTMT - Towel Rail (600 mm long)	each	165
B1506	PTMT Shelf 450x124x36 mm	each	200

Unique Code	Description	Unit	Rate (INR)
B1507	PTMT - Urinal Spreader 15 mm	each	76
B1508	PTMT Soap Dish/Holder 138x102x75 mm	each	84
B1509	Hub less centrifugally cast (spun) iron pipes as per IS 15905 - 100 mm dia (3000 mm length pipe)	metre	700
B1510	Hub less centrifugally cast (spun) iron pipes as per IS 15905 - 75 mm dia (3000 mm length pipe)	metre	570
B1511	Hub less centrifugally cast (spun) iron plain bend as per IS 15905 - 100mm dia	each	230
B1512	Hub less centrifugally cast (spun) iron plain bend as per IS 15905 -75 mm dia	each	160
B1513	Hub less centrifugally cast (spun) iron double equal plain junction as per IS 15905 - 100x100x100x100 mm dia	each	510
B1514	Hub less centrifugally cast (spun) iron double equal plain junction as per IS 15905 - 75x75x75x75 mm dia	each	275
B1515	Hub less centrifugally cast (spun) iron single equal plain junction as per IS 15905 - 100x100x100 mm dia	each	400
B1516	Hub less centrifugally cast (spun) iron single equal plain junction as per IS 15905 - 75x75x75 mm dia	each	215
B1517	Hub less centrifugally cast (spun) iron double unequal plain junction as per IS 15905 - 100x100x75x75 mm dia	each	400
B1518	Hub less centrifugally cast (spun) iron single unequal plain junction as per IS 15905 - 100x100x75 mm dia	each	375
B1519	Hub less centrifugally cast (spun) iron double equal plain invert branch as per IS 15905 - 100x100x100x100 mm dia	each	625
B1520	Hub less centrifugally cast (spun) iron single equal plain invert branch as per IS 15905 - 100x100x100 mm dia	each	390
B1521	Hub less centrifugally cast (spun) iron single equal plain invert branch as per IS 15905 - 75x75x75 mm dia	each	260
B1522	Hub less centrifugally cast (spun) iron single unequal plain invert branch 45 degree as per IS 15905 - 100x100x75 mm dia	each	430
B1523	Hub less centrifugally cast (spun) iron 65 mm offset with 100 mm dia pipe as per IS 15905	each	360
B1524	Hub less centrifugally cast (spun) iron 65 mm offset with 75 mm dia pipe as per IS 15905	each	295
B1525	Hub less centrifugally cast (spun) iron 130 mm offset with 100 mm dia pipe as per IS 15905	each	440
B1526	Hub less centrifugally cast (spun) iron 130 mm offset with 75 mm dia pipe as per IS 15905	each	310
B1527	Hub less centrifugally cast (spun) iron bend with access door - 100mm dia as per IS 15905	each	365
B1528	Hub less centrifugally cast (spun) iron bend with access door - 75mm dia as per IS 15905	each	290
B1529	Hub less centrifugally cast (spun) iron terminal guard (slotted cowl) -100 mm dia as per IS 15905	each	270
B1530	Hub less centrifugally cast (spun) iron trap with 100 mm inlet and 100 mm outlet as per IS 15905	each	540
B1531	Hub less centrifugally cast (spun) iron trap with 100 mm inlet and 75 mm outlet as per IS 15905	each	385
B1532	SS 304 grade shielded coupling with EPDM rubber gasket for 100mm dia Hub less centrifugally cast (spun) iron	each	275
B1533	SS 304 grade shielded coupling with EPDM rubber gasket for 75 mm dia Hub less centrifugally cast (spun) iron	each	250
B1534	Rubber Gaskets Conforming to I.S 5382 of S.B.R quality 100 mm dia	each	23
B1535	Rubber Gaskets Conforming to I.S 5382 of S.B.R quality 150 mm dia	each	29

Unique Code	Description	Unit	Rate (INR)
B1536	Rubber Gaskets Conforming to I.S 5382 of S.B.R quality 200 mm dia	each	50
B1537	Rubber Gaskets Conforming to I.S 5382 of S.B.R quality 250 mm dia	each	59
B1538	Rubber Gaskets Conforming to I.S 5382 of S.B.R quality 300 mm dia	each	88
B1539	Ductile Iron Pipe Class K-9 flanges and welding 100 mm dia	metre	880
B1540	Ductile Iron Pipe Class K-9 flanges and welding 150 mm dia	metre	1320
B1541	Ductile Iron Pipe Class K-9 flanges and welding 200 mm dia	metre	1724
B1542	Ductile Iron Pipe Class K-9 flanges and welding 250 mm dia	metre	2360
B1543	Ductile Iron Pipe Class K-9 flanges and welding 300 mm dia	metre	3032
B1544	S&S Centrifugally (Spun) C.I. Pipe class LA 100 mm dia	metre	686
B1545	S&S Centrifugally (Spun) C.I. Pipe class LA 125 mm dia	metre	854
B1546	S&S Centrifugally (Spun) C.I. Pipe class LA 150 mm dia	metre	1029
B1547	S&S Centrifugally (Spun) C.I. Pipe class LA 200 mm dia	metre	1752
B1548	S&S Centrifugally (Spun) C.I. Pipe class LA 250 mm dia	metre	2286
B1549	S&S Centrifugally (Spun) C.I. Pipe class LA 300 mm dia	metre	3086
B1550	S&S Centrifugally (Spun) C.I. Pipe Specials as per IS 1538 suitable for lead jointing up to 300 mm dia	quintal	4152
B1551	S&S Centrifugally (Spun) C.I. Pipe Specials as per IS 1538 suitable for lead jointing over 300 mm dia	quintal	4960
B1552	Screwed double flanged centrifugally cast (spun) C.I. Pipe of Class B conforming to I.S. 1536, - 100 mm dia	metre	1048
B1553	Screwed double flanged centrifugally cast (spun) C.I. Pipe of Class B conforming to I.S. 1536, - 150 mm dia	metre	1638
B1554	Screwed double flanged centrifugally cast (spun) C.I. Pipe of Class B conforming to I.S. 1536, - 200 mm dia	metre	2590
B1555	Screwed double flanged centrifugally cast (spun) C.I. Pipe of Class B conforming to I.S. 1536, - 250 mm dia	metre	3124
B1556	Screwed double flanged centrifugally cast (spun) C.I. Pipe of Class B conforming to I.S. 1536, - 300 mm dia	metre	3992
B1557	Ductile Iron Class K- 7 pipe conforming to I.S. 8329 - 100 mm dia	metre	810
B1558	Ductile Iron Class K- 7 pipe conforming to I.S. 8329 - 150 mm dia	metre	912
B1559	Ductile Iron Class K- 7 pipe conforming to I.S. 8329 - 200 mm dia	metre	1120
B1560	Ductile Iron Class K- 7 pipe conforming to I.S. 8329 - 250 mm dia	metre	1440
B1561	Ductile Iron Class K- 7 pipe conforming to I.S. 8329 - 300 mm dia	metre	1800
B1562	Salem Stainless steel AISI - 304 (18/8) Orissa pattern W.C. pan 724mm X 578 mm	each	4500
B1563	Salem Stainless steel AISI - 304 (18/8) Round basin 405mm X 355 mm	each	1500
B1564	Salem Stainless steel AISI - 304 (18/8) Wash basin 530mm X 345 mm	each	2000
B1565	Centrifugally cast (spun) iron S&S 100 mm inlet and 100 mm outlet	each	450
B1566	Centrifugally cast (spun) iron S&S 100 mm inlet and 75 mm outlet	each	500
B1567	P.T.M.T. Urinal cock 15 mm dia	each	107
B1568	P.T.M.T. Bib cock with nozzle 15 mm	each	155
B1569	P.T.M.T. Stop cock (concealed) 15 mm	each	134
B1570	15 mm nominal bore and 30 cm length PVC connection pipe with P.T.M.T. Nuts	each	47
B1571	15 mm nominal bore and 45 cm length PVC connection pipe with P.T.M.T. Nuts	each	57
B1572	P.T.M.T. extension nipple 15 mm dia	each	30
B1573	P.T.M.T. extension nipple 20 mm dia	each	54
B1574	P.T.M.T. extension nipple 25 mm dia	each	78
B1575	GI injection nipple 32mm dia, 75mm long	each	120

Unique Code	Description	Unit	Rate (INR)
B1576	1216 mm PE-AL-PE Composite pressure pipe	metre	62
B1577	1620 mm PE-AL-PE Composite pressure pipe	metre	78
B1578	2025 mm PE-AL-PE Composite pressure pipe	metre	110
B1579	2532 mm PE-AL-PE Composite pressure pipe	metre	157
B1580	3240 mm PE-AL-PE Composite pressure pipe	metre	235
B1581	4050 mm PE-AL-PE Composite pressure pipe	metre	330
B1582	PPR Union 20 mm	each	48
B1583	PPR Union 25 mm	each	97
B1584	PPR Union 32 mm	each	137
B1585	PPR Union 40 mm	each	185
B1586	PPR Union 50 mm	each	353
B1587	PPR Union 63 mm	each	484
B1588	PPR Union 75 mm	each	933
B1589	40 mm long S.S screws with plastic rawl plugs	100 nos.	40
B1590	Poly propylene- Random - Co - Polymer (PPR) pipes PN-16 (SDR 7.4) - 20 mm Outer dia	metre	43
B1591	Poly propylene- Random - Co - Polymer (PPR) pipes PN-16 (SDR 7.4) - 25 mm Outer dia	metre	67
B1592	Poly propylene- Random - Co - Polymer (PPR) pipes PN-16 (SDR 7.4) - 32 mm Outer dia	metre	107
B1593	Poly propylene- Random - Co - Polymer (PPR) pipes PN-16 (SDR 7.4) - 40 mm Outer dia	metre	161
B1594	Poly propylene- Random - Co - Polymer (PPR) pipes PN-10 (SDR 11) - 50 mm Outer dia	metre	252
B1595	Poly propylene- Random - Co - Polymer (PPR) pipes PN-10 (SDR 11) - 63 mm Outer dia	metre	282
B1596	Poly propylene- Random - Co - Polymer (PPR) pipes PN-10 (SDR 11) - 75 mm Outer dia	metre	418
B1597	Poly propylene- Random - Co - Polymer (PPR) pipes PN-10 (SDR 11) - 90 mm Outer dia	metre	598
B1598	Chlorinated Polyvinyl - chloride (CPVC) pipe 15 mm outer dia	metre	45
B1599	Chlorinated Polyvinyl - chloride (CPVC) pipe 20 mm outer dia	metre	74
B1600	Chlorinated Polyvinyl - chloride (CPVC) pipe 25 mm outer dia	metre	108
B1601	Chlorinated Polyvinyl - chloride (CPVC) pipe 32 mm outer dia	metre	155
B1602	Chlorinated Polyvinyl - chloride (CPVC) pipe 40 mm outer dia	metre	220
B1603	Chlorinated Polyvinyl - chloride (CPVC) pipe 50 mm outer dia	metre	365
B1604	Chlorinated Polyvinyl - chloride (CPVC) pipe 62.5 mm inner dia	metre	780
B1605	Chlorinated Polyvinyl - chloride (CPVC) pipe 75 mm inner dia	metre	1015
B1606	Chlorinated Polyvinyl - chloride (CPVC) pipe 100 mm inner dia	metre	1450
B1607	Chlorinated Polyvinyl - chloride (CPVC) pipe 150 mm inner dia	metre	3050
B1608	SS pipe 304 grades with press fit technology as per JIS 3448 standard 15.88 mm outer dia	metre	140
B1609	SS pipe 304 grades with press fit technology as per JIS 3448 standard 22.22 mm outer dia	metre	230
B1610	SS pipe 304 grades with press fit technology as per JIS 3448 standard 28.58 mm outer dia	metre	292
B1611	SS pipe 304 grades with press fit technology as per JIS 3448 standard 34.00 mm outer dia	metre	411

Unique Code	Description	Unit	Rate (INR)
B1612	SS pipe 304 grades with press fit technology as per JIS 3448 standard 42.70 mm outer dia	metre	533
B1613	SS pipe 304 grades with press fit technology as per JIS 3448 standard 48.60 mm outer dia	metre	595
B1614	Coupling/Socket fittings for 22.22 mm outer dia SS pipe	each	77
B1615	Coupling/Socket fittings for 28.58 mm outer dia SS pipe	each	109
B1616	Coupling/Socket fittings for 34.00 mm outer dia SS pipe	each	241
B1617	Coupling/Socket fittings for 42.70 mm outer dia SS pipe	each	349
B1618	Coupling/Socket fittings for 48.60 mm outer dia SS pipe	each	437
B1619	Reducer for 22.22 mm X 15.88 mm outer Dia SS pipe	each	89
B1620	Reducer for 28.58 mm X 15.88 mm outer Dia SS pipe	each	120
B1621	Reducer for 28.58 mm X 22.22 mm outer Dia SS pipe	each	122
B1622	Reducer for 34.00 mm X 15.88 mm outer Dia SS pipe	each	291
B1623	Reducer for 34.00 mm X 22.22 mm outer Dia SS pipe	each	291
B1624	Reducer for 34.00 mm X 28.58 mm outer Dia SS pipe	each	291
B1625	Reducer for 42.70 mm X 15.88 mm outer Dia SS pipe	each	333
B1626	Reducer for 42.70 mm X 22.22 mm outer Dia SS pipe	each	341
B1627	Reducer for 42.70 mm X 28.58 mm outer Dia SS pipe	each	390
B1628	Reducer for 42.70 mm X 34.00 mm outer Dia SS pipe	each	414
B1629	Reducer for 48.60 mm X 15.88 mm outer Dia SS pipe	each	414
B1630	Reducer for 48.60 mm X 22.22 mm outer Dia SS pipe	each	414
B1631	Reducer for 48.60 mm X 28.58 mm outer Dia SS pipe	each	516
B1632	Reducer for 48.60 mm X 34.00 mm outer Dia SS pipe	each	516
B1633	Reducer for48.60 mm X 42.70 mm outer Dia SS pipe	each	518
B1634	Slip Coupling / Socket 15.88 mm outer dia SS pipe	each	121
B1635	Slip Coupling / Socket 22.22 mm outer dia SS pipe	each	197
B1636	Slip Coupling / Socket 28.58 mm outer dia SS pipe	each	255
B1637	Slip Coupling / Socket 34.00 mm outer dia SS pipe	each	367
B1638	Slip Coupling / Socket 42.70 mm outer dia SS pipe	each	516
B1639	Slip Coupling / Socket 48.60 mm outer dia SS pipe	each	631
B1640	Elbow 90° for 15.88 mm outer dia SS pipe	each	65
B1641	Elbow 90° for 22.22 mm outer dia SS pipe	each	113
B1642	Elbow 90° for 28.58 mm outer dia SS pipe	each	213
B1643	Elbow 90° for 34.00 mm outer dia SS pipe	each	424
B1644	Elbow 90° for 42.70 mm outer dia SS pipe	each	654
B1645	Elbow 90° for 48.60 mm outer dia SS pipe	each	791
B1646	Reducing Elbow 90° for 22.22 mm X 15.88 mm outer dia SS pipe	each	144
B1647	Reducing Elbow 90° for 28.58 mm X 15.88 mm outer dia SS pipe	each	196
B1648	Reducing Elbow 90° for 28.58 mm X 22.22 mm outer dia SS pipe	each	205
B1649	Reducing Elbow 90° for 34.00 mm X 22.22 mm outer dia SS pipe	each	434
B1650	Reducing Elbow 90° for 34.00 mm X 28.58 mm outer dia SS pipe	each	434
B1651	Reducing Elbow 90° for 42.70 mm X 34.00 mm outer dia SS pipe	each	633
B1652	Equal Tee for 15.88 mm outer dia SS pipe	each	128
B1653	Equal Tee for 22.22 mm outer dia SS pipe	each	193
B1654	Equal Tee for 28.58 mm outer dia SS pipe	each	301
B1655	Equal Tee for 34.00 mm outer dia SS pipe	each	661

Unique Code	Description	Unit	Rate (INR)
B1656	Equal Tee for 42.70 mm outer dia SS pipe	each	906
B1657	Equal Tee for 48.60 mm outer dia SS pipe	each	1080
B1658	Reducing Tee for 22.22 mm X 15.88 mm outer dia SS	each	173
B1659	Reducing Tee for 28.58 mm X 15.88 mm outer dia SS pipe	each	230
B1660	Reducing Tee for 28.58 mm X 22.22 mm outer dia SS pipe	each	233
B1661	Reducing Tee for 34.00 mm X 15.88 mm outer dia SS pipe	each	551
B1662	Reducing Tee for 34.00 mm X 22.22 mm outer dia SS pipe	each	571
B1663	Reducing Tee for 34.00 mm X 28.58 mm outer dia SS pipe	each	584
B1664	Reducing Tee for 42.70 mm X 15.88 mm outer dia SS pipe	each	735
B1665	Reducing Tee for 42.70 mm X 22.22 mm outer dia SS pipe	each	746
B1666	Reducing Tee for 42.70 mm X 28.58 mm outer dia SS pipe	each	768
B1667	Reducing Tee for 42.70 mm X 34.00 mm outer dia SS pipe	each	811
B1668	Reducing Tee for 48.60 mm X 15.88 mm outer dia SS pipe	each	824
B1669	Reducing Tee for 48.60 mm X 22.22 mm outer dia SS pipe	each	834
B1670	Reducing Tee for 48.60 mm X 28.58 mm outer dia SS pipe	each	849
B1671	Reducing Tee for 48.60mm X 34.00 mm outer dia SS pipe	each	952
B1672	Reducing Tee for 48.60mm X 42.70mm outer dia SS pipe	each	977
B1673	Stainless steel Male thread Tee for 15.88 mm outer dia X 15 mm nominal dia threaded	each	274
B1674	Stainless steel Male thread Tee for 22.22 mm outer dia X 15 mm nominal dia threaded	each	333
B1675	Stainless steel Male thread Tee for 22.22 mm outer dia X 20 mm nominal dia threaded	each	353
B1676	Stainless steel Male thread Tee for 28.58 mm outer dia X 15 mm nominal dia threaded	each	383
B1677	Stainless steel Male thread Tee for 28.58 mm outer dia X 20 mm nominal dia threaded	each	496
B1678	Stainless steel Male thread Tee for 28.58 mm outer dia X 25 mm nominal dia threaded	each	496
B1679	Stainless steel Male thread Tee for 34.00 mm outer dia X 15 mm nominal dia threaded	each	657
B1680	Stainless steel Male thread Tee for 34.00 mm outer dia X 20 mm nominal dia threaded	each	676
B1681	Stainless steel Male thread Tee for 34.00 mm outer dia X 25 mm nominal dia threaded	each	734
B1682	Stainless steel Male thread Tee for 34.00 mm outer dia X 32 mm nominal dia threaded	each	812
B1683	Stainless steel Male thread Tee for 42.70 mm outer dia X 15 mm nominal dia threaded	each	845
B1684	Stainless steel Male thread Tee for 42.70 mm outer dia X 20 mm nominal dia threaded	each	858
B1685	Stainless steel Male thread Tee for 42.70 mm outer dia X 25 mm nominal dia threaded	each	904
B1686	Stainless steel Male thread Tee for 42.70 mm outer dia X 32 mm nominal dia threaded	each	990
B1687	Stainless steel Male thread Tee for 42.70 mm outer dia X 40 mm nominal dia threaded	each	1186
B1688	Stainless steel Male thread Tee for 48.60 mm outer dia X 15 mm nominal dia threaded	each	910

Unique Code	Description	Unit	Rate (INR)
B1689	Stainless steel Male thread Tee for 48.60 mm outer dia X 20 mm nominal dia threaded	each	928
B1690	Stainless steel Male thread Tee for 48.60 mm outer dia X 25 mm nominal dia threaded	each	1011
B1691	Stainless steel Male thread Tee for 48.60 mm outer dia X 32 mm nominal dia threaded	each	1173
B1692	Stainless steel Male thread Tee for 48.60 mm outer dia X 40 mm nominal dia threaded	each	1500
B1693	Stainless steel Male thread Tee for 48.60 mm outer dia X 50 mm nominal dia threaded	each	1658
B1694	Stainless steel Female thread Tee for 15.88 mm outer dia X 15 mm nominal dia threaded	each	240
B1695	Stainless steel Female thread Tee for 22.22 mm outer dia X 15 mm nominal dia threaded	each	275
B1696	Stainless steel Female thread Tee for 22.22 mm outer dia X 20 mm nominal dia threaded	each	298
B1697	Stainless steel Female thread Tee for 28.58 mm outer dia X 15 mm nominal dia threaded	each	400
B1698	Stainless steel Female thread Tee for 28.58 mm outer dia X 20 mm nominal dia threaded	each	400
B1699	Stainless steel Female thread Tee for 28.58 mm outer dia X 25 mm nominal dia threaded	each	499
B1700	Stainless steel Female thread Tee for 34.00 mm outer dia X 15 mm nominal dia threaded	each	602
B1701	Stainless steel Female thread Tee for 34.00 mm outer dia X 20 mm nominal dia threaded	each	602
B1702	Stainless steel Female thread Tee for 34.00 mm outer dia X 25 mm nominal dia threaded	each	720
B1703	Stainless steel Female thread Tee for 34.00 mm outer dia X 32 mm nominal dia threaded	each	851
B1704	Stainless steel Female thread Tee for 42.70 mm outer dia X 15 mm nominal dia threaded	each	851
B1705	Stainless steel Female thread Tee for 42.70 mm outer dia X 20 mm nominal dia threaded	each	859
B1706	Stainless steel Female thread Tee for 42.70 mm outer dia X 25 mm nominal dia threaded	each	946
B1707	Stainless steel Female thread Tee for 42.70 mm outer dia X 32 mm nominal dia threaded	each	965
B1708	Stainless steel Female thread Tee for 42.70 mm outer dia X 40 mm nominal dia threaded	each	1094
B1709	Stainless steel Female thread Tee for 48.60 mm outer dia X 15 mm nominal dia threaded	each	1021
B1710	Stainless steel Female thread Tee for 48.60 mm outer dia X 20 mm nominal dia threaded	each	1030
B1711	Stainless steel Female thread Tee for 48.60 mm outer dia X 25 mm nominal dia threaded	each	1055
B1712	Stainless steel Female thread Tee for 48.60 mm outer dia X 32 mm nominal dia threaded	each	1145
B1713	Stainless steel Female thread Tee for 48.60 mm outer dia X 40 mm nominal dia threaded	each	1192
B1714	Stainless steel Female thread Tee for 48.60 mm outer dia X 50 mm nominal dia threaded	each	1477

Unique Code	Description	Unit	Rate (INR)
B1715	Stainless steel Female threaded Connector/Adapter for 15.88 mm outer dia X 15 mm nominal threaded	each	170
B1716	Stainless steel Female threaded Connector/Adapter for 22.22 mm outer dia X 15 mm nominal threaded	each	188
B1717	Stainless steel Female threaded Connector/Adapter for 22.22 mm outer dia X 20 mm nominal threaded	each	217
B1718	Stainless steel Female threaded Connector/Adapter for 28.58 mm outer dia X 15 mm nominal threaded	each	333
B1719	Stainless steel Female threaded Connector/Adapter for 28.58 mm outer dia X 20 mm nominal threaded	each	333
B1720	Stainless steel Female threaded Connector/Adapter for 28.58 mm outer dia X 25 mm nominal threaded	each	333
B1721	Stainless steel Female threaded Connector/Adapter for 34.00 mm outer dia X 25 mm nominal threaded	each	553
B1722	Stainless steel Female threaded Connector/Adapter for 34.00 mm outer dia X 32 mm nominal threaded	each	592
B1723	Stainless steel Female threaded Connector/Adapter for 42.70 mm outer dia X 32 mm nominal threaded	each	832
B1724	Stainless steel Female threaded Connector/Adapter for 42.70 mm outer dia X 40 mm nominal threaded	each	860
B1725	Stainless steel Female threaded Connector/Adapter for 48.60 mm outer dia X 40 mm nominal threaded	each	1086
B1726	Stainless steel Female threaded Connector/Adapter for 48.60 mm outer dia X 50 mm nominal threaded	each	1086
B1727	Stainless steel Male threaded Connector/Adapter for 15.88 mm outer dia X 15 mm nominal threaded	each	161
B1728	Stainless steel Male threaded Connector/Adapter for 22.22 mm outer dia X 15 mm nominal threaded	each	173
B1729	Stainless steel Male threaded Connector/Adapter for 22.22 mm outer dia X 20 mm nominal threaded	each	192
B1730	Stainless steel Male threaded Connector/Adapter for 28.58 mm outer dia X 20 mm nominal threaded	each	294
B1731	Stainless steel Male threaded Connector/Adapter for 28.58 mm outer dia X 25 mm nominal threaded	each	297
B1732	Stainless steel Male threaded Connector/Adapter for 34.00 mm outer dia X 25 mm nominal threaded	each	654
B1733	Stainless steel Male threaded Connector/Adapter for 34.00 mm outer dia X 32 mm nominal threaded	each	654
B1734	Stainless steel Male threaded Connector/Adapter for 42.70 mm outer dia X 32 mm nominal threaded	each	801
B1735	Stainless steel Male threaded Connector/Adapter for 42.70 mm outer dia X 40 mm nominal threaded	each	813
B1736	Stainless steel Male threaded Connector/Adapter for 48.60 mm outer dia X 40 mm nominal threaded	each	1170
B1737	Stainless steel Male threaded Connector/Adapter for 48.60 mm outer dia X 50 mm nominal threaded	each	1178
B1738	Stainless steel Valve Connector for 15.88 mm outer dia X 15 mm nominal dia threaded	each	204
B1739	Stainless steel Valve Connector for 22.22 mm outer dia X 15 mm nominal dia threaded	each	234
B1740	Stainless steel Valve Connector for 22.22 mm outer dia X 20 mm nominal dia threaded	each	254

Unique Code	Description	Unit	Rate (INR)
B1741	Stainless steel Valve Connector for 28.58 mm outer dia X 25 mm nominal dia threaded	each	464
B1742	Stainless steel Valve Connector for 34.00 mm outer dia X 32 mm nominal dia threaded	each	632
B1743	Stainless steel Valve Connector for 42.70 mm outer dia X 40 mm nominal dia threaded	each	836
B1744	Stainless steel Valve Connector for 48.60 mm outer dia X 50 mm nominal dia threaded	each	1214
B1745	SS Female Threaded Elbow 90o for 15.88 mm outer dia X 15 mm nominal dia threaded	each	241
B1746	Stainless steel Female Threaded Elbow 90o for 22.22 mm outer dia X 15 mm nominal dia threaded	each	283
B1747	Stainless steel Female Threaded Elbow 90o for 22.22 mm outer dia X 20 mm nominal dia threaded	each	381
B1748	Stainless steel Female Threaded Elbow 90o for 28.58 mm outer dia X 25 mm nominal dia threaded	each	403
B1749	Stainless steel Female Threaded Elbow 90o for 34.00 mm outer dia X 32 mm nominal dia threaded	each	734
B1750	Stainless steel Female Threaded Elbow 90o for 42.70 mm outer dia X 32 mm nominal dia threaded	each	1007
B1751	Stainless steel Female Threaded Elbow 90o for 42.70 mm outer dia X40 mm nominal dia threaded	each	1007
B1752	Stainless steel Female Threaded Elbow 90o for 48.60 mm outer dia X 40 mm nominal dia threaded	each	1416
B1753	Stainless steel Female Threaded Elbow 90o for 48.60 mm outer dia X 50 mm nominal dia threaded	each	1416
B1754	Stainless steel Male Threaded Elbow 90o for 15.88 mm outer dia X15 mm nominal dia threaded	each	210
B1755	Stainless steel Male Threaded Elbow 90o for 22.22 mm outer dia X15 mm nominal dia threaded	each	252
B1756	Stainless steel Male Threaded Elbow 900 for 22.22 mm outer dia X20 mm nominal dia threaded	each	277
B1757	Stainless steel Male Threaded Elbow 900 for 28.58 mm outer dia X25 mm nominal dia threaded	each	427
B1758	Stainless steel Male Threaded Elbow 900 for 34.00 mm outer dia X25 mm nominal dia threaded	each	773
B1759	Stainless steel Male Threaded Elbow 900 for 34.00 mm outer dia X32 mm nominal dia threaded	each	287
B1760	Stainless steel Male Threaded Elbow 900 for 42.70 mm outer dia X32 mm nominal dia threaded	each	478
B1761	Stainless steel Male Threaded Elbow 900 for 42.70 mm outer dia X40 mm nominal dia threaded	each	478
B1762	Stainless steel Male Threaded Elbow 900 for 48.60 mm outer dia X40 mm nominal dia threaded	each	683
B1763	Stainless steel Male Threaded Elbow 900 for 48.60 mm outer dia X50 mm nominal dia threaded	each	683
B1764	Stainless steel Cap for 15.88 mm outer dia pipe	each	45
B1765	Stainless steel Cap for 22.22 mm outer dia pipe	each	64
B1766	Stainless steel Cap for 28.58 mm outer dia pipe	each	84
B1767	Stainless steel Cap for 34.00 mm outer dia pipe	each	163
B1768	Stainless steel Cap for 42.70 mm outer dia pipe	each	236
B1769	Stainless steel Cap for 48.60 mm outer dia pipe	each	299

Unique Code	Description	Unit	Rate (INR)
B1770	Stainless steel Pipe Bridge for 15.88 mm outer dia pipe	each	214
B1771	Stainless steel Pipe Bridge for 22.22 mm outer dia pipe	each	271
B1772	Stainless steel Pipe Bridge for 28.58 mm outer dia pipe	each	407
B1773	C.P. Brass Centre Hole Basin Mixer With Cast Spout	each	1600
B1774	Stone grit 6 mm and down size or pea sized gravel	cum	700
B1775	Cinder (12 nominal Size)	cum	700
B1776	Cinder ballast	cum	600
B1777	GI Cramps	kg	64
B1778	Water stops Serrated with central bulb (225 mm wide, 8-11 mm thick)	metre	200
B1779	Water stops Dumb bell with central bulb	metre	160
B1780	Kickers	metre	185
B1781	Polymer modified cementation coating	kg	140
B1782	Fibre glass cloth	sqm	25
B1783	Fibre reinforced elastomeric liquid water proofing membrane	litre	199
B1784	Cementitious water proofing coating with elastic polymers	kg	189
B1785	Acrylic modified resin based texture	kg	36
B1786	Zycosil / equivalent	litre	1600
B1787	Zycoprime /equivalent	litre	185
B1788	HDPE Membrane (1.2mm thick)	sqm	405
B1789	HDPE Sealed Tape	sqm	16
B1790	HDPE Sanded Tape	sqm	16
B1791	Non-shrink grout chemical	kg	85
B1792	HDPE Membrane (4-5mm thick)	kg	950
B1793	Detailed Strip	sqm	16
B1794	SBS Membrane	sqm	370
B1795	Primer for SBS Membrane	litre	160
B1796	PU primer	kg	160
B1797	PU primer	litre	450
B1798	Liquid applied polyurethane membrane	kg	230
B1799	Liquid applied polyurethane membrane	litre	480
B1800	Non-shrink cementitious chemical for grouting	kg	120
B1801	PUF Insulation @ 3.5 kg/sqm coverage	kg	240
B1802	21mm thick clear toughened Laminated glass for fins with holes	sqm	6000
B1803	Structural sealant - 6 mm x 12 mm	metre	30
B1804	Spacer tape 6.4 mm thick x 6 mm wide	metre	20
B1805	6 mm thick High performance glass	sqm	1000
B1806	6 mm thick clear heat strengthened glass	sqm	650
B1807	6 mm thick clear heat strengthened glass	each	128
B1808	ARMS GS HD - Top Hung -20"- Type P- Couple	pair	1350
B1809	Connection Block for vision glass panel	each	35
B1810	Curtain wall striker for vision glass panel	each	85
B1811	Adjustable Fastening Pawl for vision glass panel	each	35
B1812	Corner drive for vision glass panel	each	255
B1813	Top wedge Block for vision glass panel	each	120
B1814	Glass wool of density @ 48 kg / cum with black glass tissue (BGT)	sqm	250

Unique Code	Description	Unit	Rate (INR)
B1815	Weather Sealant - DC 789	cartridge	120
B1816	Cement Board	sqm	235
B1817	Fire Stop	metre	480
B1818	GI/Aluminium Sheet (0.8 mm thick)	kg	55
B1819	Aluminium T or L sections	kg	190
B1820	Stainless steel U Channel of size (50x25x2mm)	metre	160
B1821	Non staining water resistant clear silicon sealant	metre	65
B1822	4 Point facade glass bracket without flat head bolts	No.	3318
B1823	2 Point facade glass bracket (wall mounted with out flat head bolt)	No.	1659
B1824	1 Point facade glass bracket (wall mounted with out flat head bolt)	No.	1300
B1825	Flat head bolt for brackets of spider glazing	No.	651
B1826	400 mm long fin plate without fasteners	pair	5931
B1827	Brass single acting spring hinges 150 mm	each	425
B1828	Brass single acting spring hinges 125 mm	each	285
B1829	Brass single acting spring hinges 100 mm	each	250
B1830	Brass double acting spring hinges 150 mm	each	480
B1831	Brass double acting spring hinges 125 mm	each	400
B1832	Brass double acting spring hinges 100 mm	each	390
B1833	Brass flush bolt 250 mm	each	150
B1834	Brass flush bolt 150 mm	each	130
B1835	Brass flush bolt 100 mm	each	90
B1836	Brass 150 mm floor door stopper weighing not less than 0.357kg	each	160
B1837	Brass hard drawn hooks and eyes 300 mm	10 nos.	600
B1838	Brass hard drawn hooks and eyes 250 mm	10 nos.	574
B1839	Brass hard drawn hooks and eyes 200 mm	10 nos.	510
B1840	Brass hard drawn hooks and eyes 150 mm	10 nos.	400
B1841	Brass hard drawn hooks and eyes 100 mm	10 nos.	345
B1842	Brass quadrant stays 300 mm	each	110
B1843	Brass fanlight catch (14mm)	10 nos.	170
B1844	Brass fanlight pivot	10 nos.	168
B1845	Brass chain with hook for fan light catch	each	36
B1846	Brass helical spring 150 mm	each	290
B1847	Brass curtain rod 20 mm dia 1.25 mm thick	metre	140
B1848	Brass curtain rod 25 mm dia 1.25 mm thick	metre	190
B1849	Brass brackets (curtain rods) 20 mm	each	45
B1850	Chromium plated Brass butt hinges (heavy) type 75x65x4 mm weighing not less than 200gms	10 nos.	905
B1851	Chromium plated Brass butt hinges (light/ordinary) type 125x70x4mm	10 nos.	805
B1852	Chromium plated Brass butt hinges (light/ordinary) type 100x70x4 mm	10 nos.	690
B1853	Chromium plated Brass butt hinges (light/ordinary) type 75x40x2.5 mm	10 nos.	421
B1854	Chromium plated Brass butt hinges (light/ordinary) type 50x40x2.5 mm	10 nos.	180
B1855	Commercial LPG in cylinder	kg	82
B1856	Dismantled P or S trap scrap (approx wt 2kg)	kg	22
B1857	Chromium plated Brass pull bolt lock (locking bolt) of size 85 mm x 42 mm with screws, bolts, nuts and washers complete	each	165
B1858	Spigot for standard jointing	kg	43

Unique Code	Description	Unit	Rate (INR)
B1859	Base Jack	each	145
B1860	Challies	each	765
B1861	Cup locks	each	48
B1862	Wheel 75 mm dia. 40 mm wide	each	62
B1863	Stone cleaning chemical approved by ASI	litre	295
B1864	Water repellent chemical approved by ASI	litre	1200
B1865	Stone surface strengthening chemical approved by ASI	litre	900
B1866	Turpentine oil	litre	55
B1867	Liquid Ammonia 5%	litre	160
B1868	Sodium pentachlorophenate	kg	550
B1869	A.P.P. modified polymeric felt (two layers) 1.5 mm thick	sqm	80
B1870	A.P.P. modified polymeric felt (two layers) 2 mm thick	sqm	100
B1871	A.P.P. modified 2 mm thick membrane reinforced with glass fibre matt	sqm	127
B1872	A.P.P. modified 3 mm thick membrane reinforced with glass fibre matt	sqm	190
B1873	A.P.P. modified 3 mm thick membrane reinforced with polyester matt	sqm	205
B1874	Bitumen primer for bitumen membrane	litre	80
B1875	Geotextile 120 grams per sqm membrane	sqm	45
B1876	Water for jetting / blowback	1000 litre	1500
B1877	Rebarring 8 mm dia bar hole size 12 mm dia & depth up to 80 mm	each	250
B1878	Rebarring 10 mm dia bar hole size 14 mm.& hole depth up to 100 mm	each	450
B1879	Rebarring 12mm dia bar hole size 16mm.& hole depth up to 120 mm	each	550
B1880	Rebarring 16 mm dia bar hole size 20 mm dia & depth up to 160 mm	each	700
B1881	Rebarring 20mm dia bar hole size 24 mm dia & depth up to 240mm	each	850
B1882	Rebarring 25mm dia bar hole size 30 mm dia & depth up to 300 mm	each	1000
B1883	Rebarring 32 mm dia bar hole size 36 mm dia & depth up to 320 mm	each	1100
B1884	Chemical Rust Remover	litre	210
B1885	Epoxy	kg	585
B1886	SBR Polymer	kg	190
B1887	Woven PVC cloth	sqm	25
B1888	Adhesive chemical	ml	2
B1889	Bit of drilling machine for Hole up to 30mm dia	each	500
B1890	GI injection nipple 12mm dia, 75mm long	each	42
B1891	Blowing compressed air for cleaning holes up to 30mm dia	each	10
B1892	L shaped 100mm long, 10mm dia mild steel shear key	kg	67
B1893	Acrylic Polymer chemical for cracks	kg	31
B1894	Calcium silicate base compound for jointing calcium silicate tiles	kg	26
B1895	FY-1860 grade wire strands	quintal	5700
B1896	GI Wire mesh 100x100 mm	kg	55
B1897	Shear stud	each	50
B1898	Epoxy based sealing Compound	kg	535
B1899	Acrylic based sealing compound	kg	500
B1900	Non woven reinforcement Tape	metre	0
B1901	M-60 grade cementitious grout (Non Shrink)	kg	28
B1902	GI Screws of gauge 10, length 25 mm for fixing cement fibre board to C section	each	3
B1903	GI Screws of gauge 10, length 45 mm for fixing cement fibre board to C section	each	3

Unique Code	Description	Unit	Rate (INR)
B1904	Stone ballast	cum	800
B1905	Self tapping pan head nickel coated mild steel screws of size 13 x 3.2 mm	1000 nos.	525
B1906	Fibre joint tape 50 mm wide (90 metre) roll	each roll	165
B1907	25 mm thick Resin Bonded Rockwool 48 kg/m3	sqm	120
B1908	50 mm thick Resin Bonded Rockwool 48 kg/m4	sqm	150
B1909	65 mm thick Resin Bonded Rockwool 48 kg/m5	sqm	180
B1910	75 mm thick Resin Bonded Rockwool 48 kg/m6	sqm	210
B1911	Glass wool 50 mm thick	sqm	238
B1912	Lock Bar (E 250) - 10 thick MS Plate	kg	76
B1913	Glass reinforced Gypsum (GRG) plaster board 12.5 mm thick confirming to IS 2095 (Part 3):1996	sqm	240
B1914	Galvanised M.S. sheet 0.5 mm thick pressed channel section of size 50x32 mm	metre	57
B1915	GFRG Panel of 124 mm thick	sqm	848
B1916	Galvanised M.S. sheet 0.50 mm thick pressed stud : 48x34x36 mm	metre	71
B1917	12 mm dia 50 mm long wedge type expanded zinc alloy dash fastener	each	7
B1918	Concrete paver block of grade M-30 made of C&D waste (60mm thickness)	sqm	317
B1919	Ceramic Glazed Tiles 1st quality minimum thickness 5mm in all colours shades and designs except burgundy, bottle green, black	sqm	212
B1920	Shear loops (6mm dia GI wire rope) (For vertical joints) 6 No. on each side	each	192
B1921	dowel tubes (Corrugated GI pipes 50 to 80mm dia) (For horizontal joints)	metre	120
B1922	Hooks for lifting (Alloy steel) having 2.5 tonne capacity	each	250
B1923	Factory made EPS light weight composite sandwiched wall/roof panel (50mm thick) having core material of EPS granule balls/beads (conforming to IS 4671:1984 and shall have density not less than 15kg per cum). The outer face on both sides of the panels will be non asbestos fibre cement board confirming to IS 14862:2000 or Calcium silicate board confirming to EN 14306:2009 of 5mm thick each.	sqm	735
B1924	Factory made EPS light weight composite sandwiched wall/roof panel (60mm thick) having core material of EPS granule balls/beads (conforming to IS 4671:1984 and shall have density not less than 15kg per cum). The outer face on both sides of the panels will be non asbestos fibre cement board confirming to IS 14862:2000 or Calcium silicate board confirming to EN 14306:2009 of 5mm thick each	sqm	845
B1925	Factory made EPS light weight composite sandwiched wall/roof panel (75mm thick) having core material of EPS granule balls/beads (conforming to IS 4671:1984 and shall have density not less than 15kg per cum). The outer face on both sides of the panels will be non asbestos fibre cement board confirming to IS 14862:2000 or Calcium silicate board confirming to EN 14306:2009 of 5mm thick each	sqm	1047
B1926	Factory made EPS light weight composite sandwiched wall/roof panel (90mm thick) having core material of EPS granule balls/beads (conforming to IS 4671:1984 and shall have density not less than 15kg per cum). The outer face on both sides of the panels will be non asbestos fibre cement board confirming to IS 14862:2000 or Calcium silicate board confirming to EN 14306:2009 of 5mm thick each	sqm	1268
B1927	Factory made EPS light weight composite sandwiched wall/roof panel (100mm thick) having core material of EPS granule balls/beads (conforming to IS 4671:1984 and shall have density not less than 15kg per cum). The outer face on both sides of the panels will be non asbestos fibre cement board confirming to IS 14862:2000 or Calcium silicate board confirming to EN 14306:2009 of 5mm thick each	sqm	1512

Unique Code	Description	Unit	Rate (INR)
B1928	Factory made EPS Core wall panel /roof panel sandwiched between two Engineered welded wire fabric mesh of 3 mm dia G.I. wire mesh, with 50 mm pitch in both the directions, kept at 120-135 mm gap and interconnected by the zig zag G.I. wire of 3 mm dia at alternate row by welding.	sqm	1650
B1929	GI sheet 0.8 mm thick confirming to IS 277:1992	kg	65
B1930	Factory made EPS Core wall panel /roof panel sandwiched between two Engineered welded wire fabric mesh of 3 mm dia G.I. wire mesh, with 50 mm pitch in both the directions, connected by G.I. wire of 3mm dia at alternate row by welding	sqm	600
B1931	Aluminium sheets Grade 5052, 4 mm thick for wall panel/deck panel/WRB panel/Kicker Panels/door closing panels (for form work)	sqm	8500
B1932	Aluminium sheets Grade 5052, 4 mm thick for Internal Corner/Column Corners/ (for form work)	sqm	11500
B1933	Aluminium sheets Grade 5052, 4 mm thick for Mid Soldier/End soldier (for form work)	sqm	32000
	Accessories for aluminium form work		
B1934	External corner 2050 mm	each	1400
B1935	External corner 825 mm	each	590
B1936	soldier tie 370mm	each	290
B1937	Adjustable prop-2.0 x2.0 m	each	1080
B1938	Pin-50	each	15
B1939	Pin-127	each	55
B1940	wedge	each	14
B1941	wall tie-150 (355 mm)	each	45
B1942	Polythene Sleeve 90 x 150mm	each	3
B1943	Polythene Roll - 150mm Long.	each	6
B1944	Vertical Soldier -1100mm	each	365
B1945	Wall Attached Bracket 600x1000mm	each	985
B1946	Alignment Pipe - 3.00 Metre.	each	995
B1947	Alignment Bracket	each	475
B1948	Tie Rod for Bracket - 500mm	each	115
B1949	Anchor Wing Nut Ø100 mm	each	64
B1950	Debit Pin - 250mm	each	60
B1951	PVC Pipe Ø20mm - 150mm long	each	5
B1952	PVC Cone	each	5
B1953	Bolt+Nut - 16 x 80 mm	each	30
B1954	Flat Washer Ø16, 3mm thick	each	5
B1955	Bolt+Nut - 16 x 30 mm	each	18
B1956	Door spacer 45x45x5-1135mm Long	each	360
B1957	Door spacer 45x45x5-1135mm Long	each	315
B1958	Galvanised MS 8 mm outer diameter M-6 dash fastener 50mm long	each	25
B1959	ZMB 60/equivalent	kg	105
B1960	ZMB thinner	litre	205
B1961	Mineral fibre bevelled tegular edged ceiling tiles 595 x595mm,16 mm thick	sqm	670
B1962	Mineral fibre bevelled tegular edged ceiling tiles 595 x595mm,16 mm thick with bio-block conforming to ISO 5 (class 100) specifications.	sqm	740
B1963	Mineral fibre bevelled tegular edged ceiling tiles 595 x595mm,20 mm thick.	sqm	840
B1964	G.I main runner 15 x32 mm of 3000 mm length, 0.33 mm thick	each	145
B1965	G.I cross-T 15 x32 mm of 1200 mm length, 0.33 mm thick	each	60

Unique Code	Description	Unit	Rate (INR)
B1966	G.I cross-T 15 x32 mm of 600 mm length, 0.33 mm thick	each	29
B1967	G.I hanger rod 6mm dia fully threaded up to 1000 mm length	each	21
B1968	Extruded polystyrene rigid insulation board 25 mm thick	sqm	275
B1969	Extruded polystyrene rigid insulation board 50 mm thick	sqm	525
B1970	Extruded polystyrene rigid insulation board 75 mm thick	sqm	800
B1971	Extruded polystyrene rigid insulation board 100 mm thick	sqm	1075
B1972	15 mm thick, light weight, integral densified micro look edged, false ceiling tiles of size 595x595 mm.	sqm	720
B1973	15 mm thick, light weight, fully perforated square/butt edge integral densified, false ceiling tiles of size 595x595 mm.	sqm	900
B1974	Powder coated steel section main-T ceiling sections 15x42x0.40 mm (3000 mm long)	each	235
B1975	Galvanized mild steel perimeter wall angle 22x19x0.40 mm (3000mm long)	each	115
B1976	Powder coated Galvanised Iron intermediate cross-T section 15x42x0.40 mm (1200 mm long)	each	95
B1977	Powder coated Galvanized Iron intermediate cross-T section 15x42x0.40mm (600mm long)	each	47
B1978	Cold form light gauge Steel C-section of thickness 0.75mm i/c zinc coating/slitting etc.	kg	130
B1979	Wastage of cold form light gauge steel	kg	17
B1980	12 mm thick micro tegular edged semi perforated GRG (Glass Fibre Reinforced Gypsum) false ceiling tiles of Size 595x595 mm	sqm	510
B1981	12 mm thick micro tegular edged fully perforated GRG (Glass Fibre Reinforced Gypsum) false ceiling tiles of Size 595x595 mm	sqm	600
B1982	Galvanized iron intermediate cross-T section 15x32x0.33 mm (600mm long)	each	35
B1983	Galvanised MS hanger rod 6mm dia MS fully threaded up to 1000mm length	each	26
B1984	Precast C&D waste concrete block	1000 nos.	25150
B1985	Coupling/Socket fittings for 15.88 mm outer dia SS pipe	each	59
B1986	Aluminium profile industrial troughed sheet of Alloy 31500/31000/40800, conforming to IS 1254, IS 737, IS 2676, 0.71 mm thick, the profile detail width 1044/920 mm, cover width 1000/875 mm.	sqm	600
B1987	Aluminium profile industrial troughed sheet of Alloy 31500/31000/40800, conforming to IS 1254, IS 737, IS 2676, 0.91 mm thick, the profile detail width 1044/920 mm, cover width 1000/875 mm.	sqm	785
B1988	Cemfil AntiCrak Chopped Glass Fibre	kg	565
B1989	Cemfil AntiCrak Copped Glass Fibre	kg	711
	Green Building Materials		
B1990	40mm CFC, HCFC FREE Zero ODP Polyurethane foam(PUF) rigid insulation board	sqm	500
B1991	50mm CFC, HCFC FREE Zero ODP Polyurethane foam(PUF) rigid insulation board	sqm	600
B1992	60mm CFC, HCFC FREE Zero ODP Polyurethane foam(PUF) rigid insulation board	sqm	700
B1993	70mm CFC, HCFC FREE Zero ODP Polyurethane foam(PUF) rigid insulation board	sqm	800
B1994	40 mm thick PUF Spray	sqm	410
B1995	50 mm thick PUF Spray	sqm	510
B1996	60 mm thick PUF Spray	sqm	610
B1997	70 mm thick PUF Spray	sqm	710
B1998	Polymerised Adhesive (Patch applied)	sqm	80

Unique Code	Description	Unit	Rate (INR)
B1999	Fibreglass mesh 150 Gsm	sqm	50
B2000	Cold Adhesive like CPRX compound	litre	150
B2001	Polymerized mastic	sqm	2
B2002	Casing pipe 100 mm dia	metre	335
B2003	S.C.I. hand pump	each	670
B2004	Strainer brass 40 mm dia 1.5 metre long	each	600
B2005	M.S. pipe 150 mm dia casing pipe	metre	1126
B2006	M.S. pipe 200 mm dia casing pipe	metre	1400
B2007	PVC blind pipe 150 mm dia as per IS: 12818	metre	508
B2008	PVC blind pipe 200 mm dia as per IS: 12818	metre	788
B2009	M.S. cap 150 mm dia	each	150
B2010	M.S. cap 200 mm dia	each	200
B2011	M.S bail plug 150 mm dia	each	200
B2012	M.S bail plug 200 mm dia	each	220
B2013	PVC slotted pipe 150 mm dia as per IS: 12818	metre	550
B2014	PVC slotted pipe 200 mm dia as per IS: 12818	metre	840
B2015	Stone Boulder 50 mm to 200 mm	cum	850
B2016	Gravel 5 mm to 10 mm	cum	850
B2017	Gravel 1.5 mm to 2 mm	cum	850
B2018	M.S. pipe 100 mm dia casing pipe	metre	800
B2019	uPVC blind pipe 100 mm dia as per IS: 12818	metre	442
B2020	uPVC slotted pipe 100 mm dia as per IS: 12818	metre	480
B2021	M.S. cap 100 mm dia	each	135
B2022	M.S. bail plug 100 mm dia	each	160
B2023	Precast R.C.C. perforated slab	each	875
B2024	Water supply tanker of 5000 litre capacity	each	900
B2025	M.S. socket 100 mm dia	each	125
B2026	M.S. socket 150 mm dia	each	205
B2027	M.S. socket 200 mm dia	each	265
B2028	Pea Gravel	cum	950
B2029	Supply of Vastcrete Colour Hardener (2.5 kg /sqm) = 2.5x10=25 kg	kg	180
B2030	Supply of Mold Release (0.50 kg/sqm) = 0.5x10= 5kg	kg	275
B2031	Supply of PU/Acrylic Sealer (0.30 litre/sqm) =0.3x10=3 litres	litre	1350
B2032	Cost for 1000X2000mm Door (Plain Door in RAL colour shades)	sqm	1900.00
B2033	Cost for 1000X2000mm Door (Embossed Door in RAL colour shades)	sqm	2200.00
B2034	Cost for 1000X2000mm Door (Plain Door in wood finish shade)	sqm	2500.00
B2035	Cost for 1000X2000mm Door (Embossed door in Wood Finish shade)	sqm	2700.00
B2036	Cost for 1000X2000mm Door (Plain Double Leaf Door in RAL finish)	sqm	1950.00
B2037	Cost for 1000X2000mm Door (Plain Double leaf Door Wood Finish Shade)	sqm	2650.00
B2038	Cost for 1000X2000mm (Plain Door Frame in RAL shade)	sqm	700.00
B2039	Cost for 1000X2000mm (Double Door leaf Frame in RAL shade)	sqm	900.00
B2040	Cost for 1000X2000mm (Single door frame in wooden shade)	sqm	900.00
B2041	Cost for 1000X2000mm (Double Leaf Door Frame in wooden shade)	sqm	1100.00
B2042	Henkel Loctite UR 7221 Glue	kg	520.00
B2043	Paper Honeycomb core	sqm	110.00

Unique Code	Description	Unit	Rate (INR)
B2044	Coating Powder	kg	450.00
B2045	Wood finish shade	sqm	45.00
B2046	Epoxy screed with low viscosity and high strength with 5% wastage	litre	280
B2047	FQ sand with 5% wsatage	kg	10
B2048	Self smoothing Epoxy self levelling top coat thicken 900 micron with 5% wastage	set	2400
B2049	Matt finished vitrified tile 100x100 x16 mm	sqm	1000
B2050	Vitrified tile 300x300x9.8mm	sqm	500
B2051	Tactile tile	sqm	1000
B2052	0x10x7.50 cm Granite stone block (10x10x7.50 cm hand cut and chisel dressed on top	each	10
B2053	Matt Glossy	litre	450
B2054	Thinner	litre	70
B2055	Sand paper	each	10
B2056	Plastic emulsion paint(bio grade)	litre	450
B2057	Concealed cistern including flushing plate	each	5200
B2058	30mm thick gang saw cut mirror polished, pre-moulded and pre-polished machine cut granite stone	sqm	2600
B2059	Facing Tiles size 9" x 3" (GRC tiles) including 10% wastage and breakage	sqm	625
	Vitreous Chinaware Wash Hand Basin (White)		
B2060	Size 450mmx300mm	each	780
B2061	Size 550 mm x 400 mm x 815 mm	each	970
B2062	Size 630 mm x 450 mm x 830 mm	each	2200
B2063	Size 500 mm x 400 mm x 820 mm	each	850
B2064	Size 560mm x 430mm x 820 mm	each	1200
B2065	Size 560mm x 410mm (above counter oval)	each	1625
B2066	Size 49 cm dia (above counter round)	each	1950
B2067	Size 630mm x 500mm (above counter oval)	each	3000
B2068	Size 560mm x 450mm (Under counter oval)	each	1625
B2069	size 44cm dia (under counter round)	each	1700
B2070	Table Top (size 49 x 40 x 15 cm)	each	5950
B2071	Table Top round (size 40.5 x 40.5 x 14 cm)	each	5050
B2072	Table Top square (size 39 x 39 x 15 cm)	each	5300
B2073	Size 460mm x 330mm x 805 mm	each	875
B2074	Rack Bolt Screw Pair 115mm long for wash basin	each	75
	Single socket SWR UPVC soil waste or antisyphonage pipes as per IS 13592		
	Single Socket Type A		
B2075	160mm o/d single socket SWR UPVC pipe	metre	290
B2076	110mm o/d single socket SWR UPVC pipe	metre	130
B2077	90mm o/d single socket SWR UPVC pipe	metre	100
B2078	75mm o/d single socket SWR UPVC pipe	metre	75
	Single Socket Type B		
B2079	160mm o/d SWR UPVC pipe	metre	360
B2080	110mm o/d SWR UPVC pipe	metre	190
B2081	90mm o/d SWR UPVC pipe	metre	150
B2082	75mm o/d SWR UPVC pipe	metre	125

Unique Code	Description	Unit	Rate (INR)
	Materials for PHED works		
	Supplying & Fixing of Bell Mouth (IS 1538-1993)		
PH001	100 mm i/d	each	486
PH002	150 mm i/d	each	810
PH003	200 mm i/d	each	1242
PH004	250 mm i/d	each	1674
PH005	300 mm i/d	each	2430
PH006	350 mm i/d	each	3654
PH007	400 mm i/d	each	5040
PH008	450 mm i/d	each	5859
PH009	500 mm i/d	each	7560
PH010	600 mm i/d	each	12663
PH011	700 mm i/d	each	24624
PH012	800 mm i/d	each	35235
PH013	Ceiling fan 48'(1200mm) (IS 374)	each	2010
PH014	Ceiling fan 56" (1400mm) (IS 374)	each	2310
PH015	Exhaust fan (45cum/minute) (IS 374)	each	1310
PH016	V-notch Cast Iron	per kg	54
	Floating Arm		
PH017	150 mm	each	24840
PH018	200 mm	each	34992
PH019	250 mm	each	52488
PH020	300 mm	each	83970
PH021	350 mm	each	137151
PH022	400 mm	each	159188
	FILTER BEDS WASHING		
PH023	Taking out filter media top layer and replacing the same after screened, washed & cleaned.	cum	725
PH025	Taking out filter media 2nd layer and replacing the same after screened, washed & cleaned.	cum	700
PH026	Taking out filter media 3rd layer and replacing the same after screened, washed & cleaned.	cum	696
PH027	Taking out filter media 4th layer and replacing the same after screened, washed & cleaned.	cum	696
PH028	Taking out filter media bottom and other layers and replacing the same after screened, washed & cleaned.	cum	500
PH029	Taking out bed plates from filter beds and replacing same after washing.	each	20
PH030	Rubber matting 1 M x 2 M x 12 mm thick (IS code 15652-40091)	each	1339
	PVC Water bar (IS 12200-2001)		
PH031	150 mm wide X 4.65 mm thickness of wall	metre	150
PH032	150mm wide X 6.00 mm thickness of wall	metre	200
PH033	250 mm x 8-11 mm thickness of wall	metre	350
PH034	300 mm x 8 mm thickness of wall	metre	490
	BOKKY TYPE SHALLOW TUBWELL		
	Drilling of 250mm dia of bore through bokky type instrument		
PH035	0-50m BGL	metre	350
PH036	50-75m BGL	metre	400

Unique Code	Description	Unit	Rate (INR)
PH037	75-100m BGL	metre	450
PH038	225 mm dia UPVC pipe threaded (10kg/CM2)	metre	1250
PH039	225mm outer dia filter Jali (10 Kg/CM2)	metre	120
PH040	250 mm M.S. clamp	each	1500
PH041	PVC cap. For 225mm outer dia UPVC pipe	each	700
PH042	Development of tube well with pump of suitable rating to that full satisfaction and as directed by the Engineer-in-charge	per hour	1200
	INSTALLATION OF SHALLOW/ MEDIUM/ DEEP TUBEWELLS		
	Drilling of 609.60mm dia bore by hydraulic rotary drilling (reverse circulation method)		
PH043	Drilling from 0 metre but up to 200 metre BGL	metre	750
PH044	Above 200 metre but up to 300 metre BGL	metre	850
PH045	Above 300 metre but up to 400 metre BGL	metre	1100
PH046	Above 400 metre up to the depth required as per site requirement	metre	1400
PH047	Reducing socket as per IS:226/1975	each	2500
PH048	Bail plug hook of 219.10mm as per IS 226/1975	each	1000
PH049	Supplying graded gravel of size as per ISI 4097/1988 (A-Grade)	cum	1200
PH050	Well threaded M.S. cap for 273.10mm outer dia M.S. pipe as per ISI 226/1975	each	500
PH051	Supplying deodar wooden box as per IS 226/1975 made of 20mm thick wood size 60 cm x 75 cm x 30 cm	each	500
PH052	273.10mm M.S. clamp as per IS 226 / 1975	each	2000
	Development of tube well using compressor including the cost of all consumable stores, fuel, oil, compressors, pumps and machinery etc.		
PH053	450cfm x 250 psi	per hour	4732
PH054	800cfm x 550 psi	per hour	6000
PH055	1100cfm x 350 psi	per hour	5500
PH056	Electric logging of tube well.	per job	12000
PH057	Centralizer guides at a spacing of 12 m centre to centre	each	100
	ERW M.S. pipes in bore wells ISI marked		
PH058	200x6.4mm	metre	2047
PH059	250x8.0mm	metre	2669
	ISI marked ERW Cage Type MS Vee Wire Wound Screens		
	Stainless Steel Screens		
PH060	200x8.0x0.50mm	metre	6786
PH061	200x8.0x0.75mm	metre	6696
PH062	200x6.3x0.50mm	metre	6250
PH063	200x6.3x0.75mm	metre	6161
PH064	250x7.3x0.50mm	metre	6875
PH065	250x7.3x0.75mm	metre	6785
PH066	250x8.2x0.50mm	metre	7232
PH067	250x8.2x0.75mm	metre	7143

Unique Code	Description	Unit	Rate (INR)
	Galvanized Screens		
PH068	200x7.0x0.50mm	metre	3482
PH069	250x8.0x0.50mm	metre	4375
PH070	250x8.0x0.75mm	metre	4196
PH071	250x10.0x0.50mm	metre	5000
PH072	250x10.0x0.75mm	metre	4911
PH073	Ductile Iron class K-9 pipe conforming to IS 8329-1100mm dia	metre	23850
PH074	Ductile Iron class K-9 pipe conforming to IS 8329-1200mm dia	metre	26300
PH075	Gantry 1 tonne capacity	tonne	45000
PH076	Gantry 1.5 tonne capacity	tonne	60000
PH077	Gantry 2 tonne capacity	tonne	85000
PH078	Gantry 2.5 tonne capacity	tonne	105000
PH079	Gantry 3 tonne capacity	tonne	149000
PH080	Job charges for installation of gantry 1 tonne capacity	job	1400
PH081	Job charges for installation of gantry 1.5 tonne capacity	job	1400
PH082	Job charges for installation of gantry 2.0 tonne capacity	job	1550
PH083	Job charges for installation of gantry 2.5 tonne capacity	job	1550
PH084	Job charges for installation of gantry 3.0 tonne capacity	job	1925
PH087	15 KVA Capacity Transformer	each	53475
PH088	25 KVA Capacity Transformer	each	67150
PH089	50 KVA Capacity Transformer	each	140300
PH090	63 KVA Capacity Transformer	each	180600
PH091	100 KVA Capacity Transformer	each	207200
PH092	150 KVA Capacity Transformer	each	260780
PH093	175 KVA Capacity Transformer	each	287380
PH094	200 KVA Capacity Transformer	each	327670
PH095	250 KVA Capacity Transformer	each	380870
PH096	300 KVA CapacityTransformer	each	414120
PH097	400 KVA Capacity Transformer	each	454400
PH098	500 KVA Capacity Transformer	each	609725
PH099	600 KVA Capacity Transformer	each	689525
PH100	700 KVA Capacity Transformer	each	802975
PH101	800 KVA Capacity Transformer	each	829575
PH102	900 KVA Capacity Transformer	each	909375
PH103	1000 KVA Capacity Transformer	each	935975
PH104	1100 KVA Capacity Transformer	each	1082650
PH105	1200 KVA Capacity Transformer	each	1142500
PH106	Installation charges for 15 KVA Capacitytransformer	job	1925
PH107	Installation charges for 25 KVA Capacity Transformer	job	2300
PH108	Installation charges for 50 KVA Capacity Transformer	job	2300
PH109	Installation charges for 63 KVA Capacity Transformer	job	2700
PH110	Installation charges for 100 KVA Capacity Transformer	job	2700
PH111	Installation charges for 150 KVA Capacity Transformer	job	3080
PH112	Installation charges for 175 KVA Capacity Transformer	job	3080
PH113	Installation charges for 200 KVA Capacity Transformer	job	3470

Unique Code	Description	Unit	Rate (INR)
PH114	Installation charges for 250 KVA Capacity Transformer	job	3470
PH115	Installation charges for 300 KVA Capacity Transformer	job	3470
PH116	Installation charges for 400 KVA Capacity Transformer	job	3850
PH117	Installation charges for 500 KVA Capacity Transformer	job	4225
PH118	Installation charges for 600 KVA Capacity Transformer	job	4225
PH119	Installation charges for 700 KVA Capacity Transformer	job	4625
PH120	Installation charges for 800 KVA Capacity Transformer	job	4625
PH121	Installation charges for 900 KVA Capacity Transformer	job	4625
PH122	Installation charges for 1000 KVA Capacity Transformer	job	4625
PH123	Installation charges for 1100 KVA Capacity Transformer	job	5000
PH124	Installation charges for 1200 KVA Capacity Transformer	job	5000
PH125	G.O. Switch with all accessories	each	30000
PH126	Installation charges for G.O. Switch	job	1150
PH127	Wall mounted Chlorinator	each	13000
PH128	Installation charges wall mounted chlorinator	job	3000
PH129	CT Meter	each	11500
PH130	10 KVA Capacity DG Set	each	252000
PH131	20 KVA Capacity DG Set	each	275000
PH132	25 KVA Capacity DG Set	each	304000
PH133	50 KVA Capacity DG Set	each	445000
PH134	62.50 KVA Capacity DG Set	each	463000
PH135	100 KVA Capacity DG Set	each	665000
PH136	125 KVA Capacity DG Set	each	683000
PH137	160 KVA Capacity DG Set	each	968000
PH138	200 KVA Capacity DG Set	each	1152000
PH139	250 KVA Capacity DG Set	each	1414000
PH140	300 KVA Capacity DG Set	each	1775000
PH141	360 KVA Capacity DG Set	each	1960000
PH142	400 KVA Capacity DG Set	each	2211000
PH143	500 KVA Capacity DG Set	each	2781000
PH144	600 KVA Capacity DG Set	each	3519000
PH145	750 KVA Capacity DG Set	each	4853000
PH146	810 KVA Capacity DG Set	each	5445000
PH147	910 KVA Capacity DG Set	each	6336000
PH148	1010 KVA Capacity DG Set	each	6870000
PH149	Installation Charges 10 KVA Capacity DG Set	job	3850
PH150	Installation Charges 20 KVA Capacity DG Set	job	3850
PH151	Installation Charges 25 KVA Capacity DG Set	job	3850
PH152	Installation Charges 50 KVA Capacity DG Set	job	3850
PH153	Installation Charges 62.50 KVA Capacity DG Set	job	3850
PH154	Installation Charges 100 KVA Capacity DG Set	job	4600
PH155	Installation Charges 125 KVA Capacity DG Set	job	4600
PH156	Installation Charges 160 KVA Capacity DG Set	job	4600
PH157	Installation Charges 200 KVA Capacity DG Set	job	4600
PH158	Installation Charges 250 KVA Capacity DG Set	job	4600

Unique Code	Description	Unit	Rate (INR)
PH159	Installation Charges 300 KVA Capacity DG Set	job	4600
PH160	Installation Charges 360 KVA Capacity DG Set	job	4600
PH161	Installation Charges 400 KVA Capacity DG Set	job	4600
PH162	Installation Charges 500 KVA Capacity DG Set	job	4600
PH163	Installation Charges 600 KVA Capacity DG Set	job	6150
PH164	Installation Charges 750 KVA Capacity DG Set	job	6150
PH165	Installation Charges 810 KVA Capacity DG Set	job	6150
PH166	Installation Charges 910 KVA Capacity DG Set	job	6150
PH167	Installation Charges 1010 KVA Capacity DG Set	job	6150
PH168	Spun yarn/Hemp yarn	kg	50
PH169	Manhole cover and frame 20 kg with CC topping	each	1200
PH170	Manhole cover and frame 38 kg with CC topping	each	2250
PH171	10 mm dia threaded MS rod	kg	65
PH172	HDPE Pipe (PE-80 grade and PN-4 for sewer application)-200 mm outer diametre	metre	1138
PH173	HDPE Pipe (PE-80 grade and PN-4 for sewer application)-225 mm outer diametre	metre	1438
PH174	HDPE Pipe (PE-80 grade and PN-4 for sewer application)-250 mm outer diametre	metre	1772
PH175	HDPE Pipe (PE-80 grade and PN-4 for sewer application)-280 mm outer diametre	metre	2219
PH176	HDPE Pipe (PE-80 grade and PN-4 for sewer application)-315 mm outer diametre	metre	2788
PH177	HDPE Pipe (PE-80 grade and PN-4 for sewer application)-355 mm outer diametre	metre	3556
PH178	HDPE Pipe (PE-80 grade and PN-4 for sewer application)-400 mm outer diametre	metre	4604
PH179	HDPE Pipe (PE-80 grade and PN-4 for sewer application)-450 mm outer diametre	metre	5930
PH180	HDPE Pipe (PE-80 grade and PN-4 for sewer application)-500 mm outer diametre	metre	7311
PH181	HDPE Pipe (PE-80 grade and PN-4 for sewer application)-560 mm outer diametre	metre	9157
PH182	HDPE Pipe (PE-80 grade and PN-4 for sewer application)-630 mm outer diametre	metre	11554
PH183	HDPE Pipe (PE-80 grade and PN-4 for sewer application)-710 mm outer diametre	metre	14953
PH184	HDPE Pipe (PE-80 grade and PN-4 for sewer application)-800 mm outer diametre	metre	18946
PH185	HDPE Pipe (PE-80 grade and PN-4 for sewer application)-900 mm outer diametre	metre	23985
PH186	HDPE Pipe (PE-80 grade and PN-4 for sewer application)-1000 mm outer diametre	metre	29617
PH187	HDPE Pipe (PE-100 grade and PN-6 for sewer application)-200 mm outer diametre	metre	1344
PH188	HDPE Pipe (PE-100 grade and PN-6 for sewer application)-225 mm outer diametre	metre	1695
PH189	HDPE Pipe (PE-100 grade and PN-6 for sewer application)-250 mm outer diametre	metre	2090
PH190	HDPE Pipe (PE-100 grade and PN-6 for sewer application)-280 mm outer diametre	metre	2614
PH191	HDPE Pipe (PE-100 grade and PN-6 for sewer application)-315 mm outer diametre	metre	3309
PH192	HDPE Pipe (PE-100 grade and PN-6 for sewer application)-355 mm outer diametre	metre	4193
PH193	HDPE Pipe (PE-100 grade and PN-6 for sewer application)-400 mm outer diametre	metre	5450
PH194	HDPE Pipe (PE-100 grade and PN-6 for sewer application)-450 mm outer diametre	metre	6994
PH195	HDPE Pipe (PE-100 grade and PN-6 for sewer application)-500 mm outer diametre	metre	8644

Unique Code	Description	Unit	Rate (INR)
PH196	HDPE Pipe (PE-100 grade and PN-6 for sewer application)-560 mm outer diametre	metre	10805
PH197	HDPE Pipe (PE-100 grade and PN-6 for sewer application)-630 mm outer diametre	metre	13685
PH198	HDPE Pipe (PE-100 grade and PN-6 for sewer application)-710 mm outer diametre	metre	17645
PH199	HDPE Pipe (PE-100 grade and PN-6 for sewer application)-800 mm outer diametre	metre	22383
PH200	HDPE Pipe (PE-100 grade and PN-6 for sewer application)-900 mm outer diametre	metre	25200
PH201	HDPE Pipe (PE-100 grade and PN-6 for sewer application)-1000 mm outer diametre	metre	31135
PH202	HDPE Pipe (PE-100 grade and PN-8 for sewer application)-200 mm outer diametre	metre	1715
PH203	HDPE Pipe (PE-100 grade and PN-8 for sewer application)-225 mm outer diametre	metre	2165
PH204	HDPE Pipe (PE-100 grade and PN-8 for sewer application)-250 mm outer diametre	metre	2677
PH205	HDPE Pipe (PE-100 grade and PN-8 for sewer application)-280 mm outer diametre	metre	3350
PH206	HDPE Pipe (PE-100 grade and PN-8 for sewer application)-315 mm outer diametre	metre	4241
PH207	HDPE Pipe (PE-100 grade and PN-8 for sewer application)-355 mm outer diametre	metre	5370
PH208	HDPE Pipe (PE-100 grade and PN-8 for sewer application)-400 mm outer diametre	metre	6973
PH209	HDPE Pipe (PE-100 grade and PN-8 for sewer application)-450 mm outer diametre	metre	8969
PH210	HDPE Pipe (PE-100 grade and PN-8 for sewer application)-500 mm outer diametre	metre	11057
PH211	HDPE Pipe (PE-100 grade and PN-8 for sewer application)-560 mm outer diametre	metre	13855
PH212	HDPE Pipe (PE-100 grade and PN-8 for sewer application)-630 mm outer diametre	metre	17539
PH213	HDPE Pipe (PE-100 grade and PN-8 for sewer application)-710 mm outer diametre	metre	22600
PH214	HDPE Pipe (PE-100 grade and PN-10 for sewer application)-200 mm outer diametre	metre	2058
PH215	HDPE Pipe (PE-100 grade and PN-10 for sewer application)-225 mm outer diametre	metre	2604
PH216	HDPE Pipe (PE-100 grade and PN-10 for sewer application)-250 mm outer diametre	metre	3214
PH217	HDPE Pipe (PE-100 grade and PN-10 for sewer application)-280 mm outer diametre	metre	4006
PH218	HDPE Pipe (PE-100 grade and PN-10 for sewer application)-315 mm outer diametre	metre	5095
PH219	HDPE Pipe (PE-100 grade and PN-10 for sewer application)-355 mm outer diametre	metre	6463
PH220	HDPE Pipe (PE-100 grade and PN-10 for sewer application)-400 mm outer diametre	metre	8372
PH221	HDPE Pipe (PE-100 grade and PN-10 for sewer application)-450 mm outer diametre	metre	10779

Unique Code	Description	Unit	Rate (INR)
PH222	HDPE Pipe (PE-100 grade and PN-10 for sewer application)-500 mm outer diametre	metre	13292
PH223	HDPE Pipe (PE-100 grade and PN-10 for sewer application)-560 mm outer diametre	metre	16677
PH224	HDPE Pipe (PE-100 grade and PN-10 for sewer application)-630 mm outer diametre	metre	21072
PH225	Extra for every additional 4 metres depth or part thereof for depth of the invert level beyond 1.5 metres below ground level.	factor	8
PH226	quantity of lime and cement concrete		3
PH227	Quantity of brick work		8
PH228	Core cutting up to 200mm RCC slab - 40mm dia	each	200
PH229	Core cutting up to 200mm RCC slab - 100mm dia	each	550
PH230	Core cutting up to 200mm RCC slab - 125mm dia	each	700
PH231	Core cutting up to 200mm RCC slab - 150mm dia	each	800
PH232	Core cutting up to 200mm RCC slab - 175mm dia	each	950
PH233	Plastic encapsulated M.S. foot rest 30x20x15 cm	each	110
	AC Pressure Pipes (MAZZA Technology)		
	Water Supply pipes as per IS1592:2003		
PH234	100 mm internal diametre with coupler, EPDM ring and specials	metre	226
PH235	150 mm internal diametre with coupler, EPDM ring and specials	metre	415
PH236	200 mm internal diametre with coupler, EPDM ring and specials	metre	701
PH237	250 mm internal diametre with coupler, EPDM ring and specials	metre	889
PH238	300 mm internal diametre with coupler, EPDM ring and specials	metre	1228
PH239	350 mm internal diametre with coupler, EPDM ring and specials	metre	1504
PH240	400 mm internal diametre with coupler, EPDM ring and specials	metre	1964
PH241	450 mm internal diametre with coupler, EPDM ring and specials	metre	2301
PH242	500 mm internal diametre with coupler, EPDM ring and specials	metre	2865
PH243	600 mm internal diametre with coupler, EPDM ring and specials	metre	4081
PH244	700 mm internal diametre with coupler, EPDM ring and specials	metre	5254
PH245	800 mm internal diametre with coupler, EPDM ring and specials	metre	6924
PH246	900 mm internal diametre with coupler, EPDM ring and specials	metre	8729
PH247	1000 mm internal diametre with coupler, EPDM ring and specials	metre	10763
	Sewerage and Drainage pipes as per IS6908:1991		
	Class I (Ultimate load capacity 60KN/sqm)		
PH248	100 mm internal diametre with coupler, EPDM ring and specials	metre	212
PH249	150 mm internal diametre with coupler, EPDM ring and specials	metre	353
PH250	200 mm internal diametre with coupler, EPDM ring and specials	metre	562
PH251	250 mm internal diametre with coupler, EPDM ring and specials	metre	729
PH252	300 mm internal diametre with coupler, EPDM ring and specials	metre	930
PH253	350 mm internal diametre with coupler, EPDM ring and specials	metre	1174
PH254	400 mm internal diametre with coupler, EPDM ring and specials	metre	1453
PH255	450 mm internal diametre with coupler, EPDM ring and specials	metre	1708
PH256	500 mm internal diametre with coupler, EPDM ring and specials	metre	2159
PH257	600 mm internal diametre with coupler, EPDM ring and specials	metre	3000
PH258	700 mm internal diametre with coupler, EPDM ring and specials	metre	4407
PH259	800 mm internal diametre with coupler, EPDM ring and specials	metre	6148
PH260	900 mm internal diametre with coupler, EPDM ring and specials	metre	8148

Unique Code	Description	Unit	Rate (INR)
PH261	1000 mm internal diametre with coupler, EPDM ring and specials	metre	9915
	Class II (Ultimate load capacity 90KN/sqm)		
PH262	100 mm internal diametre with coupler, EPDM ring and specials	metre	219
PH263	150 mm internal diametre with coupler, EPDM ring and specials	metre	392
PH264	200 mm internal diametre with coupler, EPDM ring and specials	metre	654
PH265	250 mm internal diametre with coupler, EPDM ring and specials	metre	832
PH266	300 mm internal diametre with coupler, EPDM ring and specials	metre	1169
PH267	350 mm internal diametre with coupler, EPDM ring and specials	metre	1439
PH268	400 mm internal diametre with coupler, EPDM ring and specials	metre	1860
PH269	450 mm internal diametre with coupler, EPDM ring and specials	metre	2171
PH270	500 mm internal diametre with coupler, EPDM ring and specials	metre	2716
PH271	600 mm internal diametre with coupler, EPDM ring and specials	metre	3869
PH272	700 mm internal diametre with coupler, EPDM ring and specials	metre	4824
PH273	800 mm internal diametre with coupler, EPDM ring and specials	metre	6542
PH274	900 mm internal diametre with coupler, EPDM ring and specials	metre	8305
PH275	1000 mm internal diametre with coupler, EPDM ring and specials	metre	10381
	Class III (Ultimate load capacity 120KN/sqm)		
PH276	100 mm internal diametre with coupler, EPDM ring and specials	metre	306
PH277	150 mm internal diametre with coupler, EPDM ring and specials	metre	542
PH278	200 mm internal diametre with coupler, EPDM ring and specials	metre	926
PH279	250 mm internal diametre with coupler, EPDM ring and specials	metre	1188
PH280	300 mm internal diametre with coupler, EPDM ring and specials	metre	1653
PH281	350 mm internal diametre with coupler, EPDM ring and specials	metre	2092
PH282	400 mm internal diametre with coupler, EPDM ring and specials	metre	2733
PH283	450 mm internal diametre with coupler, EPDM ring and specials	metre	3233
PH284	500 mm internal diametre with coupler, EPDM ring and specials	metre	3979
PH285	600 mm internal diametre with coupler, EPDM ring and specials	metre	5612
PH286	700 mm internal diametre with coupler, EPDM ring and specials	metre	7415
PH287	800 mm internal diametre with coupler, EPDM ring and specials	metre	9936
PH288	900 mm internal diametre with coupler, EPDM ring and specials	metre	13000
PH289	1000 mm internal diametre with coupler, EPDM ring and specials	metre	15742
PH290	G.O. Switch without accessories	each	7000
	Supplying of fully automatic electric control panel board for T/Wells in Pump Chamber consisting of MS sheet of thickness 14 gauge duly painted box type floor mounted made of angle Frame containing 1 no. fully automatic air brake starter suitable for Motor of the following capacity, Min switch of suitable range with HRC fuse, 1 no. volt meter (0 to 500 volts), 1 No. Amp. Meter of 0 to 100 amp. 3 sets of indicating lamp capacitor of suitable capacity and 1 no. single phase preventers with the timer switch including wiring in panel board and suitable electric energy meter wiring in Electric Control Panel Board complete in all respect as per specification given in Schedule No. II, Including MCB, suitable, Capacitor, Wooden Box etc as per site requirement complete in fal respect. Make:- L&T, SIEMENS, BCH, SCHNEIDER.		
PH291	10 HP Motor	each	10000
PH292	15 HP Motor	each	15000
PH293	20 HP Motor	each	20000
PH294	25 HP Motor	each	25000
PH295	30 HP Motor	each	30000

Unique Code	Description			Unit	Rate (INR)
PH296	35 HP Motor			each	35000
PH297	40 HP Motor			each	40000
PH298	45 HP Motor			each	45000
PH299	50 HP Motor			each	50000
	Horizontal motor pumping set for clear water having head 20.00 m (KSB, CRI, Kirlosker, Cromp. Greeve,Lubi)	**Discharge in LPM**	**Power in BHP**		
PH300		400	3.00	each	73768
PH301		450	3.00	each	73768
PH302		500	5.00	each	73768
PH303		550	5.00	each	73768
PH304		600	5.00	each	82444
PH305		650	5.00	each	82444
PH306		700	5.00	each	82444
PH307		750	5.00	each	82444
PH308		800	7.50	each	82444
PH309		850	7.50	each	92203
PH310		900	7.50	each	92203
PH311		950	7.50	each	92203
PH312		1000	7.50	each	92203
PH313		1050	7.50	each	92203
PH314		1100	10.00	each	92203
PH315		1150	10.00	each	92203
PH316		1200	10.00	each	96996
PH317		1250	10.00	each	96996
PH318		1300	10.00	each	96996
PH319		1350	10.00	each	96996
PH320		1400	10.00	each	96996
PH321		1450	10.00	each	96996
PH322		1500	12.50	each	114752
PH323		1550	12.50	each	114752
PH324		1600	12.50	each	114752
PH325		1650	12.50	each	114752
PH326		1700	12.50	each	114752
PH327		1750	12.50	each	114752
PH328		1800	15.00	each	114752
PH329		1850	15.00	each	120412
PH330		1900	15.00	each	120412
PH331		1950	15.00	each	120412
PH332		2000	15.00	each	120412
PH333		2050	15.00	each	120412
PH334		2100	15.00	each	120412
PH335		2150	15.00	each	120412
PH336		2200	17.50	each	142048
PH337		2250	17.50	each	142048
PH338		2300	17.50	each	142048

Unique Code	Description			Unit	Rate (INR)
PH339		2350	17.50	each	142048
PH340		2400	17.50	each	142048
PH341		2450	20.00	each	142048
	Horizontal motor pumping set for clear water having head 22.50 m (KSB, CRI, Kirlosker, Cromp. Greeve,Lubi)	Discharge in LPM	Power in BHP		
PH342		400	3.00	each	73768
PH343		450	3.00	each	73768
PH344		500	5.00	each	82444
PH345		550	5.00	each	82444
PH346		600	5.00	each	82444
PH347		650	5.00	each	82444
PH348		700	5.00	each	82444
PH349		750	7.50	each	92203
PH350		800	7.50	each	92203
PH351		850	7.50	each	92203
PH352		900	7.50	each	92203
PH353		950	7.50	each	92203
PH354		1000	10.00	each	96996
PH355		1050	10.00	each	96996
PH356		1100	10.00	each	96996
PH357		1150	10.00	each	96996
PH358		1200	10.00	each	96996
PH359		1250	10.00	each	96996
PH360		1300	10.00	each	96996
PH361		1350	12.50	each	114752
PH362		1400	12.50	each	114752
PH363		1450	12.50	each	114752
PH364		1500	12.50	each	114752
PH365		1550	12.50	each	114752
PH366		1600	12.50	each	114752
PH367		1650	15.00	each	120412
PH368		1700	15.00	each	120412
PH369		1750	15.00	each	120412
PH370		1800	15.00	each	120412
PH371		1850	15.00	each	120412
PH372		1900	15.00	each	120412
PH373		1950	17.50	each	142048
PH374		2000	17.50	each	142048
PH375		2050	17.50	each	142048
PH376		2100	17.50	each	142048
PH377		2150	17.50	each	142048
PH378		2200	20.00	each	163684
PH379		2250	20.00	each	163684
PH380		2300	20.00	each	163684
PH381		2350	20.00	each	163684

Unique Code	Description			Unit	Rate (INR)
PH382		2400	20.00	each	163684
PH383		2450	20.00	each	163684
PH384		2500	20.00	each	163684
	Horizontal motor pumping set for clear water having head 25.00 m (KSB, CRI, Kirlosker, Cromp. Greeve,Lubi)	Discharge in LPM	Power in BHP		
PH385		400	3.00	each	73768
PH386		450	5.00	each	82444
PH387		500	5.00	each	82444
PH388		550	5.00	each	82444
PH389		600	5.00	each	82444
PH390		650	7.50	each	92203
PH391		700	7.50	each	92203
PH392		750	7.50	each	92203
PH393		800	7.50	each	92203
PH394		850	7.50	each	92203
PH395		900	10.00	each	96996
PH396		950	10.00	each	96996
PH397		1000	10.00	each	96996
PH398		1050	10.00	each	96996
PH399		1100	10.00	each	96996
PH400		1150	10.00	each	96996
PH401		1200	12.50	each	114752
PH402		1250	12.50	each	114752
PH403		1300	12.50	each	114752
PH404		1350	12.50	each	114752
PH405		1400	12.50	each	114752
PH406		1450	15.00	each	120412
PH407		1500	15.00	each	120412
PH408		1550	15.00	each	120412
PH409		1600	15.00	each	120412
PH410		1650	15.00	each	120412
PH411		1700	15.00	each	120412
PH412		1750	17.50	each	142048
PH413		1800	17.50	each	142048
PH414		1850	17.50	each	142048
PH415		1900	17.50	each	142048
PH416		1950	17.50	each	142048
PH417		2000	20.00	each	163684
PH418		2050	20.00	each	163684
PH419		2100	20.00	each	163684
PH420		2150	20.00	each	163684
PH421		2200	20.00	each	163684
PH422		2250	20.00	each	163684
PH423		2300	25.00	each	185320

Unique Code	Description			Unit	Rate (INR)
PH424		2350	25.00	each	185320
PH425		2400	25.00	each	185320
PH426		2450	25.00	each	185320
PH427		2500	25.00	each	185320
PH428		2550	25.00	each	185320
PH429		2600	25.00	each	185320
PH430		2650	25.00	each	185320
PH431		2700	25.00	each	185320
PH432		2750	25.00	each	185320
PH433		2800	25.00	each	185320
	Horizontal motor pumping set for clear water having head 27.50 m (KSB, CRI, Kirlosker, Cromp. Greeve,Lubi)	Discharge in LPM	Power in BHP		
PH434		400	5.00	each	82444
PH435		450	5.00	each	82444
PH436		500	5.00	each	82444
PH437		550	5.00	each	82444
PH438		600	7.50	each	92203
PH439		650	7.50	each	92203
PH440		700	7.50	each	92203
PH441		750	7.50	each	92203
PH442		800	7.50	each	92203
PH443		850	10.00	each	96996
PH444		900	10.00	each	96996
PH445		950	10.00	each	96996
PH446		1000	10.00	each	96996
PH447		1050	10.00	each	96996
PH448		1100	10.00	each	96996
PH449		1150	12.50	each	114752
PH450		1200	12.50	each	114752
PH451		1250	12.50	each	114752
PH452		1300	12.50	each	114752
PH453		1350	15.00	each	114752
PH454		1400	15.00	each	114752
PH455		1450	15.00	each	114752
PH456		1500	15.00	each	114752
PH457		1550	15.00	each	114752
PH458		1600	15.00	each	114752
PH459		1650	17.50	each	142048
PH460		1700	17.50	each	142048
PH461		1750	17.50	each	142048
PH462		1800	17.50	each	142048
PH463		1850	20.00	each	163684
PH464		1900	20.00	each	163684
PH465		1950	20.00	each	163684

Unique Code	Description			Unit	Rate (INR)
PH466		2000	20.00	each	163684
PH467		2050	20.00	each	163684
PH468		2100	20.00	each	163684
PH469		2150	22.50	each	185320
PH470		2200	22.50	each	185320
PH471		2250	22.50	each	185320
PH472		2300	25.00	each	206956
PH473		2350	25.00	each	206956
PH474		2400	25.00	each	206956
PH475		2450	25.00	each	206956
PH476		2500	25.00	each	206956
PH477		2550	25.00	each	206956
	Horizontal motor pumping set for clear water having head 30.00 m (KSB, CRI, Kirlosker, Cromp. Greeve,Lubi)	Discharge in LPM	Power in BHP		
PH478		400	5.00	each	82444
PH479		450	5.00	each	82444
PH480		500	5.00	each	82444
PH481		550	7.50	each	92203
PH482		600	7.50	each	92203
PH483		650	7.50	each	92203
PH484		700	7.50	each	92203
PH485		750	10.00	each	96996
PH486		800	10.00	each	96996
PH487		850	10.00	each	96996
PH488		900	10.00	each	96996
PH489		950	10.00	each	96996
PH490		1000	12.50	each	114752
PH491		1050	12.50	each	114752
PH492		1100	12.50	each	114752
PH493		1150	12.50	each	114752
PH494		1200	15.00	each	120412
PH495		1250	15.00	each	120412
PH496		1300	15.00	each	120412
PH497		1350	15.00	each	120412
PH498		1400	15.00	each	120412
PH499		1450	17.50	each	142048
PH500		1500	17.50	each	142048
PH501		1550	17.50	each	142048
PH502		1600	17.50	each	142048
PH503		1650	20.00	each	163684
PH504		1700	20.00	each	163684
PH505		1750	20.00	each	163684
PH506		1800	20.00	each	163684
PH507		1850	20.00	each	163684
PH508		1900	25.00	each	206956

Unique Code	Description			Unit	Rate (INR)
PH509		1950	25.00	each	206956
PH510		2000	25.00	each	206956
PH511		2050	25.00	each	206956
PH512		2100	25.00	each	206956
PH513		2150	25.00	each	206956
PH514		2200	25.00	each	206956
PH515		2250	25.00	each	206956
PH516		2300	25.00	each	206956
	Horizontal motor pumping set for clear water having head 35.00 m (KSB, CRI, Kirlosker, Cromp. Greeve,Lubi)	Discharge in LPM	Power in BHP		
PH517		400	5.00	each	82444
PH518		450	5.00	each	82444
PH519		500	7.50	each	92203
PH520		550	7.50	each	92203
PH521		600	7.50	each	92203
PH522		650	10.00	each	96996
PH523		700	10.00	each	96996
PH524		750	10.00	each	96996
PH525		800	10.00	each	96996
PH526		850	12.50	each	114752
PH527		900	12.50	each	114752
PH528		950	12.50	each	114752
PH529		1000	12.50	each	114752
PH530		1050	15.00	each	120412
PH531		1100	15.00	each	120412
PH532		1150	15.00	each	120412
PH533		1200	15.00	each	120412
PH534		1250	17.50	each	142048
PH535		1300	17.50	each	142048
PH536		1350	17.50	each	142048
PH537		1400	20.00	each	163684
PH538		1450	20.00	each	163684
PH539		1500	20.00	each	163684
PH540		1550	20.00	each	163684
PH541		1600	20.00	each	163684
PH542		1650	25.00	each	206956
PH543		1700	25.00	each	206956
PH544		1750	25.00	each	206956
PH545		1800	25.00	each	206956
PH546		1850	25.00	each	206956
PH547		1900	25.00	each	206956
PH548		1950	25.00	each	206956
PH549		2000	25.00	each	206956
PH550		2050	27.50	each	228592
PH551		2100	27.50	each	228592

Unique Code	Description			Unit	Rate (INR)
PH552		2150	27.50	each	228592
PH553		2200	30.00	each	250228
PH554		2250	30.00	each	250228
PH555		2300	30.00	each	250228
PH556		2350	30.00	each	250228
	Horizontal motor pumping set for clear water having head 40.00 m (KSB, CRI, Kirlosker, Cromp. Greeve.Lubi)	Discharge in LPM	Power in BHP		
PH557		400	7.50	each	92203
PH558		450	7.50	each	92203
PH559		500	7.50	each	92203
PH560		550	10.00	each	96996
PH561		600	10.00	each	96996
PH562		650	10.00	each	96996
PH563		700	10.00	each	96996
PH564		750	12.50	each	114752
PH565		800	12.50	each	114752
PH566		850	12.50	each	114752
PH567		900	15.00	each	120412
PH568		950	15.00	each	120412
PH569		1000	15.00	each	120412
PH570		1050	15.00	each	120412
PH571		1100	17.50	each	142048
PH572		1150	17.50	each	142048
PH573		1200	17.50	each	142048
PH574		1250	20.00	each	163684
PH575		1300	20.00	each	163684
PH576		1350	20.00	each	163684
PH577		1400	20.00	each	163684
PH578		1450	25.00	each	206956
PH579		1500	25.00	each	206956
PH580		1550	25.00	each	206956
PH581		1600	25.00	each	206956
PH582		1650	25.00	each	206956
PH583		1700	25.00	each	206956
PH584		1750	25.00	each	206956
PH585		1800	30.00	each	250228
PH586		1850	30.00	each	250228
PH587		1900	30.00	each	250228
PH588		1950	30.00	each	250228
PH589		2000	30.00	each	250228
PH590		2050	30.00	each	250228
PH591		2100	35.00	each	293500
PH592		2150	35.00	each	293500
PH593		2200	35.00	each	293500
PH594		2250	35.00	each	293500

Unique Code	Description			Unit	Rate (INR)
PH595		2300	35.00	each	293500
PH596		2350	35.00	each	293500
PH597		2400	35.00	each	293500
	Horizontal motor pumping set for clear water having head 45.00 m (KSB, CRI, Kirlosker, Cromp. Greeve,Lubi)	Discharge in LPM	Power in BHP		
PH598		400	7.50	each	92203
PH599		450	7.50	each	92203
PH600		500	10.00	each	96996
PH601		550	10.00	each	96996
PH602		600	10.00	each	96996
PH603		650	10.00	each	96996
PH604		700	12.50	each	114752
PH605		750	12.50	each	114752
PH606		800	15.00	each	120412
PH607		850	15.00	each	120412
PH608		900	15.00	each	120412
PH609		950	15.00	each	120412
PH610		1000	20.00	each	163684
PH611		1050	20.00	each	163684
PH612		1100	20.00	each	163684
PH613		1150	20.00	each	163684
PH614		1200	20.00	each	163684
PH615		1250	20.00	each	163684
PH616		1300	25.00	each	206956
PH617		1350	25.00	each	206956
PH618		1400	25.00	each	206956
PH619		1450	25.00	each	206956
PH620		1500	25.00	each	206956
PH621		1550	25.00	each	206956
PH622		1600	30.00	each	250228
PH623		1650	30.00	each	250228
PH624		1700	30.00	each	250228
PH625		1750	30.00	each	250228
PH626		1800	30.00	each	250228
PH627		1850	30.00	each	250228
PH628		1900	35.00	each	293500
PH629		1950	35.00	each	293500
PH630		2000	35.00	each	293500
PH631		2050	35.00	each	293500
PH632		2100	35.00	each	293500
PH633		2150	35.00	each	293500
PH634		2200	40.00	each	336772
PH635		2250	40.00	each	336772
PH636		2300	40.00	each	336772
PH637		2350	40.00	each	336772

Unique Code	Description			Unit	Rate (INR)
PH638		2400	40.00	each	336772
PH639		2450	40.00	each	336772
	Horizontal motor pumping set for clear water having head 50.00 m (KSB, CRI, Kirlosker, Cromp. Greeve,Lubi)	Discharge in LPM	Power in BHP		
PH640		400	7.50	each	92203
PH641		450	10.00	each	96996
PH642		500	10.00	each	96996
PH643		550	10.00	each	96996
PH644		600	12.50	each	114752
PH645		650	12.50	each	114752
PH646		700	12.50	each	114752
PH647		750	15.00	each	120412
PH648		800	15.00	each	120412
PH649		850	15.00	each	120412
PH650		900	17.50	each	142048
PH651		950	17.50	each	142048
PH652		1000	20.00	each	163684
PH653		1050	20.00	each	163684
PH654		1100	20.00	each	163684
PH655		1150	25.00	each	206956
PH656		1200	25.00	each	206956
PH657		1250	25.00	each	206956
PH658		1300	25.00	each	206956
PH659		1350	25.00	each	206956
PH660		1400	25.00	each	206956
PH661		1450	30.00	each	250228
PH662		1500	30.00	each	250228
PH663		1550	30.00	each	250228
PH664		1600	30.00	each	250228
PH665		1650	30.00	each	250228
PH666		1700	35.00	each	293500
PH667		1750	35.00	each	293500
PH668		1800	35.00	each	293500
PH669		1850	35.00	each	293500
PH670		1900	35.00	each	293500
PH671		1950	40.00	each	336772
PH672		2000	40.00	each	336772
PH673		2050	40.00	each	336772
PH674		2100	40.00	each	336772
PH675		2150	40.00	each	336772
PH676		2200	40.00	each	336772
PH677		2250	45.00	each	358408
PH678		2300	45.00	each	358408
PH679		2350	45.00	each	358408
PH680		2400	45.00	each	358408

Unique Code	Description			Unit	Rate (INR)
PH681		2450	45.00	each	358408
	Submersible motor pumping set non clog for sewerage having head 10.00 m (KSB, CRI, Kirlosker, Cromp. Greeve,Lubi)	Discharge in LPM	Power in BHP		
PH682		20	1.00	each	27200
PH683		50	1.00	each	27200
PH684		100	1.00	each	27200
PH685		150	1.00	each	27200
PH686		200	1.00	each	27200
PH687		250	1.00	each	27200
PH688		300	2.00	each	47200
PH689		400	2.00	each	47200
PH690		450	2.00	each	47200
PH691		500	2.00	each	47200
PH692		600	2.50	each	47200
PH693		620	2.50	each	47200
PH694		650	2.50	each	47200
PH695		700	2.50	each	47200
PH696		750	3.00	each	51200
PH697		800	3.00	each	51200
PH698		900	3.00	each	51200
PH699		1000	5.00	each	55200
PH700		1100	5.00	each	55200
PH701		1200	5.00	each	55200
PH702		1250	5.00	each	55200
PH703		1300	5.00	each	55200
PH704		1400	5.00	each	55200
PH705		1500	7.50	each	71200
PH706		1600	7.50	each	71200
PH707		1700	7.50	each	71200
PH708		1800	7.50	each	71200
PH709		1900	7.50	each	71200
PH710		2000	7.50	each	71200
PH711		2100	7.50	each	71200
PH712		2200	10.00	each	78400
PH713		2300	10.00	each	78400
PH714		2400	10.00	each	78400
PH715		2500	10.00	each	78400
PH716		2600	10.00	each	78400
PH717		2700	10.00	each	78400
PH718		2800	10.00	each	78400
PH719		2900	10.00	each	78400
PH720		3000	12.50	each	92800
PH721		3100	12.50	each	92800
PH722		3200	12.50	each	92800
PH723		3300	12.50	each	92800

Unique Code	Description			Unit	Rate (INR)
PH724		3400	12.50	each	92800
PH725		3500	15.00	each	142400
PH726		3600	15.00	each	142400
PH727		3700	15.00	each	142400
PH728		3800	15.00	each	142400
PH729		3900	15.00	each	142400
PH730		4000	15.00	each	142400
PH731		4100	15.00	each	142400
PH732		4200	17.50	each	164800
PH733		4300	17.50	each	164800
PH734		4400	17.50	each	164800
PH735		4500	17.50	each	164800
PH736		4600	17.50	each	164800
PH737		4700	17.50	each	164800
PH738		4800	17.50	each	164800
PH739		4900	20.00	each	212000
PH740		5000	20.00	each	212000
PH741		5100	20.00	each	212000
PH742		5200	20.00	each	212000
PH743		5300	20.00	each	212000
PH744		5400	20.00	each	212000
PH745		5500	20.00	each	212000
PH746		5600	20.00	each	212000
PH747		5700	22.50	each	214400
PH748		5800	22.50	each	214400
PH749		5900	22.50	each	214400
PH750		6000	22.50	each	214400
PH751		6100	22.50	each	214400
PH752		6200	25.00	each	228000
PH753		6300	25.00	each	228000
PH754		6400	25.00	each	228000
PH755		6500	25.00	each	228000
PH756		6600	25.00	each	228000
PH757		6700	25.00	each	228000
PH758		6800	25.00	each	228000
PH759		6900	25.00	each	228000
PH760		7000	27.50	each	240800
PH761		7100	27.50	each	240800
PH762		7200	27.50	each	240800
PH763		7300	27.50	each	240800
PH764		7400	27.50	each	240800
PH765		7500	27.50	each	240800
PH766		7600	30.00	each	252000
PH767		7700	30.00	each	252000
PH768		7800	30.00	each	252000

Unique Code	Description			Unit	Rate (INR)
PH769		7900	30.00	each	252000
PH770		8000	30.00	each	252000
PH771		8100	30.00	each	252000
PH772		8200	30.00	each	252000
PH773		8300	30.00	each	252000
PH774		8400	35.00	each	290400
PH775		8500	35.00	each	290400
PH776		8600	35.00	each	290400
PH777		8700	35.00	each	290400
PH778		8800	35.00	each	290400
PH779		8900	35.00	each	290400
PH780		9000	35.00	each	290400
PH781		9100	35.00	each	290400
PH782		9200	35.00	each	290400
PH783		9300	35.00	each	290400
PH784		9400	35.00	each	290400
PH785		9500	35.00	each	290400
PH786		9600	35.00	each	290400
PH787		9700	35.00	each	290400
PH788		9800	40.00	each	316000
PH789		9900	40.00	each	316000
PH790		10000	40.00	each	316000
PH791		10500	40.00	each	316000
PH792		11000	40.00	each	316000
	Submersible motor pumping set non clog for sewerage having head 12.00 m (KSB, CRI, Kirlosker, Cromp. Greeve,Lubi)	**Discharge in LPM**	**Power in BHP**		
PH793		20	1.00	each	27200
PH794		50	1.00	each	27200
PH795		100	1.00	each	27200
PH796		150	1.00	each	27200
PH797		200	1.00	each	27200
PH798		250	1.00	each	27200
PH799		300	2.00	each	47200
PH800		400	2.00	each	47200
PH801		450	2.00	each	47200
PH802		500	2.00	each	47200
PH803		600	2.50	each	47200
PH804		620	2.50	each	47200
PH805		650	2.50	each	47200
PH806		700	5.00	each	55200
PH807		750	5.00	each	55200
PH808		800	5.00	each	55200
PH809		900	5.00	each	55200
PH810		1000	5.00	each	55200
PH811		1100	5.00	each	55200

Unique Code	Description			Unit	Rate (INR)
PH812		1200	5.00	each	55200
PH813		1250	7.50	each	71200
PH814		1300	7.50	each	71200
PH815		1400	7.50	each	71200
PH816		1500	7.50	each	71200
PH817		1600	7.50	each	71200
PH818		1700	7.50	each	71200
PH819		1800	10.00	each	78400
PH820		1900	10.00	each	78400
PH821		2000	10.00	each	78400
PH822		2100	10.00	each	78400
PH823		2200	10.00	each	78400
PH824		2300	10.00	each	78400
PH825		2400	10.00	each	78400
PH826		2500	12.50	each	92800
PH827		2600	12.50	each	92800
PH828		2700	12.50	each	92800
PH829		2800	12.50	each	92800
PH830		2900	15.00	each	142400
PH831		3000	15.00	each	142400
PH832		3100	15.00	each	142400
PH833		3200	15.00	each	142400
PH834		3300	15.00	each	142400
PH835		3400	15.00	each	142400
PH836		3500	17.50	each	164800
PH837		3600	17.50	each	164800
PH838		3700	17.50	each	164800
PH839		3800	17.50	each	164800
PH840		3900	17.50	each	164800
PH841		4000	17.50	each	164800
PH842		4100	20.00	each	212000
PH843		4200	20.00	each	212000
PH844		4300	20.00	each	212000
PH845		4400	20.00	each	212000
PH846		4500	20.00	each	212000
PH847		4600	20.00	each	212000
PH848		4700	20.00	each	212000
PH849		4800	22.50	each	214400
PH850		4900	22.50	each	214400
PH851		5000	22.50	each	214400
PH852		5100	22.50	each	214400
PH853		5200	25.00	each	228000
PH854		5300	25.00	each	228000
PH855		5400	25.00	each	228000
PH856		5500	25.00	each	228000

Unique Code	Description			Unit	Rate (INR)
PH857		5600	25.00	each	228000
PH858		5700	25.00	each	228000
PH859		5800	25.00	each	228000
PH860		5900	27.50	each	240800
PH861		6000	27.50	each	240800
PH862		6100	27.50	each	240800
PH863		6200	27.50	each	240800
PH864		6300	30.00	each	252000
PH865		6400	30.00	each	252000
PH866		6500	30.00	each	252000
PH867		6600	30.00	each	252000
PH868		6700	30.00	each	252000
PH869		6800	30.00	each	252000
PH870		6900	30.00	each	252000
PH871		7000	35.00	each	290400
PH872		7100	35.00	each	290400
PH873		7200	35.00	each	290400
PH874		7300	35.00	each	290400
PH875		7400	35.00	each	290400
PH876		7500	35.00	each	290400
PH877		7600	35.00	each	290400
PH878		7700	35.00	each	290400
PH879		7800	35.00	each	290400
PH880		7900	35.00	each	290400
PH881		8000	35.00	each	290400
PH882		8100	40.00	each	316000
PH883		8200	40.00	each	316000
PH884		8300	40.00	each	316000
PH885		8400	40.00	each	316000
PH886		8500	40.00	each	316000
PH887		8600	40.00	each	316000
PH888		8700	40.00	each	316000
PH889		8800	40.00	each	316000
PH890		8900	40.00	each	316000
PH891		9000	40.00	each	316000
PH892		9100	40.00	each	316000
PH893		9200	40.00	each	316000
	Submersible motor pumping set non clog for sewerage having head 15.00 m (KSB, CRI, Kirlosker, Cromp. Greeve,Lubi)	**Discharge in LPM**	**Power in BHP**		
PH894		20	1.00	each	27200
PH895		50	1.00	each	27200
PH896		100	1.00	each	27200
PH897		150	1.00	each	27200
PH898		200	1.00	each	27200
PH899		250	1.00	each	27200

Unique Code	Description			Unit	Rate (INR)
PH900		300	2.00	each	47200
PH901		400	2.50	each	47200
PH902		450	2.50	each	47200
PH903		500	3.00	each	51200
PH904		600	5.00	each	55200
PH905		620	5.00	each	55200
PH906		650	5.00	each	55200
PH907		700	5.00	each	55200
PH908		750	5.00	each	55200
PH909		800	5.00	each	55200
PH910		900	5.00	each	55200
PH911		1000	5.00	each	55200
PH912		1100	7.50	each	71200
PH913		1200	7.50	each	71200
PH914		1250	7.50	each	71200
PH915		1300	7.50	each	71200
PH916		1400	7.50	each	71200
PH917		1500	10.00	each	78400
PH918		1600	10.00	each	78400
PH919		1700	10.00	each	78400
PH920		1800	10.00	each	78400
PH921		1900	10.00	each	78400
PH922		2000	12.50	each	92800
PH923		2100	12.50	each	92800
PH924		2200	12.50	each	92800
PH925		2300	12.50	each	92800
PH926		2400	15.00	each	142400
PH927		2500	15.00	each	142400
PH928		2600	15.00	each	142400
PH929		2700	15.00	each	142400
PH930		2800	15.00	each	142400
PH931		2900	17.50	each	164800
PH932		3000	17.50	each	164800
PH933		3100	17.50	each	164800
PH934		3200	17.50	each	164800
PH935		3300	20.00	each	212400
PH936		3400	20.00	each	212400
PH937		3500	20.00	each	212400
PH938		3600	20.00	each	212400
PH939		3700	20.00	each	212400
PH940		3800	22.50	each	214400
PH941		3900	22.50	each	214400
PH942		4000	22.50	each	214400
PH943		4100	22.50	each	214400
PH944		4200	25.00	each	228000

Unique Code	Description			Unit	Rate (INR)
PH945		4300	25.00	each	228000
PH946		4400	25.00	each	228000
PH947		4500	25.00	each	228000
PH948		4600	25.00	each	228000
PH949		4700	27.50	each	240800
PH950		4800	27.50	each	240800
PH951		4900	27.50	each	240800
PH952		5000	27.50	each	240800
PH953		5100	30.00	each	252000
PH954		5200	30.00	each	252000
PH955		5300	30.00	each	252000
PH956		5400	30.00	each	252000
PH957		5500	30.00	each	252000
PH958		5600	35.00	each	290400
PH959		5700	35.00	each	290400
PH960		5800	35.00	each	290400
PH961		5900	35.00	each	290400
PH962		6000	35.00	each	290400
PH963		6100	35.00	each	290400
PH964		6200	35.00	each	290400
PH965		6300	35.00	each	290400
PH966		6400	35.00	each	290400
PH967		6500	40.00	each	316000
PH968		6600	40.00	each	316000
PH969		6700	40.00	each	316000
PH970		6800	40.00	each	316000
PH971		6900	40.00	each	316000
PH972		7000	40.00	each	316000
PH973		7100	40.00	each	316000
PH974		7200	40.00	each	316000
PH975		7300	40.00	each	316000
	Submersible motor pumping set non clog for sewerage having head 18.00 m (KSB, CRI, Kirlosker, Cromp. Greeve,Lubi)	**Discharge in LPM**	**Power in BHP**		
PH976		20	1.00	each	27200
PH977		50	1.00	each	27200
PH978		100	1.00	each	27200
PH979		150	1.00	each	27200
PH980		200	2.00	each	47200
PH981		250	2.00	each	47200
PH982		300	2.00	each	47200
PH983		400	3.00	each	51200
PH984		450	3.00	each	51200
PH985		500	3.00	each	51200
PH986		600	5.00	each	55200
PH987		620	5.00	each	55200

Unique Code	Description			Unit	Rate (INR)
PH988		650	5.00	each	55200
PH989		700	5.00	each	55200
PH990		750	5.00	each	55200
PH991		800	5.00	each	55200
PH992		900	7.50	each	71200
PH993		1000	7.50	each	71200
PH994		1100	7.50	each	71200
PH995		1200	10.00	each	78400
PH996		1250	10.00	each	78400
PH997		1300	10.00	each	78400
PH998		1400	10.00	each	78400
PH999		1500	10.00	each	78400
PH1000		1600	12.50	each	92800
PH1001		1700	12.50	each	92800
PH1002		1800	12.50	each	92800
PH1003		1900	12.50	each	92800
PH1004		2000	15.00	each	142400
PH1005		2100	15.00	each	142400
PH1006		2200	15.00	each	142400
PH1007		2300	15.00	each	142400
PH1008		2400	17.50	each	164800
PH1009		2500	17.50	each	164800
PH1010		2600	17.50	each	164800
PH1011		2700	20.00	each	212000
PH1012		2800	20.00	each	212000
PH1013		2900	20.00	each	212000
PH1014		3000	20.00	each	212000
PH1015		3100	20.00	each	212000
PH1016		3200	22.50	each	214400
PH1017		3300	22.50	each	214400
PH1018		3400	22.50	each	214400
PH1019		3500	25.00	each	228000
PH1020		3600	25.00	each	228000
PH1021		3700	25.00	each	228000
PH1022		3800	25.00	each	228000
PH1023		3900	27.50	each	240800
PH1024		4000	27.50	each	240800
PH1025		4100	27.50	each	240800
PH1026		4200	30.00	each	252000
PH1027		4300	30.00	each	252000
PH1028		4400	30.00	each	252000
PH1029		4500	30.00	each	252000
PH1030		4600	30.00	each	252000
PH1031		4700	35.00	each	290400
PH1032		4800	35.00	each	290400

Unique Code	Description			Unit	Rate (INR)
PH1033		4900	35.00	each	290400
PH1034		5000	35.00	each	290400
PH1035		5100	35.00	each	290400
PH1036		5200	35.00	each	290400
PH1037		5300	35.00	each	290400
PH1038		5400	40.00	each	316000
PH1039		5500	40.00	each	316000
PH1040		5600	40.00	each	316000
PH1041		5700	40.00	each	316000
PH1042		5800	40.00	each	316000
PH1043		5900	40.00	each	316000
PH1044		6000	40.00	each	316000
PH1045		6100	40.00	each	316000
	Submersible motor pumping set non clog for sewerage having head 20.00 m (KSB, CRI, Kirlosker, Cromp. Greeve,Lubi)	**Discharge in LPM**	**Power in BHP**		
PH1046		20	1.00	each	27200
PH1047		50	1.00	each	27200
PH1048		100	1.00	each	27200
PH1049		150	1.00	each	27200
PH1050		200	2.00	each	47200
PH1051		250	2.00	each	47200
PH1052		300	2.50	each	47200
PH1053		400	3.00	each	51200
PH1054		450	3.00	each	51200
PH1055		500	5.00	each	55200
PH1056		600	5.00	each	55200
PH1057		620	5.00	each	55200
PH1058		650	5.00	each	55200
PH1059		700	5.00	each	55200
PH1060		750	7.50	each	71200
PH1061		800	7.50	each	71200
PH1062		900	7.50	each	71200
PH1063		1000	7.50	each	71200
PH1064		1100	10.00	each	78400
PH1065		1200	10.00	each	78400
PH1066		1250	10.00	each	78400
PH1067		1300	10.00	each	78400
PH1068		1400	10.00	each	78400
PH1069		1500	12.50	each	92800
PH1070		1600	12.50	each	92800
PH1071		1700	12.50	each	92800
PH1072		1800	15.00	each	142400
PH1073		1900	15.00	each	142400
PH1074		2000	15.00	each	142400
PH1075		2100	15.00	each	142400

Unique Code	Description			Unit	Rate (INR)
PH1076		2200	17.50	each	164800
PH1077		2300	17.50	each	164800
PH1078		2400	17.50	each	164800
PH1079		2500	20.00	each	212000
PH1080		2600	20.00	each	212000
PH1081		2700	20.00	each	212000
PH1082		2800	20.00	each	212000
PH1083		2900	22.50	each	214400
PH1084		3000	22.50	each	214400
PH1085		3100	22.50	each	214400
PH1086		3200	25.00	each	228000
PH1087		3300	25.00	each	228000
PH1088		3400	25.00	each	228000
PH1089		3500	25.00	each	228000
PH1090		3600	27.50	each	240800
PH1091		3700	27.50	each	240800
PH1092		3800	30.00	each	252000
PH1093		3900	30.00	each	252000
PH1094		4000	30.00	each	252000
PH1095		4100	30.00	each	252000
PH1096		4200	35.00	each	290400
PH1097		4300	35.00	each	290400
PH1098		4400	35.00	each	290400
PH1099		4500	35.00	each	290400
PH1100		4600	35.00	each	290400
PH1101		4700	35.00	each	290400
PH1102		4800	35.00	each	290400
PH1103		4900	40.00	each	316000
PH1104		5000	40.00	each	316000
PH1105		5100	40.00	each	316000
PH1106		5200	40.00	each	316000
PH1107		5300	40.00	each	316000
PH1108		5400	40.00	each	316000
PH1109		5500	40.00	each	316000
	Submersible motor pumping set non clog for sewerage having head 25.00 m (KSB, CRI, Kirlosker, Cromp. Greeve,Lubi)	Discharge in LPM	Power in BHP		
PH1110		20	1.00	each	27200
PH1111		50	1.00	each	27200
PH1112		100	1.00	each	27200
PH1113		150	2.00	each	47200
PH1114		200	2.00	each	47200
PH1115		250	2.50	each	47200
PH1116		300	3.00	each	51200
PH1117		400	5.00	each	55200
PH1118		450	5.00	each	55200

Unique Code	Description			Unit	Rate (INR)
PH1119		500	5.00	each	55200
PH1120		600	5.00	each	55200
PH1121		620	5.00	each	55200
PH1122		650	7.50	each	71200
PH1123		700	7.50	each	71200
PH1124		750	7.50	each	71200
PH1125		800	7.50	each	71200
PH1126		900	10.00	each	78400
PH1127		1000	10.00	each	78400
PH1128		1100	10.00	each	78400
PH1129		1200	12.50	each	92800
PH1130		1250	12.50	each	92800
PH1131		1300	12.50	each	92800
PH1132		1400	12.50	each	92800
PH1133		1500	15.00	each	142400
PH1134		1600	15.00	each	142400
PH1135		1700	15.00	each	142400
PH1136		1800	17.50	each	164800
PH1137		1900	17.50	each	164800
PH1138		2000	20.00	each	212000
PH1139		2100	20.00	each	212000
PH1140		2200	20.00	each	212000
PH1141		2300	22.50	each	264400
PH1142		2400	22.50	each	264400
PH1143		2500	25.00	each	228000
PH1144		2600	25.00	each	228000
PH1145		2700	25.00	each	228000
PH1146		2800	25.00	each	228000
PH1147		2900	30.00	each	252000
PH1148		3000	30.00	each	252000
PH1149		3100	30.00	each	252000
PH1150		3200	30.00	each	252000
PH1151		3300	30.00	each	252000
PH1152		3400	35.00	each	290400
PH1153		3500	35.00	each	290400
PH1154		3600	35.00	each	290400
PH1155		3700	35.00	each	290400
PH1156		3800	35.00	each	290400
PH1157		3900	40.00	each	316000
PH1158		4000	40.00	each	316000
PH1159		4100	40.00	each	316000
PH1160		4200	40.00	each	316000
PH1161		4300	40.00	each	316000
PH1162		4400	40.00	each	316000

Unique Code	Description			Unit	Rate (INR)
	Submersible motor pumping set non clog for sewerage having head 30.00 m (KSB, CRI, Kirlosker, Cromp. Greeve,Lubi)	Discharge in LPM	Power in BHP		
PH1163		20	1.00	each	27200
PH1164		50	1.00	each	27200
PH1165		100	1.00	each	27200
PH1166		150	2.00	each	47200
PH1167		200	2.50	each	47200
PH1168		250	3.00	each	51200
PH1169		300	5.00	each	55200
PH1170		400	5.00	each	55200
PH1171		450	5.00	each	55200
PH1172		500	5.00	each	55200
PH1173		600	7.50	each	71200
PH1174		620	7.50	each	71200
PH1175		650	7.50	each	71200
PH1176		700	7.50	each	71200
PH1177		750	10.00	each	78400
PH1178		800	10.00	each	78400
PH1179		900	10.00	each	78400
PH1180		1000	12.50	each	92800
PH1181		1100	12.50	each	92800
PH1182		1200	15.00	each	142400
PH1183		1250	15.00	each	142400
PH1184		1300	15.00	each	142400
PH1185		1400	15.00	each	142400
PH1186		1500	17.50	each	164800
PH1187		1600	17.50	each	164800
PH1188		1700	20.00	each	212000
PH1189		1800	20.00	each	212000
PH1190		1900	22.50	each	214400
PH1191		2000	22.50	each	214400
PH1192		2100	25.00	each	228000
PH1193		2200	25.00	each	228000
PH1194		2300	25.00	each	228000
PH1195		2400	27.50	each	240800
PH1196		2500	27.50	each	240800
PH1197		2600	30.00	each	252000
PH1198		2700	30.00	each	252000
PH1199		2800	35.00	each	290400
PH1200		2900	35.00	each	290400
PH1201		3000	35.00	each	290400
PH1202		3100	35.00	each	290400
PH1203		3200	35.00	each	290400
PH1204		3300	40.00	each	316000
PH1205		3400	40.00	each	316000

Unique Code	Description			Unit	Rate (INR)
PH1206		3500	40.00	each	316000
PH1207		3600	40.00	each	316000
	Electrical Materials **Note: Rates of material having code starting with EL are not to be used for the procurement purpose. These are the current market rates used for the purpose of analysis of rates of this edition of HSR**				
EL001	Drilling of 46 Nos 12 mm dia holes on G.I. pipe			LS	300
EL002	Solder jointing			each	12
	WIRE				
EL003	1.5 sq. mm ISI marked, FRLS PVC insulated, single core copper conductor cable			metre	11
EL004	2.5 sq. mm ISI marked, FRLS PVC insulated, single core copper conductor cable			metre	18
EL005	4.0 sq. mm ISI marked, FRLS PVC insulated, single core copper conductor cable			metre	26
EL006	6.0 sq. mm ISI marked, FRLS PVC insulated, single core copper conductor cable			metre	34
EL007	10 sq. mm ISI marked, FRLS PVC insulated, single core copper conductor cable			metre	80
EL008	16/0.20 mm (0.5 sqmm) twin core FRLS PVC sheathed, flat flexible copper cable			metre	9
EL009	2 pair, 0.5 mm dia annealed copper conductor, FRLS PVC insulated, unarmoured, telephone cable			metre	3
EL010	4 pair, 0.5 mm dia annealed copper conductor, FRLS PVC insulated, unarmoured, telephone cable			metre	9
EL011	Cat6 Cable			meter	24
EL012	Cat6a Cable			meter	35
	CONDUIT (STEEL & PVC) AND ACCESSORIES				
	SUBMERSIBLE CABLE COPPER				
EL013	SUBMERSIBLE COPPER CABLE 3 Core 1.5 sqmm			metre	31
EL014	SUBMERSIBLE COPPER CABLE 3 Core 2.5 sqmm			metre	48
EL015	SUBMERSIBLE COPPER CABLE 3 Core 4 sqmm			metre	72
EL016	SUBMERSIBLE COPPER CABLE 3 Core 6 sqmm			metre	108
EL017	SUBMERSIBLE COPPER CABLE 3 Core 10 sqmm			metre	142
EL018	SUBMERSIBLE COPPER CABLE 3 Core 16 Sqmm			metre	225
EL019	SUBMERSIBLE COPPER CABLE 3 Core 25 Sqmm			metre	340
	MS CONDUIT				
EL020	20 mm dia, ISI marked, steel conduit			metre	45
EL021	25 mm dia, ISI marked, steel conduit			metre	55
EL022	32 mm dia, ISI marked, steel conduit			metre	80
EL023	40 mm dia, ISI marked, steel conduit			metre	135
	PVC CONDUIT				
EL024	20 mm dia, ISI marked, PVC conduit			metre	12
EL025	25 mm dia, ISI marked, PVC conduit			metre	16
EL026	32 mm dia, ISI marked, PVC conduit			metre	25
EL027	40 mm dia, ISI marked, PVC conduit			metre	34
EL028	GI flexible conduit 15 mm			metre	21
EL029	GI flexible conduit 20 mm			metre	23
EL030	GI flexible conduit 25 mm			metre	35
EL031	U-PVC trunking channel 25*12 mm			metre	11
EL032	U-PVC trunking channel 32*12 mm			metre	14
EL033	U-PVC trunking channel 38*25 mm			metre	32
EL034	U-PVC trunking channel 50*50 mm			metre	58

Unique Code	Description	Unit	Rate (INR)
EL035	MS CLAMPS	each	20
EL036	Hinges	each	10
	Metal Boxes		
EL037	Modular GI box for 2 module	each	23
EL038	Modular GI box for 3 module	each	31
EL039	Modular GI box for 4 module	each	38
EL040	Modular GI box for 6 module	each	51
EL041	Modular GI box for 8 module	each	66
EL042	Modular GI box for 12 module	each	81
EL043	75 mm X 75 mm X 60 mm deep metal box	each	20
EL044	100 mm X 100 mm X 60 mm deep metal box	each	28
EL045	150 mm X 75 mm X 60 mm deep metal box	each	31
EL046	150 mm X 150 mm X 60 mm deep metal box	each	44
EL047	180 mm X 100 mm X 60 mm deep metal box	each	37
EL048	200 mm X 150 mm X 60 mm deep metal box	each	60
EL049	200 mm X 250 mm X 75 mm deep metal box	each	90
	WIRING SWITCHES AND ACCESSORIES		
EL050	3 mm thick phenolic laminated sheet	sqcm	0
EL051	Ceiling rose, 3 pin, 5 A ISI marked	each	12
EL052	S.P. 5/6 A, one way modular switch, ISI marked	each	28
EL053	S.P. 5/6 A, two way modular switch, ISI marked	each	57
EL054	S.P. 15/16 A, one way modular switch, ISI marked	each	63
EL055	3 pin 5/6 A modular socket outlet, ISI marked	each	60
EL056	6 pin 15/16 A modular socket outlet, ISI marked	each	96
EL057	Modular bell push, ISI marked	each	59
EL058	Stepped type Modular Fan regulator (2 module)	each	210
EL059	Telephone Socket outlet modular type	each	54
EL060	T.V. Socket outlet modular type	each	54
EL061	Modular blanking plate	each	12
EL062	RJ 45 Computer DATA socket outlet for CAT 6 or CAT6e cable Modular type	each	250
EL063	USB Charger, 1000mA, 5V, 1 Module	each	398
EL064	32A D.P. Main Switch With Key Ring Tag 2 Module	each	271
EL065	Modular base & cover plate for 2 module	each	38
EL066	Modular base & cover plate for 3 module	each	48
EL067	Modular base & cover plate for 4 module	each	56
EL068	Modular base & cover plate for 6 module	each	78
EL069	Modular base & cover plate for 8 module	each	100
EL070	Modular base & cover plate for 12 module	each	123
EL071	Passive Infrared(PIR) technology based occupancy sensor	each	3090
EL072	Passive Infrared(PIR) technology based occupancy sensor with day light dimming(lighting level shall be regulated as per availability of natural day light	each	4674
EL073	S.P. 5/6 A, one way switch, piano type ISI marked	each	10
EL074	S.P. 5/6 A, two way switch, piano type ISI marked	each	17
EL075	S.P. 15/16 A, one way switch, piano type ISI marked	each	47
EL076	3 pin 5/6 A socket outlet, piano type ISI marked	each	19
EL077	6 pin 15/16 & 5/6 A socket outlet, piano type ISI marked	each	60

Unique Code	Description	Unit	Rate (INR)
EL078	Bell push, piano type	each	12
EL079	Telephone Socket outlet piano type	each	20
EL080	Call BELL MUSICAL	each	70
EL081	Call bell/ buzzer, single phase	each	35
EL082	Bakelite Batten/ Angle Holder	each	28
EL083	Bed Switch Piano type	each	18
EL084	Rotary electronic step type Fan regulator	each	150
EL085	3 mm thick phenolic laminated sheet	sqcm	0
EL086	5 mm thick phenolic laminated sheet	sqcm	0
	CAPACITORS		
EL087	2 to 3.5 micro Fd	each	28
EL088	4 to 6 micro Fd	each	32
EL089	7 to 8 micro Fd	each	35
	SWITCH DISCONNECTOR SFU AND MCCB		
EL090	CHANGE OVER SWITCH MANUAL ON LOAD FOUR POLE in SS Enclosure 63 A	each	5224
EL091	CHANGE OVER SWITCH MANUAL ON LOAD FOUR POLE in SS Enclosure 100 A	each	6664
EL092	CHANGE OVER SWITCH MANUAL ON LOAD FOUR POLE in SS Enclosure 200 A	each	12536
EL093	CHANGE OVER SWITCH MANUAL ON LOAD FOUR POLE in SS Enclosure 300 A	each	18264
EL094	CHANGE OVER SWITCH MANUAL ON LOAD FOUR POLE in SS Enclosure 400 A	each	26616
EL095	MCCB Thermal Magnetic Release DY , 25 Ka, 2 POLE 16 to 100 A	each	1173
EL096	MCCB Thermal Magnetic Release DY , 25 Ka, 2 POLE 125 A	each	1811
EL097	MCCB Thermal Magnetic Release DY , 25 Ka, 3 POLE 16 to 100 A	each	3868
EL098	MCCB Thermal Magnetic Release DY , 25 Ka, 3 POLE 125 A	each	4395
EL099	MCCB Thermal Magnetic Release DY , 25 Ka, 4 POLE 16 to 100 A	each	5151
EL100	MCCB Thermal Magnetic Release DY , 25 Ka, 4 POLE 125 A	each	5636
EL101	MCCB Thermal Magnetic Release DU , 25 Ka, adjustable OL setting 0.8 to 1,3 POLE 200A	each	7251
EL102	MCCB Thermal Magnetic Release DU , 25 Ka, adjustable OL setting 0.8 to 1,3 POLE 250A	each	7863
EL103	MCCB Thermal Magnetic Release DU , 50 Ka, adjustable OL setting 0.8 to 1,3 POLE 400A	each	13838
EL104	MCCB Thermal Magnetic Release DTH, 50 Ka, adjustable OL setting 0.8 to1,3 POLE 600 to 800 A	each	27702
EL105	MCCB Thermal Magnetic Release DU , 25 Ka, adjustable OL setting 0.8 to1,4 POLE 200 A	each	9129
EL106	MCCB Thermal Magnetic Release DU , 50 Ka, adjustable OL setting 0.8 to 1,4 POLE 400A	each	17281
EL107	MCCB Thermal Magnetic Release DTH, 50 Ka, adjustable OL setting 0.8 to 1 4 POLE 600 to 800 A	each	34213
EL108	MCCB Enclosure made of Sheet Steel suitable for mounting MCCB up to 125 A MCCB	each	1407
EL109	MCCB Enclosure made of Sheet Steel suitable for mounting MCCB up to 250 A MCCB	each	3234
EL110	MCCB Enclosure made of Sheet Steel suitable for mounting MCCB up to 250 A MCCB	each	5000

Unique Code	Description	Unit	Rate (INR)
EL111	1 phase Energy meter with LCD display with optical port 5-30 A	each	1472
EL112	1 phase Energy meter with LCD display with optical port 10-60 A	each	1622
EL113	LCD display 100*100 Ammeter/Voltmeter	each	800
	MCB		
EL114	Blanking plate for MCB DB	each	5
EL115	SP MCB 6-32 A	each	110
EL116	SP MCB 40 A	each	250
EL117	SP MCB 63 A	each	250
EL118	DP MCB 6-32 A	each	348
EL119	DP MCB 40 A	each	563
EL120	DP MCB 63 A	each	563
EL121	TP MCB 6-32 A	each	568
EL122	TP MCB 40 A	each	873
EL123	TP MCB 63 A	each	873
EL124	FP MCB 6-32 A	each	763
EL125	FP MCB 40 A	each	1090
EL126	FP MCB 63 A	each	1090
EL127	DP RCCB 30ma sensitivity , 25 A	each	1250
EL128	DP RCCB 30ma sensitivity , 40 A	each	1415
EL129	DP RCCB 30ma sensitivity , 63 A	each	1763
EL130	FP RCCB 30ma sensitivity , 25 A	each	1655
EL131	FP RCCB 30ma sensitivity , 40 A	each	1663
EL132	FP RCCB 30ma sensitivity , 63 A	each	1908
EL133	SPN enclosure	each	250
EL134	TP enclosure;	each	300
EL135	SPN DB Double Door 4 way (2 incoming and 2 outgoing)	each	855
EL136	SPN DB Double Door 8 way (2 incoming and 6 outgoing)	each	1056
EL137	SPN DB Double Door 12 way (2 incoming and 10 outgoing)	each	1275
EL138	SPN DB Double Door 16 way (2 incoming and 14 outgoing)	each	1596
EL139	TPN DB Horizomtal type Double Door 4 way (8 incoming and 3phase*4 outgoing)	each	2097
EL140	TPN DB Horizomtal type Double Door 6 way (8 incoming 3phase*6 outgoing)	each	2586
EL141	TPN DB Horizomtal type Double Door 8 way (8 incoming 3phase*8 outgoing)	each	3096
EL142	TPN DB Horizomtal type Double Door 12 way (8 incoming 3phase*12 outgoing)	each	4638
EL143	Vertical TPN DB Double Door 4 way (8 incoming and 3phase*4 outgoing)	each	4923
EL144	Vertical TPN DB Double Door 6 way (8 incoming 3phase*6 outgoing)	each	5898
EL145	Vertical TPN DB Double Door 8 way (8 incoming 3phase*8 outgoing)	each	6597
EL146	Vertical TPN DB Double Door 12 way (8 incoming 3phase*12 outgoing)	each	8943
	MCB'S,ISOLATORS,RCCB'S AND MCB DB'S		
	COPPER LUGS		
EL147	PVC insulated copper terminal pin type 1.5 Sqmm	each	1
EL148	PVC insulated copper terminal pin type 2.5 Sqmm	each	1
EL149	PVC insulated copper terminal pin type 4 Sqmm	each	3
EL150	PVC insulated copper terminal pin type 6 Sqmm	each	4
EL151	PVC insulated copper terminal pin type 10 Sqmm	each	4
EL152	PVC insulated copper terminal pin type 16 Sqmm	each	6

Unique Code	Description	Unit	Rate (INR)
	BRASS COMPRESSION GLANDS		
EL153	Single compression Gland : Brass Up to 6 Sq mm cable 2 to 4 Core	set	20
EL154	Single compression Gland : Brass 10 Sqmm to 16 Sqmm Cable 2 to 4 Core	set	27
EL155	Single compression Gland : Brass 25 Sqmm to 50 Sqmm Cable 2 to 4 Core	set	51
EL156	Single compression Gland : Brass 70 Sqmm to 95 Sqmm Cable 3 to 3½ Core	set	67
EL157	Single compression Gland : Brass 120 Sqmm to 185 Sqmm Cable 3 to 32 Core	set	85
EL158	Single compression Gland : Brass 240 Sqmm to Cable 3 to 32 Core	set	105
EL159	Single compression Gland : Brass 300 Sqmm to 400 Sqmm Cable 3 to 3½ Core	set	158
	ALUMINIUM LUGS		
EL160	Aluminium Lugs/terminals 1.5 Sqmm to 2.5 Sqmm	each	1
EL161	Aluminium Lugs/terminals 4 Sqmm to 6 Sqmm	each	1
EL162	Aluminium Lugs/terminals 10 Sqmm	each	2
EL163	Aluminium Lugs/terminals 16 Sqmm	each	2
EL164	Aluminium Lugs/terminals 25 Sqmm	each	3
EL165	Aluminium Lugs/terminals 35 Sqmm	each	4
EL166	Aluminium Lugs/terminals 50 Sqmm	each	5
EL167	Aluminium Lugs/terminals 70 Sqmm	each	8
EL168	Aluminium Lugs/terminals 95 Sqmm	each	9
EL169	Aluminium Lugs/terminals 120 Sqmm	each	13
EL170	Aluminium Lugs/terminals 150 Sqmm	each	16
EL171	Aluminium Lugs/terminals 185 Sqmm	each	20
EL172	Aluminium Lugs/terminals 240 Sqmm	each	35
EL173	Aluminium Lugs/terminals 300 Sqmm	each	49
EL174	Aluminium Lugs/terminals 400 Sqmm	each	71
	MV CABLE JOINTING KITS		
EL175	Straight Through Cable Joint Kit, For 1.5 to 6 Sqmm Cable 2 Core	set	352
EL176	Straight Through Cable Joint Kit, For 1.5 to 6 Sqmm Cable 3 to 4 Core	set	605
EL177	Straight Through Cable Joint Kit, For 10 to 16 Sqmm Cable 2 Core	set	954
EL178	Straight Through Cable Joint Kit, For 10 to 16 Sqmm Cable 3 to 4 Core	set	1079
EL179	Straight Through Cable Joint Kit, For 25 Sqmm to 50 Sqmm Cable 3 to 4 Core	set	2000
EL180	Straight Through Cable Joint Kit, For 70 Sqmm to 150 Sqmm Cable 3 to 4 Core	set	3070
EL181	Straight Through Cable Joint Kit, For 185 Sqmm Cable 300 Sqmm cable 3 to 4 Core	set	5674
EL182	Straight Through Cable Joint Kit, For 400 Sqmm Cable 3 to 4 core	set	6000
	GI POLES		
EL183	GI OCTAGONAL POLES	kg	100
EL184	Anchor bolts for pole foundations	kg	75
	11 kV & 33 kV CABLE JOINTING KITS		
EL185	Heat Shrinkable 11 KV indoor Terminations , earthed 70 to 120 Sqmm	set	6062
EL186	Heat Shrinkable 11 KV indoor Terminations , earthed 150 to 185 sqmm	set	7406
EL187	Heat Shrinkable 11 KV indoor Terminations , earthed 240 to 400 Sqmm	set	8712
EL188	Heat Shrinkable 11 KV outdoor Terminations , earthed 70 to 120 Sqmm	set	9810
EL189	Heat Shrinkable 11 KV outdoor Terminations , earthed 150 to 185 sqmm	set	11236
EL190	Heat Shrinkable 11 KV outdoor Terminations , earthed 240 to 400 Sqmm	set	14938
EL191	Heat Shrinkable 11 KV straight through joint 70 to 95 Sqmm	set	22054
EL192	Heat Shrinkable 11 KV straight through joint 120 to 150 sqmm	set	23273

Unique Code	Description	Unit	Rate (INR)
EL193	Heat Shrinkable 11 KV straight through joint 185 to 240 Sqmm	set	29475
EL194	Heat Shrinkable 11 KV straight through joint 300 to 400 Sqmm	set	32822
EL195	Heat Shrinkable 33 KV indoor Terminations , earthed 70 to 95 Sqmm	set	7972
EL196	Heat Shrinkable 33 KV indoor Terminations , earthed 120 to 185 sqmm	set	12055
EL197	Heat Shrinkable 33 KV indoor Terminations , earthed 240 to 400 Sqmm	set	13669
EL198	Heat Shrinkable 33 KV outdoor Terminations , earthed 70 to 95 Sqmm	set	12923
EL199	Heat Shrinkable 33 KV outdoor Terminations , earthed 120 to 185 sqmm	set	16750
EL200	Heat Shrinkable 33 KV outdoor Terminations , earthed 240 to 400 Sqmm	set	22170
EL201	Heat Shrinkable 33 KV outdoor straight through joint 95 to 150 Sqmm	set	28754
EL202	Heat Shrinkable 33 KV outdoor straight through joint 185 to 300 sqmm	set	40836
	CABLE TRAYS		
EL203	MS perforated cable tray painted with powder coating 100 X 50 X 1.6 mm^3	metre	144
EL204	MS perforated cable tray painted with powder coating 225 X 50 X 1.6 mm^3	metre	226
EL205	MS perforated cable tray painted with powder coating 375 X 50 X 2 mm^3	metre	258
EL206	MS perforated cable tray painted with powder coating 600 X 50 X 2 mm^3	metre	311
	ANGLE/FLAT IRON AND STEEL SHEET		
EL207	MS Rod 10 mm dia 0.5m long	each	32
EL208	MS Rod 8 mm dia 0.5m long	each	22
EL209	35 mm X 35 mm X 4 mm angle iron	kg	43
EL210	50 mm X 50 mm X 6 mm angle iron	kg	43
EL211	M.S. sheet	kg	48
EL212	ALUMINIUM	kg	150
	GI AND RCC PIPE		
EL213	15 mm dia, G.I. pipe (heavy class)	metre	101
EL214	20 mm dia, G.I. pipe (heavy class)	metre	130
EL215	40 mm to 20 mm reducer	each	33
EL216	40 mm dia, G.I. bend (medium class)	each	57
	SCREWS, NUT BOTS AND OTHER ACCESSORIES		
EL219	Al. Alloy/ cadmium plated iron screws, 20 mm	each	1
EL220	Iron screws, 35 mm X 6 mm	each	1
EL221	Iron screws, 45 mm X 6 mm	each	1
EL222	Steel fastener 6 mm X 75 mm	each	6
EL223	PVC fastener 40mm long	each	3
EL224	10 mm X 25 mm long G.I. bolt with nut etc	each	9
EL225	GI saddles 19mm x 0.55mm for conduit	each	1
EL226	GI saddles 25mm x 0.90mm for conduit above 25mm	each	2
EL227	Girder clip complete for girder up to 100 mm deep	each	20
EL228	Girder clip complete for girder up to 300 mm deep	each	40
	HDPE Pipe 10Kg/cm2		
EL229	63 mm dia	metre	67
EL230	90 mm dia	metre	96
EL231	120 mm dia	metre	156
EL232	145 mm dia	metre	200
EL233	40 mm dia	metre	48
EL234	50 mm dia	metre	55

Unique Code	Description	Unit	Rate (INR)
EL235	180 mm dia	metre	234
	HDPE Pipe Coupler		
EL236	25 mm X 5 mm copper tape (1.15 kg/metre)	kg	538
EL237	8 SWG copper wire (4.0 mm dia)	kg	540
EL238	600 mm X 600 mm X 3 mm thick copper plate (10.5 kg)	each	5649
EL239	Lightning finial, 25 mm dia X 300 mm long, G.I.	each	127
EL240	20 mm X 3 mm G.I. Tape (0.461 kg/metre)	kg	61
EL241	25 mm X 3 mm G.I. strip (0.6 kg/metre)	kg	57
EL242	25 mm X 6 mm G.I. strip (1.2 kg/metre)	kg	55
EL243	600 mm X 600 mm X 6 mm thick G.I. plate	each	1438
EL244	6 SWG G.I. wire	kg	61
EL245	GI saddle 20mm x 3mm	each	3
EL246	Funnel	each	19
EL247	G.I. nuts and through bolts with washer	each	26
EL248	CI/MS cover plate hinged to Frame with Locking arrangement	each	277
EL249	Rubber reel, nut & bolts with washers and safety pin	set	60
EL250	250 mm X 200 mm H.T. danger notice plate	each	62
EL251	200 mm X 150 mm M.V. danger notice plate	each	48
EL252	Cement, paint, sand etc.	LS	5
EL253	Charcoal	kg	8
EL254	Salt	kg	8
EL255	Common burnt clay F.P.S. (non modular) bricks class designation 7.5	each	5
EL256	Bricks ballast	cum	650
EL257	MS Bucket for fire	each	200
EL258	Shock treatment chart	each	200
EL259	SS grade 304 2 mm thick, 50 per inch Wire Mesh	sqft	100
EL260	8 mm thick Outdoor duty Ply wood	sqft	59
EL261	12 mm thick Outdoor duty Ply wood	sqft	80
EL262	C fan Ball or bush bearing	each	50
EL263	LT line Phase separator	each	20
EL264	Sundries/bending charges	LS	1
	HVAC Items		
	The Pipes of sizes 150mm & below shall be M.S. 'C' class as per IS : 1239 and pipes size above 150mm shall be welded black steel pipe heavy class as per IS: 3589, from minimum 6.35mm thick M.S. Sheet for pipes up to 350 mm dia, and from minimum 7mm thick MS sheet for pipes of 400 mm dia and above.		
EL265	M.S. Pipe 300 mm dia,	metre	4532
EL266	M.S. Pipe 250mm dia,	metre	3806
EL267	M.S. Pipe 200mm dia,	metre	3210
EL268	M.S. Pipe 150mm dia,	metre	2038
EL269	M.S. Pipe 125mm dia,	metre	1742
EL270	M.S. Pipe 100mm dia,	metre	1399
EL271	M.S. Pipe 80mm dia,	metre	1183
EL272	M.S. Pipe 65mm dia,	metre	1010
EL273	M.S. Pipe 50mm dia,	metre	775
EL274	M.S. Pipe 40mm dia,	metre	620

Unique Code	Description	Unit	Rate (INR)
EL275	BUTTERFLY VALVE (MANUAL) with C I body SS Disc, Nitrile Rubber Seal & O-Ring PN 16 pressure rating for chilled water/hot eater circulation as specified		
EL276	300 mm dia	each	14875
EL277	250mm dia,	each	12593
EL278	200 mm dia	each	7431
EL279	150mm dia,	each	3723
EL280	125mm dia,	each	2855
EL281	100mm dia,	each	2103
EL282	80mm dia,	each	1595
EL283	65mm dia,	each	1417
EL284	50mm dia,	each	1256
EL285	40mm dia,	each	1053
	BALANCING VALVE WITH BUILT IN MEASURING FACILITY with C I body flanged construction with EPDM coated disc with long pitch with protected out pipe insulation & PN 16 pressure rating for chilled / hot water circulation as specified.		
EL286	200 mm dia	each	29102
EL287	150mm dia,	each	15390
EL288	125mm dia,	each	11351
EL289	100mm dia,	each	7963
EL290	80mm dia,	each	5353
EL291	65 mm dia	each	4557
EL292	50mm dia,	each	4146
EL293	40 mm dia	each	2500
	NON - RETURN VALVE with duel plate of C I body SS plates vulcanized NBR seal flanged end & PN 16 pressure rating for chilled / hot water circulation including insulation as specified.		
EL294	200 mm dia	each	10000
EL295	150mm dia,	each	6800
EL296	125mm dia,	each	4500
EL297	100 mm dia	each	3400
EL298	80mm dia,	each	2800
EL299	65 mm dia	each	2600
EL300	50mm dia,	each	2400
EL301	40 mm dia	each	1800
	GSS sheet metal of following sheet thickness		
EL302	Thickness 0.63 mm sheet	sqm	500
EL303	Thickness 0.80 mm sheet	sqm	625
EL304	Thickness 1.00 mm sheet	sqm	750
EL305	Thickness 1.25 mm sheet	sqm	900
EL306	Anchor bolts for pole foundations	kg	75
	HIGH MAST POLES		
EL307	12.5 mtr	each	95000
EL308	16 mtr	each	120000
EL309	20 mtr	each	145000
	LOAD BANKS		
EL310	Load Bank 4 way 250 amp.	each	32115
EL311	Load Bank 8 way 250 amp.	each	39805

Unique Code	Description	Unit	Rate (INR)
EL312	Load Bank 4 way 400 amp.	each	35662
EL313	Load Bank 8 way 400 amp.	each	40554
EL314	GI saddles	each	6
EL315	Neutral link and Bakelite base plate	each	40
EL316	weather proof MS box 20 cm x 15 cm x 10 cm. covered with 3.00 mm thick M.S. sheet hinged cover	each	180
EL317	Hard wood/8 mm Bakellite sheet	each	100
EL318	connector /neutral links	each	20
	Horticulture Materials		
HO001	Royalty for good earth	cum	40
HO002	Manure at source	cum	295
HO003	De-oiled Neem Cake	quintal	1750
HO004	Sludge	cum	400
HO005	Bermuda grass (Selection No.1)	sqm	55
HO006	Urea	kg	6
HO007	DAP (Di-Ammonium Phosphate)	kg	23
HO008	Hedge plants	each	12
HO009	Neel giri/Mexican grass turf	sqm	150
HO010	Doob grass	sqm	40
HO011	Oasis floral foam bricks	per box	600
HO012	Hardwar pebbles 2" to 2.5 " dia i/c carriage	quintal	1000
HO013	Cost of PVC Hexagonal net (Tuflex or equivalent)	sqm	150
HO014	Bamboo 90 cm height (Including Cartage)	each	33
HO015	PCC tree guard made of 4 panels each weighing 35 kg, containing MS bars not less than 2.5 kg with overall Height 1800mm, Width 620 mm & Legs 450mm.	each	1650
HO016	Carriage of tree guard	quintal	50
HO017	38mm dia 1.50 metre. Long bamboo stick	each	50
HO018	Average rate for sapling above 6 feet height and 5 cm to 6cm cm calliper size.	each	120
HO019	Fertilizer urea	quintal	560
HO020	Shrub plants of 75cm to 1 metre height well developed plant in poly bag/pots 30cm x 30 cm size.	each	45
HO021	Average cost of plant to be planted	each	5
HO022	Plants - Rassella, Chlorophytum, Juniperous prostata, Asparagus grass, cuphea chinensis, ipomea, Portulacaria (Jade plant) Zebrina Trades Cantia etc to be supplied in 15cm x20 cm poly bags	each	25
HO023	200 cm to 240 cm tall sapling	each	800
HO024	Seasonal flower seedlings	each	5
HO025	Fungicide Blitox	kg	600
HO026	30 cm x 30 cm size earthen pot	each	80
HO027	Well finished 23 cm dia x 23 cm deep size earthen tray pot	each	70
HO028	30 cm dia x 23 cm deep size earthen tray pot	each	150
HO029	Pot plant	each	200
HO030	Vermi compost manure	quintal	500
HO031	Coco peat	kg	25
HO032	Vermiculite	quintal	5000
HO033	Perlite	quintal	7000

Unique Code	Description	Unit	Rate (INR)
HO034	Murate of Potash	kg	18
HO035	Single super phosphate (SSP)	kg	9
HO036	Metsulfuron methyl 20% WG	gm	45
HO037	Halosulfuron methyl 75% WD	gm	50
HO038	DAP	quintal	2300
HO039	Cotton Niwar	kg	300
HO040	Coir Rope	kg	150
HO041	Plants at flowering stage in polybags	each	28
HO042	Fungicide	kg	360
HO043	Flower bulbs	each	25
HO044	Ground cover plants	each	8
HO045	Rose plants	each	30
HO046	Edging plants	each	10
HO047	Polybags (550 polybags per kg)	kg	130
HO048	Well burnt cylindrical / conical earthen pots - 15 cm	each	25
HO049	Well burnt cylindrical / conical earthen pots - 20 cm	each	40
HO050	Well burnt cylindrical / conical earthen pots - 25 cm	each	60
HO051	Well burnt cylindrical / conical earthen pots - 30 cm	each	88
HO052	cement pots size 30cm x30cm	each	95
HO053	cement pots size 35cm x35cm	each	120
HO054	cement pots size 45cm x45cm	each	200
HO055	cement pots size 50cm x50cm	each	320
HO056	cement pots size 60cm x60cm	each	425
HO057	1st quality heavy duty plastic pot-15cm size	each	10
HO058	1st quality heavy duty plastic pot-20cm size	each	20
HO059	1st quality heavy duty plastic pot-25cm size	each	40
HO060	1st quality heavy duty plastic pot-30cm size	each	65
HO061	1st quality heavy duty plastic pot-35cm size	each	80
HO062	1st quality heavy duty plastic pot-40cm size	each	125
HO063	1st quality heavy duty plastic pot-45cm size	each	205
HO064	1st quality heavy duty plastic pot-50cm size	each	320
HO065	1st quality heavy duty plastic pot-60cm size	each	580
HO066	Chrysanthemum/Dahlia cuttings	each	7
HO067	NPK 20:20:20 @ 20gm	kg	90
HO068	Plastic plate-30 cm	each	15
HO069	Plastic plate-45 cm	each	40
HO070	Indoor decorative plants with fresh foliage,60cm-75 cm in height' 3-4 stems each pot, full lof leaves	each	100
HO071	Specimen pot plant with fresh foliage,60 cm-75 cm in height'/ 3-4 stems / full lof leaves	each	400
HO072	Outdoor pot plant	each	125
HO073	Imidachloprid 30.5%	litre	3140
HO074	Chair type garden bench with L-shaped sides made of reinforced concrete (M30), thickness 100 mm, overall height 1000 mm, base width 620 mm. Back and seat shall consist of 5 Nos. reinforced concrete planks 1500 mm x 100 mm x 50 mm, one plank 1500 mm x 200 mm x 50 mm. Seating height of the bench shall be 450 mm.	each	3950

Unique Code	Description	Unit	Rate (INR)
HO075	Rectangular garden bench with h-shaped sides made of reinforced concrete (M30), thickness 100 mm, back height 750 mm, base width 450 mm. Back and seat shall consist of rectangular reinforced concrete planks 1500 mm x 350 mm x 50 mm. Seating height of the bench shall be 450 mm.	each	2900
HO076	Cast Iron bench of 1800 mm length, 900 mm width, 450 mm seating height, sides made of cast iron. Seat and back shall be made of 10 strips of M.S. pipes 63 mm x 25 mm of 14 gauge with one M.S. Flat 25 x 10 mm welded at the centre, below and back of the seat and back rest. Spray painted with approved brand paint. (Minimum weight of each bench 105 kg)	each	9500
HO077	Aluminium tubes 50 x 25 x 1.5 mm	kg	150
HO078	Cup and frame type planter panels 45 x 30 cm size.	each	105
HO079	LDPE lateral Pipe 16 mm; Class 2, 2.5 kg/cm2	metre	15
HO080	LDPE lateral Pipe 12 mm; Class 2, 2.5 kg/cm2	metre	12
HO081	LDPE Emitting Pipe 16 mm; Class 2 (0.6 m x 1 to 4 Lph), Anti-rodent	metre	20
HO082	LDPE Emitting Pipe 16 mm; Class 2 (0.5 m x 1 to 4 Lph), Anti-rodent	metre	18
HO083	LDPE Emitting Pipe 16 mm; Class 2 (0.4 m x 1 to 4 Lph), Anti-rodent	metre	18
HO084	LDPE Emitting Pipe 16 mm; Class 2 (0.3 m x 1 to 4 Lph), Anti-rodent	metre	18
HO085	LDPE Emitting Pipe 16 mm; Class 2 (0.6 m x 1 to 4 Lph)	metre	18
HO086	LDPE Emitting Pipe 16 mm; Class 2 (0.5 m x 1 to 4 Lph)	metre	18
HO087	LDPE Emitting Pipe 16 mm; Class 2 (0.4 m x 1 to 4 Lph)	metre	18
HO088	LDPE Emitting Pipe 16 mm; Class 2 (0.3 m x 1 to 4 Lph)	metre	18
HO089	LDPE Emitting Pipe 16 mm; Class 2 (0.6 m x 1 to 4 Lph), pressure compensating	metre	18
HO090	LDPE Emitting Pipe 16 mm; Class 2 (0.5 m x 1 to 4 Lph), pressure compensating	metre	18
HO091	LDPE Emitting Pipe 16 mm; Class 2 (0.4 m x 1 to 4 Lph), pressure compensating	metre	18
HO092	LDPE Emitting Pipe 16 mm; Class 2 (0.3 m x 1 to 4 Lph), pressure compensating	metre	18
HO093	LDPE Emitting Pipe 16 mm; Class 2 (0.6 m x 1 to 4 Lph), pressure compensating, Anti siphoning	metre	18
HO094	LDPE Emitting Pipe 16 mm; Class 2 (0.5 m x 1 to 4 Lph), pressure compensating, Anti siphoning	metre	20
HO095	LDPE Emitting Pipe 16 mm; Class 2 (0.4 m x 1 to 4 Lph), pressure compensating Anti siphoning	metre	20
HO096	LDPE Emitting Pipe 16 mm; Class 2 (0.3 m x 1 to 4 Lph), pressure compensating Anti siphoning	metre	22
HO097	Stake dipper	each	30
HO098	Disc Filter 15 cum/hr	each	3200
HO099	Irrigation timer	each	4500
HO100	Pressure compensating drip emitters	metre	10
HO101	Pressure compensating Non leakage drip emitters	metre	10
HO102	Non Pressure compensating drip emitters	metre	5
HO103	Micro sprinkler having 1.5-4 m throw radius with stake, vinyl tubing and all other accessories	metre	100
HO104	Adjustable flow bubblers with connecting pipe and all other accessories	metre	335
HO105	Pop up Impact Rotors 3/4" inlet and radius ranging from 7-12 m with interchangeable nozzles and all accessories complete	each	850
HO106	Pop up geared rotors 3/4" inlet and radius ranging from 7-12 m with interchangeable nozzles and all accessories complete	each	850
HO107	Pop up Spray heads 1/2" inlet and radius ranging from 3-5 m	each	250
HO108	Swing joint size 3/4", length 12", three way movement for height	each	150
HO109	Swing joint size 1/2", length 12", three way movement for height	each	120

Unique Code	Description	Unit	Rate (INR)
HO110	adjustment	each	150
HO111	Service saddle, heavy duty 3/4"	each	120
HO112	interchangeable nozzles and all accessories complete	each	50
HO113	Rain Gun with throw radius of 14-22 m, interchangeable	each	6500
HO114	Rain Gun with throw radius of 20-35 m, interchangeable	each	19500
HO115	nozzles and arc adjustment and all accessories complete	each	150
HO116	Rain gun stand	each	2800
HO117	Sand/Media filter 25 cum/hr, with back wash and bypass	each	28500
HO118	Sand/Media filter 40 cum/hr, with back wash and by-pass	each	32000
HO119	Sand/Media filter 50 cum/hr, with back wash and bypass	each	41550
HO120	Disc filter 15 cum/hr, with flush valve	each	3200
HO121	Disc filter 25 cum/hr, with flush valve	each	6500
HO122	Disc filter 50 cum/hr, with flush valve	each	8800
HO123	Hydro cyclone/ Sand separator 10-16 cum/hr, with flush valve	each	6000
HO124	Hydro cyclone/ Sand separator 12-30 cum/hr, with flush valve	each	8000
HO125	Hydro cyclone/ Sand separator 20-40 cum/hr, with flush valve	each	9200
HO126	Hydraulic pressure relief valve 1.5/2"	each	10500
HO127	40 mm artificial turf with density of 16800/sqm	sqm	615
HO128	35 mm artificial turf with density of 16800/sqm	sqm	480
HO129	25 mm artificial turf with density of 16800/sqm	sqm	450
HO130	20 mm artificial turf with density of 16800/sqm	sqm	380
HO131	10 mm artificial turf with density of 16800/sqm	sqm	290
HO132	Indoor plants for vertical garden	each	50
HO133	Outdoor plants for vertical garden	each	40
HO134	HDPE root barrier 1 mm thick	sqm	120
HO135	Water borne stone aggregate (12 mm-13.2 mm nominal size)	cum	790
HO136	Water borne stone aggregate (10 mm- 11.2 mm nominal size)	cum	850
HO137	Water borne stone aggregate (6 mm nominal size)	cum	850
HO138	Lightweight expanded clay aggregates 2-8 mm crushed	cum	10000
HO139	Geotextile 200 gsm	sqm	50
HO140	Geotextile 120 gsm	sqm	25
HO141	Drain Cell panels 20 mm thick	sqm	185
HO142	Drain Cell panels 30 mm thick	sqm	264
HO143	Biochar	quintal	3000
HO144	Non woven coir mat 600 gsm without netting, latex bound	sqm	88
HO145	Plastic Dustbin 100 litre volume made of virgin plastic	each	3000
HO146	MS Hollow section 50 x 50 x 3 mm (4.26 Kg/m)	quintal	4600
HO147	MS Hollow section 50 x 25 x 3 mm (3.07 Kg/m)	quintal	4600
HO148	Dahlia /chrysanthemum plants in flowering stage in 25 cm poly bag exhibition type	each	200
HO149	Chlorpyriphos 20% EC (Dursban)	litre	330
	FOLIAGE AND SHADE LOVING PLANTS		
HO150	Aglaonema Parrot Jungle plant (three in one), having ht. 30 cm and above with 20 to 25 leaves, well developed, fresh & healthy in 25 cm size of poly bag	each	66
HO151	Aglaonema dove variety having ht. 30 cm to 45 cm with 8 to 10 leaves, well developed, fresh and healthy in 25 cm size of poly bag	each	85

Unique Code	Description	Unit	Rate (INR)
HO152	Aglaonema Pseudo bractatum plants, having ht. 30 cm and above with 3 to 4 suckers & 20 to 25 leaves, well developed, fresh and healthy in 25 cm size of poly bag.	each	85
HO153	Aglaonema Snow White hybrid plant (three in one), having ht. 30 cm & above with 6 to 8 leaves, bright colour, well developed, fresh and healthy in 25 cm size of Earthen pot / Plastic pot. (Specimen Plant).	each	212
HO154	Aglaonema Silver Queen having ht. 30 cm to 45 cm. with 12 to 15 leaves, multi suckers, well developed, fresh and healthy in 25 cm size of Earthen pot / Plastic pot.	each	158
HO155	Aglaonema ernesto Plant (three in one), having ht. 45 cm & above with 12 to 15 leaves, well developed, fresh and healthy in 25 cm size of Earthen pot / Plastic pot.	each	184
HO156	Aglaonema marentifolium variety having ht. 23 cm to 30 cm with 8 to 10 leaves, well developed, fresh and healthy with colourful leaves in 20 cm size of Poly bag/Earthen pot / Plastic pot..	each	66
HO157	Aglaonema modestum having ht. 23 cm to 30 cm with 3 to 4 suckers & 15 to 20 leaves, well developed, fresh and healthy in 25 cm size of poly bag..	each	66
HO158	Aglaonema nitida having ht. 30 cm to 45 cm with 8 to 10 leaves, well developed, fresh and healthy with attractive leaves in 25 cm size of Earthen pot / Plastic pot..	each	158
HO159	Araucaria cookie having ht. 45 cm to 60 cm, straight, well developed, fresh and healthy with lush green leaves from bottom top in 20 cm size of Earthen pot/Plastic pot.	each	180
HO160	Araucaria cookie having ht. 60 cm to 75 cm, straight, well developed, fresh and healthy with lush Earthen pot/Plastic pot.	each	210
HO161	Araucaria cookie having ht.90 cm to 1.20 m, straight, well developed, fresh and healthy with lush green leaves from bottom top in 25 cm size of Earthen pot/Plastic pot.	each	368
HO162	Araucaria cookie having ht.1.50 m to 1.80 m, straight, well developed, fresh and healthy with lush green leaves from bottom top in 30 cm size of Earthen pot/Plastic pot .	each	550
HO163	Areca Palm having ht. 90 cm to 1.05 m with 4 to 5 suckers, well developed, fresh and healthy with lush green foliage in 25 cm size of Earthen pot/Plastic pot .	each	154
HO164	Areca Palm having ht. 1.05 m to 1.20 m with 5 to 6 suckers, well developed, fresh and healthy with lush green foliage in 25 cm size of Earthen pot/Plastic pot.	each	165
HO165	Areca palm having ht. 1.20 m to 1.50 m with 6 to 8 suckers, well developed, fresh and healthy with lush green foliage in 25 cm size of Earthen pot/Plastic pot.	each	189
HO166	Areca Palm having ht. 1.50 m to 1.95 m with 8 to 10 suckers, well developed, fresh and healthy with Plastic pot.	each	341
HO167	Areca Palm having ht. 1.95 m to 2.40 m with 12 to 14 suckers, well developed, fresh and healthy with lush green foliage in 35 cm size of Bucket type cement pots.	each	578
HO168	Brassia Variegated having ht. 30 cm, well developed with fresh and healthy foliage in 20 cm size of Earthen pot/Plastic pot/Poly bag.	each	74
HO169	Brassia Variegated having ht. 30 cm to 45 cm, well developed with fresh and healthy foliage in 25 cm size of Earthen pot / Plastic pot..	each	116
HO170	Chamaedorea elegans palm having ht. 60 cm to 75 cm, well developed with fresh and healthy leaves in 25 cm size of Earthen pot / Plastic pot.	each	105
HO171	Croton Challenger variety having ht. 30cm and above, well developed with full of fresh and healthy leaves in 20 cm size of Poly bag.	each	44
HO172	Croton baby golden variety having ht.30 cm and above, well developed with full of fresh and healthy leaves in 20 cm size of Poly bag.	each	40
HO173	Croton Baby Golden Punctatumaureum having ht. 23 cm to 30 cm, well developed with fresh and healthy foliage in 15 cm size of Poly bag.	each	33
HO174	Croton Golden having ht. 45 cm to 60 cm with 2 to 3 branches, well developed, fresh and healthy foliage in 25 cm size of Poly bag.	each	55

Unique Code	Description	Unit	Rate (INR)
HO175	Croton Baby Golden plant (three in one), having ht. 30cm, multi branches, well developed with fresh and healthy foliage in 25 cm size of Poly bag.	each	83
HO176	Croton Golden (Broad Leaves) having ht. 60 cm to 75 cm with 3 to 4 branches, well developed, fresh and healthy leaves in 25 cm size of Poly bag.	each	55
HO177	Croton Golden specimen having ht. 90 cm to 1.05 cm with 5 to 6 branches, well developed, fresh and healthy foliage in 30 cm size of Earthen pot/Plastic pot/Poly bag.	each	168
HO178	Croton Duck Foot (Elite) having ht. 45 cm and above with 3 to 4 branches, well developed, fresh and healthy leaves in 25 cm size of Earthen pot / Plastic pot.	each	110
HO179	Croton Duck Foot (Elite) having ht. 60 cm to 75 cm with 4 to 5 branches, well developed, fresh and healthy colourful leaves in 30 cm size of Earthen pot / Plastic pot.	each	315
HO180	Croton Petra Bangalore variety having ht 30 cm & above, well developed with fresh and healthy leaves in 25 cm size of Earthen pot/Plastic pot.	each	115
HO181	Croton Petra having ht. 30 cm & above with 2 to 3 branches, well developed, fresh and healthy leaves in 25 cm size of Earthen pot/Plastic pot.	each	120
HO182	Croton Petra Bangalore variety having ht. 60 cm to 75 cm with 4 to 6 branches, well developed, fresh and healthy colourful leaves in 25 cm size of Earthen pot / Plastic pot.	each	336
HO183	Croton Petra Bangalore (Specimen) variety having ht. 60 cm to 75 cm with 4 to 6 branches, well developed, fresh & healthy foliage approximately 60- 65 leaves in 30 cm size of Earthen pot / Plastic pot.	each	525
HO184	Dieffenbachia Tropic-snow having ht. 45 cm & above with 8 - 10 leaves, well developed, fresh & healthy in 20 cm size of Earthen pot/Plastic pot.	each	77
HO185	Dieffenbachia Mosaic having ht. 23 cm to 30 cm with 10-12 leaves, well developed, fresh and healthy in 20 cm size of Earthen pot/Plastic pot.	each	77
HO186	Dieffenbachia Maculata having ht. 30 cm to 45 cm with 5 and above leaves, well developed, fresh and healthy & attractive variegated foliage in 20 cm size of Earthen pot/Plastic pot.	each	147
HO187	Dracaena 'Song of India' plant (three in one), having ht. 30 cm and above, multibranched, well developed with fresh and healthy leaves in 20 cm size of Earthen pot/Plastic pot.	each	110
HO188	Dracaena 'Song of India' specimen plant (three in one), having ht. 60 cm & above, well developed, fresh and healthy with good foliage in 20 cm size of Earthen pot/Plastic pot.	each	138
HO189	Dracaena 'Song of India' Green plant (three in one), having ht. 30 cm, well developed, fresh & healthy, lush green foliage from bottom top in 20 cm size of Polybag.	each	44
HO190	Dracaena 'Song of India' variegated having ht. 30 cm to 45 cm, well developed, fresh & healthy foliage with bright leaves in 20 cm size of Polybag.	each	44
HO191	Dracaena Kedarnath having ht. 30 cm & above, well developed with good colourful foliage in 20 cm size of Polybag.	each	44
HO192	Dracaena Marginata having ht. 30 cm to 45 cm with colourful leaves, fresh and healthy in 20 cm size of Polybag.	each	46
HO193	Dracaena Mahatma having ht. 30 cm to 45 cm, well developed, fresh and healthy foliage in 20 cm size of Polybag.	each	44
HO194	Dracaena Rosea having ht. 30 cm & above with 8 to10 leaves, well developed, fresh and healthy in 15 cm size of Earthen pot/Plastic pot.	each	58
HO195	Dracaena Victoria having ht. 30 cm & above, well developed with full of leaves, fresh and healthy in 15 cm size of Earthen pot/Plastic pot.	each	58
HO196	Dracaena Fragrans"Massangeana" having ht. 30 cm & above with full of leaves, well developed, fresh and healthy in 15 cm size of Earthen pot/Plastic pot.	each	58

Unique Code	Description	Unit	Rate (INR)
HO197	Dracaena Waraneckii having ht. 30 cm to 45 cm. with good colour foliage, well developed, fresh and healthy in 15 cm size of Earthen pot/Plastic pot.	each	55
HO198	Livistona Palm having ht. 30 cm to 45 cm, well developed with 5 to 6 leaves, fresh & healthy foliage in 20 cm size of Earthen pot/Plastic pot.	each	84
HO199	Livistona Palm having ht. 60 cm to 75 cm, well developed with 8 to 10 leaves, fresh & healthy foliage in 30 cm size of Earthen pot / Plastic pot	each	210
HO200	Monestaria plant mounted on moss stick 90 cm ht., 2 to 3 plant in one pot well developed with fresh & healthy foliage in 25 cm size of Earthen pot / Plastic pot.	each	210
HO201	Money Plant Broad Leaves mounted on moss stick 75 cm ht., 3 to 4 plants in each pot, well developed with full of fresh & healthy leaves in size of 25 cm height Earthen pot/Plastic pot. Top dia x 18 cm Bottom dia x 25 cm Perpendicular	each	180
HO202	Money Plant Broad Leaves mounted on moss stick 0.90 m ht., 5 to 6 plants in each pot, well developed with full of fresh & healthy leaves in size of 25 cm Top dia x 18 cm Bottom dia x 25 cm Perpendicular height Earthen pot/Plastic pot.	each	240
HO203	Money Plant Golden leaves mounted on moss stick 90cm ht., having 3 plants at equal distance, well developed with full of fresh, shinning and healthy leaves from bottom top in 25 cm size of Earthen pot / Plastic pot.	each	180
HO204	Philodendron Burgundy plant mounted on moss stick 90 cm ht., well developed with full of fresh & healthy leaves from bottom top in 25 cm size of Earthen pot / Plastic pot.	each	252
HO205	Philodendron emerald red colour mounted on moss stick 90 cm ht., having 3 plants placed at equal distance, well developed with full of fresh & healthy leaves in 25 cm size of Earthen pot / Plastic pot.	each	368
HO206	Philodendron Envy mounted on moss stick 90 cm ht., well developed with full of fresh & healthy leaves in 30 cm size of Earthen pot / Plastic pot.	each	420
HO207	Philodendron Oxicodium mounted on moss stick 90 cm ht., having 3 plants placed at equal distance, well developed with full of fresh & healthy leaves in 20 cm size of Earthen pot/Plastic pot.	each	158
HO208	Philodendron Oxicodium Golden Colour Mounted on moss stick 90 cm ht., having 3 plants placed at equal distance, well developed with full of fresh & healthy leaves in 20 cm Top dia x 16 cm Bottom dia x 20 cm Perpendicular height Earthen pot/ Plastic pot.	each	168
HO209	Philodendron Oxicodium Golden Colour Mounted on moss stick 1.20 m ht., having 3 to 4 plants placed at equal distance, well developed with full of fresh & healthy leaves in 25 cm size of Earthen pot / Plastic pot.	each	228
HO210	Philodendron Oxicodium mounted on moss stick 1.20 m ht., having 3 plants placed at equal distance, well developed with full of fresh & healthy leaves in 25 cm size of Earthen pot / Plastic pot.	each	240
HO211	Philodendron Selloum having ht. 30 cm to 45 cm with 8 to 10 leaves, well developed, fresh and healthy foliage in 20 cm size of Earthen pot/Plastic pot.	each	158
HO212	Philodendron Selloum having ht. 45 cm to 60 cm with 12 to 16 leaves, well developed, fresh and healthy foliage in 25 cm size of Earthen pot/Plastic pot.	each	210
HO213	Philodendron Ceylon gold having ht. 30 cm to 45 cm with 8 to10 leaves, well developed, fresh & healthy bright colour leaves in 25 cm size of Earthen pot/Plastic pot.	each	187
HO214	Philodendron Xanadu having 15 to 20 leaves, well developed with full of fresh & healthy leaves in 25 cm size of Earthen pot/Plastic pot.	each	179
HO215	Philodendron Moonlight having ht. 30 cm to 45 cm with 10 to 12 leaves, well developed, fresh & healthy bright colour leaves in 25 cm size of Earthen pot / Plastic pot.	each	200
HO216	Phoenix Palm having ht. 75 cm to 90 cm with 10 to 15 or more leaves, well developed, fresh and healthy in 25 cm size of Earthen pot / Plastic pot.	each	210
HO217	Rhapis Palm having ht. 45 cm to 60 cm with 5 to 7 suckers, well developed, full of fresh and healthy leaves in 25 cm size of Earthen pot / Plastic pot.	each	180

Unique Code	Description	Unit	Rate (INR)
HO218	Rhapis Palm having ht. 75 cm to 90 cm with 12 to 15 equal suckers, well developed, full of fresh & healthy leaves from bottom top in 25 cm size Earthen pot / Plastic pot.	each	315
HO219	Rhapis Palm having ht. 75 cm to 90 cm with 15 to 18 equal suckers, well developed, full of fresh and healthy leaves from bottom top in 35 cm PVC Pots/C.Pots.	each	345
HO220	Rhapis Palm specimen having ht. 1.50 m to 1.65 m with 40 to 50 lush green suckers, well developed, fresh & healthy foliage leaves in 40 cm size of Earthen Pot / Chili / tray.	each	518
HO221	Seaforthia Palm having ht. 90cm to 1.20 m with 6-8 suckers, well developed, fresh and healthy lush green leaves from bottom top in 20 cm size of Earthen pot / Plastic pot.	each	350
HO222	Seaforthia Palm having ht. 1.20 m. to 1.50 m. with 8-10 suckers, well developed, fresh and healthy lush green leaves from bottom top in 25 cm size of Earthen pot / Plastic pot.	each	385
HO223	Seaforthia Palm having ht. 1.50 m to 1.80 m with 12-15 suckers, well developed, fresh and healthy lush green leaves from bottom top in 30 cm size of Earthen pot / Plastic pot.	each	495
HO224	Sanchezia Nobili's having ht. 30 cm & above, well developed with fresh & healthy foliage in 15 cm size of Earthen pot/Plastic pot.	each	35
HO225	Schefflera high colour having ht. 25 cm to 30 cm, well developed with fresh & healthy foliage in 15cm size of Earthen pot/Plastic pot.	each	40
HO226	Schefflera high colour plant (three in one), having ht. 25 cm to 30 cm, well developed with fresh and healthy foliage in 30 cm size of Earthen pot / Plastic pot.	each	132
HO227	Schefflera Green plant (three in one), mounted on moss stick 90 cm, well developed with full of fresh & healthy leaves from bottom top with rich foliage in 25 cm size of Earthen pot / Plastic pot.	each	275
HO228	Schefflera Variegated mounted on moss stick 90 cm ht., 3 to 4 plants placed in each pot at equal distance, well developed with full of fresh & healthy bright leaves from bottom top in 25 cm size of Earthen pot / Plastic pot.	each	275
HO229	Syngonium golden mounted on moss stick 90 cm ht., 3 to 4 plants placed in each pot at equal distance, well developed with full of fresh & healthy leaves from bottom top in 25 cm size of Earthen pot / Plastic pot.	each	189
HO230	Syngonium Variegated mounted on moss stick 90 cm ht., 3 to 4 plants placed in each pot at equal distance, well developed with full of fresh & healthy leaves from bottom top in 25 cm size of Earthen pot / Plastic pot.	each	189
	SEASONAL PLANTS		
	Winter seasonal plants		
HO231	Allyssum white in full bloom well developed fresh & healthy in 15 cm Earthen Pot/Plastic Pot.	each	42
HO232	Anemone hybrid (3 in one) variety well developed with fresh & healthy Flower in full bloom in 20 cm Earthen Pot/Plastic Pot.	each	84
HO233	Antirrhinum Hybrid Dwarf variety (3 in one) well developed with fresh & healthy Flower multi branch in full bloom in 20 cm Earthen Pot/Plastic Pot.	each	53
HO234	Antirrhinum Hybrid dwarf variety, specimen (8-10 s) with fresh & healthy foliage in full bloom well developed in 35 cm Earthen tray/Challi Pot	each	525
HO235	Antirrhinum variety, well developed, fresh & healthy multi branched 30 to 45 cm ht, in full bloom with stacking in 20 cm Earthen Pot/Plastic Pot.	each	53
HO236	Asiatic lily hybrid variety (3 in one) in each pot having in full bloom 3 to 5 flowers 30 to 45 cm ht. well developed in 25 cm Earthen Pot/Plastic Pot.	each	126
HO237	Aster Hybrid variety in different colour, well developed with fresh & healthy foliage in full bloom 25 to 30 cm ht., in 15 cm Earthen Pot/Plastic Pot.	each	42

Unique Code	Description	Unit	Rate (INR)
HO238	Bigonia rex having 15 to 25 cm ht., well developed with fresh & healthy foliage with 10 to 12 flowers in bloom in 20 cm Earthen Pot/Plastic Pot.	each	63
HO239	Brachycome well developed with fresh & healthy foliage with 100 to 120 flowers stacking with green painted bamboo stick in 25 cm Earthen Pot/ Plastic Pot.	each	126
HO240	Calceolaria hybrid variety in full bloom well developed with fresh & healthy foliage in 20 cm Earthen Pot/Plastic Pot.	each	116
HO241	Calendula double variety well developed with fresh & healthy foliage in full bloom in 20 cm Earthen Pot/Plastic Pot.	each	53
HO242	Chrysanthemum double variety, well developed, having 45 to 60 cm ht., with 6 and above flowers with half blooming condition, fresh and healthy with bamboo stacking in 25 cm Earthen Pot	each	116
HO243	Chrysanthemum single variety in different colour well developed having 45 to 60 cm ht., minimum 100 and above half bloom flowers open well stacked with bamboo stick having three layer tiding by thread fresh and healthy foliage in 25 cm Earthen Pot	each	126
HO244	Chrysanthemum single named variety in different colour well developed, having 45 to 60 cm ht., minimum 150 and above half bloom flowers well stacked with bamboo stick having three layer tied by thread fresh and healthy foliage in 30 cm Earthen Pot	each	147
HO245	Cineraria dwarf in different colour with fresh & healthy foliage well developed in 20 cm Earthen Pot/Plastic Pot.	each	53
HO246	Cineraria Hybrid dwarf variety in different colour well developed with fresh & healthy foliage in bloom in 25 cm Earthen Pot/Plastic Pot.	each	63
HO247	Cineraria long 45 to 60 cm ht., 8 to 10 branch with full bloom specimen with green painted stacking in 30 cm Earthen Pot/Plastic Pot.	each	126
HO248	Clarkia well developed with fresh & healthy foliage, 5 to 6 branch in full bloom with stacking in 25 cm Earthen Pot/Plastic Pot.	each	105
HO249	Clianthus well developed, with fresh & healthy foliage in bloom 30 to 45 cm ht., with stacking in 25 cm Earthen Pot/Plastic Pot.	each	84
HO250	Coleus broad leaves having 3 to 4 branches equal well developed with fresh & healthy foliage in different colour in 25 cm Earthen Pot/Plastic Pot.	each	53
HO251	Coleus broad leaves having 5 to 6 branches equal well developed with fresh & healthy foliage in different colour in 25 cm Earthen Pot/Plastic Pot.	each	84
HO252	Cyclamen hybrid variety fresh & healthy in full bloom well developed in 25 cm Earthen Pot/Plastic Pot.	each	210
HO253	Cyclamen hybrid variety specimen 5-6 fresh & healthy in full bloom well developed in 35 cm Earthen tray	each	394
HO254	Dahlia double Kenya variety in different colour well developed with 3 to 4 flowers in half bloom, good foliage stacked with Green painted Bamboo sticks, 45 to 60 cm height in 25 cm Earthen Pot/Plastic Pot.	each	84
HO255	Dahlia single in different colour with fresh & healthy foliage well developed with 6 to 8 half blooming buds in 15 cm Earthen Pot/Plastic Pot.	each	26
HO256	Daisy well developed with fresh & healthy foliage in full bloom in 15 cm Earthen Pot/Plastic Pot.	each	42
HO257	Dianthus dwarf in different colour fresh & healthy bloom in 15 cm Earthen Pot/Plastic Pot.	each	42
HO258	Dianthus dwarf specimen 6-8 s with fresh & healthy foliage in full bloom well developed in 60 cmx35 cm Earthen Tray	each	368
HO259	Dianthus in different colour well developed with fresh & healthy foliage 30 cm ht., in full bloom with stacking in 20 cm Earthen Pot/Plastic Pot.	each	53
HO260	Freesia hybrid 6 to 8 in full bloom, with fresh and healthy flower and foliage stacked with Green painted bamboo sticks in 25 cm Earthen Pot/ Plastic Pot.	each	84
HO261	Gazania hybrid in different colour well developed with fresh & healthy foliage with full bloom in 25 cm Earthen Pot/Plastic Pot.	each	63

Unique Code	Description	Unit	Rate (INR)
HO262	Geranium double variety having 30 cm ht., in different colour well developed with fresh & healthy foliage (3 in one) well bloomed in 25 cm Earthen Pot/ Plastic Pot.	each	131
HO263	Gerbera Hybrid, well developed, with fresh and healthy foliage, fully blooms in 25 cm Earthen Pot/Plastic Pot.	each	84
HO264	Helianthus different colour with full bloom (3 in one) fresh & healthy in 35 cm Earthen Pot/Plastic Pot. well developed	each	210
HO265	Impatiens in different colour well developed fresh and healthy (3 in one) well bloomed in 30 cm Earthen Pot/Plastic Pot.	each	105
HO266	Marigold Jaffri dwarf in different colour well developed with fresh & healthy foliage with 12 to 15 flowers in full bloom specimen 23 to 30 cm ht. in 20 cm Earthen Pot/Plastic Pot.	each	53
HO267	Marigold Jaffri orange/yellow/Russet colour well developed with fresh & healthy foliage with 40 to 50 flowers in bloom specimen 60 to 75 cm ht in 30 cm Earthen Pot/Plastic Pot.	each	147
HO268	Marigold Jaffri french orange/yellow/Russet colour well developed with fresh & healthy foliage with 60 to 75 flowers in bloom specimen 60 to 75 cm ht in 30 cm Earthen Pot/Plastic Pot.	each	105
HO269	Kalanchoe Hybrid variety in different colour well developed with fresh & healthy foliage in full bloom in 20 cm Earthen pot/Plastic Pot.	each	53
HO270	Marigold(Tagetes) inca hybrid different colour having 30 cm and above ht., with 6 to 8 flowers in bloom & blooming condition, well developed pot should be fully covered with fresh and healthy, foliage and flowers in 20 cm Earthen Pot/Plastic Pot.	each	63
HO271	Mimulus multi branching bushy in different colour well developed fresh & healthy in full bloom in 20 cm Earthen Pot in 20 cm Earthen Pot/Plastic Pot.	each	74
HO272	Mesembryanthemum in different colour well developed with fresh & healthy foliage in full bloom in 15 cm Earthen Pot/Plastic Pot.	each	32
HO273	Nemesia well developed with fresh & healthy with good attractive foliage full blooming in 20 cm Earthen Pot/Plastic Pot.	each	53
HO274	Nasturtium in different colour well developed with fresh & healthy foliage with full bloom in 20 cm Earthen Pot /Plastic Pot.	each	53
HO275	Ornamental Kale Hybrid variety in full bloom with fresh & healthy foliage well developed in 20 cm Earthen Pot/Plastic Pot.	each	53
HO276	Pansy Hybrid Sakata in different colour specimen 15-20 plants with fresh & healthy foliage in full bloom well developed in 60x35 cm Earthen Tray	each	315
HO277	Pansy Hybrid Sakata well developed with fresh & healthy foliage with 3 to 4 flower in bloom in 20 cm Earthen Pot/Plastic Pot.	each	53
HO278	Pansy hybrid sakata in different colour with fresh & healthy foliage well developed in 15 cm Earthen Pot/Plastic Pot.	each	26
HO279	Petunia hybrid different colour single well developed in full bloom in 20 cm Earthen/Plastic Pot.	each	42
HO280	Petunia hybrid different variety in different colour well developed with fresh and healthy foliage in full bloom in 25 cm Earthen Pot/Plastic Pot.	each	63
HO281	Petunia hybrid well developed with fresh & healthy foliage in full bloom 15-20 plants in 60x35 cm Earthen Tray	each	26
HO282	Petunia hybrid well developed with fresh & healthy foliage in full bloom 15-20 plants in 60x35 cm Earthen Tray	each	315
HO283	Phlox in different colour well developed with fresh & healthy foliage 30 cm ht., in full bloom with stacking in 25 cm Earthen Pot/Plastic Pot.	each	53
HO284	Poinsettia Dwarf variety different colour well developed 25 to 30 cm ht., 3 to 4 branch full bloom with fresh & healthy foliage in 20 cm Earthen Pot/ Plastic Pot.	each	179
HO285	Poinsettia dwarf multi head, having 25 to 30 cm ht., with 5 to 7 branches with fully different coloured top with fresh & healthy foliage well developed in 25 cm Earthen Pot/Plastic Pot.	each	252

Unique Code	Description	Unit	Rate (INR)
HO286	Primula Hybrid variety specimen 5-6 s in each Pot with fresh & healthy foliage in full bloom different colour well developed in 60x35 cm Earthen Tray	each	420
HO287	Primula Hybrid variety well developed with fresh & healthy foliage with full bloom in 25 cm Earthen Pot/Plastic Pot.	each	84
HO288	Ranunculus Hybrid variety in different colour specimen 5-6 s in each Pot with fresh & healthy foliage in full bloom well developed in 60x35 cm Earthen Tray	each	504
HO289	Ranunculus Hybrid variety well developed with fresh & healthy foliage with 2-3 flower in bloom in 25 cm Earthen Pot/Plastic Pot.	each	105
HO290	Salvia dwarf variety with fresh & healthy foliage well developed multi branching in blooming stage in 15 cm Earthen Pot/Plastic Pot.	each	26
HO291	Salvia ht. 45 to 60 cm multi branches stacking with bamboo stick specimen type with full bloom well developed in 30 cm Earthen Pot/Plastic Pot.	each	126
HO292	Salvia ht. 45 to 60 cm multi branches stacking with bamboo stick specimen type with full bloom well developed in 25 cm Earthen Pot/Plastic Pot.	each	105
HO293	Salvia red Hybrid dwarf variety having 15 cm to 25 cm ht., well developed with fresh & healthy foliage in bloom in 20 cm Earthen Pot/Plastic Pot.	each	53
HO294	Salvia red Hybrid dwarf variety having 15 to 25 cm ht., specimen 6 with fresh & healthy foliage in full bloom well developed in 35 cm Earthen tray	each	53
HO295	Star of Bethlehem (Chinchi - Rinchi), 5 to 6 in each Pot full bloom, with fresh and healthy foliage flower in 35 cm Earthen Pot/Plastic Pot.	each	336
HO296	Stock Double Blue non-branching having 30 to 45 cm ht., with full bloom, well developed in 20 cm Earthen Pot/Plastic Pot.	each	53
HO297	Stock double white colour dwarf variety with fresh and healthy foliage with bloom in 20 cm Earthen Pot/Plastic Pot.	each	63
HO298	Stock single in different colour well developed with fresh & healthy foliage with full bloom in 20 cm Earthen Pot/Plastic Pot.	each	53
HO299	Tulip Dutch hybrid variety (3 in one) in each pot in full bloom fresh & bright in different colour well developed in 25 cm Earthen Pot/Plastic Pot.	each	179
HO300	Verbena in different colour having 30 to 45 cm ht., well developed with fresh & healthy foliage in bloom condition in 25 cm Earthen Pot/Plastic Pot.	each	63
	SUMMER & RAINY SEASONAL		
HO301	Celosia well developed fresh & healthy 20 to 25 cm ht. (attractive) multi branching at blooming stage in 20 cm Earthen Pot/Plastic Pot.	each	53
HO302	Cladium Hybrid variety 3 to 4 well developed with fresh & healthy foliage 30 to 45 cm ht. in different colour 25 cm Earthen Pot/Plastic Pot.	each	63
HO303	Cockscomb well developed fresh & healthy 20 to 25 cm ht. attractive colours fully bloomed in 20 cm Earthen Pot/Plastic Pot.	each	42
HO304	Cosmos well developed fresh & healthy 20 to 25 cm ht. attractive colours multi branching at blooming stage in 20 cm Earthen Pot/Plastic Pot.	each	42
HO305	Gaillardia double hybrid variety well developed 30 to 45 cm ht 20 to 30 fresh & healthy flower with green painted bamboo stick in 25 cm Earthen Pot/Plastic Pot.	each	53
HO306	Gamphrena well developed fresh & healthy 30 to 45 cm ht. bushy 15 & above flower in 20 cm Earthen Pot/Plastic Pot.	each	42
HO307	Kochia well developed fresh & healthy 20 to 25 cm ht. lush green well shaped in 15 cm Earthen Pot/Plastic Pot	each	32
HO308	Kochia well developed fresh & healthy 30 to 45 cm ht. lush green well shaped in 25 cm Earthen Pot/Plastic Pot.	each	42
HO309	Portulaca hybrid in different colour with bloom well developed fresh & healthy in 20 cm Earthen Pot/Plastic Pot.	each	84
HO310	Sunflower hybrid well developed 15 to 20 cm ht. with fresh & healthy foliage at blooming stage in 15 cm Earthen Pot/Plastic Pot.	each	32

Unique Code	Description	Unit	Rate (INR)
HO311	Sunflower single well developed 8 to 10 half bloom buds multi branched in fresh & healthy full stacked with green painted bamboo stick stacking in 25 cm Earthen Pot/Plastic Pot.	each	63
HO312	Tapioca variegated (Manihot esculenta) well developed fresh & healthy 30 to 45 cm ht. in bright colour foliage in 15 cm Earthen Pot/Plastic Pot.	each	32
HO313	Vinca different colour 6 to 8 well developed branch in full bloom stacked with green painted Bamboo stick in 20 cm Earthen Pot/Plastic Pot.	each	53
HO314	Vinca different colour fresh & healthy 25 to 30 cm ht. with bloom multi branchy in 15 cm Earthen Pot/Plastic Pot.	each	26
HO315	Vinca Hybrid in different colour fresh & healthy 20 to 25 cm ht. with bloom in 20 cm Earthen Pot/Plastic Pot.	each	42
HO316	Zinnia hybrid double in different colour well developed fresh & healthy 30 to 45 cm ht. (3 to 4 s in each pot) full bloom in 20 cm Earthen Pot/Plastic Pot.	each	42
	ROSE Plants		
HO317	Budded Rose (H.T. variety) 3 to 4 healthy branch 30 cm and above ht. well developed with one and above flower in 15 cm Earthen Pot.	each	32
HO318	Creeper Rose variety 3 to 4 healthy branch 60 cm and above ht. well developed with one and above flowers in 20 cm Earthen Pot.	each	74
HO319	Standard Rose (H.T. variety) 3 to 4 healthy branch 90 cm and above ht. well developed with one and above flowers in 25 cm Earthen Pot,	each	147
	ORNAMENTAL PLANTS		
HO320	Acalypha Different colour well developed, fresh & healthy with good foliage, multi branch 30 to 45 cm ht. plant in 15 cm size of Earthen Pot/ Plastic Pot.	each	35
HO321	Acalypha green well developed, fresh & healthy with good foliage, multi branch 30 to 45 cm ht. plant in 15 cm size Earthen Pot/ Plastic Pot.	each	35
HO322	Acalypha red well developed with fresh & healthy 30 to 45 cm ht. plant in 15 cm size Earthen Pot/ Plastic Pot.	each	40
HO323	Acalypha twisted well developed with fresh & healthy 30 cm ht. plant in 15 cm size Earthen Pot/ Plastic Pot.	each	40
HO324	Adenium Obesum grafted well developed with fresh & healthy 30 to 60 cm ht. plant in 25 cm size Earthen Pot/ Plastic Pot	each	280
HO325	Adenium Obesum well developed with fresh & healthy 4 to 5 branch 60 to 75 cm ht. plant in 40 cm size Earthen Pot/ Plastic Pot	each	550
HO326	Bamboo Buddha valley with fresh & healthy 3 to 4 suckers having 75 to 90 cm ht. plant in 30 cm size Earthen Pot/ Plastic Pot.	each	450
HO327	Bamboo Buddha valley variety with umbrella shape plant having 120 to 135 ht. plant with fresh & healthy foliage well developed in 40 cm Cement pot multy branch, bushy	each	1000
HO328	Bamboo Buddha Valley with fresh & healthy 5 to 6 suckers 1.80 m to 2.10m ht umbrella type plant well developed in 50 cm Cement Pot	each	1400
HO329	Bird of paradise well developed with fresh & healthy 90 to 120 cm ht in 30 cm Earthen Pot/ Plastic Pot	each	380
HO330	Bismarckia Palm 115 to 180 cm ht. plant, well developed 12 and above good colour fresh and healthy leaves in 40 cm Cement Pot	each	1890
HO331	Bougainvillea named variety, Sobhra, Thema, Marry palmar, Cherry Blossom etc. well developed with fresh & healthy bushy plant in full bloom 75 to 90 cm ht. plant in 35 cm Cement Pot	each	315
HO332	Cycus cirsnallis well developed with fresh & healthy 35 to 40 lush green leaves in 40 cm Cement Pot	each	1900
HO333	Cycus revoluta in 35 cm challi, specimen plant, having 30 to 40 with fresh and healthy, leaves having 25cm to 30cm circumference of base stem well developed	each	1155
HO334	Cycus revoluta specimen plant, having 45 to 50 fresh and healthy, leaves having 30cm to 35cm circumference of base stem well developed in 40 cm challi,	each	1500

Unique Code	Description	Unit	Rate (INR)
HO335	Cyprus Golden 30 to 45 cm ht. plant well developed good Golden colour foliage, Conical Shape in 30 cm Earthen Pots	each	370
HO336	Cyprus golden well shaped developed with good coloured foliage fresh & healthy 60 to 75 cm ht in 35 cm Earthen Pot	each	420
HO337	Cyprus Golden Conical Shape 150 to 165 cm ht. plant, with fresh and healthy Golden colour foliage in 40 cm Cement Pot	each	1575
HO338	Euphorbia milli hybrid variety with multi branch, full bloom, with fresh and healthy well developed having 30 to 45 cm ht. plant in 35 cm Cement Pot	each	630
HO339	Ficus black vivion piller Topiary (cylinder type) well developed with fresh & healthy 180 to 210 cm ht in 40 cm Cement Pot	each	2000
HO340	Ficus Long Island Topiary well developed with fresh & healthy 5 to 6 big ball specific size and shape 120 to 150 cm ht in 40 cm Cement Pot	each	1200
HO341	Ficus Nuda Topiary well developed with fresh & healthy 8 to 10 big ball specific size and shape 180 to 210 cm ht in 40 cm Cement Pot	each	2530
HO342	Ficus Nuda well developed with fresh & healthy foliage 45 to 60cm spread 75 to 90 cm ht. plant bushy plant in 35 cm Cement Pot	each	330
HO343	Ficus Retusa Topiary well developed with fresh & healthy 8 to 10 big ball specific size and shape 180 to 210cm ht in 40 cm Cement Pot	each	2100
HO344	Ficus reginold well developed fresh & healthy foliage 60 to 75 cm spread 105 to 120 cm ht. plant, Bushy plant in 35 cm Cement Pot	each	368
HO345	Ficus reginold piller type Topiary well developed with fresh & healthy 210 to 240 cm ht in 40 cm Cement Pot	each	2400
HO346	Ficus resnold Topiary well developed with fresh & healthy 8 to 10 big ball specific size 210 to 240 cm ht in 50 cm Cement Pot	each	1995
HO347	Ficus Starlight with fresh, healthy and attractive foliage 90 to 120 cm spread 75 to 90 cm ht. plant, specimen bushy plantain 35 cm Cement Pot	each	840
HO348	Fishtail palm well developed with fresh & healthy foliage leaves of ht 180 to 190 cm Specimen plant in 35 cm Cement Pot	each	300
HO349	Foxtail palm well developed with fresh & healthy foliage of ht. plant 210 to 240 cm in big 40 cm Cement Pot	each	1155
HO350	Furcaira variegated well developed with fresh & healthy foliage 8 to 10 leaves in 30 cm Earthen Pot	each	220
HO351	Furcaria Variegated hybrid well developed with fresh & healthy foliage 20 and above attractive leaves in 35 cm Cement Pot	each	440
HO352	Golden Bottle brush Topiary well developed with fresh & healthy foliage 5 to 6 big ball 115 to 180 cm ht in 40 cm Cement Pot	each	475
HO353	Zamia palm well developed with fresh & healthy leaves 120 cm ht in 35 cm cement pot	each	900
HO354	Latania Rubra Palm well developed with fresh & healthy foliage 150 to 180 cm ht. plant with 6 to 7 leaves in big 35 cm Cement Pot	each	1000
HO355	Mascarena palm well developed with fresh & healthy foliage leaves 180 to 210 cm ht in 40 cm Cement Pot	each	1800
HO356	Phoenix roebelenii palm well developed having 20 to 25 fresh & healthy leaves 90 to 135 cm ht. plant in 35 cm Cement Pot	each	525
HO357	Topiary plant of Ficus Bush King well developed with fresh & healthy foliage from Top to Bottom with single piller 60 to 75 cm spread, 210 to 225 cm ht. plant, in 35 cm Cement tray/Cement Pot	each	1260
HO358	Topiary plant of Ficus Nuda well developed with fresh & healthy foliage from Top to Bottom with single piller 75 to 90 cm spread, 195 to 210 cm ht. plant in 35 cm Cement tray /Cement Pot	each	1260
HO359	topiary plant of Ficus Panda well developed with fresh & healthy foliage with 6 to 7 Balls and 75 to 90 cm spread each Ball, 150 to 165 cm ht., in 35 cm Cement Tray /Cement Pot	each	1100

Unique Code	Description	Unit	Rate (INR)
HO360	Topiary planted Casuarina plant fresh & healthy having 8 to 10 specific shape and size ball well developed 195 to 210 cm ht. plant in 40 cm Cement Pot	each	1050
HO361	Travellers palm well developed with fresh & healthy foliage 150 to 180 cm ht. plant in 35 cm Cement Pot	each	473
HO362	Travellers palm well developed with fresh & healthy leaves foliage 210 to 240 cm ht specimen plant in 40 cm Cement Pot	each	950
HO363	Washingtonia filifera palm well developed 90 to 105 cm stem ht. plant having 5 to 6 straight fresh and healthy leaves in 35 cm Cement Pot	each	525
	GROUND COVER PLANTS		
HO364	Alpinia Variegated (three in one) having ht. 30 cm and above, with fresh and healthy variegated foliage in 20 cm size of Earthen Pot / Plastic Pot.	each	121
HO365	Alternanthera species of height 15 cm to 20 cm, full of branches and foliage in 15 cm size of Polybag	each	20
HO366	Asparagus Meyeri, well developed 15 to 20 leaves, full of branches and foliage in 15 cm size of Earthen Pot / Plastic Pot.	each	55
HO367	Asparagus sprengeri of height 30 cm to 45 cm, full of leafy branches in 20 cm size of Polybag.	each	40
HO368	Aspidistra, having 10 to 15 leaves well developed with fresh & healthy in 15 cm size of Earthen Pot / Plastic Pot.	each	40
HO369	Clerodendrum inerme of ht. 20 cm to 30 cm multi branched in 20 cm size of Polybag	each	10
HO370	Clerodendrum inerme having ht. 25 cm to 30 cm multi branched in 25 cm size of Earthen Pot / Plastic Pot.	each	20
HO371	Chlorophytum (Green), full of leafy suckers in 20 cm size of Polybag .	each	20
HO372	Plastic Chlorophytum-variegated, full of leafy suckers in 15 cm size of Polybag.	each	20
HO373	Cuphea chinensis of ht. 20-30 cm full of branches and healthy foliage in 15 cm size of Polybag.	each	20
HO374	Dianella variegated, with 3 to 4 variegated leaves in 15 cm size of Earthen Pot / Plastic Pot.	each	30
HO375	Duranta Golden, having ht.15 to 20 cm bushy shape with fresh and healthy leaves in 20 cm size of Polybag.	each	20
HO376	Euphorbia milli hybrid variety, having ht.30 cm to 45 cm with multi branch, full bloom, fresh and healthy leaves in 20 cm size of Earthen Pot / Plastic Pot.	each	70
HO377	Euphorbia milli hybrid variety, having ht. 30 cm to 45 cm with multi branch, full bloom, fresh and healthy leaves in 25 cm size of Earthen Pot / Plastic Pot.	each	105
HO378	Ipomoea (Golden leaves), with fresh and healthy leaves in 10 cm size of Earthen Pot / Plastic Pot.	each	20
HO379	Iresine herbstii, of height 20-30 cm. full of branches well developed in 10 cm size of Earthen Pot / Plastic Pot.	each	15
HO380	Iresine herbstii, of height 20-30 cm., full of branches well developed in 10 cm size of Earthen Pot / Plastic Pot.	each	20
HO381	Juniperous prostrata with 5 to 6 lateral branches and green foliage in 15 cm size of Earthen Pot / Plastic Pot.	each	30
HO382	.Ophiopogon, Green/Black full of leaves in 10 cm size of Earthen Pot / Plastic Pot.	each	20
HO383	Ophiopogon jaburan (variegated), full of variegated leaves in 10 cm size of Earthen Pot / Plastic Pot	each	20
HO384	Ophiopogon jaburan (variegated), full of variegated leaves in 15 cm Earthen Pot/Plastic Pot	each	30
HO385	Portulacaria afra (Jade) with 5 to 6 branches in 15 cm size of Earthen Pot / Plastic Pot.	each	30

Unique Code	Description	Unit	Rate (INR)
HO386	Schefflera green, having 3 to 4 branch, ht. 30 to 45 cm well developed with fresh & healthy in 15 cm size of Earthen Pot/Plastic Pot.	each	30
HO387	Setcreasea purpurea full of variegated leaves in 15 cm size of Earthen Pot/Plastic Pot.	each	20
HO388	Syngonium (Butterfly) variegated with 2-3 suckers healthy foliage in Earthen Pot/Plastic Pot of size 15 cm.each	each	30
HO389	Syngonium golden of height 30-45 cm. with 2-3 suckers healthy foliage in Earthen Pot/Plastic Pot of size 12.50 cm	each	30
HO390	Syngonium miniature dwarf, having height 30-45 cm. with 2-3 suckers healthy foliage in Earthen Pot/ Plastic Pot of size 15 cm.	each	42
HO391	Syngonium variegated, of height 30-45 cm. with 2-3 suckers healthy foliage in Earthen Pot/Plastic Pot of size 10 cm.	each	21
HO392	Tradescantia, full of leaves in Earthen Pot/Plastic Pot of size 15 cm.	each	21
HO393	Tradescantia zebrina having in 15 cm size of Earthen Pot / Plastic Pot.	each	20
HO394	Wedelia trilobata, full of leaves in 15 cm size of Earthen Pot / Plastic Pot.	each	15
	TREE PLANTS		
HO395	Acacia auriculiformis ht 150-165 cm in bag size 25 cm	each	65
HO396	Adansonia digitata (kalp vricksh) ht 150-165 cm in bag size 25 cm	each	265
HO397	Albizia lebbeck height 150-165 cm. in bag size 25 cm	each	65
HO398	Alstonia scholaris height 150-165 cm. in bag size 25 cm	each	65
HO399	Azadirachta indicia (Neem) height 120-130cm in big Polybag size 25 cm	each	65
HO400	Bassia latifolia (Mahua) height 90-105 cm. in big Polybag size 25 cm	each	65
HO401	Bauhinia blakeana (Kachnar) height 120-150 cm. in big poly bag size 25 cm	each	80
HO402	Bauhinia purpurea (Kachnar) height 150-165 cm. in big poly bag size 25 cm	each	50
HO403	Bombax ceiba height 150-165 cm. in big poly bag size 25 cm	each	70
HO404	Bottle palm ht. 120-150 cm bottom girth 15-20 cm well developed in big poly bags size 25 cm	each	180
HO405	Bottle palm ht. 210-240 cm bottom girth 25-30 cm well developed in big HDPE bags.	each	350
HO406	Bottle palm ht. 270-300 cm bottom girth 30-40 cm well developed in big HDPE bags	each	550
HO407	Butea frondosa (Flame Forest) height 60-75 cm. in big poly bag size 25 cm	each	55
HO408	Callistemon lanceolatus height 150-165 cm. in big poly bag size 25 cm	each	65
HO409	Casuarina equisetifolia height 150-165 cm in big poly bag size 25 cm	each	60
HO410	Cassia fistula (Amaltash) height 120-135 cm. in big poly bag size 25 cm	each	65
HO411	Cassia siamea height 150-165 cm. in big poly bag size 25 cm	each	65
HO412	Cassia javanica height 120-150 cm. in big poly bag size 25 cm	each	85
HO413	Cassia nodosa height 120-150 cm. in big poly bag size 25 cm	each	65
HO414	Ceiba pentandra height 150-165 cm. in big poly bag size 25 cm	each	65
HO415	Chorisia speciosa height 150-165 cm. in big poly bag size 25 cm	each	80
HO416	Chukrassia tabularis height 150-165 cm. in big poly bag size 25 cm	each	65
HO417	Dalbergia sissoo (Seasam) height 120-135 cm. in big poly bag size 25 cm	each	55
HO418	Delonix regia (Gulmohar) height 150-165 cm. in big poly bag size 25 cm	each	60
HO419	Erythrina indicia height 150-165 cm. in big Polybag size 25 cm	each	65
HO420	Ficus benjamina (green) height 120-135 cm. with 6-8 branches and lush green foliage in gunny bag size 25 cm	each	105
HO421	Ficus benjamina (green) height 150-165 cm., bushy with healthy branches and lush green foliage in 35 cm bags	each	180

Unique Code	Description	Unit	Rate (INR)
HO422	Ficus benghalensis (Banyan) height 120-135 cm. in big poly bag size 25 cm	each	65
HO423	Ficus bengalensis (variegated) height 75-90 cm., multibranched in earthen pot size 30 cm	each	80
HO424	Ficus bengalensis krishna height 75-90 cm., multibranched in earthen pot size 30 cm	each	120
HO425	Ficus elastica Decora (Rubber plant) height 45-60 cm. in earthen pot size 25 cm	each	65
HO426	Ficus infectoria (Pilkhan) height 150-165 cm. in big Polybag size 25 cm	each	65
HO427	Ficus lyrata height 45-60 cm. in earthen pot size 25 cm	each	90
HO428	Ficus nuda height 120-135 cm. with 6-8 branches and lush green foliage in gunny bag size 25 cm	each	120
HO429	Ficus nuda height 150-165 cm., bushy with healthy branches and lush green foliage in big size HDPE bag	each	190
HO430	Ficus religiosa (Peepal) height 150-165 cm. in big poly bag size 30 cm	each	65
HO431	Ficus retusa well branched height 120-135 cm. in big poly bag size 30 cm	each	120
HO432	Ficus shiela height 150-165 cm. in big poly bag size 25 cm	each	85
HO433	Fishtail palm ht. 150-180 cm bottom girth 15-20 cm well developed in big poly bag size 25 cm	each	200
HO434	Fishtail palm ht. 210-240 cm bottom girth 25-30 cm well developed in 30 cm HDPE bags	each	300
HO435	Fishtail palm ht. 270-300 cm bottom girth 30-35 cm well developed in 40 cm HDPE bags	each	550
HO436	Foxtail palm ht. 120-150 cm bottom girth 12-15 cm well developed in big poly bags size 25 cm	each	230
HO437	Foxtail palm ht. 180-210 cm bottom girth 15-20 cm well developed in big size HDPE bags	each	480
HO438	Foxtail palm ht. 240-270 cm bottom girth 25-30 cm well developed in big size HDPE bags	each	650
HO439	Grevillea Robusta (Silver Oak) height 150-165 cm. in big poly bag size 25 cm	each	50
HO440	Heterophragma adenophyllum (Marore fali) height 150-165 cm. in Big poly bag size 25 cm	each	60
HO441	Ingla dulcis (Jungle Jalebi) height 150-165 cm. in big poly bag size 25 cm	each	80
HO442	Jacaranda mimosifolia height 150-165 cm. in big poly bag size 25 cm	each	60
HO443	Kigelia pinnata height 150-165 cm. in big poly bag size 25 cm	each	80
HO444	Lagerstroemia flosreginae height 150-165 cm.in big poly bag size 25 cm	each	120
HO445	Lagerstroemia thorelli height 150-165 cm.in big poly bag size 25 cm	each	120
HO446	Magnolia grandiflora height 150-165 cm. in big poly bag size 25 cm	each	380
HO447	Mangifera indicia (Mango-grafted) height 60-75 cm. in big poly bag size 25 cm	each	55
HO448	Melia azedarach height 120-135 cm. in big poly bag size 25 cm	each	45
HO449	Michelia champa (Golden Champa) height 90-105 cm. in earthen pot size 25 cm	each	90
HO450	Milletia ovalifolia height 120-135 cm. in big poly bag size 25 cm	each	55
HO451	Millingtonia hortensis height 150-165 cm. in big poly bag size 25 cm	each	70
HO452	Mimusops elengi (Maulsri) height 150-165 cm. in big poly bag size 25 cm	each	75
HO453	Mimusops elengi (Maulsri) height 180-195 cm., well developed with thick stem in 30 cm HDPE bag	each	125
HO454	Nauclea cadamba (Kadam) height 150-165 cm. in big poly bag size 25 cm	each	65
HO455	Parkinsonia species height 120-135 cm. in big poly bag size 25 cm	each	45
HO456	Peltophorum species height 150-165 cm. in big poly bag size 25 cm	each	60
HO457	Phoenix sylvestris Roxb. (Wild date palm/khajur) height 150-165 cm. in 30-35 cm size HDPE Bag	each	650

Unique Code	Description	Unit	Rate (INR)
HO458	Phyllanthus emblica (Amla) height 150-165 cm. in 30 cm HDPE Bag	each	90
HO459	Pinus longifolia (Pinus) height 90-105 cm. in cement pot size 35 cm	each	550
HO460	Pithecellobium dulce (Jungle Jalebi) height 120-150 cm. in Big HDPE Bag	each	60
HO461	Plumeria acutifolia height 120-135 cm. with 2-3 branches in HDPE bag size 30 cm	each	110
HO462	Plumeria acutifolia height 150-165 cm. with 3-4 branches in 35 cm HDPE bag	each	200
HO463	Plumeria alba height 120-135 cm. with 2-3 branches in bag size 30 cm	each	120
HO464	Plumeria alba height 165-180 cm. with 3-4 branches and thick stem in 35 cm HDPE bags	each	225
HO465	Plumeria alba dwarf height 90-105 cm. with 3-4 branches and thick stem in 40 cm HDPE bags	each	750
HO466	Plumeria alba dwarf height 90-105 cm. with 3-4 branches and thick stem in 35 cm HDPE bags	each	400
HO467	Pongamia glabra (Papri) height 120-135 cm. in big poly bag size 25 cm	each	50
HO468	Polyalthia longifolia (Ashok) height 150-165 cm. in polybags size 25 cm	each	80
HO469	Polyalthia longifolia (Ashok) height 180-195 cm. in gunny bag size 30 cm	each	100
HO470	Polyalthia pendula (Ashok Pendula) height 150-165 cm. in polybags size 25 cm	each	80
HO471	Polyalthia pendula (Ashok Pendula) height 180-195 cm. in gunny bag size 30 cm	each	100
HO472	Pterospermum acerifolium (Kanak Champa) height 150-165 cm. in big poly bag size 25 cm	each	65
HO473	Putranjiva roxburghii height 90-105 cm. in big Polybag size 25 cm	each	45
HO474	Saraca indica (Sita Ashok) height 105-120 cm. in big poly bag size 25 cm	each	80
HO475	Schleichera trijuga (Kusum) height 150-165 cm. in big poly bag size 25 cm	each	70
HO476	Spathodea campanulata height 150-165 cm. in big poly bags size 25 cm	each	75
HO477	Eugenia jambolana (Jamun) height 150-165 cm. in big poly bag size 25 cm	each	75
HO478	Tabebuia sp. height 150-165 cm. in big Polybag size 25 cm	each	85
HO479	Tamarindus indica (Imli) height 120-150 cm. in big Polybag size 25 cm	each	80
HO480	Tecoma argentea height 120-135 cm. in big poly bag size 25 cm	each	80
HO481	Tectona grandis (Teak) height 150-165 cm. in big Polybag size 25 cm	each	110
HO482	Terminalia arjuna height 150-165 cm. in big Polybag size 25 cm	each	60
HO483	Washingtonia filifea palm stem ht. 60-90 cm with 6-7 healthy leaves lush green leaves well developed in big size HDPE Bags	each	400
HO484	Washingtonia filifea palm stem ht. 90-120 cm with 8-10 healthy leaves lush green leaves well developed in big size HDPE Bags	each	650
	SHRUBS		
HO485	Bauhinia acuminata height 60-75 cm. in Polybag of size 20 cm	each	45
HO486	Bauhinia tomentosa (yellow) of height 60-75 cm. in Polybag of size 20 cm	each	45
HO487	Beloperone species of height 30-45 cm. in poly bag of size 20 cm	each	40
HO488	Caesalpinia pulcherrima species of height 45-60 cm. in Polybag of size 20 cm	each	45
HO489	Calliandra, emarginata of height 45-60 cm. in Polybag of size 20 cm	each	35
HO490	Calliandra hybrida of height 75-90 cm. with 4-5 branches in bag of size 25 cm	each	45
HO491	Calliandra hybrida of height 105-120 cm., well branched, bushy in big size HDPE bag	each	90
HO492	Cassia biflora of height 45-60 cm. in earthen pots of size 15 cm	each	45
HO493	Cassia biflora of height 60-75 cm. with 4-5 branches in earthen pot of size 20 cm	each	55
HO494	Cassia biflora of height 90-105 cm., well branched, bushy in 30 cm HDPE bag	each	100
HO495	Cassia laevigata of height 45-60 cm. in Polybag of size 20 cm	each	35
HO496	Cassia laevigata of height 60-75 cm. with 4-5 branches in bag of size 20 cm	each	40

Unique Code	Description	Unit	Rate (INR)
HO497	Cestrum noctumum (Raat ki Rani) of height 60-75 cm. with 4-5 branches in bag of size 25 cm	each	40
HO498	Dombeya mastersii of height 60-75 cm. with 4-5 branches in bag of size 25 cm	each	110
HO499	Euphorbia caracasana (bronze colour leaves) of height 60-75 cm. with 2-3 branches in earthen pots of size 15 cm	each	40
HO500	Euphorbia caracasana (bronze colour leaves) of height 60-75 cm. with 4-5 branches in bag of size 25 cm	each	55
HO501	Euphorbia caracasana (bronze colour leaves) of height 90-105 cm., bushy in big size HDPE bag	each	105
HO502	Euphorbia pulcherrima (dark red double bracts) well branched of height 60- 75 cm. in earthen pot of size 25 cm	each	110
HO503	Euphorbia pulcherrima (dark red) well branched (poinsettia Red Hegg) of height 60-75 cm. In earthen pots of size 20 cm	each	60
HO504	Excoecaria bicolour of height 45-60 cm. in earthen pots of size 15 cm	each	40
HO505	Ficus blackii (F.vivion) of height 45-60 cm. with 6-8 branches healthy foliage in earthen pot of size 25 cm	each	110
HO506	Ficus blackii (F.vivion) (bushy) of height 150-165 cm. with 8-10 branches and healthy foliage in earthen pot of size 30 cm	each	250
HO507	Ficus regineld well branched, bushy of height 60-75 cm. in earthen pot of size 25 cm	each	100
HO508	Ficus panda of height 30-45 cm. with 3-4 branches and healthy foliage in Polybag of size 20 cm	each	35
HO509	Ficus panda of height 45-60 cm. with 6-7 branches and healthy foliage in Polybag of size 25 cm	each	55
HO510	Ficus panda of height 60-90 cm, with 8-10 branches, and healthy foliage, bushy in big size HDPE bag	each	180
HO511	Ficus panda of height 90-105 cm. with 10-12 branches and healthy foliage, well formed in cement pot of size 30 cm	each	225
HO512	Gardenia jasminoides of height 45-60 cm. with 3-4 branches in earthen pots of size 15 cm	each	50
HO513	Hamelia patens of height 30-45 cm. with 3-4 branches in poly bag of size 20 cm	each	20
HO514	Hamelia patens of height 60-75 cm. with 6-8 branches in poly bag of size 25 cm	each	50
HO515	Hamelia patens of height 90-105 cm. bushy in big size HDPE bag	each	100
HO516	Hamelia patens (Dwarf) of height 30-45 cm. with 3-4 branches in earthen pots of size 15 cm	each	40
HO517	Hibiscus rosasinensis of height 45-60 cm. with 3-4 branches in earthen pots of size 15 cm	each	35
HO518	Hibiscus rosasinensis of height 60-75 cm. with 5-6 branches in p.bag of size 20 cm	each	45
HO519	Hibiscus rosasinensis of height 90-105 cm., bushy in 35 cm HDPE bag	each	90
HO520	Hibiscus variegated of height 45-60 cm. with 3-4 branches and healthy variegated foliage in earthen pots of size 15 cm	each	45
HO521	Hibiscus variegated of height 60-75 cm. with 8-10 branches and healthy variegated foliage in cement pot of size 35 cm	each	180
HO522	Hibiscus variegated of height 60-75 cm. with healthy variegated foliage in Polybag of size 25 cm	each	55
HO523	Jatropha multifida (red colour) of height 45-60 cm. with 2-3 branches in earthen pots of size 15 cm	each	35
HO524	Jatropha multifida (red colour) of height 60-75 cm. multibranched in Polybag of size 20 cm	each	45
HO525	Lagerstroemia indicia of height 90-105 cm. multibranched in Polybag of size 25 cm	each	40

Unique Code	Description	Unit	Rate (INR)
HO526	Lagerstroemia indicia of height 45-60 cm. in Polybag of size 20 cm	each	30
HO527	Malpighia coccigera of height 30-45 cm., multibranched in Polybag of size 20 cm	each	50
HO528	Murraya exotica of height 45-60 cm. in poly bag of size 15 cm	each	15
HO529	Murraya Koenigii spreng (Kadipatta/meetha neem) of ht 45-60 cm well developed in Polybag of size 20 cm.	each	25
HO530	Mussaenda erythrophylla (Rosea) of height 60-75 cm. multi branched in Polybag of size 25 cm	each	110
HO531	Nerium oleander (Kaner) of height 45-60 cm. with 3-4 branches in poly bag of size 20 cm	each	30
HO532	Nerium oleander (kaner) of height 60-75 cm. with 5-6 branches in poly bag of size 25 cm	each	40
HO533	Nerium oleander (kaner) dwarf of height 30-40 cm. in earthen pot of size 20 cm	each	40
HO534	Nerium oleander variegated of height 45-60 cm. in earthen pot of size 20 cm	each	40
HO535	Nerium oleander variegated of height 60-75 cm., multibranched in Polybag of size 25 cm	each	60
HO536	Nyctanthes arbor-tristis(Har singar) of ht. 90-105 cm in Polybag of size 20 cm	each	40
HO537	Plumbego capensis well developed with fresh and healthy 30 to 45 cm ht., with bloom in 20 cm Polybag	each	60
HO538	Putranjiva roxburghii of ht. 45-60 cm in bag of size 15 cm	each	20
HO539	Putranjiva roxburghii of ht. 60-75 cm in bag of size 20 cm	each	30
HO540	Tabernaemontana coronaria (Chandni single) of height 45-60 cm. in Polybag of size 20 cm	each	35
HO541	Tabernaemontana coronaria (Chandni single) of height 75-90 cm. with 5-6 branches in bag of size 25 cm	each	45
HO542	Tabernaemontana coronaria (Chandni single) of height 90-105 cm.,bushy in 35 cm size HDPE bag	each	80
HO543	Tabernaemontana coronaria (chandni variegated) of height 45-60 cm. with 3-4 branches Polybag of size 20 cm	each	45
HO544	Tabernaemontana coronaria (Chandni single) variegated of height 60-75 cm., 5-6 branches in Polybag of size 25 cm	each	55
HO545	Tabernaemontana coronaria (Chandni single) variegated of height 105-120 cm., multibranched, bushy in 35 cm size HDPE bag	each	110
HO546	Tabernaemontana divaricata (Chandni double) of height 45-60 cm. in Polybag of size 20 cm	each	40
HO547	Tabernaemontana divaricata (Chandni double) of height 75-90 cm. with 4-5 branches in bag of size 25 cm	each	40
HO548	Tabernaemontana divaricata (Chandni double) of height 90-105 cm., bushy in 35 cm size HDPE bag	each	90
HO549	Tecoma gaudichaudi of height 45-60 cm. in earthen pot of size 20 cm	each	35
HO550	Tecoma gaudichaudi of height 60-75 cm. with 5-6 branches in p.bag of size 25 cm	each	50
HO551	Tecoma gaudichaudi of height 90-105 cm.,bushy in 35 cm size HDPE bag	each	110
HO552	Tecoma stans of height 45-60 cm. branched in Polybag of size 20 cm	each	45
HO553	Tecoma stans of height 60-75 cm. branched in Polybag of size 20 cm	each	60
HO554	Tecoma stans of height 90-105 cm. bushy in 35 cm size HDPE bag	each	120
HO555	Thevetia nerifolia of height 30-45 cm. with 3-4 branches in poly bag of size 20 cm	each	35
HO556	Thevetia nerifolia of height 60-75 cm. with 5-6 branches in poly bag of size 25 cm	each	45
HO557	Thuja compacta of height 45-60 cm., well branched in Polybag of size 25 cm	each	65
HO558	Thuja compacta of height 75-90 cm., conical shaped, well formed with healthy foliage in Polybag of size 30 cm	each	130

Unique Code	Description	Unit	Rate (INR)
	CREEPER PLANTS		
HO559	Allamanda cathartic of height 30 cm to 45 cm. in 20 cm size of Polybag	each	45
HO560	Allamanda violacea of height 30 cm to 45 cm. in poly bag of size 20 cm	each	45
HO561	Bignonia venusta (Golden shower) of height 30 cm to 45 cm. in 20 cm size of Earthen pot/Plastic pot	each	40
HO562	Bougainvillea (Variety Butiana, Lady Mary Baring, Mahara,Mohan,Scarlet Queen, Variegated, Glabra Formosa, Peruvian Odissi, Paratha, Subhra,Thimma, Spectabilis L.N Birla, Refulgence) plant of height 30 cm. to 45 cm. with 2-3 branches in 20 cm size of Polybag .	each	40
HO563	Clerodendrum splendens of height 30 cm to 45 cm. in 20 cm size of Polybag	each	30
HO564	Clerodendrum thomsoniae of height 30 cm.to 45 cm. in 30 cm to 45 cm. in 20 cm size of Polybag.	each	45
HO565	Ipomea purpurea (Morning glory) of height 30 cm to 45 cm. in 20 cm size of Earthen pot/Plastic pot	each	35
HO566	Jasmine grandiflorum (chameli) of height 30 cm to 45 cm. in 20 cm size of Polybag.	each	30
HO567	Jasmine humile (Yellow) of height 30 cm to 45 cm. in 20 cm size of Polybag	each	30
HO568	Passiflora caerulea (Rakhi bel) of height 30 cm to 45 cm. in 20 cm size of Polybag	each	50
HO569	Petra volubilis of height 30 cm to 45 cm. in 20 cm size of Polybag	each	48
HO570	Quisqualis indicia of height 30 cm to 45 cm. in 20 cm size of Polybag	each	25
HO571	Tacoma grandiflora of height 30 cm to 45 cm. in 20 cm size of Polybag	each	40
HO572	Vernonia elaegnifolia (curtain creeper) of height 30 cm to 45 cm. in 20 cm size of Polybag	each	25
	ANNUAL FLOWER SEEDLINGS/CUTTING **Winter seasonal seedlings/cuttings of F1 Hybrid at site of work well developed and healthy free from disease in per tray and each tray having 100 No. plants.**		
HO573	Alyssum	per tray	600
HO574	Antirrhinum dwarf	per tray	857
HO575	Aster dwarf	per tray	714
HO576	Brachycome	per tray	714
HO577	Calendula double	per tray	714
HO578	Carnation (double) Dutch	per tray	1428
HO579	Carnation (double) Lilliput	per tray	1714
HO580	Carnation hybrid	per tray	1214
HO581	Chrysanthemum double	per tray	571
HO582	Cineraria	per tray	750
HO583	Cineraria dwarf hybrid	per tray	1000
HO584	Clarkia hybrid	per tray	1000
HO585	Cosmos hybrid	per tray	1000
HO586	Dahlia double	per tray	750
HO587	Daisy hybrid	per tray	571
HO588	Dianthus hybrid	per tray	714
HO589	Gazania hybrid	per tray	714
HO590	Gerbera hybrid double	per tray	3143
HO591	Lupine hybrid	per tray	600
HO592	Marigold French Hybrid dwarf	per tray	600
HO593	Marigold Inca hybrid	per tray	714
HO594	Nasturtium	per tray	714

Unique Code	Description	Unit	Rate (INR)
HO595	Nemesia hybrid	per tray	600
HO596	Pansy Hybrid	per tray	928
HO597	Petunia hybrid	per tray	928
HO598	Phlox mix colour hybrid	per tray	714
HO599	Poppy double	per tray	714
HO600	Salvia	per tray	600
HO601	Salvia Hybrid different colour	per tray	714
HO602	Stock double	per tray	714
HO603	Verbena hybrid	per tray	571
HO604	Balsam seedling	per tray	714
HO605	Celosia argentea & Celosia crostata Hybrid	per tray	600
HO606	Cosmos hybrid	per tray	857
HO607	Gaillardia Double	per tray	600
HO608	Gomphrena	per tray	714
HO609	Kochia	per tray	600
HO610	Portulaca hybrid	per tray	600
HO611	Sunflower Dwarf	per tray	714
HO612	Vinca Hybrid	per tray	600
HO613	Zinnia hybrid	per tray	600
HO614	Aglaonema Butterfly plant having ht.30 cm 10 to 12 fresh, healthy and attractive colourful leaves, well developed in 25 cm size Earthen pot/ Plastic pot	each	180
HO615	Aglaonema Ice plant ht.25 cm having 10 to 12 fresh, healthy and attractive colourful leaves, well developed in 25 cm size Earthen pot/Plastic pot	each	180
HO616	Aglaonema sam plant,ht.30 cm well developed three in one, having 18 to 20 fresh, healthy and attractive colourful leaves in 30 cm size Earthen pot/ Chali/tray	each	300
HO617	Araucaria cookie plant, having ht. 75 cm to 90 cm, straight, well developed, fresh and healthy with lush green leaves from bottom top in 25 cm size of Earthen pot/Plastic pot .	each	250
HO618	Brassia hicolour 3 in 1 well developed with fresh, healthy from bottom top with 30 cm to 45 cm ht. in 25 cm size Plastic pot/Earthen pot	each	125
HO619	Dieffenbachia superba, well developed, with 10-12 fresh, healthy and attractive leaves 45 cm to 60 cm ht. in 25 cm size Earthen pot/ Plastic pot	each	160
HO620	Dracaena pendanus, well developed, having 6 to 8 suckers with healthy foliage in 20 cm size Earthen pot/Plastic pot.	each	180
HO621	Rubber plant black variety, well developed, having 45 to 60 cm ht.with fresh, healthy and attractive colourful leaves in 25 cm size Earthen pot/ Plastic pot	each	90
HO622	Rubber plant varigated, well developed, having 45 to 60 cm ht.with fresh, healthy and attractive colourful leaves in 20 cm size Earthen pot/Plastic pot	each	150
HO623	Schefflera green 3 in 1 well developed with fresh, healthy and attractive foliage from having 45 cm to 60 cm ht. in 25 cm size Earthen pot/Plastic pot	each	200
HO624	Spathiphyllum (peace Lilly), having 15 cm to 25 cm ht. blooming stag with fresh & healthy foliage well developed in 15 cm of Earthen pot/plastic pot	each	90
HO625	Bush Rose in different colour 2 to 3 healthy branch 30 cm and above ht. well developed with 8 or more flowers / flower buds in 20 cm Earthen pot/ Plastic pot	each	50
HO626	Motia of height 25 to 30 cm., 2 to 3 branch in earthen pot of size 20 cm	each	40
HO627	Mogra of height 25 to 30 cm., 2 to 3 branch in earthen pot of size 20 cm	each	45
HO628	Canna dwarf of height 25 to 30 cm., 2 to 3 suckers in earthen pot of size 20 cm	each	35
HO629	Chandni dwarf of height 15-20 cm., well branched in earthen pots of size 15 cm	each	35

Unique Code	Description	Unit	Rate (INR)
HO630	Ficus long Island of height 15 cm to 20 cm, full of branches and foliage in 15 cm size of Earthen Pot / Plastic Pot	each	45
	Multiplication factors for LS rates		
LS001	Multiplication factor for enhancing value of LS of HSR items adopted in the revise version of HSR	factor	2
LS002	Carriage multiplication factor	LS	1
LS003	Carriage and sundries multiplication factor	LS	1
LS004	Sundries multiplication factor	LS	1
	MATERIAL USED FOR ROAD WORKS		
RM001	Stone Boulder of size 150 mm and below at Curser Plant	cum	300
RM002	Supply of quarried stone 150 - 200 mm size for Hand Broken at site	cum	300
RM003	Boulder with minimum size of 300 mm for Pitching at Site	cum	300
RM004	Coarse sand at Mixing Plant	cum	650
RM005	Coarse sand at Site	cum	650
RM006	Fine sand at Site	cum	600
RM007	Moorum at Site	cum	600
RM008	Gravel/Quarry spall at Site	cum	600
RM009	Granular Material or hard moorum for GSB works at Site	cum	600
RM010	Fly ash conforming to IS: 3812 (Part II & I) at HMP Plant / Batching Plant / Crushing Plant	cum	4
RM011	Filter media/Filter Material as per Table 300-3 (MoRTH Specification)	cum	1020
RM012	Close graded Granular sub-base Material 53 mm to 9.5 mm	cum	600
RM013	Close graded Granular sub-base Material 37.5 mm to 9.5 mm	cum	600
RM014	Close graded Granular sub-base Material 26.5 mm to 9.5 mm	cum	600
RM015	Close graded Granular sub-base Material 9.5 mm to 4.75 mm	cum	600
RM016	Close graded Granular sub-base Material 9.5 mm to 2.36 mm	cum	600
RM017	Close graded Granular sub-base Material 4.75mm to 2.36 mm	cum	600
RM018	Close graded Granular sub-base Material 4.75mm to 75 micron mm	cum	650
RM019	Close graded Granular sub-base Material 2.36 mm	cum	650
RM020	Stone crusher dust finer than 3mm with not more than 10% passing 0.075 sieve.	cum	650
RM021	Coarse graded Granular sub-base Material 2.36 mm & below	cum	650
RM022	Coarse graded Granular sub-base Material 4.75mm to 75 micron mm	cum	650
RM023	Coarse graded Granular sub-base Material 4.75 mm to 2.36 mm	cum	650
RM024	Coarse graded Granular sub-base Material 9.5 mm to 4.75 mm	cum	600
RM025	Coarse graded Granular sub-base Material 26.5 mm to 4.75 mm	cum	600
RM026	Coarse graded Granular sub-base Material 37.5 mm to 9.5 mm	cum	600
RM027	Coarse graded Granular sub-base Material 53 mm to 26 .5mm	cum	350
RM028	Aggregates below 5.6 mm	cum	600
RM029	Aggregates 22.4 mm to 2.36 mm	cum	600
RM030	Aggregates 45 mm to 2.8 mm	cum	600
RM031	Aggregates 45 mm to 22.4 mm	cum	600
RM032	Aggregates 53 mm to 2.8 mm	cum	600
RM033	Aggregates 63 mm to 2.8 mm	cum	600
RM034	Aggregates 63 mm to 45 mm	cum	600
RM035	Aggregates 90 mm to 45 mm	cum	600

Unique Code	Description	Unit	Rate (INR)
RM036	Aggregates 10 mm to 5 mm	cum	600
RM037	Aggregates 11.2 mm to 0.09 mm	cum	600
RM038	Aggregates 13.2 mm to 0.09 mm	cum	600
RM039	Aggregates 13.2 mm to 5.6 mm	cum	600
RM040	Aggregates 13.2 mm to 10 mm	cum	600
RM041	Aggregates 20 mm to 10 mm	cum	600
RM042	Aggregates 25 mm to 10 mm	cum	600
RM043	Aggregates 37.5 mm to 25 mm	cum	600
RM044	Aggregates 6 mm nominal size	cum	600
RM045	Aggregates 10 mm nominal size	cum	600
RM046	Aggregates 13.2/12.5 mm nominal size	cum	600
RM047	Aggregates 20 mm nominal size	cum	600
RM048	Aggregates 25 mm nominal size	cum	600
RM049	Aggregates 40 mm nominal size	cum	600
RM050	AC pipe 100 mm dia	metre	150
RM051	Aluminium alloy/galvanised steel	tonne	55000
RM052	Aluminium studs 100 x 100 mm fitted with lense reflectors	nos	250
RM053	Barbed wire	kg	55
RM054	Bearing (Cast steel rocker bearing assembly of 250 tonne)	nos	125000
RM055	Bearing (Elastomeric bearing assembly consisting of 7 internal layers of elastomer bonded to 6 nos. internal reinforcing steel laminates by the process of vulcanisation,)	nos	8000
RM056	Bearing (Forged steel roller bearing of 250 tonne	nos	100000
RM057	Bearing (Pot type bearing assembly consisting of a metal piston supported by a disc, PTFE pads providing sliding surfaces against stainless steel mating together with cast steel assemblies/fabricated structural steel assemblies duly painted with all components	nos	35000
RM058	Bearing (PTFE sliding plate bearing assembly of 80 tonnes)	nos	14000
RM059	Bearing (Supply of sliding plate bearing of 80 tonne)	nos	14400
RM060	Bentonite	kg	3
RM061	Binding wire	kg	48
RM062	Bitumen VG - 30	tonne	39256
RM063	Bitumen VG - 10	tonne	38456
RM064	Bitumen (emulsion)	tonne	35000
RM065	Bitumen (modified graded) CRMB 55	tonne	40416
RM066	Brick	each	5
RM067	C.I.shoes for the pile	kg	80
RM068	Cement	tonne	4940
RM069	Cold twisted bars (HYSD Bars)	tonne	50000
RM070	Collar for joints 300 mm dia	nos	44
RM071	Compressible Fibre Board(20mm thick)	sqm	390
RM072	Connectors/ Staples	each	15
RM073	Copper Plate(12m long x 250mmwide)	kg	600
RM074	Corrosion resistant Structural steel	tonne	55000
RM075	Corrugated sheet, 3 mm thick, "Thrie" beam section railing	kg	56
RM076	Credit for excavated rock found suitable for use	cum	200
RM077	Curing compound	litre	38

Unique Code	Description	Unit	Rate (INR)
RM078	Delineators from ISI certified firm as per the standard drawing given in IRC - 79	each	1100
RM079	Earth Cost or compensation for earth taken from private land	cum	20
RM080	Elastomeric slab seal expansion joint assembly manufactured by using chloroprene, elastomer for elastomeric slab unit conforming to clause 915.1 of IRC: 83 (part II),	metre	10000
RM081	Electric Detonators @ 1 detonator for 1/2 gelatine stick of 125 gms each	100 nos	350
RM082	Epoxy compound with accessories for preparing epoxy mortar	kg	371
RM083	Epoxy mortar	kg	205
RM084	Epoxy primer	kg	230
RM085	Epoxy resin-hardener mix for prime coat	kg	150
RM086	Flag of red colour cloth 600 x 600 mm	each	15
RM087	Galvanised MS flat clamp	nos	30
RM088	Galvanised steel wire crates of mesh size 100 mm x 100 mm woven with 4mm dia. GI wire in rolls of required size.	sqm	200
RM089	Galvanised structural steel plate 200 mm wide, 6 mm thick, 24 m long	kg	56
RM090	Gelatine 80%	kg	83
RM091	Geo grids	sqm	65
RM092	Geomembrane	sqm	80
RM093	Geonets	sqm	60
RM094	Geotextile	sqm	40
RM095	Geotextile filter fabric	sqm	55
RM096	GI bolt 10 mm Dia	nos	9
RM097	Grouting pump with agitator	hour	200
RM098	HDPE pipes 75mm dia	metre	67
RM099	HDPE pipes 90mm dia	metre	96
RM100	Helical pipes 600mm diameter	metre	1200
RM101	Hot applied thermoplastic compound	litre	85
RM102	HTS strand	tonne	65000
RM103	Joint Sealant Compound	kg	160
RM104	Jute netting, open weave, 2.5 cm square opening for seeding and Mulching	sqm	30
RM105	LDO for steam curing	litre	50
RM106	M.S. Clamps	nos	20
RM107	M.S. Clamps	kg	55
RM108	M.S. Shoes @ 35 Kg per pile of 15 m	kg	60
RM109	Mild Steel bars	tonne	49000
RM110	Modular strip/box seal expansion joint including anchorage catering to a horizontal movement beyond 70 mm and up to 140mm assembly comprising of edge beams, central beam,2 modules chloroprene seal, anchorage elements, support and control system, all steel sections protected against corrosion and installed by the manufacturer or his authorised representative	metre	26334
RM111	Modular strip/box seal expansion joint catering to a horizontal movement beyond 140mm and up to 210mm box/box seal joint assembly containing 3 modules/cells and comprising of edge beams, two central beams, chloroprene seal, anchorage elements, support and control system, all steel sections protected against corrosion and installed by the manufacturer or his authorised representative	metre	291060
RM112	Nipples 12mm	nos	50
RM113	Nuts and bolts	kg	60
RM114	Paint	litre	165

Unique Code	Description	Unit	Rate (INR)
RM115	Pavement Marking Paint	litre	120
RM116	Paving Fabric	sqm	58
RM117	Perforated Geosynthetic pipe 150 mm dia	metre	150
RM118	Plastic sheath, 1.25 mm thick for dowel bars	sqm	61
RM119	Polymer braids	metre	200
RM120	Pre moulded Joint filler,25 mm thick for expansion joint.	sqm	350
RM121	Pre-coated stone chips of 13.2 mm nominal size	cum	2365
RM122	Preformed continuous chloroprene elastomer or closed cell foam sealing element with high tear strength, vulcanised in a single operation for the full length of a joint to ensure water tightness.	metre	3000
RM123	Pre-moulded asphalt filler board	sqm	250
RM124	Pre-packed cement based polymer concrete of strength 45 Mpa at 28 days	kg	18
RM125	Sealant Primer	kg	140
RM126	Quick setting compound	kg	55
RM127	Random Rubble Stone	cum	1100
RM128	RCC Pipe NP 4 heavy duty non pressure pipe 1000 mm dia	metre	4500
RM129	RCC Pipe NP 4 heavy duty non pressure pipe 1200 mm dia	metre	5200
RM130	RCC Pipe NP 4 heavy duty non pressure pipe 300 mm dia	metre	1100
RM131	Reflectorising glass beads	kg	70
RM132	Reinforcement strips 60 mm wide 5 mm thick as per clause 3102. (Galvanised carbon steel strips)	metre	164
RM133	Reinforcement strips 60 mm wide 5 mm thick as per clause 3102. (Glass reinforced polymer/fibre reinforced polymer/polymeric strips)	metre	32
RM134	Sand bags (Cost of sand and Empty cement bag)	nos	50
RM135	Scrap tyres of size 900 x 20	nos	900
RM136	Seeds	kg	225
RM137	Separation Membrane of impermeable plastic sheeting 125 micron thick	sqm	12
RM138	Sheathing duct	metre	75
RM139	Sludge / Farm yard manure @ 0.18 cum per 100 sqm at site of work for turfing	cum	400
RM140	Square Rubble Coursed Stone	cum	1100
RM141	Steel helmet and cushion block on top of pile head during driving.	kg	275
RM142	Steel pipe 25 mm external dia as per IS:1239	metre	90
RM143	Steel pipe 50 mm external dia as per IS:1239	metre	216
RM144	Steel wire rope 20 mm	kg	60
RM145	Steel wire rope 40 mm	kg	60
RM146	Strip seal expansion join	metre	4000
RM147	Structural Steel	tonne	50000
RM148	Super plasticiser admixture IS marked as per 9103-1999	kg	41
RM149	Synthetic GeoGrids as per clause 3102.8 and approved design and specifications.	sqm	92
RM150	Through and bond stone	each	50
RM151	Tie rods 20mm diameter	nos	280
RM152	Timber	cum	26000
RM153	Traffic cones with 150 mm reflective sleeve	nos	350
RM154	Tube anchorage set complete with bearing plate, permanent wedges etc	nos	1200
RM155	Unslaked lime	tonne	3000
RM156	Water	KL	50

Unique Code	Description	Unit	Rate (INR)
RM157	Water based cement paint	litre	38
RM158	Welded steel wire fabric	kg	60
RM159	Wooden ballies 2" Dia for bracing	each	50
RM160	Wooden ballies 8" Dia and 9 m long	each	723
RM161	Wooden packing	cum	60000
RM162	Wooden staff for fastening of flag 25 mm dia, one m long	each	15
RM163	Moulded shank Road stud	nos	170
RM164	Flexible Median Marker, high impact resistant thermoplastic body, with reflective sheeting of Type XI, edge protected against vandalism, overall height 180 mm, body thickness 2 mm and depth of shank 30 mm	nos	195
RM165	Solar cat eye, produced from engineered polymer, impact resistant, top transparent, storage device for energy storage and LEDs for illumination, tested as per ASTM D4280	Nos	1800
RM166	Bearing (rolled/Cast steel spherical bearing assembly of 250 tonne) as per IRC: 83(Pt.-IV) section IX and clause 2014 of MoRTH specifications	Nos	60000
RM167	RCC Pipe NP 4 heavy duty non pressure pipe 1000 mm dia	metre	4500
RM168	RCC Pipe NP 4 heavy duty non pressure pipe 1200 mm dia	metre	5500
RM169	350 NB heavy duty MS pipe (@50 kg/m) for column	quintal	5200
RM170	MS plates - 8mm foundation plate & top supporting plate, 10 mm bracing supporting plate, 12 mm top, base & base supporting plate	quintal	5200
RM171	Anchor bolts(25 mm) and nuts for foundation and for fixing plate with truss @ 2% of pipe weight	kg.	75
RM172	3 mm thick Aluminium Composite Material (ACM) sheeting having aluminium skin thickness of 0.4 to 0.5 mm on both sided	sqm	825
RM173	4mm thick Aluminium Composite Material (ACM) sheeting having aluminium skin thickness of 0.4 to 0.5 mm on both sided	sqm	1100
RM174	High intensity Micro prismatic grade Retro reflective sheeting Type XI as per IRC 67 2012 including pasting on board base	sqm	2500
RM175	High intensity Micro prismatic grade Retro reflective sheeting Type IV as per IRC 67 2012 including pasting on board base	sqm	1200
RM176	Labour work for manufacturing signs, such as cutting, plotting, pasting with transfer tape	sqm	300
RM177	Epoxy paint of approved quality two coats	litre	195
RM178	Red Oxide Primer of approved quality	litre	95
RM179	Welding rod box for fabrication of truss	each	160
RM180	Bitumen VG-40	tonne	40736
RM181	NP3/NP4 600 dia RCC Pipes	metre	2000
RM182	UV Over laminate with 2% wastage	sqm	1130
RM183	Lime stone Dust 10% 34.685 cum i.e. 55.22 MT	tonne	600
RM184	100 mm thick interlocking paver blocks (M-50)	sqm	500
RM185	80 mm thick interlocking paver blocks (M-40)	sqm	440
RM186	Edge block	metre	50
RM187	Hybrid Geo-Synthetic Non Woven Glass Fibre Engineering Paving Mat	sqm	200
RM188	R.C.C. pipes NP2 class 350 mm dia	metre	484
RM189	60 mm thick interlocking paver blocks (M-35)	sqm	380
RM190	Wire mesh 50mm x 50mm size of 3mm wire	kg	60
RM191	Acrylic polymer bonding coat	litre	260
RM192	Waste Plastic (cleanied & shredded) for use in wearing course of Bituminous Works	tonne	38000

CHAPTER NO. 3

LOADING, UNLOADING and CARRIAGE of MATERIALS

CHAPTER 3.0 - LOADING, UNLOADING AND CARRIAGE OF MATERIALS

Notes:

1.1 The carriage and stacking of materials shall be done as directed by the Engineer-in- Charge. Any tools and plants, required for the work shall be arranged by the Contractor. The carriage of materials includes loading within a lead of 50 metres, unloading and stacking within a lead of 50 metres.

1.2 Loading, carriage, unloading and stacking shall be done carefully to avoid loss or damage to the materials. In case of any loss or damage, recovery shall be effected from the Contractor at twice the prevailing market rates as determined by the Engineer-in-Charge.

1.3 Depending upon the feasibility and economy, the Engineer-in -Charge shall determine the mode of carriage viz. whether by mechanical or animal transport or manual labour.

1.4 All distances shall be measured over the shortest practical route and not necessarily the route actually taken. Route other than shortest practical route may be considered in cases of unavoidable circumstances and as approved by Engineer-in-Charge.

1.5 Carriage by manual labour shall be reckoned in units of 50 metres or part thereof.

1.6 Carriage by animal and mechanical transport shall be reckoned in one km unit. Distances of 0.5 km or more shall be taken as 1 km and distance of less than 0.5 km shall be ignored. However, when the total lead is less than 0.5 km, it will not be ignored but paid for separately in successive stages of 50 metres subject to the condition that the rate worked on this basis does not exceed the rate for initial lead of 1 km by mechanical/ animal transport.
Measurement of materials: - While making measurements for supply of materials like boulder, aggregate, etc., suitable deduction for voids shall be made as per PWD Specifications, CPWD Specifications and MORT&H specifications.

1.7 The storage and stacking of various materials shall be governed by BIS Code: 4082.

1.8 Carried material shall be placed close to the site of work so that least effort is required to unload and transport it again.

1.9 For materials unloaded and stored in stacks , Length, breadth and height of stacks shall be measured correct to a cm. The quantity shall be worked out in cubic metre correct to two place of decimal. The volume of stacks shall be reduced by percentages as shown against each for looseness in stacking to arrive at the net quantity for payment . No reduction shall be made in respect of articles or materials for which mode of payment is by length or weight or number.

1.10 The rates of loading, unloading and stacking shall also include the loading, unloading and stacking of containers in which the materials are contained. For instance, if 100 tonnes of bitumen are loaded or unloaded in 160/200 litres drums, the net weight of bitumen will be 100 tonnes and weight of the drum will be over and above this weight. Nothing extra will be paid for the weight of the bitumen drums which are supposed to be carried in addition to the bitumen within the same rate.

1.11 The bricks and tiles shall be properly stacked in vehicles while loading and when unloading, these shall be directly placed in stacks and not dumped on the ground and then stacked. In case of bricks and tiles, nominal sizes have been mentioned in the Schedule of Rates. In PWD specifications certain tolerance limits have been provided for these materials. Variation of sizes within these limits will be ignored for the purpose of loading, unloading and carriage of these materials.

CHAPTER 3.0- LOADING, UNLOADING AND CARRIAGE OF MATERIALS
(Summary)

Note: 1. These rates are exclusive of GST, contractor's profit and overhead charges.
2. Carriage for 5.0 km lead by Mechanical Transport including loading, Unloading and stacking.

Unique Code	Description	Unit	Rate
CA001	Good earth	cum	93
CA002	Dump manure or Sludge	cum	121
CA003	Moorum	cum	74
CA004	Surkhi	cum	49
CA005	Red bajri	cum	49
CA006	Steam coal	tonne	127
CA007	Bricks	1000 Nos.	296
CA008	Stone aggregate below 40 mm nominal size	cum	49
CA009	Coarse sand	cum	49
CA010	Timber	cum	127
CA011	Steel	tonne	99
CA012	Stone aggregate 40 mm nominal size and above	cum	49
CA013	Brick tiles	1000 Nos.	178
CA014	Lime	cum	74
CA015	Cement	tonne	99
CA016	Tar bitumen	tonne	111
CA017	Soling stone & masonry stone	cum	49
CA018	Stone blocks white & red sand stone & kota stone slab	tonne	99
CA019	S.W. pipes100 mm dia	100 metres	148
CA020	S.W. pipes150 mm dia	100 metres	296
CA021	S.W. pipes200 mm dia	100 metres	493
CA022	S.W. pipes250 mm dia	100 metres	846
CA023	S.W. pipes300 mm dia	100 metres	1057
CA024	Brick aggregate	cum	49
CA025	Fly ash	cum	49
CA026	Rubbish	cum	74
CA027	Stone dust	cum	49
CA028	Marble dust and marble chips	cum	49
CA029	G.I. pipes below 100 mm dia	tonne	99
CA030	Stainless Steel pipe below 100 mm dia	tonne	99
CA031	A.C.sheet and accessories	tonne	99
CA032	R.C.C. pipes 100 mm dia	100 metres	243
CA033	R.C.C. pipes 150 mm dia	100 metres	404
CA034	R.C.C. pipes 250 mm dia	100 metres	935
CA035	R.C.C. pipes 300 mm dia	100 metres	1155
CA036	R.C.C. pipes 450 & 500 mm dia	100 metres	2696
CA037	G.I.sheet and accessories	tonne	99
CA038	R.C.C. pipes 600, 700, 750 & 800 mm dia	100 metres	4044
CA039	R.C.C. pipes 900 mm dia	100 metres	6066
CA040	Plaster of paris	tonne	99
CA041	Cast iron fittings	tonne	99
CA042	Barbed wire	tonne	99
CA043	Spun iron S & S pipes 100 mm dia	100 metres	243

Unique Code	Description	Unit	Rate
CA044	Spun iron S & S pipes 125 mm dia	100 metres	324
CA045	Spun iron S & S pipes 150 mm dia	100 metres	404
CA046	Spun iron S & S pipes 200 mm dia	100 metres	658
CA047	Spun iron S & S pipes 250 mm dia	100 metres	935
CA048	Spun iron S & S pipes 300 mm dia	100 metres	1155
CA049	Pig lead	tonne	99
CA050	Solvent/ Diesel	quintal	11
CA051	Ductile iron pipes (k7) 100 mm dia	100 metres	243
CA052	Cast iron pipes 150 mm dia	100 metres	404
CA053	Cast iron pipes 200 mm dia	100 metres	658
CA054	Cast iron pipes 250 mm dia	100 metres	935
CA055	Cast iron pipes 300 mm dia	100 metres	1155
CA056	Carriage of Bamboo Mat corrugated sheets and accessories	tonne	11500

Chapter 3.0: Loading, Unloading, and Carriage of Materials
(Schedule A)

Note:- These rates are exclusive of Contractor's profit and over heads as well as GST

3.1 By Mechanical Transport including loading, unloading and stacking

Unique Code	Material	Unit	Rate					Beyond 5 km up to 10 km per km	Beyond 10 km up to 20 km per km	Beyond 20 km per addl. km	Remarks
			1km	2km	3km	4km	5km				
1	2	3	4	5	6	7	8	9	10	11	12
3.1.1	Lime, moorum, building rubbish	cum	47	54	61	68	74	6	5	4	The rates will be applicable to net quantities after deduction of prescribed percentage for voids mentioned in the specification under subhead "Carriage of Materials"
3.1.2	Earth	cum	59	67	76	84	93	7	6	5	
3.1.3	Manure or sludge	cum	77	88	99	110	121	10	8	7	
3.1.4	Excavated rock	cum	63	72	81	90	99	8	7	6	
3.1.5	Sand, stone aggregate below 40 mm nominal size	cum	31	36	41	45	49	4	3	3	
3.1.6	Stone aggregate 40 mm nominal size and above	cum	31	36	41	45	49	4	3	3	
3.1.7	Soling stone	cum	31	36	41	45	49	4	3	3	
3.1.8	Bricks	1000 Nos.	188	216	243	270	296	24	20	17	
3.1.9	Brick Tiles	1000 Nos.	113	129	146	162	178	14	12	10	
3.1.10	Cement, stone blocks, G.I.. C.I., A.C., & C.C.pipes below 100 mm dia and other heavy materials	tonne	63	72	81	90	99	8	7	6	
3.1.11	Steel	tonne	63	72	81	90	99	8	7	6	
3.1.12	Timber	cum	81	92	104	116	127	10	9	7	
3.1.13	Tar Bitumen	tonne	70	81	91	101	111	9	7	6	
3.1.14	Solvent, diesel	quintal	7	8	9	10	11	1	1	1	
3.1.15	Steam coal	tonne	81	92	104	116	127	10	9	7	

Unique Code	Material	Unit	Rate					Beyond 5 km up to 10 km per km	Beyond 10 km up to 20 km per km	Beyond 20 km per addl. km	Remarks
			1km	2km	3km	4km	5km				
1	2	3	4	5	6	7	8	9	10	11	12
3.1.16	S.W. pipe										
3.1.16.1	100 mm dia	100 metres	94	108	122	135	148	12	10	8	
3.1.16.2	150 mm dia	100 metres	188	216	243	270	296	24	20	17	
3.1.16.3	200 mm dia	100 metres	313	360	406	450	493	39	33	28	
3.1.16.4	250 mm dia	100 metres	537	616	695	771	846	67	57	48	
3.1.16.5	300 mm dia	100 metres	671	770	869	964	1057	84	71	60	
3.1.16.6	350 mm dia	100 metres	939	1079	1217	1350	1480	118	100	84	
3.1.16.7	400 mm dia	100 metres	1342	1541	1738	1929	2114	168	142	120	
3.1.16.8	450 mm dia	100 metres	1708	1961	2212	2454	2691	214	181	153	
3.1.16.9	500 mm dia	100 metres	1878	2157	2433	2700	2960	236	199	168	
3.1.16.10	600 mm dia	100 metres	2348	2696	3042	3375	3700	294	249	210	
3.1.17	R.C.C. pipe, A.C. pipes, steel cylinder, R.C. pipes, S.C.I. pipes, C.I. pipes and unreinforced cement pipes										
3.1.17.1	100 mm dia	100 metres	154	177	199	221	243	19	16	14	
3.1.17.2	125 mm dia	100 metres	206	236	266	296	324	26	22	18	
3.1.17.3	150 mm dia	100 metres	257	295	332	369	404	32	27	23	
3.1.17.4	200 mm dia	100 metres	417	479	541	600	658	52	44	37	
3.1.17.5	250 mm dia	100 metres	593	681	768	853	935	74	63	53	
3.1.17.6	300 mm dia	100 metres	733	842	950	1054	1155	92	78	66	
3.1.17.7	350 mm dia	100 metres	1026	1179	1330	1475	1618	129	109	92	
3.1.17.8	400 mm dia	100 metres	1400	1607	1813	2012	2206	176	148	125	
3.1.17.9	450 mm & 500 mm dia	100 metres	1711	1965	2216	2459	2696	215	181	153	

Unique Code	Material	Unit	Rate					Beyond 5 km up to 10 km per km	Beyond 10 km up to 20 km per km	Beyond 20 km per addl. km	Remarks
			1km	2km	3km	4km	5km				
1	2	3	4	5	6	7	8	9	10	11	12
3.1.17.10	600, 700, 750 & 800 mm dia	100 metres	2566	2947	3324	3688	4044	322	272	230	
3.1.17.11	900 mm dia	100 metres	3849	4420	4986	5533	6066	483	408	344	
3.1.17.12	1000, 1100 & 1200 mm dia	100 metres	5132	5894	6648	7377	8088	644	544	459	

Unique Code	Description	Unit	Rate
3.1.18	Disposal of moorum/building rubbish/ malba/ similar unserviceable, dismantled or waste material by mechanical transport including loading, transporting, unloading to approved municipal dumping ground for lead up to 10 km for all lifts, complete as per directions of Engineer-in-charge. **Note - item to be applicable in urban areas having directions for restricted hours for movement/ plying of load carrying motor vehicle of 3.5 cum or more.**	cum	226

Chapter 3.0: Loading, Unloading, and Carriage of Materials
(Schedule B)

Note:- These rates are inclusive of Contractor's profit and over heads but exclusive of GST

3.2 By Manual Labour including loading, unloading and stacking for lead less than 0.50 KM

Unique Code	Material	Unit	Cost of carriage including loading, unloading & stacking for first 50 metres	Every additional lead of 50m or part thereof beyond1st 50 m up to 9 such additional lead	Remarks
1	2	3	4	5	6
3.2.1	Lime, moorum, building rubbish	cum	80	17	The rates ill be applicable to net quantities after deduction of prescribed percentage for voids mentioned in the specification under subhead "Carriage of Materials"
3.2.2	Earth	cum	100	22	
3.2.3	Manure or sludge	cum	87	19	
3.2.4	Excavated rock	cum	160	35	
3.2.5	Sand, stone aggregate below 40 mm nominal size	cum	100	22	
3.2.6	Stone aggregate 40 mm nominal size and above	cum	108	23	
3.2.7	Soling stone	cum	117	26	
3.2.8	Bricks	1000 Nos.	186	41	
3.2.9	Brick Tiles	1000 Nos.	116	25	
3.2.10	Steam Coal	tonne	93	20	
3.2.11	Stone blocks,G.I.,C.I. Stainless Steel pipes below 100 mm dia and other heavy material	tonne	73	11	
3.2.12	Cement	tonne	58	8	
3.2.13	Steel	tonne	124	18	
3.2.14	Timber	cum	80	12	
3.2.15	Tar, bitumen etc.	tonne	73	11	
3.2.16	S.W. pipe				The length of S.W. pipes will be measured exclusive of the internal depth of sockets.
3.2.16.1	100 mm dia	100 metres	146	21	
3.2.16.2	150 mm dia	100 metres	240	35	
3.2.16.3	200 mm dia	100 metres	335	49	
3.2.16.4	250 mm dia	100 metres	558	82	
3.2.16.5	300 mm dia	100 metres	797	117	
3.2.16.6	350 mm dia	100 metres	1116	164	
3.2.16.7	400 mm dia	100 metres	1395	205	

Unique Code	Material	Unit	Cost of carriage including loading, unloading & stacking for first 50 metres	Every additional lead of 50m or part thereof beyond1st 50 m up to 9 such additional lead	Remarks
3.2.16.8	450 mm dia	100 metres	1691	248	
3.2.16.9	500 mm dia	100 metres	2067	303	
3.2.16.10	600 mm dia	100 metres	2537	372	
3.2.17	R.C.C. pipes, Steel cylinder, R.C. pipes, C.I. pipes and unreinforced cement pipes				The length of the flanged or plain ended concrete, R.C.C. pipes, Steel cylinders, R.C. pipes and C.I. pipes shall be measured overall. The length of socketed pipes shall be measured exclusive of internal depth of sockets.
3.2.17.1	100 mm dia	100 metres	197	29	
3.2.17.2	125 mm dia	100 metres	241	35	
3.2.17.3	150 mm dia	100 metres	277	41	
3.2.17.4	200 mm dia	100 metres	416	61	
3.2.17.5	250 mm dia	100 metres	731	107	
3.2.17.6	300 mm dia	100 metres	915	134	
3.2.17.7	350 mm dia	100 metres	1308	192	
3.2.17.8	400 mm dia	100 metres	1522	223	
3.2.17.9	450 mm & 500 mm dia	100 metres	2030	298	
3.2.17.10	600, 700, 750 & 800 mm dia	100 metres	2233	328	

Chapter 3.0: Loading, Unloading, and Carriage of Materials
(Schedule C)
3.2 By Manual Labour including loading, unloading and stacking for lead less than 0.50 KM

Unique Code		Description	Unit	Rate	Remarks
3.3	Loading in or unloading cement from the railway wagons at siding and carrying the same from or into godowns adjacent to the siding, including stacking the same properly in rows up to any height as per direction of Engineer-in-charge, sweeping the wagons and screening the swept cement and filling in bags complete.		tonne	59	
3.4	Loading in or unloading from the railway wagons as per direction of Engineer-in-charge :				
	3.4.1	Steel	tonne	88	The rates will be applicable in all cases whether materials are unloaded or loaded from Railway siding or directly unloaded on or loaded from transport.
	3.4.2	G.I., C.I., R.C.C. or C.C. pipes up to 500 mm dia and similar heavy materials	tonne	52	
	3.4.3	Heavy materials where each piece or bundle, crate or case weighs more than one tonne and R.C.C., C.I. and concrete pipes above 500 mm dia.	tonne	92	No deduction shall be from carriage rates for direct unloading or loading

CHAPTER NO. 4

EARTH WORK
and
ROCK CUTTING

CHAPTER 4.0 - EARTH WORK AND ROCK CUTTING

COMMENTS

1. This chapter contains earthwork items pertaining to building works only. Items of earth work related to road work, river works and deep foundations has been incorporated in respective chapters.

2. Items of earth work for soil and rock cutting has been clubbed in this chapter.

3. Items of rock cutting without blasting and with blasting has been included.

4. Item of pre-construction as well as post-construction anti-termite treatment has been included.

5. Initial lead of 50m and lift of ±1.5m is included in the first stage item of the earth work.

NOTES

1. Lead : All distances shall be measured over the shortest practical route and not necessarily the route actually taken. Route other than shortest practical route may be considered in cases of unavoidable circumstances and approved by Engineer-in-charge along with reasons in writing. Carriage by animal and mechanical transport shall be reckoned in one km. unit. Distances of 0.5 km. or more shall be taken as 1 km. and distance of less than 0.5 km. shall be ignored.

2. Lift: The vertical distance for removal with reference to the ground level. The excavation up to 1.5 metre depth below the ground level and depositing the excavated materials up to 1.5 metre above the ground level shall be included in the rate of earth work. Lifts inherent in the lead due to ground slope shall not be paid for.

3. Safety rules: Safety rules as laid down by the statutory authority and as provided in Haryana Building Code (HBC) and MoRT&H Specification shall be followed.

CHAPTER 4.0 - EARTH WORK AND ROCK CUTTING

LIST OF BUREAU OF INDIAN STANDARD CODES

S.No.	B.I.S. No.	Subject
1	IS 1200 (Pt 1)	Method of measurement of earth work
2	IS 1200 (Pt-27)	Method of measurement of earth work (by Mechanical Means)
3	IS 4081	Safety code for Blasting and related drilling operation
4	IS 4988 (Part IV)	Excavators
5	IS 12138	Earth moving Equipments
6	IS 6313 (pt-II)	Anti Termite measures in buildings (pre -constructional)
7	IS 6313(pt.-III)	Anti Termite Measures in Buildings for existing buildings
8	IS 6940	Methods of test for pesticides and their formulations
9	IS 8944	Chlorpyrifos emulsifiable concentrates
10	IS 8963	Chlorpyrifos – Technical specifications
11	IS 632	Gamma – BHC (Lindane) emulsifiable concentrates

CHAPTER 4.0 - EARTH WORK AND ROCK CUTTING

Item No.	Description	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
4.1	Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth up to 30 cm measured at a height of 1 m above ground level and removal of rubbish up to a distance of 50 m outside the periphery of the area cleared.	sqm	7	-	-	7
4.2	Clearing grass and removal of the rubbish up to a distance of 50 m outside the periphery of the area cleared.	sqm	3	-	-	3
4.3	Felling trees of the girth (measured at a height of 1 m above ground level), including cutting of trunks and branches, removing the roots and stacking of serviceable material and disposal of unserviceable material.					
4.3.1	Beyond 30 cm girth up to and including 60 cm girth	each	196	-	-	196
4.3.2	Beyond 60 cm girth up to and including 120 cm girth	each	894	-	-	894
4.3.3	Beyond 120 cm girth up to and including 240 cm girth	each	4142	-	-	4142
4.3.4	Above 240 cm girth	each	8294	-	-	8294
4.4	Surface dressing of the ground including removing vegetation and in-equalities not exceeding 15 cm deep and disposal of rubbish, lead up to 50 m and lift up to 1.5 m.					
4.4.1	All kinds of soil	sqm	12	-	-	12
4.5	Ploughing the existing ground to a depth of 15 cm to 25 cm and watering the same.					
4.5.1	All kinds of soil	sqm	15	-	-	15
4.6	Extra for levelling & neatly dressing of disposed soil completely as directed by Engineer-in-charge.	cum	23	-	-	23
4.7	Earth work in surface excavation not exceeding 30 cm in depth but exceeding 1.5 m in width as well as 10 sqm on plan including getting out and disposal of excavated earth and lift up to 1.5 m, as directed by Engineer-in- Charge:					
4.7.1	All kinds of soil					
4.7.1.1	50m lead	sqm	59	-	-	59
4.7.1.2	15 m lead	sqm	42	-	-	42
4.8	Earth work in rough excavation, banking excavated earth in layers not exceeding 20cm in depth, breaking clods, watering, rolling each layer with ½ tonne roller or wooden or steel rammers, and rolling every 3rd and top-most layer with power roller of minimum 8 tonnes and dressing up in embankments for roads, flood banks, marginal banks and guide banks or filling up ground depressions, lead up to 50 m and lift up to 1.5 m :					
4.8.1	All kinds of soil	cum	158	-	-	158
4.9	Banking excavated earth in layers not exceeding 20 cm in depth, breaking clods, watering, rolling each layer with ½ tonne roller, or wooden or steel rammers, and rolling every 3rd and top-most layer with power roller of minimum 8 tonnes and dressing up, in embankments for roads, flood banks, marginal banks, and guide banks etc., lead up to 50 m and lift up to 1.5 m :					
4.9.1	All kinds of soil	cum	115	-	-	115
4.10	Deduct for not rolling with power roller of minimum 8 tonnes for banking excavated earth in layers not exceeding 20 cm in depth.	cum	4	-	-	4
4.11	Deduct for not watering the excavated earth for banking	cum	19	-	-	19

Item No.	Description		Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
4.12	Earth work in excavation by mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead up to 50 m and lift up to 1.5 m, as directed by Engineer-in-charge.						
	4.12.1	All kinds of soil	cum	17	69	-	87
4.13	Earth work in excavation by mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead up to 50 m and lift up to 1.5 m, as directed by Engineer-in-charge.						
	4.13.1	Ordinary rock	cum	11	134	-	145
	4.13.2	Hard rock (requiring blasting)	cum	29	305	-	334
	4.13.3	Hard rock (blasting prohibited)	cum	61	277	-	338
4.14	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, lift up to 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.						
	4.14.1	All kinds of soil.	cum	22	71	-	93
4.15	Excavation work by mechanical means (Hydraulic excavator)/ manual means in foundation trenches or drains (not exceeding 1.5m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, lift up to 1.5 m, including getting out the excavated soil and disposal of surplus excavated soils as directed, within a lead of 50 m.						
	4.15.1	Ordinary rock	cum	19	107	-	126
	4.15.2	Hard rock (requiring blasting)	cum	123	214	-	337
	4.15.3	Hard rock (blasting prohibited)	cum	163	214	-	378
4.16	Excavating trenches of required width for pipes, cables, etc including excavation for sockets, and dressing of sides, ramming of bottoms, depth up to 1.5 m, including getting out the excavated soil, and then returning the soil as required, in layers not exceeding 20 cm in depth, including consolidating each deposited layer by ramming, watering, etc. and disposing of surplus excavated soil as directed, within a lead of 50 m :						
	4.16.1	All kinds of soil					
		4.16.1.1 Pipes, cables etc, not exceeding 80 mm dia.	metre	32	30	-	62
		4.16.1.2 Pipes, cables etc. exceeding 80 mm dia. but not exceeding 300 mm dia	metre	35	34	-	69
		4.16.1.3 Pipes, cables etc. exceeding 300 mm dia but not exceeding 600 mm	metre	49	47	-	96
4.17	Extra for excavating trenches for pipes, cables etc. in all kinds of soil for depth exceeding 1.5 m, but not exceeding 3 m. (Rate is over corresponding basic item for depth up to 1.5 metre).		metre	-	-	-	3
4.18	Extra for excavating trenches for pipes, cables, etc, in all kinds of soil for depth exceeding 3 m in depth, but not exceeding 4.5 m. (Rate is over corresponding basic item for depth up to 1.5 metre.)		metre	-	-	-	7

Item No.	Description			Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
4.19	Excavating trenches of required width for pipes, cables, etc, including excavation for sockets, depth up to 1.5 m, including getting out the excavated materials, returning the soil as required in layers not exceeding 20 cm in depth, including consolidating each deposited layers by ramming, watering etc., stacking serviceable material for measurements and disposal of unserviceable material as directed, within a lead of 50 m :							
	4.19.1	Ordinary rock :						
		4.19.1.1	Pipes, cables etc. not exceeding 80 mm dia	metre	52	46	-	97
		4.19.1.2	Pipes, cables etc. exceeding 80 mm dia but not exceeding 300 mm dia	metre	65	91	-	156
		4.19.1.3	Pipes, cables exceeding 300 mm dia but not exceeding 600 mm dia	metre	78	108	-	186
	4.19.2	Hard rock (requiring blasting)						
		4.19.2.1	Pipes, cables etc. not exceeding 80 mm dia	metre	77	91	-	168
		4.19.2.2	Pipes, cables etc. exceeding 80 mm dia but not exceeding 300 mm dia	metre	155	182	-	337
		4.19.2.3	Pipes, cables etc. exceeding 300 mm dia but not exceeding 600 mm dia	metre	184	216	-	400
	4.19.3	Hard rock (blasting prohibited)						
		4.19.3.1	Pipes, cables etc. not exceeding 80 mm dia	metre	95	91	-	186
		4.19.3.2	Pipes, cables etc. exceeding 80 mm dia but not exceeding 300 mm dia	metre	189	182	-	372
		4.19.3.3	Pipes, cables etc. exceeding 300 mm dia but not exceeding 600 mm dia	metre	225	216	-	441
4.20	Extra for excavating trenches for pipes, cables, etc. in ordinary/hard rock exceeding 1.5 m in depth but not exceeding 3 m. (Rate is over corresponding basic item for depth up to 1.5 metre)			metre	-	-	-	2
4.21	Extra for excavating trenches for pipes, cables, etc. in ordinary/hard rock exceeding 3m in depth but not exceeding 4.5 m. (Rate is over corresponding basic item for depth up to 1.5 metre)			metre	-	-	-	4
4.22	Close timbering in trenches including strutting, shoring and packing cavities (wherever required) complete. (Measurements to be taken of the face area timbered).							
	4.22.1	Depth not exceeding 1.5 m		sqm	8	-	113	121
	4.22.2	Depth exceeding 1.5 m but not exceeding 3 m		sqm	15	-	113	127
	4.22.3	Depth exceeding 3 m but not exceeding 4.5 m		sqm	30	-	113	142
4.23	Close timbering in case of shafts, wells, cesspits, manholes and the like including strutting, shoring and packing cavities							
	4.23.1	Depth not exceeding 1.5 m		sqm	13	-	112	125
	4.23.2	Depth exceeding 1.5 m but not exceeding 3 m		sqm	27	-	112	140
	4.23.3	Depth exceeding 3 m but not exceeding 4.5 m		sqm	42	-	112	154
4.24	Close timbering over areas including strutting, shoring and packing cavities (wherever required) etc. complete. (Measurements to be taken of the face area timbered):							
	4.24.1	Depth not exceeding 1.5 m		sqm	8	-	98	107
	4.24.2	Depth exceeding 1.5 m but not exceeding 3 m		sqm	16	-	98	115
	4.24.3	Depth exceeding 3 m but not exceeding 4.5 m		sqm	24	-	98	123
4.25	Extra for planking, strutting and packing materials for cavities (in close timbering) if required to be left permanently in position. (Face area of timber permanently left to be measured).			sqm	-	-	1547	1547

Item No.	Description		Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
4.26	Open timbering in trenches including strutting and shoring complete (measurements to be taken of the face area timbered):						
	4.26.1	Depth not exceeding 1.5 m	sqm	4	-	58	62
	4.26.2	Depth exceeding 1.5 m but not exceeding 3 m	sqm	8	-	58	66
	4.26.3	Depth exceeding 3 m but not exceeding 4.5 m	sqm	15	-	58	73
4.27	Open timbering in case of shafts, wells, cesspits, manholes and the like including strutting and shoring complete (Measurements to be taken of the face area timbered):						
	4.27.1	Depth not exceeding 1.5 m	sqm	7	-	47	54
	4.27.2	Depth exceeding 1.5 m but not exceeding 3 m	sqm	13	-	47	61
	4.27.3	Depth exceeding 3 m but not exceeding 4.5 m	sqm	22	-	47	69
4.28	Open timbering over areas including strutting, shoring etc. complete. (Measurements to be taken of the face area timbered):						
	4.28.1	Depth not exceeding 1.5 m	sqm	4	-	32	36
	4.28.2	Depth exceeding 1.5 m but not exceeding 3 m	sqm	8	-	32	41
	4.28.3	Depth exceeding 3 m but not exceeding 4.5 m	sqm	15	-	32	48
4.29	Extra for planking and strutting in open timbering if required to be left permanently in position. (Face area of the timber permanently left to be measured).		sqm	-	-	797	797
4.30	Extra rates for quantities of works, executed:						
	4.30.1	In or under water and/or liquid mud, including pumping out water as required	meter depth				20%
	4.30.2	In or under foul position, including pumping out water as required	meter depth				25%
	Note for item no. 4.30:- The extra percentage rate is applicable in respect of each item but limited to quantities of work executed in these difficult conditions. The unit, namely, metre depth, to be considered for payment, shall be the depth measured from the sub soil water level up to the centre of gravity of the qty executed in difficult conditions. The depth shall be reckoned correct to 0.10 m, 0.05 m or more shall be taken as 0.10 m and less than 0.05 m ignored.						
4.31	Extra for every additional lift of 1.5 m or part thereof in excavation / banking excavated or stacked materials.						
	4.31.1	All kinds of soil	cum	57	-	-	57
	4.31.2	Ordinary or hard rock	cum	102	-	-	102
4.32	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift up to 1.5 m.		cum	52	-	-	52
4.33	Excavating, supplying and filling of local earth (including royalty) by mechanical transport up to a lead of 1 km also including ramming and watering of the earth in layers not exceeding 20 cm in trenches, plinth, sides of foundation etc. complete.		cum	37	46	-1	82
4.34	Excavating holes more than 0.10 cum & up to 0.5 cum including getting out the excavated soil, then returning the soil as required in layers not exceeding 20cm in depth, including consolidating each deposited layer by ramming, watering etc, disposing of surplus excavated soil, as directed within a lead of 50 m and lift up to 1.5 m.						
	4.34.1	All kinds of soil	each	5	14	-	19
	4.34.2	Ordinary rock	each	5	21	-	26
	4.34.3	Hard rock (requiring blasting)	each	25	43	-	68
	4.34.4	Hard rock (blasting prohibited)	each	33	43	-	76

Item No.	Description	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
4.35	Earthwork over roofs of one storey building with good earth, free of any admixture of foreign matter, including breaking of clods, ramming, watering, dressing and horizontal lead up to 50 metres.	cum	197	-	-	197
4.35.1	Extra for every additional storey	cum	13	-	-	13
4.36	Supply and stacking of Fly ash conforming to IRC- 58 at site, including carriage, loading , unloading & stacking up to any lead (measured stacks will be reduced by 20% for payment).	cum	-	-	69	69
4.37	Filling with available fly ash and earth (excluding rock) in trenches or embankment in layers (each layer should not exceed 15 cm), with intermediate layer of compacted earth (Soil density of 98%) after every four layers of compacted depth of fly ash, sides & top layer of filling shall be done with earth having total minimum compacted thickness 30 cm or as decided by Engineer - in-charge, including compacting each layer by rolling/ ramming and watering, all complete as per drawing and direction of Engineer -in - charge.	cum	78	-	-	78
4.38	Supplying chemical emulsion in sealed containers including delivery as specified.					
4.38.1	Chlorpyriphos/ Lindane emulsifiable concentrate of 20%	per litre	-	-	221	221
4.39	Providing and injecting chemical emulsion for PRE-CONSTRUCTIONAL anti termite treatment and creating a chemical barrier under and around the column pits, wall trenches, basement excavation, top surface of plinth filing junction of wall and floor, along with the external perimetre of building, expansion joints surrounding of pipes and conduit etc, complete (plinth area of the building at ground floor only shall be measured) using Chlorpyriphos/ Lindane emulsifiable concentrate of 20%	sqm	91	-	227	318
4.40	Diluting and injecting chemical emulsion for POST-CONSTRUCTIONAL anti-termite treatment (excluding the cost of chemical emulsion) :					
4.40.1	Along external wall where the apron is not provided using chemical emulsion @ 7.5 litres / sqm of the vertical surface of the substructure to a depth of 300mm including excavation channel along the wall & rodding etc. complete:					
4.40.1.1	With Chlorpyriphos/ Lindane E.C. 20% with 1% concentration	metre	17	-	-	17
4.40.2	Along the external wall below concrete or masonry apron using chemical emulsion @ 4.32 litres per linear metre including drilling and plugging holes etc.:					
4.40.2.1	With Chlorpyriphos/ Lindane E.C. 20% with 1% concentration	metre	22	-	-	22
4.40.3	Treatment of soil under existing floors using chemical emulsion @ one litre per hole, 300 mm apart including drilling 12 mm diameter holes and plugging with cement mortar 1 :2 (1 cement : 2 Coarse sand) to match the existing floor:					
4.40.3.1	With Chlorpyriphos/Lindane E.C. 20% with 1% concentration	sqm	138	-	-	138
4.40.4	Treatment of existing masonry using chemical emulsion @ one litre per hole at 300 mm interval including drilling holes at 45 degree and plugging them with cement mortar 1:2 (1 cement : 2 coarse sand) to the full depth of the hole :					
4.40.4.1	With Chlorpyriphos/Lindane E.C. 20% with 1% concentration	metre	18	-	-	18

Item No.	Description	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	4.40.5 Treatment at points of contact of wood work by chemical emulsion Chlorpyriphos/ Lindane (in oil or kerosene based solution) @ 0.5 litres per hole by drilling 6 mm dia holes at downward angle of 45 degree at 150 mm centre to centre and sealing the same.	metre	20	-	210	230

CHAPTER NO. 5

DISMANTLING and DEMOLITION

CHAPTER 5: DISMANTLING AND DEMOLITION

LIST OF BUREAU OF INDIAN STANDARD CODES

Sr. No.	B.I.S. No.	Subject
1	IS 1200(Part-XVIII)	Method of measurement of Building and Civil Engineering Works (Part-XVIII) - Demolition and Dismantling
2	IS 4130	Demolition of Buildings - Code of safety

CHAPTER 5.0 - DISMANTLING AND DEMOLITION

Item No.	Description	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
5.1	Dismantling dressed stone work ashlar face stone work, marble work or precast concrete work manually/ by mechanical means including stacking of serviceable and disposal of unserviceable material within 50 metres lead as per direction of Engineer-in-charge :					
5.1.1	In lime mortar	cum	598	-	-	598
5.1.2	In cement mortar	cum	749	-	-	749
5.2	Demolishing stone rubble masonry manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50 metres lead as per direction of Engineer-in-charge :					
5.2.1	In lime mortar	cum	455	-	-	455
5.2.2	In cement mortar	cum	745	-	-	745
5.3	Dismantling Stone Pitching					
5.3.1	Dry Conditions					
5.3.1.1	Stone pitching dry	cum	169	-	-	169
5.3.1.2	Stone pitching laid dry, but grouted with natural silt and clay	cum	315	-	-	315
5.3.1.3	stone pitching laid dry, and grouted with dry ballast	cum	236	-	-	236
5.3.1.4	stone pitching grouted with dry ballast and with natural silt and clay	cum	338	-	-	338
5.3.2	When the work to be dismantled under item 5.3.1 is under water, add 60 % to above rates.					
5.4	Dismantling Stone Spalls or Brickbats Filling					
5.4.1	In dry	cum	158	-	-	158
5.4.2	Grouted with natural silt and clay	cum	222	-	-	222
5.4.3	in-wire crates including opening of crates and stacking crate material	cum	278	-	-	278
5.4.4	When the work to be dismantled under item 5.4.1, 5.4.2, 5.4.3 is under water, add 60 % to above rates.					
5.5	Removing mortar from and cleaning stones and concrete articles (net quantity of stacks of cleaned materials will be measured):					
5.5.1	In lime mortar	cum	122	-	-	122
5.5.2	In cement mortar	cum	170	-	-	170
5.6	Demolishing dry brick pitching in floors, drains etc. including stacking of serviceable material and disposal of unserviceable material within 50 metres lead :	cum	298	-	-	298
5.7	Demolishing brick work manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50 metres lead as per direction of Engineer-in-charge.					
5.7.1	In mud mortar	cum	252	-	-	252
5.7.2	In lime mortar with old mughal bricks	cum	403	-	-	403
5.7.3	In lime mortar	cum	389	-	-	389
5.7.4	In cement mortar	cum	655	-	-	655
5.8	Removing mortar from bricks and cleaning bricks including stacking within a lead of 50 m (stacks of cleaned bricks shall be measured):					
5.8.1	From brick work in mud mortar	1000 Nos.	1162	-	-	1162
5.8.2	From brick work in lime mortar	1000 Nos.	1431	-	-	1431
5.8.3	From brick work in cement mortar	1000 Nos.	1856	-	-	1856
5.9	Demolishing thatch roofing including mats, bamboo, Jaffri etc. complete including stacking of serviceable material and disposal of unserviceable material within 50 metres lead.	sqm	16	-	-	16

Item No.	Description	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
5.10	Dismantling jack arch roofing and floors including stacking of serviceable material and disposal of unserviceable material within 50 metres lead.	sqm	57	-	-	57
5.11	Demolishing mud phaska in terracing and disposal of material within 50 metres lead.	cum	207	-	-	207
5.12	Dismantling stone slab roofing over wooden karries or R.C.C. battens (dismantling karries and battens to be paid for separately), including stacking of serviceable material and disposal of unserviceable material within 50 metres lead.	cum	606	-	-	606
5.13	Dismantling tiled roofing with battens, boarding etc. complete including stacking of serviceable material and disposal of unserviceable material within 50 metres lead.	sqm	47	-	-	47
5.14	Demolishing brick tile covering in terracing including stacking of serviceable material and disposal of unserviceable material within 50 metres lead.	sqm	39	-	-	39
5.15	Dismantling roofing including ridges, hips, valleys and gutters etc., and stacking the material within 50 metres lead of:					
5.15.1	G.S. Sheet	sqm	48	-	-	48
5.15.2	Asbestos Cement sheet	sqm	22	-	-	22
5.16	Dismantling wood work in frames, trusses, purlins and rafters up to 10 metres span and 5 metres height including stacking the material within 50 metres lead :					
5.16.1	Of sectional area 40 square centimetres and above	cum	1430	-	-	1430
5.16.2	Of sectional area below 40 square centimetres	metre	6	-	-	6
5.17	Extra for dismantling trusses, rafters, purlins etc. of wood work for every additional span of one metre or part thereof beyond 10 metres :					
5.17.1	Of sectional area 40 square centimetres and above	cum per metre span	177	-	-	177
5.17.2	Of sectional area below 40 square centimetres	cum per	1	-	-	1
5.18	Extra for dismantling trusses, rafters, purlins etc. of steel work for every additional span of one metre or part thereof beyond 10 metres	kg per metre span	0.26	-	-	0.26
5.19	Extra for dismantling trusses, rafters, purlins etc. of wood work for every additional height of one metre or part thereof beyond 5 metres :					
5.19.1	Of sectional area 40 square centimetres and above	cum per metre span	248	-	-	248
5.19.2	Of sectional area below 40 square centimetres	cum per	1	-	-	1
5.20	Extra for dismantling trusses, rafters, purlins etc. of steel work for every additional height of one metre or part thereof beyond 5 metres.	kg per metre height	0.26	-	-	0.26
5.21	Demolishing lime concrete manually/ by mechanical means and disposal of material within 50 metres lead as per direction of Engineer- in-charge.	cum	193	-	-	193
5.22	Demolishing R.B. work manually/ by mechanical means including stacking of steel bars and disposal of unserviceable material within 50 metres lead as per direction of Engineer-in- charge.	cum	1403	-	-	1403
5.27	Extra for cutting reinforcement bars manually/ by mechanical means in R.C.C. or R.B. work (Payment shall be made on the cross sectional area of R.C.C. or R.B. work) as per direction of Engineer-in-charge.	cum	366	-	-	366
5.28	Extra for scrapping, cleaning and straightening reinforcement from R.C.C. or R.B. work.	kg	3	-	-	3
5.23	Demolishing cement concrete manually/ by mechanical means including disposal of material within 50 metres lead as per direction of Engineer - in - charge.					
5.23.1	Nominal concrete 1:1.5:3 or richer mix (i/c equivalent design mix)	cum	1441	-	-	1441

Item No.	Description		Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	5.23.2	Nominal concrete 1:2:4 or leaner mix (i/c equivalent design mix)	cum	1287	-	-	1287
5.24	Dismantling of cement concrete platform along with curtain walls and base concrete etc. including stacking of useful materials near the site and disposal of unserviceable materials within 50 metres lead :						
	5.24.1	120 x 120 cm (outside to outside)	each	250	-	-	250
	5.24.2	210 x 120 cm (outside to outside)	each	384	-	-	384
	5.24.3	320 x 120 cm (outside to outside)	each	542	-	-	542
5.25	Demolishing R.C.C. work manually/ by mechanical means including stacking of steel bars and disposal of unserviceable material within 50 metres lead as per direction of Engineer - in-charge.		cum	1749	-	-	1749
5.26	Demolishing R.C.C. work by mechanical means and stockpiling at designated locations and disposal of dismantled materials up to a lead of 1 kilometre, stacking serviceable and unserviceable material separately including cutting reinforcement bars.		cum	731	1476	-	2207
5.27	Extra for cutting reinforcement bars manually/ by mechanical means in R.C.C. or R.B. work (Payment shall be made on the cross sectional area of R.C.C. or R.B. work) as per direction of Engineer-in-charge.		cum	366	-	-	366
5.28	Extra for scrapping, cleaning and straightening reinforcement from R.C.C. or R.B. work.		kg	3	-	-	3
5.29	Dismantling doors, windows and clerestory windows (steel or wood) shutter including chowkhats, architrave, holdfasts etc. complete and stacking within 50 metres lead :						
	5.29.1	Of area 3 sq. metres and below	each	121	-	-	121
	5.29.2	Of area beyond 3 sq. metres	each	165	-	-	165
5.30	Taking out doors, windows and clerestory window shutters (steel or wood) including stacking within 50 metres lead :						
	5.30.1	Of area 3 sq. metres and below	each	43	-	-	43
	5.30.2	Of area beyond 3 sq. metres	each	58	-	-	58
5.31	Dismantling expanded metal or I.R.C. fabrics with necessary battens and beading including stacking the serviceable material within 50 metres lead.		sqm	19	-	-	19
5.32	Dismantling steel work in single sections including dismembering and stacking within 50 metres lead in:						
	5.32.1	R.S. Joists	kg	1	-	-	1
	5.32.2	Channels, angles, tees and flats	kg	1	-	-	1
5.33	Dismantling steel work in built up sections in angles, tees, flats and channels including all gusset plates, bolts, nuts, cutting rivets, welding etc. including dismembering and stacking within 50 metres lead.		kg	2	-	-	2
5.34	Dismantling steel work manually/ by mechanical means in built up sections without dismembering and stacking within 50 metres lead as per direction of Engineer-in-charge.		kg	1	-	-	1
5.35	Extra for marking of structural steel work required to be re-erected.		kg	1	-	-	1
5.36	Dismantling and stacking within 50 metres lead, fencing posts or struts including all earth work and dismantling of concrete etc. in base of:						
	5.36.1	T' or 'L' iron or pipe	each	54	-	-	54
	5.36.2	R.C.C.	each	60	-	-	60
5.37	Dismantling barbed wire or flexible wire rope in fencing including making rolls and stacking within 50 metres lead.		kg	8	-	-	8
5.38	Dismantling wooden ballies in posts and struts including stacking within 50metres lead.		metre	5	-	-	5

Item No.	Description	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
5.39	Cutting ballies or wooden posts of fencing at the point of projection above the concrete or ground and stacking the same within 50 metres lead.	each	4	-	-	4
5.40	Dismantling wooden trellis work excluding frames but including stacking the serviceable material within 50 metres lead.	sqm	17	-	-	17
5.41	Removing rolling shutters including top cover, brackets and side guides etc.complete.	sqm	34	-	-	34
5.42	Dismantling cement conglomerate / terrazzo floors 25 mm to 50 mm manually/ by mechanical means and disposal of material within standard lead as per direction of Engineer- in-charge.	sqm	109	-	-	109
5.43	Dismantling tile work in floors and roofs laid in cement mortar including stacking material within 50 metres lead.					
5.43.1	For thickness of tiles 10 mm to 25 mm	sqm	25	-	-	25
5.43.2	For thickness of tiles above 25 mm and up to 40 mm	sqm	42	-	-	42
5.44	Dismantling stone slab flooring laid in cement mortar including stacking of serviceable material and disposal of unserviceable material within 50 metres lead.	sqm	60	-	-	60
5.45	Dismantling old plaster or skirting raking out joints and cleaning the surface for plaster including disposal of rubbish to the dumping ground within 50 metres lead.	sqm	37	-	-	37
5.46	Dismantling wooden boardings in lining of walls and partitions, excluding supporting members but including stacking within 50 metres lead :					
5.46.1	Up to 10 mm thick	sqm	17	-	-	17
5.46.2	Thickness above 10 mm up to 25 mm	sqm	22	-	-	22
5.46.3	Thickness above 25 mm up to 40 mm	sqm	25	-	-	25
5.47	Dismantling precast concrete or stone slabs in walls, partition walls etc. including stacking within 50 metres lead :					
5.47.1	Thickness up to 40 mm	sqm	71	-	-	71
5.47.2	Thickness above 40 mm up to 75 mm	sqm	106	-	-	106
5.48	Dismantling cement asbestos or other hard board ceiling or partition walls including stacking of serviceable materials and disposal of unserviceable materials within 50 metres lead.	sqm	17	-	-	17
5.49	Dismantling aluminium/ Gypsum partitions, doors, windows, fixed glazing and false ceiling including disposal of unserviceable material and stacking of serviceable material with in 50 meters lead as directed by Engineer-in-charge.	sqm	17	-	-	17
5.50	Removal of old broken glass panes (any thickness or size, quality or description) from wooden frames, glazed with putty or fixed with beads	sqm	50	-	-	50
5.51	Removing old broken/serviceable glass of any thickness or size or description except polished plate glass from old wood or metal frames etc.(any thickness or size) hacking out old putty etc. including making good breakages in talking out and handling complete	sqm	65	-	-	65
5.52	Dismantling stone-ware drains and of concrete	metre	20	-	-	20
5.53	Removing hume pipes-NP 2/NP 3/NP 4 including excavation and taking out the pipes manually/ by mechanical means and stacking the pipes within standard lead as per direction of Engineer-in-charge					
5.53.1	up to 600 mm dia	metre	95	-	-	95
5.53.2	above 600 mm dia	metre	195	-	-	195
5.54	Dismantling C.I. or asbestos rain water pipe with fittings and clamps including stacking the material within 50 metres lead :					
5.54.1	75 to 80 mm dia pipe	metre	17	-	-	17
5.54.2	100 mm dia pipe	metre	18	-	-	18

Item No.	Description		Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	5.54.3	150 mm dia pipe	metre	18	-	-	18
5.55	Dismantling G.I. pipes (external work) including excavation and refilling trenches after taking out the pipes, manually/ by mechanical means including stacking of pipes within 50 metres lead as per direction of Engineer-in-charge :						
	5.55.1	15 mm to 40 mm nominal bore	metre	34	-	-	34
	5.55.2	Above 40 mm nominal bore	metre	37	-	-	37
5.56	Dismantling C.I. pipes including excavation and refilling trenches after taking out the pipes, manually/ by mechanical means breaking lead caulked joints, melting of lead and making into blocks including stacking of pipes & lead at site within 50 metre lead as per direction of Engineer-in-charge:						
	5.56.1	Up to 150 mm diameter	metre	92	-	9	101
	5.56.2	Above 150 mm dia up to 300 mm dia	metre	122	-	20	142
	5.56.3	Above 300 mm diameter	metre	160	-	29	189
5.57	Dismantling steel cylinder R.C. pipes including excavation and refilling trenches after taking out the pipes, manually/ by mechanical means breaking lead caulked joints, melting of lead and making into blocks including stacking of pipes & lead at site within 50 metres lead as per direction of Engineer-in-charge :						
	5.57.1	Up to 600 mm diameter	metre	159	-	29	188
	5.57.2	Above 600 mm diameter	metre	428	-	62	490
5.58	Dismantling asbestos cement pressure pipes including excavation and refilling trenches after taking out the pipes manually/ by mechanical means and stacking the pipes within 50 metres lead as per direction of Engineer-in-charge :						
	5.58.1	Up to 150 mm diameter	metre	77	-	-	77
	5.58.2	Above 150 mm diameter	metre	92	-	-	92
5.59	Taking out C.I. cover with frame from R.C.C. top slab of manholes of various sizes including demolishing of R.C.C. work manually/ by mechanical means and stacking of useful materials near the site and disposal of unserviceable materials within 50 metres lead as per direction of Engineer-in-charge.		each	159	-	-	159
5.60	Taking out C.I. cover with frame from R.C.C. top slab of inspection chambers of various sizes including demolishing of R.C.C. work manually/ by mechanical means and stacking of useful materials near the site and disposal of unserviceable materials within 50 metres lead as per direction of Engineer-in-charge.		each	92	-	-	92
5.61	Dismantling of R.C.C. spun vent shaft including excavating the cement concrete pit completely, taking out the shaft, refilling the excavated gap, stacking the useful materials near the site and disposal of unserviceable materials within 50 metres lead.		each	1476	-	-	1476
5.62	Dismantling of road gully chamber of various sizes including C.I. grating with frame including stacking of useful materials near the site and disposal of unserviceable materials within 50 metres lead including refilling the excavated gap.		each	218	-	-	218
5.63	Dismantling of flushing cistern of all types (C.I./PVC/Vitreous China) including stacking of useful materials near the site and disposal of unserviceable materials within 50 metres lead.		each	256	-	-	256
5.64	Dismantling of C.I. sluice valve including stacking of useful materials within a lead of 50 metres						
	5.64.1	Up to 150 mm diameter	each	94	-	-	94
	5.64.2	Above 150 mm diameter	each	349	-	-	349
5.65	Dismantling of spindle fire hydrant including stacking of useful materials within 50 metres lead.		each	215	-	-	215

Item No.	Description		Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
5.66	Dismantling old C.I. pipes including excavation and refilling trenches after taking out the pipes, breaking lead caulked joints, melting of lead and making into blocks, including stacking of pipes at site lead up to 50 metre:						
	5.66.1	80 mm diameter C.I. pipe	metre	89	-	7	96
	5.66.2	100 mm diameter C.I. pipe	metre	93	-	8	102
	5.66.3	125 mm diameter C.I. pipe	metre	97	-	10	107
	5.66.4	150 mm diameter C.I. pipe	metre	101	-	11	112
	5.66.5	200 mm diameter C.I. pipe	metre	112	-	15	127
	5.66.6	250 mm diameter C.I. pipe	metre	123	-	18	142
	5.66.7	300 mm diameter C.I. pipe	metre	134	-	21	154
5.67	Dismantling of old S.W. pipes including breaking of joints and bed concrete stacking of useful materials near the site within 50 m lead and disposal of unserviceable materials into municipal dumps :						
	5.67.1	100 mm diameter	metre	20	-	-	20
	5.67.2	150 mm diameter	metre	22	-	-	22
	5.67.3	200 mm diameter	metre	24	-	-	24
	5.67.4	250 mm diameter	metre	25	-	-	25
	5.67.5	300 mm diameter	metre	26	-	-	26
	5.67.6	350 mm diameter	metre	30	-	-	30
	5.67.7	400 mm diameter	metre	33	-	-	33
	5.67.8	450 mm diameter	metre	35	-	-	35
5.68	Dismantling of manhole including R.C.C. top slab, C.I. cover with frame, including stacking of useful materials near the site and disposal of unserviceable materials within 50 m lead as per direction of Engineer-in-charge:						
	5.68.1	Rectangular manhole 90x80 cm and 45 cm deep	each	1398	-	-	1398
	5.68.2	Rectangular manhole 120x90 cm and 90 cm deep	each	2226	-	-	2226
	5.68.3	Rectangular arch type manhole 140x90 cm and 2.45 m deep	each	3582	-	-	3582
	5.68.4	Circular manhole 122 cm diameter and 1.68 m deep	each	3075	-	-	3075
5.69	Extra for depth of manholes dismantled :						
	5.69.1	Rectangular manhole 90x80 cm and beyond 45 cm depth	metre	650	-	-	650
	5.69.2	Rectangular manhole 120x90 cm and beyond 90 cm depth	metre	774	-	-	774
	5.69.3	Rectangular arch type manhole 140x90 cm and beyond 2.45 m depth (up to 4.25 m depth)	metre	702	-	-	702
	5.69.4	Circular manhole 122 cm diameter and beyond 1.68 m depth (up to 2.29 m depth)	metre	709	-	-	709
5.70	Disposal of building rubbish / malba / similar unserviceable, dismantled or waste materials by mechanical means, including loading, transporting, unloading to approved municipal dumping ground or as approved by Engineer-in-charge, beyond 50 m initial lead, for all leads including all lifts involved.		cum	96	-	-	96

CHAPTER NO. 6

CONCRETE
and
RCC WORK

CHAPTER 6.0 - CONCRETE AND RCC WORK

NOTES:

1. This chapter includes items of Concrete work, RCC work and Form work.

2. Fly Ash based concrete mixes have been introduced.

3. Water charges for water to be arranged by contractor are included in the rates mentioned.

4. Rates above plinth level shall be same up to floor four level (3 storey height) for each storey height up to 3.50 m or less. Rate shall be extra for floor five and above. Extra payment shall be made if storey height is more than 3.5m.

5. No extra payment shall be paid for mezzanine floor.

6. Items of CC/RCC in the basement above basement floor level shall be considered as CC/RCC in superstructure.

7. CC/RCC items in foundation and plinth shall be between plinth level to -1.50 m below NGL.

8. Plinth level shall be considered as floor one level. Floor level of first slab above plinth shall be designated as floor two level and so on.

9. Unless specified particularly rates shall include handling of material up to 50m.

CHAPTER 6.0 - CONCRETE AND RCC WORK

LIST OF BUREAU OF INDIAN STANDARD CODES

Sr. No.	B.I.S. No.	Subject
1	IS 226	Structural Steel
2	IS 383	Specification for coarse and fine aggregate from natural sources for concrete.
3	IS 432 (Part I)	Specification for mild steel and medium tensile steel bars and hard drawn steel wire for concrete reinforcement part-I mild steel and medium tensile steel bars.
4	IS 432 (Part II)	Specification for mild steel and medium tensile steel bars and hard drawn steel wire for concrete reinforcement – Part-II hard drawn steel wire.
5	IS 456	Plain and reinforced concrete - Code of practice
6	IS 1200 (Part II)	Method of measurement of building and civil engineering work (concrete work)
7	IS 1200 (Part V)	Method of measurement of building and civil engineering work – concrete work (Part 5- Form work)
8	IS 1322	Specification for bitumen felt for water proofing and damp proofing.
9	IS 1791	General requirements for batch type conrete mixers
10	IS 2505	General requirements for concrete vibrators - immersion type.
11	IS 2506	General requirements for concrete vibrators - screed board concrete vibrators
12	IS 2645	Specification for integral water proofing compounds for cement mortar and concrete
13	IS 3068	Specification for broken brick (burnt clay) coarse aggregate for use in concrete.
14	IS 3812	Specification for flyash for use as pozzolana and admixture in cement mortar and concrete.
15	IS 4656	Specification for form vibrators for concrete.
16	IS 7861 (Part-I)	Code of practice for extreme weather concreting (Part-I) recommended practice for hot weather concreting.
17	IS 7861 (Part–II)	Code of practice for extreme weather concreting (Part-II) recommended.
18	IS 9103	Specification for concrete admixtures
19	IS 2751	Recommended practice for welding of mild steel plain and deformed bars for reinforced construction.
20	IS 4925	Batch plants specification for concrete batching and mixing plant
21	IS 2502	Code of Practice for bending for fixing of bars for concrete reinforcement
22	IS 4926	Ready – Mixed Concrete
23	IS 6523	Specification for precast reinforced concrete door, window frames
24	IS 10262	Recommended guidelines for concrete mix design
25	IS 1566	Specification for hard drawn steel wire fabric for concrete requirement.
26	IS 1343	Code of Practice for Prestressed Concrete
27	IS 1608	Method for tensile testing of steel products
28	IS 1786	Specification for high strength deformed steel and wires for concrete reinforcement.
29	IS 1791	Specification for batch type concrete mixes

Item No.	Description	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	A. CEMENT CONCRETE (CAST IN SITU)					
6.1	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work below plinth level and up to Floor IV level:					
6.1.1	1:1½:3 (1 Cement: 1½ coarse sand (zone-III) : 3 graded stone aggregate 20 mm nominal size)	cum	865	-	3587	4451
6.1.2	1:2:4 (1 cement : 2 coarse sand (zone-III) : 4 graded stone aggregate 20 mm nominal size)	cum	770	-	3122	3892
6.1.3	1:2:4 (1 Cement : 2 coarse sand (zone-III) : 4 graded stone aggregate 40 mm nominal size)	cum	746	-	3090	3836
6.1.4	1:3:6 (1 Cement : 3 coarse sand (zone-III) : 6 graded stone aggregate 20 mm nominal size)	cum	720	-	2540	3260
6.1.5	1:3:6 (1 Cement : 3 coarse sand (zone-III): 6 graded stone aggregate 40 mm nominal size)	cum	720	-	2501	3221
6.1.6	1:4:8 (1 Cement : 4 coarse sand (zone-III) : 8 graded stone aggregate 40 mm nominal size)	cum	555	-	2180	2735
6.1.7	1:5:10 (1 cement : 5 coarse sand (zone-III): 10 graded stone aggregate 40 mm nominal size)	cum	531	-	1924	2455
6.1.8	1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size)	cum	531	-	1893	2424
6.1.9	1:2:3½:9 (1 ordinary portland cement : 2 Fly ash : 3½ coarse sand (zone-III) : 9 graded stone aggregate 40 mm nominal size)	cum	720	-	2097	2817
6.1.10	1:2½:4:11 (1 ordinary portland cement : 2½ fly ash : 4 coarse sand(zone-III) : 11 graded stone aggregate 40 mm nominal size)	cum	720	-	1815	2535
6.1.11	Plum cement concrete 1:3:6 with stone aggregate 40 mm nominal size using 20 percent plum in foundation and plinth.	cum	739	-	2492	3231
6.2	Providing and laying cement concrete in retaining walls, return walls, walls (any thickness) including attached pilasters, columns, piers, abutments, pillars, posts, struts, buttresses, string or lacing courses, parapets, coping, bed blocks, anchor blocks, plain window sills, fillets, sunken floor etc., up to floor four level, excluding the cost of centering, shuttering and finishing:					
6.2.1	1:1½:3 (1 cement : 1½ coarse sand (zone-III) : 3 graded stone aggregate 20 mm nominal size).	cum	872	-	3587	4459
6.2.2	1:2:4 (1 Cement : 2 coarse sand (zone-III) : 4 graded stone aggregate 20 mm nominal size)	cum	772	-	3122	3894
6.2.3	1:3:6 (1 cement : 3 coarse sand (zone-III) : 6 graded stone aggregate 20 mm nominal size)	cum	720	-	2540	3261
6.2.4	1:5:10 (1 cement : 5 coarse sand (zone-III) : 10 graded stone aggregate 40 mm nominal size).	cum	538	-	1924	2462
6.3	Providing and laying cement concrete in kerbs, steps and the like at or near ground level excluding the cost of centering, shuttering and finishing.					
6.3.1	1:1½:3 (1 Cement: 1½ coarse sand(zone-III) : 3 graded stone aggregate 20 mm nominal size)	cum	865	-	3587	4451
6.4	Extra for concrete work in superstructure above floor IV level for each four floors or part thereof.	cum	354	-	-	354

Item No.	Description	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	Note:- The quantity will be calculated by multiplying the depth measured from the sub-soil water level up to centre of gravity of concrete under sub-soil water level with quantity of concrete in cum executed under sub-soil water. The depth of centre of gravity shall be reckoned correct to 0.1m. 0.05m or more shall be taken as 0.1m and less than 0.05m ignored.					
6.5	Extra for providing and mixing water proofing material in cement concrete work in doses by weight of cement as per manufacturer's specification.	50 kg	-	-	49	49
6.6	Extra for addition of synthetic Polyester triangular fibre of length 12mm, effective diameter 10-40 microns and specific gravity of 1.34 to 1.40 in cement concrete/RCC/Flooring/water retaining structures by using 125gms of synthetic Polyester triangular fibre for 50 kg cement used as per directions of Engineer-in-Charge.	50 kg	-	-	59	59
6.7	Supplying and applying pre tested and approved water based concrete curing compound to concrete/ masonry surface, all as per manufacturer's specification and direction of Engineer-in-charge.					
6.7.1	Non pigmented wet curing compound	sqm	24	-	10	34
	B. DAMP-PROOF COURSE					
6.8	Providing and laying damp-proof course with cement concrete 1:2:4 (1 cement : 2 coarse sand (zone-III): 4 graded stone aggregate 12.5mm nominal size)					
6.8.1	50 mm thick	sqm	42	-	157	199
6.8.2	40mm thick	sqm	23	-	126	149
6.8.3	25 mm thick	sqm	11	-	79	90
6.9	Providing and laying damp-proof course with cement concrete 1:1.5:3 (1 cement : 1.5 coarse sand (zone-III): 3 graded stone aggregate 20mm nominal size)					
6.9.1	50 mm thick	sqm	46	-	180	226
6.9.2	40 mm thick	sqm	24	-	145	169
6.9.3	25 mm thick	sqm	12	-	91	102
6.10	Providing & applying a coat of residual petroleum bitumen of grade of VG-10 of approved quality using 1.7kg per square metre on damp proof course after cleaning the surface with brushes and finally with apiece of cloth lightly soaked in kerosene oil.	sqm	20	-	81	101
6.11	12 mm thick cement plaster damp-proof course 1:3 with 2 coats of bitumen at 1.65 kg. per sqm, laid hot and sanded:					
6.11.1	Vertical	sqm	103	-	130	234
6.11.2	Horizontal	sqm	74	-	130	204
6.12	20 mm thick cement plaster damp-proof course 1:3 with 2 coats of bitumen at 1.65 kg. per sqm, laid hot and sanded:					
6.12.1	Vertical	sqm	110	-	171	281
6.12.2	Horizontal	sqm	81	-	171	252
	C. PLINTH PROTECTION					
6.13	Making plinth protection 50mm thick of cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) over 75mm thick bed of dry brick ballast 40 mm nominal size, well rammed and consolidated and grouted with fine sand, including necessary excavation, levelling & dressing & finishing the top smooth.	sqm	169	-	175	343
	D. REINFORCED CEMENT CONCRETE					
6.14	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level :					

Item No.	Description	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	6.14.1 1:1.5:3 (1 cement : 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size)	cum	1312	-	3587	4898
	6.14.2 1:2:4 (1 cement : 2 coarse sand **(zone-III)** : 4 graded stone aggregate 20 mm nominal size)	cum	1217	-	3122	4339
6.15	Reinforced cement concrete work in walls (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts etc. above plinth level up to floor four level, excluding cost of centering, shuttering, finishing and reinforcement :					
	6.15.1 1:1.5:3 (1 cement : 1.5 coarse sand(zone-III) : 3 graded stone aggregate 20 mm nominal size)	cum	3097	-	3587	6684
6.16	Reinforced cement concrete work in beams, suspended floors, roofs having slope up to 15° landings, balconies, shelves, chajjas, lintels, bands, plain window sills, staircases and spiral stair cases above plinth level up to floor four level, excluding the cost of centering, shuttering, finishing and reinforcement with 1:1.5:3 (1 cement : 1.5 coarse sand(zone-III) : 3 graded stone aggregate 20 mm nominal size).	cum	3258	-	3587	6845
6.17	Providing and laying up to floor four level reinforced cement concrete in kerbs, steps and the like excluding the cost of centering, shuttering, finishing and reinforcement with 1:1.5:3 (1 cement : 1.5 coarse sand(zone-III) : 3 graded stone aggregate 20 mm nominal size).	cum	1212	-	3587	4799
6.18	Reinforced cement concrete work in arches, arch ribs, domes, vaults, shells, folded plate and roofs having slope more than 15° up to floor four level, excluding the cost of centering, shuttering, finishing and reinforcement with 1:1.5:3 (1 cement : 1.5 coarse sand (zone-III) : 3 graded stone aggregate 20 mm nominal size).	cum	3300	-	3587	6886
6.19	Reinforced cement concrete work in chimneys, shafts, up to floor four level, excluding the cost of centering, shuttering, finishing and reinforcement with 1:1.5:3 (1 cement : 1.5 coarse sand(zone-III) : 3 graded stone aggregate 20 mm nominal size).	cum	3310	-	3587	6896
6.20	Reinforced cement concrete work in well-steining, excluding the cost of centering, shuttering, finishing and reinforcement with 1:1.5:3 (1 cement : 1.5 coarse sand(zone-III) : 3 graded stone aggregate 20 mm nominal size).	cum	2164	-	3587	5751
6.21	Reinforced cement concrete work in vertical and horizontal fins individually or forming box louvers, facias and eaves boards above plinth level up to floor four level, excluding the cost of centering, shuttering, finishing and reinforcement with 1:1½:3 (1 cement : 1½ coarse sand(zone-III) : 3 graded stone aggregate 20mm nominal size).	cum	2746	-	3587	6333
	E. READY MIX CEMENT CONCRETE					
6.22	Providing and laying in position ready mixed plain cement concrete, with cement content as per approved design mix and manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for plain cement concrete work, including pumping of R.M.C. from transit mixer to site of laying and curing, excluding the cost of centering, shuttering and finishing, including cost of curing, admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer-in-charge. (Note :- Less cement used as per design mix is recoverable. However no extra payment shall be made if excess cement is used as per design mix).					

Item No.	Description		Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	6.22.1	All works above plinth and up to floor IV level :					
	6.22.1.1	M-20 grade plain cement concrete (cement content considered @ 300 kg/cum)	cum	891	727	3084	4703
	6.22.1.2	M-15 grade plain cement concrete (cement content considered @ 240 kg/cum)	cum	884	727	2686	4297
	6.22.1.3	M-10 grade plain cement concrete (cement content considered @ 220 kg/cum)	cum	247	727	2553	3526
	6.22.2	All works up to Plinth Level :					
	6.22.2.1	M-20 grade plain cement concrete. (cement content considered @ 300 kg/cum)	cum	1117	454	3084	4656
	6.22.2.2	M-15 grade plain cement concrete. (cement content considered @ 240 kg/cum)	cum	1084	454	2686	4224
	6.22.2.3	M-10 grade plain cement concrete (cement content considered @ 220 kg/cum)	cum	463	454	2553	3470
	F. READY MIX CEMENT CONCRETE WITH FLYASH						
6.23	Providing and laying in position ready mixed plain cement concrete, using fly ash and cement content as per approved design mix and manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for plain cement concrete work, including pumping of R.M.C. from transit mixer to site of laying and curing, excluding the cost of centering, shuttering and finishing, including cost of curing, admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer-in-charge. **Note : Fly ash conforming to grade I of IS 3812 (Part-1) only be used as part replacement of OPC as per IS : 456. Uniform blending with cement is to be ensured in accordance with clauses 5.2 and 5.2.1 of IS: 456 -2000 in the items of BMC and RMC.**						
	6.23.1	All works up to plinth level					
	6.23.1.1	M-15 grade plain cement concrete (cement content considered @ 240 kg/cum)	cum	793	727	2602	4123
	6.23.1.2	M-10 grade plain cement concrete (cement content considered @ 220 kg/cum)	cum	723	727	2469	3919
	6.23.2	All works above plinth and up to floor IV level:					
	6.23.2.1	M-15 grade plain cement concrete (cement content considered @ 240 kg/cum)	cum	1269	454	2602	4326
	6.23.2.2	M-10 grade plain cement concrete (cement content considered @ 220 kg/cum)	cum	1269	454	2469	4193

Item No.	Description	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
6.24	Providing and laying in position ready mixed M-25 grade concrete for reinforced cement concrete work, using cement content as per approved design mix, manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work, including pumping of R.M.C. from transit mixer to site of laying , excluding the cost of centering, shuttering finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer-in-charge. **(Note :- Cement content considered in this item is @ 330 kg/cum. Less cement used as per design mix is recoverable. However no extra payment shall be made if excess cement is used as per design mix).**					
6.24.1	All works up to plinth level	cum	671	1117	3215	5002
6.24.2	All works above plinth level up to floor IV level	cum	719	1117	3215	5051
	G. DESIGN MIX CONCRETE					
6.25	Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge. (Note :- Cement content considered in this item is @ 330 kg/cum. Less cement used as per design mix is recoverable. However no extra payment shall be made if excess cement is used as per design mix).					
6.25.1	All works up to plinth level	cum	1057	727	3215	4999
6.25.2	All works above plinth level up to floor IV level	cum	1099	727	3215	5041
6.26	Extra for providing richer mixes up to plinth and at all floor levels. (Note :- Less cement used as per design mix is recoverable. However no extra payment shall be made if excess cement is used as per design mix).					
6.26.1	Providing M-30 grade concrete instead of M-25 grade BMC/ RMC. (Note:- Cement content considered in M-30 is @ 340 kg/cum)	cum	-	-	66	66
6.26.2	Providing M-35 grade concrete instead of M-25 grade BMC/ RMC. (Note : Cement content considered in M-35 is @ 350 kg/ cum)	cum	-	-	133	133
6.26.3	Providing M-40 grade concrete instead of M-25 grade BMC/ RMC.(Note : Cement content considered in M-40 is @ 360 kg/ cum)	cum	-	-	199	199
6.27	Extra for R.C.C./ B.M.C/ R.M.C. work above floor IV level for each three floors or part thereof.	cum	-	-	273	273
	H. DESIGN MIX CONCRETE WITH FLYASH					

Item No.	Description		Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
6.28	Providing and laying in position ready mixed M-25 grade concrete for reinforced cement concrete work, using fly ash and cement content as per approved design mix, and manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work, including pumping of R.M.C. from transit mixer to site of laying, excluding the cost of centering, shuttering, finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate / retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge.						
	NOTE- (1) Cement content considered in this item is @ 330 kg/cum. Less cement used as per design mix is recoverable. However no extra payment shall be made if excess cement is used as per design mix. (2) Fly ash conforming to grade I of IS 3812 (Part-1) only be used as part replacement of OPC as per IS : 456. Uniform blending with cement to be ensured in accordance with clauses 5.2 and 5.2.1 of IS:456 -2000 in the items of BMC and RMC.						
	6.28.1	All works up to Plinth level.	cum	1053	1117	3201	5371
	6.28.2	All works above plinth & up to floor IV level.	cum	1101	1117	3201	5418
	I. CENTRING AND SHUTTERING (FORM WORK)						
6.29	Centering and shuttering including strutting, propping etc. and removal of form work for :						
	6.29.1	Foundations, footings, bases for columns	sqm	106	-	68	174
	6.29.2	Retaining walls, return walls, walls (any thickness) including attached pilasters, buttresses, plinth and string courses fillets, kerbs and steps etc.	sqm	249	-	67	316
	6.29.3	Columns, piers, abutments, pillars, posts and struts	sqm	194	-	99	292
6.30	Centering and shuttering including strutting, propping etc. and removal of form for						
	6.30.1	Foundations, footings, bases of columns, etc. for mass concrete	sqm	106	-	69	175
	6.30.2	Walls (any thickness) including attached pilasters, buttresses, plinth and string courses etc.	sqm	249	-	67	316
	6.30.3	Suspended floors, roofs, landings, balconies and	sqm	158	-	75	233
	6.30.4	Shelves (Cast in situ)	sqm	175	-	75	250
	6.30.5	Lintels, beams, plinth beams, girders, bressumers and cantilevers	sqm	246	-	86	332
	6.30.6	Columns, Pillars, Piers, Abutments, Posts and Struts	sqm	194	-	99	293
	6.30.7	Stairs, (excluding landings) except spiral-staircases	sqm	121	-	204	325
	6.30.8	Spiral staircases (including landing)	sqm	215	-	107	322
	6.30.9	Arches, domes, vaults up to 6 m span	sqm	302	-	508	810
	6.30.10	Extra for arches, domes, vaults exceeding 6 m span	sqm	225	-	424	649
	6.30.11	Chimneys and shafts	sqm	295	-	67	361
	6.30.12	Well steining	sqm	102	-	205	307
	6.30.13	Vertical and horizontal fins individually or forming box louvers band, facias and eaves boards	sqm	438	-	75	513
	6.30.14	Extra for shuttering in circular work (20% of respective centering and shuttering items)					(20% of respectiv

Item No.	Description		Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	6.30.15	Small lintels not exceeding 1.5 m clear span, moulding as in cornices, window sills, string courses, bands, copings, bed plates, anchor blocks and the like	sqm	106	-	68	174
	6.30.16	Edges of slabs and breaks in floors and walls					
	6.30.16.1	Under 20 cm wide	metre	53	-	75	128
	6.30.16.2	Above 20 cm wide	sqm	208	-	353	562
	6.30.17	Cornices and mouldings	sqm	150	-	458	608
	6.30.18	Small surfaces such as cantilever ends, brackets and ends of steps, caps and bases to pilasters and columns and the like	sqm	302	-	233	535
	6.30.19	Weather shade, Chajjas, corbels etc., including edges	sqm	50	-	261	311
	6.30.20	Suspended floors, roofs, landings, balconies and access platform with water proof ply 12 mm thick	sqm	340	-	149	489
	6.30.21	Lintels, beams, plinth beams, girders, bressumers and cantilevers with water proof ply 12 mm thick	sqm	258	-	154	411
6.31	Providing and fixing tie bolt, spring coil and plastic cone in wall shuttering complete as per the direction of Engineer-in-charge.						
	6.31.1	12 mm dia. & 100 mm length	each Set	1	-	132	133
	6.31.2	12 mm dia. & 150 mm length	each Set	1	-	145	146
	6.31.3	20 mm dia. & 150 mm length	each Set	1	-	157	158
	6.31.4	20 mm dia.& 225 mm length	each Set	1	-	170	171
6.32	Extra for additional height in centering, shuttering where ever required with adequate bracing, propping etc., including cost of de-shuttering and decentring at all levels, over a height of 3.5 m, for every additional height of 1 metre or part thereof (Plan area to be measured).						
	6.32.1	Suspended floors, roofs, landing, beams and balconies (Plan area to be measured)	sqm	153	-	11	164
	J. STEEL REINFORCEMENT						
6.33	Steel reinforcement for R.C.C. work, where not included in the complete rate of RCC, including straightening, cutting, bending, placing in position, binding, wastage, overlaps, welded joints, spacer bars, chairs, stays, hangers and annealed steel wire etc. complete in all respect below plinth level Note:- Reinforcement shall be measured in length including hooks, if any, separately for different diameters as actually used in work , excluding overlaps. Wastage, overlaps, couplings, welded joints, spacer bars, chairs, stays, hangers and annealed steel wire or other methods of binding & placing shall not be measured and cost of these items shall be deemed to be included in the rates for reinforcement.						
	6.33.1	Mild steel and Medium Tensile steel bars	kg	2	-	65	67
	6.33.2	Hard drawn steel wire	kg	2	-	73	75
	6.33.3	Cold twisted bars	kg	2	-	66	68
	6.33.4	Hot rolled deformed bars	kg	2	-	66	68
	6.33.5	Hard drawn steel wire fabric	kg	2	-	74	75
	6.33.6	Thermo-Mechanically Treated bars of grade Fe-500D or more.	kg	2	-	66	68
6.34	Steel reinforcement for R.C.C. work, where not included in the complete rate of RCC, including straightening, cutting, bending, placing in position, binding, wastage, overlaps, welded joints, spacer bars, chairs, stays, hangers and annealed steel wire etc. complete in all respect above plinth level.						

Item No.	Description		Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	Note:- Reinforcement shall be measured in length including hooks, if any, separately for different diameters as actually used in work , excluding overlaps. Wastage, overlaps, couplings, welded joints, spacer bars, chairs, stays, hangers and annealed steel wire or other methods of binding & placing shall not be measured and cost of these items shall be deemed to be included in the rates for reinforcement.						
	6.34.1	Mild steel and Medium Tensile steel bars	kg	2	-	65	67
	6.34.2	Hard drawn steel wire	kg	2	-	73	75
	6.34.3	Cold twisted bars	kg	2	-	66	68
	6.34.4	Hot rolled deformed bars	kg	2	-	66	68
	6.34.5	Hard drawn steel wire fabric	kg	2	-	74	75
	6.34.6	Thermo-Mechanically Treated bars of grade Fe-500D or more.	kg	2	-	66	68
6.35	Steel reinforcement for R.C.C. work ready to use "cut and bend" rebars of approved make from factory/workshop to construction site including placing in position and binding all complete up to plinth level.						
	6.35.1	Thermo-Mechanically Treated bars of grade Fe-500D or more.	kg	6	-	65	71
6.36	Steel reinforcement for R.C.C. work ready to use "cut and bend" rebars of approved make from factory/workshop to construction site including placing in position and binding all complete above plinth level.						
	6.36.1	Thermo-Mechanically Treated bars of grade Fe-500D	kg	8	-	65	73
6.37	Providing and fixing parallel threaded couplers conforming to IS on "Reinforcement Couplers for Mechanical Splices of Bars for Concrete Reinforcement - Specification", to reinforcement bars including threading, enlargement at connection by forging, protecting the prepared reinforcement bars and related operations as required to complete the works per direction of Engineer- in-Charge.						
	6.37.1	Coupler for 16 mm diameter reinforcement bar	each	19	-	39	58
	6.37.2	Coupler for 20 mm diameter reinforcement bar	each	26	-	51	77
	6.37.3	Coupler for 25 mm diameter reinforcement bar	each	34	-	90	124
	6.37.4	Coupler for 28 mm diameter reinforcement bar	each	39	-	104	143
	6.37.5	Coupler for 32 mm diameter reinforcement bar	each	42	-	143	184
	K. CEMENT CONCRETE PRECAST						
6.38	Providing and fixing up to floor four level precast cement concrete string or lacing courses, copings, bed plates, anchor blocks, plain window sills, shelves, louvers, steps, stair cases, etc., including hoisting and setting in position with cement mortar 1:3 (1 Cement : 3 coarse sand), cost of required Centering complete.						
	6.38.1	1:1.5:3 (1 cement : 1.5 coarse sand(zone-III) : 3	cum	721	-	3813	4534
6.39	Providing and fixing at or near ground level precast cement concrete in kerbs, edgings etc. as per approved pattern and setting in position with cement mortar 1:3 (1 Cement : 3 coarse sand), including the cost of required centering, shuttering complete.						
	6.39.1	1:1½:3 (1 Cement: 1½ coarse sand(zone-III) : 3 graded stone aggregate 20 mm nominal size).	cum	893	-	3738	4631
6.40	Providing and fixing up to floor four level precast cement concrete solid block, including hoisting and setting in position with cement mortar 1:3 (1 cement : 3 coarse sand), cost of required centering, shuttering complete :						
	6.40.1	1:1½:3 (1 Cement: 1½ coarse sand(zone-III) : 3 graded stone aggregate 20 mm nominal size).	cum	1015	-	4061	5076

Item No.	Description	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
6.41	Providing and fixing up to floor four level precast cement concrete hollow block, including hoisting and setting in position with cement mortar 1:3 (1 cement : 3 coarse sand), cost of required centering, shuttering complete.					
6.41.1	1:1½:3 (1 Cement: 1½ coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size) .	cum	1146	-	2330	3476
6.42	Precasting and placing in position 125 mm dia Bollards 600 mm high of required shape including providing M.S. Pipe Sleeve 50 mm dia 300 mm long in the Bollard and M.S. Pipes 40 mm dia and 450mm long with 150x150x6mm M.S. plate welded at bottom and embedded 150mm in cement concrete 1:3:6 (1 Cement : 3 coarse sand (zone-III) : 6 graded stone aggregate 20 mm nominal size), including necessary excavation of size 250x250x450mm deep for the same in bitumen/concrete pavement at specified spacing.	each	115	-	374	490
	L. PRE-CAST RCC					
6.43	Providing, hoisting and fixing above plinth level up to floor four level precast reinforced cement concrete work in string courses, bands, copings, bed plates, anchor blocks, plain window sills and the like, including the cost of required centering, shuttering but , excluding cost of reinforcement with 1:1.5:3 (1 cement : 1.5 coarse sand(zone-III) : 3 graded stone aggregate 20 mm nominal size).	cum	861	-	3813	4674
6.44	Providing, hoisting and fixing up to floor four level precast reinforced cement concrete in small lintels not exceeding 1.5m clear span up to floor four level, including the cost of required centering, shuttering but , excluding the cost of reinforcement with 1:1.5:3 (1 cement : 1.5 coarse sand(zone-III) : 3 graded stone aggregate 20 mm nominal size).	cum	1345	-	4345	5690
6.45	Providing, hoisting and fixing above plinth level up to floor four level precast reinforced cement concrete in mouldings as in cornices, windows sills etc, including setting in cement mortar 1:3 (1 cement : 3 coarse sand) cost of required centering, shuttering but, excluding the cost of reinforcement, with 1:1.5:3 (1 cement : 1.5 coarse sand(zone-III) : 3 graded stone aggregate 20 mm nominal size).	cum	1767	-	5028	6795
6.46	Providing, hoisting and fixing above plinth level up to floor four level precast reinforced cement concrete in lintels, beams and bressumers, including setting in cement mortar 1:3 (1 cement : 3 coarse sand), cost of required centering and shuttering but , excluding the cost of reinforcement, with 1:1.5:3 (1 cement : 1.5 coarse sand(zone-III) : 3 graded stone aggregate 20 mm nominal size)	cum	1894	-	4062	5956
6.47	Providing, hoisting and fixing above plinth level up to floor four level precast reinforced cement concrete in shelves, including setting in cement mortar 1:3 (1cement : 3 coarse sand), cost of required centering, shuttering and finishing with neat cement punning on exposed surfaces but , excluding the cost of reinforcement, with 1:1.5:3 (1 cement : 1.5 coarse sand(zone-III) : 3 graded stone aggregate 20 mm nominal size).	cum	2606	-	4728	7334
6.48	Providing, hoisting and fixing above plinth level up to floor four level precast reinforced cement concrete in vertical & horizontal fins, individually or forming box louvers, setting in cement mortar 1:2 (1 cement : 2 coarse sand), including the cost of required centering, shuttering but , excluding the cost of reinforcement, with 1:1.5:3 (1 cement : 1.5 coarse sand(zone-III) : 3 graded stone aggregate 20 mm nominal size).	cum	1623	-	3851	5474

Item No.	Description		Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
6.49	Providing precast cement concrete Jali 1:2:4 (1 cement : 2 coarse sand(zone-III) : 4 graded stone aggregate 6mm nominal size), reinforced with 1.6 mm dia mild steel wire, including centering and shuttering, roughening cleaning, fixing and finishing in cement mortar 1:3 (1 cement: 3 fine sand) etc. complete, excluding plastering of the jambs, sills and soffits.						
	6.49.1	50 mm thick	sqm	425	-	523	948
	6.49.2	40 mm thick	sqm	387	-	458	845
	6.49.3	25 mm thick	sqm	340	-	361	701
6.50	Providing and fixing in position factory made precast RCC M-40 fixing with hold fast embedded in 1:3:6 concrete block for doors and windows frames having excellent smooth finish as per IS: 6523 with reinforcement of 3 Nos., 6 mm dia main bars tied with 3 mm M.S stirrups placed @ 200 mm C/C and 6 numbers high strength polymer blocks of required size for fixing hinges including providing 6 no specially designed M.S. galvanised sleeves for accommodating 6 mm dia fully threaded bolts for fixing hold fast on vertical members, providing suitable arrangement for receiving sliding door bolts and tower bolt etc. all complete, as per the direction of Engineer-in-charge. The frame shall be measured in running metre correct to two places of decimal.						
	6.50.1	Door frame 125 mmx 60 mm	metre	163	7	253	422
	6.50.2	Door frame 100 mmx 60 mm	metre	155	5	222	383
	6.50.3	Door frame 85 mmx60 mm	metre	151	5	206	362
6.51	Providing and placing in position precast reinforced cement concrete waffle units, square or rectangular, as per design and shape for floors and roofs in 1:1½:3 (1 Cement : 1½ coarse sand (zone-III) : 3 graded stone aggregate 10 mm nominal size), including flush or deep ruled pointing at joints in Cement mortar 1:2 (1 Cement : 2 Fine sand), making necessary holes of required sizes for carrying through service lines etc., providing steel hooks for lifting etc, form work in precasting, handling, hoisting, centering and erection complete for all floor levels but, excluding the cost of reinforcement.		cum	8174	-	6437	14611
	M. ENCASING ROLLED STEEL SECTION						
6.52	Encasing rolled steel sections, in beams and columns, with cement concrete 1:1.5:3 (1 cement : 1.5 coarse sand (zone-III) : 3 graded stone aggregate 20 mm nominal size) including centering and shuttering complete but , excluding cost of reinforcement.		cum	3354	-	4412	7766
6.53	Encasing rolled steel section in grillages with cement concrete 1:1.5:3 (1 cement : 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size) including centering and shuttering but, excluding cost of expanded metal and hangers.		cum	1260	-	3684	4945
6.54	Extra for providing and fixing expanded metal mesh of size 20x60 mm and strands 3.25 mm wide 1.6 mm thick weighing 3.64 kg per sqm for encasing of rolled steel sections in beams, columns and grillages, excluding cost of hangers.		sqm	17	-	382	399
	N. EXPANSION JOINTS						
6.55	Providing and fixing in position copper plate as per design for expansion joints.		kg	12	-	684	696
6.56	Providing and filling in position, blown bitumen in expansion joints.		cum	3886	-	47772	51659
6.57	Providing and filling in position bitumen mix filler of proportion 80 kg. of hot bitumen, 1 kg. of cement and 0.25 cubic metre of coarse sand for expansion joints.		cum	3440	-	12194	15634

Item No.	Description		Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
6.58	Providing and fixing in position 12mm thick bitumen impregnated fibre board conforming to IS: 1838, including cost of primer, sealing compound Grade-A in expansion joints.		per cm depth per 100m	16	-	487	503
6.59	Providing and fixing sheet covering over expansion joints with iron screws as per design.						
	6.59.1	Non-asbestos fibre cement board 6 mm thick as per IS: 14862.					
	6.59.1.1	150mm wide	metre	38	-	48	86
	6.59.1.2	200mm wide	metre	47	-	65	112
	6.59.2	Aluminium fluted strips 3.15 mm thick.					
	6.59.2.1	150 mm wide	metre	38	-	364	402
	6.59.2.2	200 mm wide	metre	49	-	470	519
	6.59.3	Cement bonded wood particle board 6mm thick as per IS : 14276					
	6.59.3.1	150 mm wide	metre	47	-	51	98
	6.59.3.2	200 mm wide	metre	47	-	69	116
6.60	Providing and fixing in position Stainless steel Grade 304 plate-1.0 mm thick as per design for expansion joints.						
	6.60.1	200 mm wide.	metre	48	-	574	622
	6.60.2	300 mm wide.	metre	48	-	859	908
6.61	Providing and fixing of expansion joint system related with floor location as per drawings and direction of Engineer-In-Charge. The joints system will be of extruded aluminium base members, self aligning / self centering arrangement and support plates etc. as per ASTM B221-02. The system shall be such that it provides floor to floor /floor to wall expansion control system for various vertical location in load application areas that accommodates multi directional seismic movement without stress to it's components. System shall consist of metal profiles with a universal aluminium base member designed to accommodate various project conditions and finish floor treatments. The cover plate shall be designed of width and thickness required to satisfy projects movement and loading requirements and secured to base members by utilizing manufacturer's pre-engineered self-centering arrangement that freely rotates / moves in all directions. The Self - centering arrangement shall exhibit circular sphere ends that lock and slide inside the corresponding aluminium extrusion cavity to allow freedom of movement and flexure in all directions including vertical displacement. Provision of Moisture Barrier Membrane in the Joint System to have watertight joint is mandatory requirement all as per the manufactures design and as approved by Engineer -in-Charge. (Material shall confirm to ASTM 6063).						
	6.61.1	Floor Joint of 100 mm gap	metre	155	-	4853	5008
	6.61.2	Floor Joint of 150 mm gap	metre	155	-	6070	6225
	6.61.3	Floor Joint of 200 mm gap	metre	155	-	7937	8091

Item No.	Description		Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
6.62	Providing and fixing of expansion joint system related with wall joint (internal/external) location as per drawings and direction of Engineer-In- Charge. The joints shall be of extruded aluminium base members, self aligning / centering arrangement and support plates as per ASTM B221- 02. The material shall be such that it provides an Expansion Joints System suitable for vertical wall to wall/ wall to corner application, both new and existing construction in office Buildings & complexes with no slipping down tendency amongst the components of the Joint System. The Joint System shall utilize light weight aluminium profiles exhibiting minimal exposed aluminium surfaces mechanically snap locking the multicellular to facilitate movement. (Material shall confirm to ASTM 6063).						
	6.62.1	Wall Joint of 100 mm gap	metre	155	-	3944	4099
	6.62.2	Wall Joint of 150 mm gap	metre	155	-	4512	4667
	6.62.3	Wall Joint of 200 mm gap	metre	155	-	5340	5495
6.63	Providing and fixing of expansion joint system of approved make and manufactures for various roof locations as per approved drawings and direction of Engineer-In-Charge. The joints shall be of extruded aluminium base members with, self aligning and self centering arrangement support plates as per ASTM B221-02. The system shall be such that it provides watertight roof to roof/roof to corner joint cover expansion control system that is capable of accommodating multidirectional seismic movement without stress to its components. System shall consist of metal profile that incorporates a universal aluminium base member designed to accommodate various project conditions and roof treatments. The cover plate shall be designed of width and thickness required to satisfy movement and loading requirements and secured to base members by utilizing manufacturer's pre-engineered self-centering arrangement that freely rotates / moves in all directions. The Self centering arrangement shall exhibit circular sphere ends that lock and slide inside the corresponding aluminium extrusion cavity to allow freedom of movement and flexure in all directions including vertical displacement. The Joint System shall resists damage or deterioration from the impact of falling ice, exposure to UV, airborne contaminants and occasional foot traffic from maintenance personnel. Provision of Moisture Barrier Membrane in the Joint System to have water tight joint is mandatory requirement. (Material shall confirm to ASTM 6063).						
	6.63.1	Roof Joint of 100 mm gap	metre	155	-	4463	4618
	6.63.2	Roof Joint of 150 mm gap	metre	155	-	5031	5186
	6.63.3	Roof Joint of 200 mm gap	metre	155	-	6119	6274
	O. MISCELLANEOUS						
6.64	Extra for laying concrete in or under water and/or liquid mud including cost of pumping or bailing out water and removing slush etc. complete.		cum per metre depth	403	-	-	403
6.65	Extra for laying concrete in or under foul positions.		cum	176	-	-	176
6.66	Extra for laying reinforced cement concrete in or under water and/ or liquid mud, including cost of pumping or bailing out water and removing slush etc., complete.		cum	403	-	-	403

Item No.	Description	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	Note:- The quantity will be calculated by multiplying the depth measured from the subsoil water level up to the centre of gravity of the R.C.C. under subsoil water with the quantity of R.C.C. in cubic metre executed under subsoil water. The depth of centre of gravity shall be reckoned correct to 0.1 m. 0.05 m or more shall be taken as 0.1 m and less than 0.05 m ignored. No extra payment shall be made for placing reinforcement or centering & shuttering under sub - soil water conditions.					
6.67	Extra for laying reinforced cement concrete in or under foul positions.	cum	212	-	-	212
6.68	Constructing cast-in situ RCC diaphragm wall by providing and laying machine batched, machine mixed, self compacting, ready mix reinforced cement concrete, tramie controlled, of M 30 grade using minimum 400 kg cement per cum of concrete including providing and mixing required admixtures in recommended proportions as per IS : 9103, as approved by the Engineer-in-charge, for achieving 150- 200mm slump, for diaphragm wall having thickness as per approved structural design not exceeding 600 mm, in panels of required depth and lengths as per approved drawing, including constructing necessary guide walls as required and as specified including boring in all kinds of soils and rocks, including working in or under water and / or liquid mud, in foul conditions and pumping or bailing out of water and removing slush, including disposal of earth/ rock / slush etc. for all leads and all lifts, including preparing, providing and re-circulating bentonite slurry in the trench as and when required for all depths, including agitating bentonite slurry during trenching etc., providing and fixing stop ends or form tubes, up to the required depth of diaphragm wall including extracting the same after casting, including chipping off the bentonite adulterated concrete or unsound concrete up to the cut off level for obtaining the sound concrete, dressing undulations on the exposed face of diaphragm wall after excavation by chipping / chiselling etc. including filling the depression/ cavities with sound concrete etc. complete and as directed by the Engineer-in-charge, including providing recess for bearing plates and fixing insert boxes for **Note: Less cement used as per design mix is recoverable. However no extra payment shall be made if excess cement is used as per design mix and for under water concreting.**	cum	1909	3780	6289	11978

CHAPTER NO. 7

BRICK WORK
and
STONE MASONRY

CHAPTER 7.0 - BRICK WORK AND STONE MASONRY

NOTES:

1. **Items of masonry have been included with CM 1 :4 and CM 1 :6. Rates of mortars for other proportions have been mentioned vide item no. 3.1 to 3.19. For masonry items with mortars other than CM 1:4 and CM 1 :6, difference in rate of mortars can be added or subtracted to arrive at the rate of masonry.**
2. **Rates above plinth level shall be same up to floor four level (3 storey height) for each storey height up to 3.50m or less. Rate shall be extra for floor five and above. Extra payment shall be made if storey height is more than 3.5m.**
3. **No extra payment shall be paid for mezzanine floor**
4. **Items of masonry in the basement above floor level shall be considered as masonry in superstructure.**
5. **Masonry items in foundation and plinth shall be between plinth level to -1.20 m below NGL.**
6. **Masonry in free standing wall up to a height of 0.90m above plinth level shaU be measured under masonry in foundation and plinth.**
6. **Plinth level shall be considered as floor one level. Floor level of first slab above plinth shall be designated as floor two level and so on.**
7. **Unless specified particularly rates shall include handling of material up to 50m.**
8. **All type of masonry in sub-structure or superstructure shall be paid on the basis of actual quantities measured.**
9. **The rates are inclusive of GST and all other taxes, Labour Welfare Cess and contractor's profit.**
10. **For item 7 .22, 7 .23, 7 .24, extra rate @ 1 % for each three additional floor above floor iv level shall be added on the rates of item 7.20 and 7.21.**

CHAPTER 7.0 - BRICK WORK AND STONE MASONRY

LIST OF BUREAU OF INDIAN STANDARD CODES

Sr. No.	B.I.S. No.	Subject
1.	IS 269	Specification for 33 grade ordinary Portland cement
2.	IS 383	Specification for coarse and fine aggregate from natural source for concrete.
3.	IS 650	Specification for standard sand for testing of cement
4.	IS 1269	Specification for 53 grade ordinary Portland cement
5.	IS 1344	Specification for calcined clay Pozzolana.
6.	IS 1489	Specification for Portland pozzolana cement
7.	IS 1542	Specification for sand for plaster
8.	IS 2116	Specification for sand for masonry mortar.
9.	IS 2250	Code of practice for preparation and use of masonry Mortar.
10.	IS 3812 (Part I)	Specification for fly ash for use as pozzolana in cement mortar and concrete
11.	IS 3812 (Part II)	Specification for fly ash for use as admixture in cement mortar and concrete
12.	IS 8041	Rapid hardening Portland cement.
13.	IS 8042	Specification for white cement
14.	IS 8112	Specification for 43 grade ordinary Portland cement
15.	IS 1077	Common burnt clay building bricks.
16.	IS 1200 (Part 3)	Method of measurements of brick works
17.	IS 2212	Code of practice for brick work. (1st Revision)
18.	IS 2222	Specification for burnt clay perforated building bricks.
19.	IS 3495	Method of test for burnt clay building bricks.
20.	IS 3812	Specification for fly ash for use as pozzolana and admixture.
21.	IS 4885	Specification for sewer brick
22.	IS 5454	Methods of sampling of clay building bricks.
23.	IS 12894	Pulverized fuel ash lime bricks specification.
24.	IS 13757	Specification of burnt clay fly ash bricks.
25.	IS 1121 - (Pt. I)	Methods of determination of properties and strengths of natural building stones (Part-I compressive strength).
26.	IS 1122	Methods for determination of specific gravity of natural building stone.
27.	IS 1123	Methods of identification of natural building stones.
28.	IS 1128	Specification for Lime stone (Slab & Tiles).
29.	IS 1129	Recommendations for dressing of natural building stones.
30.	IS 1200 (Pt. IV)	Methods of measurements of building and Civil engineering works stone Masonry.
31.	IS 1197 (Pt. I)	Code of practice for construction of rubble stone masonry.
32.	IS 1597 (Pt. II)	Code of practice for construction of ashlar stone masonry.
33.	IS 1805	Glossary of terms relating to stones, quarrying and dressing.
34.	IS 3620	Specification for latrite stone block for masonry.
35.	IS 3622	Sand stone (Slab & Tiles).

CHAPTER 7.0 - BRICK WORK AND STONE MASONRY

Item No.	Description	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	A. MORTARS					
7.1	Cement mortar 1:1 (1 cement : 1 fine sand)	cum	228	-	5466	5695
7.2	Cement mortar 1:2 (1 cement : 2 fine sand).	cum	228	-	4043	4272
7.3	Cement mortar 1:3 (1 cement : 3 fine sand).	cum	228	-	3265	3493
7.4	Cement mortar 1:4 (1 cement : 4 fine sand).	cum	228	-	2519	2748
7.5	Cement mortar 1:5 (1 cement : 5 fine sand).	cum	228	-	2257	2485
7.6	Cement mortar 1:6 (1 cement : 6 fine sand).	cum	228	-	1954	2183
7.7	Cement mortar 1:2 (1 cement : 2 coarse sand).	cum	228	-	4091	4319
7.8	Cement mortar 1:3 (1 cement : 3 coarse sand).	cum	228	-	3318	3546
7.9	Cement mortar 1:4 (1 cement : 4 coarse sand).	cum	218	-	2573	2791
7.10	Cement mortar 1:5 (1 cement : 5 coarse sand).	cum	228	-	2310	2539
7.11	Cement mortar 1:6 (1 cement : 6 coarse sand).	cum	228	-	2008	2236
7.12	Cement mortar 1:2 (1 cement : 2 stone dust).	cum	228	-	4233	4462
7.13	Cement mortar 1:2 (1 cement : 2 marble dust).	cum	228	-	4547	4775
7.14	Cement mortar 1:5 (1 cement : 5 marble dust).	cum	228	-	2824	3052
7.15	White cement mortar 1:2 (1 white cement : 2 marble dust).	cum	228	-	8803	9032
7.16	White cement mortar 1:3 (1 white cement : 3 marble dust).	cum	228	-	7024	7253
7.17	White cement mortar 1:5 (1 white cement : 5 marble dust).	cum	228	-	4764	4993
7.18	Mud mortar	cum	348	-	178	526
7.19	Mortar in lime, surkhi (50% red and 50% light yellow) and marble dust 1:1.5:0.5	cum	502	-	2136	2638
	B. BRICK WORK					
7.20	Brick work with common burnt clay modular bricks of class designation 7.5 in foundation and plinth in:					
	7.20.1 Cement mortar 1:4 (1 cement : 4 coarse sand)	cum	450	-	3891	4341
	7.20.2 Cement Mortar 1:6 (1 cement : 6 coarse sand).	cum	453	-	3730	4183
7.21	Brick work with common burnt clay non-modular bricks of class designation 7.5 in foundation and plinth in:					
	7.21.1 Cement mortar 1:4 (1 cement : 4 coarse sand)	cum	430	-	3705	4135
	7.21.2 Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	433	-	3521	3955
7.22	Brick work with common burnt clay non-modular bricks of class designation 7.5 in superstructure above plinth level up to floor IV level in all shapes and sizes in :					
	7.22.1 Cement mortar 1:4 (1 cement : 4 coarse sand)	cum	638	-	3705	4342
	7.22.2 Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	641	-	3795	4436
7.23	Brick work with common burnt clay machine moulded perforated bricks of class designation 12.5 conforming to IS: 2222 in superstructure above plinth level up to floor four level in cement mortar 1:6 (1 cement : 6 coarse sand) :					
	7.23.1 With non-modular bricks	cum	641	-	3808	4449
	7.23.2 With Modular bricks	cum	632	-	3730	4362
7.24	Extra for forming cavity 5 cm to 11.5 cm wide in cavity walls with necessary weep and vent holes including use of cores and cost of providing and fixing bitumastic coated M .S. ties 300 mm long of 25x3 mm section at not less than 3 ties per sqm as per approved design.	sqm	86	-	36	121
7.25	Providing half brick masonry with common burnt clay non-modular bricks of class designation 7.5 in cement mortar 1:3 (1 Cement : 3 coarse sand) in superstructure for closing cavity 5 to 7.5 cm wide in cavity wall complete with 10cm / 11.4 cm wide bitumen felt type 3 grade 1.	metre	37	-	132	169
7.26	Brick work 7 cm thick with common burnt clay non-modular brick of class designation 7.5 in cement mortar 1:3 (1 cement : 3 coarse sand) in superstructure above plinth level and up to floor four level.	sqm	121	-	303	424

Item No.	Description		Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	HALF BRICK MASONRY						
7.27	Half brick masonry with common burnt clay non-modular bricks of class designation 7.5 in foundations and plinth in :						
	7.27.1	Cement mortar 1:3 (1 cement : 3 coarse sand)	sqm	90	-	450	540
	7.27.2	cement mortar 1:4 (1 cement : 4 coarse sand)	sqm	89	-	424	513
7.28	Half brick masonry with common burnt clay non-modular bricks of class designation 7.5 in superstructure above plinth level up to floor IV level.						
	7.28.1	Cement mortar 1:3 (1 cement :3 coarse sand)	sqm	131	-	450	581
	7.28.2	Cement mortar 1:4 (1 cement :4 coarse sand)	sqm	122	-	423	546
7.29	Extra for half brick masonry in superstructure, above floor IV level for every three floors or part thereof by mechanical means.		sqm	20	-	-	20
7.30	Extra for providing and placing in position 2 Nos. 6mm dia. M.S. bars at every third course of half brick masonry.		sqm	-	-	84	84
7.31	Half brick masonry with non modular fly ash bricks of class designation 10, conforming IS :12894, in super structure above plinth and up to floor IV level.						
	7.31.1	Cement mortar 1 : 3 (1 cement : 3 coarse sand)	sqm	120	-	439	558
	7.31.2	Cement mortar 1 : 4 (1 cement : 4 coarse sand)	sqm	119	-	411	531
	BRICK TILE WORK						
7.32	Tile brick masonry with common burnt clay non-modular tile bricks of class designation 10 in foundation and plinth in:						
	7.32.1	Cement mortar 1:4 (1 cement : 4 coarse sand)	cum	841	-	6385	7226
	7.32.2	Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	846	-	6091	6937
7.33	Tile brick masonry with common burnt clay machine moulded tile bricks of class designation 12.5 conforming to IS : 2690 (Part I) in foundation and plinth in cement mortar 1:6 (1 cement : 6 coarse sand).		cum	846	-	6152	6998
7.34	Tile brick masonry with common burnt clay non-modular tile bricks of class designation 10 in superstructure above plinth level up to floor IV level in cement mortar 1:6 (1 cement : 6 coarse sand).		cum	1089	-	6091	7180
7.35	Tile brick masonry work 5 cm thick with common burnt clay non-modular tile bricks of class designation 10 in cement mortar 1:3 (1 cement : 3 coarse sand) in superstructure above plinth and up to floor four level.		sqm	72	-	310	382
7.36	Tile brick masonry with common burnt clay non-modular tile bricks of class designation 10 in plain arch work in superstructure above plinth and up to floor four level in cement mortar 1:4 (1 cement : 4 coarse sand) including centering and shuttering complete.		cum	1422	-	7377	8798
7.37	Tile brick masonry with common burnt clay non-modular tile bricks of class designation 10 in gauged arch work in superstructure above plinth and up to floor four level in cement mortar 1:4 (1 cement : 4 coarse sand) including centering and shuttering complete.		cum	1422	-	7650	9072
	HONEY COMB WORK						
7.38	Honey-comb brick work 10 / 11.4 cm thick with common burnt clay bricks of class designation 7.5 in super structure above plinth level up to floor IV level with cement mortar 1:4 (1 cement : 4 coarse sand).		sqm	51	-	315	366
	EXPOSED BRICK WALL						
7.39	Brick work with common burnt clay selected non-modular bricks of class designation 7.5 in exposed brick work including making horizontal and vertical grooves 10 mm wide 12 mm deep complete in cement mortar 1:6 (1 cement : 6 coarse sand)						
	7.39.1	From ground level up to plinth level	cum	520	-	3532	4052

Item No.	Description		Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	7.39.2	Above plinth level up to floor IV level	cum	536	-	3532	4068
7.40	Brick work with common burnt clay machine moulded non-modular bricks of class designation 12.5 in exposed brick work including making horizontal and vertical grooves 10 mm wide 12 mm deep complete in cement mortar 1:6 (1 cement : 6 coarse sand).						
	7.40.1	From ground level up to plinth level	cum	517	-	3818	4335
	7.40.2	Above plinth level up to floor IV level	cum	532	-	3818	4351
7.41	Brick work with common burnt clay modular bricks of class designation 7.5 in exposed brick work including making horizontal and vertical grooves 10mm wide 12 mm deep complete in cement mortar 1:6 (1 cement : 6 coarse sand).						
	7.41.1	From ground level up to plinth level	cum	508	-	3742	4249
	7.41.2	Above plinth level up to floor IV level	cum	538	-	3742	4279
7.42	Brick work with common burnt clay machine moulded modular bricks of class designation 12.5 in exposed brick work including making horizontal and vertical grooves 10 mm wide 12 mm deep complete in cement mortar 1:6 (1 cement : 6 coarse sand).						
	7.42.1	From ground level up to plinth level	cum	508	-	3740	4248
	7.42.2	Above plinth level up to floor IV level	cum	524	-	3740	4264
7.43	Brick work with common burnt clay machine moulded perforated non-modular bricks of class designation 12.5 conforming IS : 2222 in exposed brick work including making horizontal and vertical grooves 10mm wide 12 mm deep complete in cement mortar 1:6 (1 cement : 6 coarse sand).						
	7.43.1	From ground level up to plinth level	cum	517	-	3818	4335
	7.43.2	Above plinth level up to floor IV level	cum	532	-	3818	4351
7.44	Brick work with common burnt clay machine moulded perforated modular bricks of class designation 12.5 conforming to IS : 2222 in exposed brick work including making horizontal and vertical grooves 10 mm wide 12mm deep complete in cement mortar 1:6 (1 cement : 6 coarse sand).						
	7.44.1	From ground level up to plinth level	cum	508	-	3740	4248
	7.44.2	Above plinth level up to floor IV level	cum	524	-	3740	4264
7.45	Brick work with modular calcium silicate bricks machine moulded conforming to IS:4139, class designation 10 average compressive strength in super structure above plinth level up to floor IV level in :						
	7.45.1	Cement mortar 1:4 (1 cement : 4 coarse sand)	cum	521	-	3717	4237
	7.45.2	Cement mortar 1:6 (1 cement : 6 Coarse sand)	cum	469	-	3555	4024
7.46	Brick work with clay Flyash non-modular brick of class designation 7.5 in superstructure above plinth level up to floor four level in :						
	7.46.1	Cement mortar 1:4 (1 cement : 4 coarse sand)	cum	519	-	3418	3937
	7.46.2	Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	522	-	3235	3757
7.47	Brick work with non modular fly ash bricks conforming to IS:12894, class designation 10 average compressive strength in super structure above plinth level up to floor IV level in :						
	7.47.1	Cement mortar 1:4 (1 cement : 4 coarse sand)	cum	510	-	3502	4013
	7.47.2	Cement mortar 1:6 (1 cement : 6 Coarse sand)	cum	513	-	3341	3854
7.48	Brick work with modular extruded brunt fly ash clay sewer bricks (Conforming to IS: 4885) in cement mortar 1:4 (1 cement : 4 coarse sand) in foundation and plinth :						
	7.48.1	Cement Mortar 1:4 (1 cement : 4 coarse sand)	cum	478	-	3717	4195

Item No.	Description	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
7.49	Brick work with modular extruded brunt fly ash clay sewer bricks (conforming to IS : 4885) in arches in foundation and plinth in cement mortar 1:3 (1 cement : 3 fine sand).	cum	1096	-	5184	6279
7.50	Providing and laying autoclaved aerated cement blocks masonry with 100 mm thick AAC blocks in super structure above plinth level up to floor IV level in cement mortar 1:4 (1 cement : 4 coarse sand). The rate includes providing and placing in position 2 Nos. 6 mm dia M.S. bars at every third course of masonry work.	cum	485	-	4350	4835
7.51	Providing and laying autoclaved aerated cement blocks masonry with 150mm/230mm/300 mm thick AAC blocks in super structure above plinth level up to floor IV level with RCC band at sill level and lintel level with approved block laying polymer modified adhesive mortar all complete as per direction of Engineer-in-Charge. (The payment of RCC band and reinforcement shall be made for separately).	cum	472	-	3573	4046
7.52	Brick work in plain arches in superstructure above plinth level and up to floor four level including centering and shuttering complete for span up to 6 metres with common burnt clay non-modular bricks of class designation 7.5 in cement mortar 1:3 (1 cement : 3 coarse sand).	cum	1066	-	5104	6170
7.53	Brick work in gauged arches in superstructure above plinth level and up to floor four level in cement mortar 1:3 (1 cement : 3 coarse sand) including centering and shuttering complete, for span up to 6 meters with common burnt clay non-modular bricks of class designation 7.5.	cum	1066	-	5104	6170
7.54	Extra for additional cost of centering for arches exceeding 6m span including all shuttering, bolting, wedging and removal (Area of the soffit to be measured).	sqm	175	-	379	554
	MISCELLANEOUS BRICKWORK ITEMS			-		
7.55	Brick edging 7cm wide 11.4 cm deep to plinth protection with common burnt clay non-modular bricks of class designation 7.5 including grouting with cement mortar 1:4 (1 cement : 4 fine sand).	metre	12	-	30	43
7.56	Dressed or moulded three brick cornice laid in cement sand mortar 1:4 including 12 mm thick cement plaster 1:4 or pointing, as required.	metre	144	-	146	291
7.57	Dressed or moulded two brick cornice laid in cement sand mortar 1:4 including 12 mm thick cement plaster 1:4 or pointing, as required.	metre	106	-	80	186
7.58	Dressed or moulded one brick cornice laid in cement sand mortar 1:4 including 12 mm thick cement plaster 1:4 or pointing, as required.	metre	52	-	32	84
7.59	Extra for making tapered surface of brick masonry.	sqm	119	-	122	241
7.60	Dressing, Chamfering of bricks to required shape in masonry work	100 No.	810	-	0	810
7.61	Maroo-corners making from first class bricks, and fixing in position, with cement mortar 1:4	each	109	-	43	152
7.62	Replacing Kallar eaten bricks	each	8	-	14	22
7.63	Labour for brick-work laid dry in walls	cum	208	-	-	208
7.64	Extra for specially moulded radiated work in arches of egg-shaped sewer, circular barrels and similar drainage works excluding cost of centring and moulds	cum	217	-	-	217
7.65	Extra for specially moulded brick work in circular work such as wells, shafts, circular sumps, pumps chambers, etc. in which specially moulded or cut-bricks have to be used; but for which no centring or supports are required up to 4.5 metres internal diameter.	cum	147	-	-	147
7.66	Chiselling sides of head regulators and other brick works to increase gullet width	sqm	135	-	-	135

Item No.	Description	Unit		Labour Rate	Machinery Rate	Material Rate	Through Rate
7.67	Fire brick work in lining of fire places flues, etc. (excepting chimney shafts)	cum		1078	-	13083	14161
7.68	Providing 75mm first class brick drip course at junction of roof and walls laid in cement sand mortar 1:4 including dressing of bricks.	metre		31	-	64	95
7.69	Providing first class brick-on-edge drip course at the junction of roof and walls, laid in cement sand mortar 1: 4 including dressing of bricks.	metre		46	-	96	143
7.70	Extra for bailing / pumping out standing water of pond caused by springs, sub soil water, canal or river seepage and broken water mains or drains except rain water collected in the trenches or foundations before laying brick work.	kilolitre		-	30	-	30
7.71	Extra for laying brick work in or under water and/or liquid mud including cost of pumping or bailing out water and removing slush etc. complete. **NOTE :- The quantity will be calculated by multiplying the depth measured from sub - soil water level up to the centre of gravity of brick work under sub - soil water with the quantity of brick work in cum executed under the sub - soil water. The depth of centre of gravity shall be reckoned correct to 0.1 m, 0.05 m or more shall be taken as 0.1 m and less than 0.05 m ignored.**	cum	per metre depth	306	-	-	306
7.72	Extra for laying brick work in or under foul position.	cum		135	-	-	135

C. STONE MASONRY

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
	ASHLAR MASONRY				
7.73	Stone work in plain ashlar in super structure up to floor four level in cement mortar 1:6 (1 cement : 6 coarse sand) including pointing with cement mortar 1:2 (1 white cement : 2 stone dust) with an admixture of pigment matching the stone shade :				
	7.73.1 One face dressed				
	7.73.1.1 Red sand stone	cum	5896	5761	11656
	7.73.2 Both face dressed				
	7.73.2.1 Red sand stone	cum	9306	5994	15300
7.74	Stone work plain ashlar in arches in super structure up to floor IV level in cement mortar 1:3 (1 cement : 3 coarse sand) including centering, shuttering and pointing with white cement mortar 1:2 (1 white cement : 2 stone dust) with an admixture of pigment matching the stone shade.				
	7.74.1 One face dressed				
	7.74.1.1 Red sand stone	cum	5896	7578	13474
	7.74.2 Both face dressed				
	7.74.2.1 Red sand stone	cum	9306	7812	17118
7.75	Stone work plain ashlar in domes , in super structure up to floor IV level in cement mortar 1:3 (1 cement : 3 coarse sand) including centering, shuttering and pointing with white cement mortar 1:2 (1 white cement : 2 stone dust) with an admixture of pigment matching the stone shade.				
	7.75.1 One face dressed				
	7.75.1.1 Red sand stone	cum	13500	9500	23000
	7.75.2 Both face dressed				
	7.75.2.1 Red sand stone	cum	19007	9720	28728
7.76	Stone work ashlar punched (ordinary) in superstructure up to floor four level in cement mortar 1:6 (1 white cement : 6 coarse sand) including pointing with cement mortar 1:2 (1 white cement : 2 stone dust) with an admixture of pigment matching the stone shade.				
	7.76.1 One face dressed				
	7.76.1.1 Red sand stone	cum	5141	5761	10902
	7.76.2 Both faced punched				
	7.76.2.1 Red sand stone	cum	7744	5994	13738
7.77	Extra for plain ashlar or ashlar punched in :				
	7.77.1 Square or rectangular pillars	cum	779	-	779
7.78	Extra for stone work; plain ashlar or ashlar punched curved on plan with a mean radius not exceeding 6 m.	cum	519	-	519
7.79	Extra for additional cost of centering for arches exceeding 6m span including all strutting, bolting, wedging etc. and removal (area of soffit to be measured).	sqm	184	339	523
	SUNK, MOULDED, CARVED ASHLAR MASONRY				
7.80	Stone work ashlar sunk or moulded or sunk and moulded up to floor four level in cement mortar 1:6 (1 cement : 6 coarse sand) including pointing with white cement mortar 1:2 (1 white cement : 2 stone dust) with an admixture of pigment matching the stone shade :				
	7.80.1 Red sand stone	cum	11433	6410	17843
7.81	Extra for stone work ashlar sunk or moulded or sunk and moulded or carved in :				
	7.81.1 Triangular or Square or rectangular pillars	cum	1039	-	1039
	7.81.2 Circular or polygonal pillars	cum	2857	-	2857
7.82	Extra for stone work ashlar sunk or moulded in cornices.	per	70	-	70
	RANDOM RUBBLE MASONRY				
7.83	Random rubble masonry with hard stone in foundation and plinth including levelling up with cement concrete 1:6:12 (1 cement : 6 coarse sand : 12 graded stone aggregate 20 mm nominal size) up to plinth level with :				
	7.83.1 Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	729	2558	3287

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
7.84	Random rubble masonry with hard stone in superstructure above plinth level and up to floor four level, including levelling up with cement concrete 1:6:12 (1 cement : 6 coarse sand : 12 graded stone aggregate 20 mm nominal size) at window sills, ceiling level and the like.					
	7.84.1	Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	901	2558	3459
7.85	Extra for random rubble masonry with hard stone in :					
	7.85.1	Square or rectangular pillars	cum	156	-	156
	7.85.2	Circular pillars	cum	383	357	740
7.86	Extra for random rubble masonry with hard stone curved on plan for a mean radius not exceeding 6 m.		cum	75	123	199
	COURSED RUBBLE MASONRY					
7.87	Coursed rubble masonry (first sort) with hard stone in foundation and plinth with :					
	7.87.1	Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	900	3264	4163
7.88	Coursed rubble masonry (second sort) with hard stone in foundation & plinth with :					
	7.88.1	Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	803	3128	3930
7.89	Coursed rubble masonry with hard stone (first or second sort) in superstructure above plinth level and up to floor four level.					
	7.89.1	Masonry work (first sort), in cement mortar 1:6 (1 cement : 6 coarse sand)	cum	1075	3264	4339
	7.89.2	Masonry work (second sort), in cement mortar 1:6 (1 cement: 6 coarse sand)	cum	978	3128	4106
7.90	Extra for coursed rubble masonry with hard stone (first or second sort) in:					
	7.90.1	Square or rectangular pillars	cum	390	-	390
	7.90.2	Circular pillars	cum	453	394	847
7.91	Extra for coursed rubble masonry with hard stone (first or second sort) curved on plan for a mean radius not exceeding 6 m.		cum	92	136	227
	PRECAST STONE BLOCK MASONRY					
7.92	Stone block masonry (including quoin-blocks, jamb blocks, closer etc.) with precast solid concrete blocks of approved size laid in cement sand mortar 1:6 (1 cement : 6 fine sand) in foundation and plinth					
	7.92.1	precast cement concrete block made from medium size stone 15 to 20 cm, 35% in volume at the face and cement, concrete 1:4:8 (with stone aggregate of 20 mm and down gauge) 65% in volume.	cum	2067	1684	3750
	7.92.2.	precast cement concrete block made from medium size stone 15 to 20 cm, 35% in volume at the face and cement concrete 1:5:8 (with stone aggregate of 20 mm and down gauge) 65% in volume.	cum	2067	1672	3738
	7.92.3	precast cement concrete block made from medium size stone 15 to 20 cm, 35% in volume at the face and cement concrete 1:5:10 (with stone aggregate of 20 mm and down gauge) 65% in volume.	cum	2067	1601	3668
7.93	Stone block masonry 15 cm thick (including quoin-blocks, jamb blocks, closer etc.) with precast solid concrete blocks of approved size laid in cement sand mortar 1 : 6 (1 cement : 6 fine sand) in foundation and plinth.					
	7.93.1	precast cement concrete block made from medium size stone 15 to 20 cm, 35% in volume at the face and cement concrete 1 :4 :8 (with stone aggregate of 20 mm and down gauge) 65% in volume.	sqm	342	2344	2687
	7.93.2	precast cement concrete block made from medium size stone 15 to 20 cm, 35% in volume at the face and cement concrete 1 :5:8 (with stone aggregate of 20 mm and down gauge) 65% in volume.	sqm	342	2290	2632

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
	7.93.3	precast cement concrete block made from medium size stone 15 to 20 cm, 35% in volume at the face and cement concrete 1:5:10 (with stone aggregate of 20 mm and down gauge) 65% in volume.	sqm	342	2207	2550
7.94	Stone block masonry 10 cm thick (including quoin-blocks, jamb blocks, closer etc.) with precast solid concrete blocks of approved size laid in cement sand mortar 1 : 6 (1 cement: 6 fine sand) in foundation and plinth.					
	7.94.1	precast cement concrete block made from medium size stone 15 to 20 cm, 35% by volume at the face and cement concrete 1:4:8 (with stone aggregate of 20 mm and down gauge) 65% in volume.	sqm	231	167	398
	7.94.2	precast cement concrete block made from medium size stone 15 to 20 cm, 35% by volume at the face and cement concrete 1:5:8 (with stone aggregate of 20 mm and down gauge) 65% in volume.	sqm	231	162	393
	7.94.3	Precast cement concrete block made from medium size stone 15 to 20 cm, 35% by volume at the face and cement concrete 1:5:10 (with stone aggregate of 20 mm and down gauge) 65% in volume.	sqm	231	310	541
	MISCELLANEOUS STONE WORK					
7.95	Providing and fixing sloping chajja of stone 40 mm thick and up to 80 cm wide beyond the wall as measured along the slope in cement mortar 1:4 (1 cement : 4 coarse sand) with 12 mm diameter anchoring steel bar, 45 cm long, fixed in each stone and supported on and including with bricks cove in cement mortar 1:4 (1 cement : 4 coarse sand), including pointing in cement mortar 1:2 (1 white cement : 2 stone dust) with an admixture of pigment matching the stone shade :					
	7.95.1	Red sand stone :				
		7.95.1.1 With common burnt clay non-modular bricks of class designation 7.5	sqm	486	313	798
7.96	Providing and fixing horizontal chajja of stone 40 mm thick and up to 80 cm projection in cement mortar 1:4 (1 cement : 4 coarse sand), including pointing in white cement mortar 1:2 (1 white cement : 2 stone dust) with an admixture of pigment matching the stone shade :					
	7.96.1	Red sand stone	sqm	257	211	468
7.97	30 mm red sand stone sun-shade (chisel-dressed) supported on red sand stone brackets, fixed in walls with cement mortar 1:4 (1 cement : 4 coarse sand), including finishing complete.		sqm	312	258	571
7.98	Providing and fixing red sand stone brackets 55x22.5x45 cm sunk and moulded including providing and fixing with 4 Nos. gun metal cramp 25x6 mm 30 cm long		each	971	728	1699
7.99	Stone work, plain in copings, cornices, string courses and plinth courses, up to 75 mm thick in Cement mortar 1:6 (1 cement : 6 coarse sand), including pointing with white cement mortar 1:2 (1 white cement : 2 stone dust) with an admixture of pigment matching the stone shade.					
	7.99.1	Red sand stone	cum	10391	6530	16921
7.100	Providing and fixing stone jali 40 mm thick throughout in cement mortar 1:3 (1 cement : 3 coarse sand), including pointing in white cement mortar 1:2 (1 white cement : 2 stone dust) with an admixture of pigment, matching the stone shade, jali slab without any chamfers etc.					
	7.100.1	Red sand stone	sqm	1550	226	1776
7.101	Extra for laying stone work in or under water and/or liquid mud including cost of pumping or bailing out water and removing slush etc. complete.		cum per metre depth	306	-	306

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
	NOTE :- The quantity will be calculated by multiplying the depth measured from sub-soil water level up to the centre of gravity of stone work under sub - water with the quantity of stone work in cum executed under the sub-soil water. The depth of centre of gravity shall be reckoned correct to 0.1 m, 0.05 m or more shall be taken as 0.1 m and less than 0.05 m ignored.				
7.102	Extra for laying stone work in or under foul position.	cum	176	-	176
7.103	Stone tile work for wall lining up to 10 m height with special adhesive over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand), including pointing in white cement with an admixture of pigment to match the stone shade.				
	7.103.1 8mm thick (mirror polished and machine cut edge)				
	7.103.1.1 Granite stone of any colour and shade	sqm	324	1056	1380
	7.103.1.2 Raj Nagar plain white marble/ Udaipur green	sqm	324	790	1114
7.104	Dry stone masonry for work of purely temporary nature (excluding dressing)	cum	619	-	619

CHAPTER NO. 8

CLADDING WORK

CHAPTER 8.0 - CLADDING WORK

NOTES:

A. STONE CLADDING AND VENEERING WORK (WET)

1.1 Stone lining upto 8 cm shall be treated as veneering work. The stone shall be gang saw cut into slabs of required thickness along the planes parallel to the natural bed of stone. Dressing at the back of the slab shall not be done, so as to ensure better grip with the backing. The dressed slabs shall be of the thickness as specified, with permissible tolerance of ± 2 mm. The stone shall be wetted before laying. They shall then be fixed with mortar in position without the use of chips or underpinning of any sort. Where so desired, the adjoining stones shall be secured to each other by means of copper pins 75 mm long and 6 mm diameter or as specified.

1.2 The stones shall be secured to the backing by means of cramps. The material for cramps shall have high resistance to corrosion under conditions of dampness and against the chemical action of mortar or concrete in which cramps are usually embedded. Minimum one cramp/stone dowel shall be used to secure one slab to the backing. The actual number of cramps and their sections, however, shall be as per requirements of design to carry the loads. The cramps shall be of copper alloyed with zinc or nickel or of stainless steel of grade 304. The pins, cramps and dowels shall be laid in cement mortar 1 :2 (1 cement : 2 fine sand).

1.3 The walls shall be carried up truly plumb. All courses shall be laid truly horizontal and all vertical joints truly vertical. The stone shall break joints on the face for at least half the height of the course, unless otherwise shown in the drawings. The stone shall be laid in regular courses not less than 20 cm height and all the stones shall be of the same height unless otherwise specified. No stone shall be less in length than one and a half times its height unless otherwise specified.

1.4 The joints shall be done with cement mortar 1: 3 (1 cement : 3 coarse sand). The thickness of joints shall be as small as possible, not exceeding 5 mm.

1.5 The length and breadth of the finished work shall be measured in metre correct to cm. The area should be calculated in sq. metre correct to two places of decimal.

B. DRY STONE CLADDING

1.6 Stone shall be hard, sound durable and tough free from cracks, decay and weathering and defects like cavities cracks, flaws, holes, veins, patches of soft or loose materials etc. Stone shall be cut with the gang saw to the required size and shape on all beds and joints so as to free from any waviness and to give truly vertical horizontal surface as required. The dressed stone shall be of the thickness specified with permissible tolerance of ±2 mm.

1. 7 The cramps shall have inbuilt adjustment for vertical and horizontal alignment. The cramps used to hold support and transfer the load of stone unit to the supporting structured steel shall be designed by the manufacturer and approval of the same shall be obtained from the Engineer-in-Charge. The minimum number of clamps required shall be as per requirement of design to carry the load of individual stone slabs. Adequate cutting in stone shall be made with precision instrument to hold the cramps pins at the joints.

1.8 Joints horizontal and vertical shall be filled with weather sealant of approved make.

1.9 The properly designed structural frame for withstanding the weight of stone slab are fixed/supported on wall surface with the help of M.S. brackets/lugs of angle iron/flat etc. The frame can also be supported on RCC surface with the help of hold fastener by drilling the holes in RCC surface.

1.10 The rate shall include the cost of materials and labour involved in all the operations described above, except for the cost of providing and fixing pins, dowels and metal cramps, which shall be paid for separately unless otherwise stipulated in the item of work.

1.11 The rates are inclusive of GST and all other taxes, Labour Welfare Cess and contractor's profit.

CHAPTER 8.0 - CLADDING WORK

LIST OF BUREAU OF INDIAN STANDARDS CODES

Sr. No.	B.I.S. No.	Subject
1.	IS 1122	Method of test for determination of true specific gravity of natural building stones.
2.	IS 1124	Method of test for determination of water absorption, apparent specific gravity and porosity of natural building stones.
3.	IS 1130	Marble (blocks, slabs and tiles).
4.	IS 4101 (Part 1)	Code of practice for external facing and veneers: Stone facing.
5.	IS 3316	Specifications for structural granite
6.	IS 14223 (Part 1)	Polished Building Stones (Part-1) Granite

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
	STONE WORK DRY CLADDING				
8.1	Providing and fixing dry cladding up to 10 metre heights with 30mm thick gang saw cut stone with (machine cut edges) of uniform colour and size up to 1mx1m, fixed to structural steel frame work and/ or with the help of cramps, pins etc. and sealing the joints with approved weather sealant as per Architectural drawing and direction of Engineer-in-charge. (The steel frame work, stainless steel cramps and pins etc. shall be paid for separately).				
	8.1.1 Red sand stone - 30mm thick gang saw cut stone	sqm	844	282	1126
8.2	Providing and fixing structural steel frame (for dry cladding with 30 mm thick gang saw cut with machine cut edges sand stone) on walls at all heights using M.S. square/ rectangular tube in the required pattern as per architectural drawing, including cost of cutting, bending, welding etc. The frame work shall be fixed to the wall with the help of M.S. brackets/ lugs of angle iron/ flats etc. which shall be welded to the frame and embedded in brick wall with cement concrete block 1:2:4 (1 cement :2 coarse sand :4 graded stone aggregate 20 mm nominal size) of size 300x230x300 mm, including cost of necessary centring and shuttering and with approved expansion hold fasteners on CC/RCC surface, including drilling necessary holes. Approved cramps/ pins etc. shall be welded to the frame work to support stone cladding, the steel work will be given a priming coat of Zinc primer as approved by Engineer-in-charge and painted with two or more coats of epoxy paint (Shop drawings shall be submitted by the contractor to the Engineer-in-charge for approval before execution). The frame work shall be fixed in true horizontal & vertical lines/planes. (Only structural steel frame work shall be measured for the purpose of payment, stainless steel cramps shall be paid for separately and nothing extra shall be paid).	kg	70	94	164
8.3	Providing and fixing adjustable stainless steel cramps of approved quality, required shape and size, adjustable with stainless steel nuts, bolts and washer (total weight not less than 260 gms), for dry stone cladding fixed on frame work at suitable location, including making necessary recesses in stone slab, drilling required holes etc complete as per direction of the Engineer-in-charge.	each	114	130	244
	STONE WORK WET CLADDING				
8.4	Marble work gang saw cut (polished and machine cut) of thickness 18 mm for wall lining (veneer work), backing filled with a grout of average 12 mm thick in cement mortar 1:3 (1 cement : 3 coarse sand), including pointing with white cement mortar 1:2 (1 white cement : 2 marble dust) with an admixture of pigment to match the marble shade (To be secured to the backing by means of cramps, which shall be paid for separately).				
	8.4.1 Raj Nagar Plain white marble/ Udaipur green marble/ Zebra black marble.				
	8.4.1.1 Area of slab up to 0.50 sqm	sqm	1878	1000	2878
	8.4.1.2 Area of slab over 0.50 sqm	sqm	1888	1033	2921
8.5	Extra for fixing marble /granite stone, over and above corresponding basic item, in facia and drops of width up to 150 mm with epoxy resin based adhesive, including cleaning etc. complete.	metre	201	11	212
8.6	Providing and fixing cramps of required size & shape in RCC/ CC / Brick masonry backing with cement mortar 1:2 (1 cement :2 coarse sand), including drilling necessary hole in stones and embedding the cramp in the hole (fastener to be paid separately).				
	8.6.1 Gunmetal cramps	kg	57	437	494
	8.6.2 Stainless steel cramps	kg	63	405	468
8.7	Providing and fixing expansion hold fasteners on C.C. /R.C.C./Brick masonry surface backing including drilling necessary holes and the cost of bolt etc complete.				
	8.7.1 Wedge expansion type				
	8.7.1.1 Fastener with threaded dia 6 mm	each	9	15	24

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
	8.7.1.2	Fastener with threaded dia 10 mm	each	9	16	24
	8.7.1.3	Fastener with threaded dia 12 mm	each	9	37	46
	STONE WORK FOR WALL LINING					
8.8	Stone tile (polished) work for wall lining over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and cement slurry @ 3.3 kg/sqm including pointing in white cement complete.					
	8.8.1	8mm thick				
	8.8.1.1	Raj nagar plain white marble/ Udaipur green	sqm	1084	640	1725
	8.8.1.2	Granite of any colour and shade	sqm	1084	1040	2124
8.9	Stone work (machine cut edges) for wall lining etc. (veneer work) up to 10 metre height, backing filled with a grout of average 12 mm thick cement mortar 1:3 (1 cement : 3 coarse sand) including pointing in white cement mortar 1:2 (1 white cement : 2 stone dust) with an admixture of pigment matching the stone shade : (To be secured to the backing and the sides by means of cramps and pins which shall be paid for separately) :					
	8.9.1	Red sand stone - exposed face fine dressed with rough backing.				
	8.9.1.1	70 mm thick	sqm	1906	516	2423
	8.9.1.2	60 mm thick	sqm	1914	457	2371
	8.9.1.3	50 mm thick	sqm	1906	398	2304
	8.9.1.4	40 mm thick	sqm	1906	261	2167
	8.9.1.5	30 mm thick	sqm	1906	279	2185
	8.9.2	Red sand stone - Exposed face machine cut and table rubbed				
	8.9.2.1	70 mm thick	sqm	2909	516	3425
	8.9.2.2	60 mm thick	sqm	2909	457	3365
	8.9.2.3	50 mm thick	sqm	2909	398	3306
	8.9.2.4	40 mm thick	sqm	2909	261	3169
	8.9.2.5	30 mm thick	sqm	2909	279	3187
	8.9.3	Gang saw cut stone				
	8.9.3.2	30mm thick Red sand stone	sqm	904	383	1287
8.10	Providing and fixing stainless steel cramps of required size and shape for anchoring stone wall lining to the backing or securing adjacent stones in stone wall lining in cement mortar 1:2 (1 cement : 2 coarse sand), including making the necessary chases in stone and holes in walls wherever required.		kg	61	405	466
8.11	Providing and fixing copper pins 7.5 cm long 6 mm diameter for securing adjacent stones in stone wall lining in cement mortar 1:2 (1 cement : 2 coarse sand), including making the necessary chases.		each	5	22	26
8.12	Wall lining butch work up to 10m height with Dholpur stone 40 mm thick rough facing on the exposed surface with stone strips of minimum length 300 mm and required width, including embedding every tenth layer and bottom most layer in masonry or concrete after making necessary chases of size 75x75 mm and by providing layer of 75 mm thick strips i/c 12 mm thick bed of cement mortar 1:3 (1 Cement : 3 coarse sand) i/c ruled pointing in cement mortar 1:2 (1 white cement : 2 stone dust) with an admixture of pigment to match the shade of stone complete as per direction of Engineer-in-charge.		sqm	731	688	1419
8.13	Stone work (machine cut edges Veneer work) for wall lining up to 10 m height, backing filled with a grout of 12 mm thick cement mortar 1:3 (1 Cement : 3 coarse sand) and jointed with Cement mortar 1:2 (1 cement : 2 stone dust), including rubbing and polishing complete. (To be secured to the backing and the sides by means of cramps and pins which shall be paid for separately).					
	8.13.1	Kota stone slabs exposed face dressed and rubbed.				
	8.13.1.1	25 mm thick	sqm	1300	462	1763
8.14	Extra for stone work for wall lining on exterior walls of height more than 10 m from ground level for every additional height of 3 m or part there of.		sqm	60	-	60

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
8.15	Providing and fixing machine cut, mirror/ eggshell polished , Marble stone work for wall lining (veneer work) including dado, skirting, risers of steps etc., in required design and pattern wherever required, stones of different finished surface texture, on 12 mm (average) thick cement mortar 1:3 (1 cement : 3 coarse sand) laid and jointed with white cement slurry @ 3.3 kg/sqm including pointing with white cement slurry admixed with pigment of matching shade, including rubbing, curing, polishing etc. all complete as per Architectural drawings, and as directed by the Engineer-in-Charge.				
8.15.1	18 mm thick Italian Marble stone slab, Perlato, Rosso verona, Fire Red or Dark Emperadore etc.	sqm	1883	5167	7050
8.16	Providing and fixing of reconstituted stone tile work (IS 3622-2017-Reaffirmed) for wall Cladding up to 10 m height with special adhesive (IS 15477-2019) over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand), including pointing in white cement with an admixture of pigment to match the stone shade.	sqm	851	1099	1950
8.17	Providing & fixing factory manufactured jali of reinforced cement concrete consisting of cement , coarse sand and 10mm & down gauge bajri in ratio of 1:1:2 with 8mm dia tor steel. Outer frame of the jail will be 50mm wide & 25mm thick & inner frame of jali will be 25mm wide and 25mm thick with smooth finish as per design approved by the Engineer-in-Charge including fixing in position up to any height with cement sand mortar 1:4 complete in all respect.	sqm	267	599	866
	VENEERING WORK				
8.18	Providing and fixing specified wood frame work consisting of battens 50x25mm fixed with rawl plug and drilling necessary holes for rawl plug etc. including priming coat complete.				
8.18.1	Kiln seasoned and chemically treated Hollock wood	cum	80650	53331	133981
8.19	Providing and fixing plywood 4 mm thick, one side decorative veneer conforming to IS: 1328 (type-1), for plain lining / cladding with necessary screws, including priming coat on unexposed surface with :				
8.19.1	Decorative veneer facings of approved manufacture	sqm	514	586	1101
8.20	Providing and fixing 4mm thick coir veneer board, ISI marked IS : 14842, plain lining with necessary screws, priming coat on unexposed surface etc., complete.	sqm	514	539	1054
8.21	Providing and fixing skirting with Pre-laminated (one side decorative and other side balancing lamination) flat pressed 3 layer or graded particle board (medium density) Grade I, Type II, IS :12823 marked, with necessary fixing arrangements and screws, including drilling necessary holes for rawl plugs etc. and priming coat on unexposed surface complete :				
8.21.1	18 mm thick	sqm	172	1490	1662
8.21.2	25 mm thick	sqm	152	1866	2019
8.22	Providing 50x50x50 mm 2nd class teak wood plugs including cutting brick work and fixing in cement mortar 1:3 (1 cement : 3 fine sand) and making good the walls etc.	each	11	14	25
8.23	Providing and fixing expandable fasteners of specified size with necessary plastic sleeves and galvanised M.S. screws including drilling holes in masonry work /CC/ R.C.C. and making good etc. complete.				
8.23.1	25 mm long	each	2	13	15
8.23.2	32 mm long	each	2	13	15
8.23.3	40 mm long	each	2	17	19
8.23.4	50 mm long	each	2	18	21
8.24	Providing and fixing 2nd class teak wood plain lining tongued and grooved, including wooden plugs complete with necessary screws and priming coat on unexposed surface.				
8.24.1	40 mm thick	sqm	264	5470	5734
8.24.2	25 mm thick	sqm	264	3452	3715
8.24.3	20 mm thick	sqm	224	2779	3002
8.24.4	12 mm thick	sqm	233	1693	1926

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
8.25	Providing and fixing in wall lining flat pressed three layer (medium density) particle board or graded wood Pre-laminated one side decorative lamination and other side balancing lamination Grade I, Type II, IS : 12823 marked, including priming coat on unexposed arrangement and screws etc. complete :					
	8.25.1	12 mm thick	sqm	323	784	1106
	8.25.2	18 mm thick	sqm	323	941	1264
	8.25.3	25 mm thick	sqm	323	1298	1621
	KITCHEN PLATEFORMS/ WINDOW SILLS/ URINAL PARTITIONS					
8.26	Providing and fixing 18 mm thick gang saw cut, mirror polished, premoulded and prepolished, machine cut for kitchen platforms, vanity counters, window sills, facias and similar locations of required size, approved shade, colour and texture laid over 20 mm thick base cement mortar 1:4 (1 cement : 4 coarse sand), joints treated with white cement, mixed with matching pigment, epoxy touch ups, including rubbing, curing, moulding and polishing to edges to give high gloss finish etc. complete at all levels.					
	8.26.1	Raj Nagar Plain white marble/ Udaipur green marble/ Zebra black				
		8.26.1.1 Area of slab up to 0.50 sqm	sqm	955	864	1819
		8.26.1.2 Area of slab over 0.50 sqm	sqm	742	898	1641
	8.26.2	Granite of any colour and shade				
		8.26.2.1 Area of slab up to 0.50 sqm	sqm	955	2125	3080
		8.26.2.2 Area of slab over 0.50 sqm	sqm	711	2398	3109
8.27	Providing edge moulding to 18 mm thick marble stone counters, Vanities etc., including machine polishing to edge to give high gloss finish etc. complete as per design approved by Engineer-in-Charge.					
	8.27.1	Marble work	metre	150	-	150
	8.27.2	Granite work	metre	257	-	257
8.28	Extra for providing opening of required size & shape for wash basin/ kitchen sink in kitchen platform, vanity counter and similar location in marble/ Granite/ stone work, including necessary holes for pillar taps etc. including moulding, rubbing and polishing of cut edges etc. complete.		each	440	-	440
8.29	Mirror polishing on marble work/Granite work/stone work where ever required to give high gloss finish complete.		sqm	234	-	234
8.30	Providing and fixing stone slab with table rubbed, edges rounded and polished, of size 75x50 cm deep and 1.8 cm thick, fixed in urinal partitions by cutting a chase of appropriate width with chase cutter and embedding the stone in the chase with epoxy grout or with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 6 mm nominal size) as per direction of Engineer-in-charge and finished smooth.					
	8.30.1	White Agaria Marble Stone	sqm	145	2573	2718
	8.30.2	Granite Stone of approved shade	sqm	145	2573	2718
8.31	Providing and fixing facing extruded clay Tile (Glass Reinforced Clay Tiles (GRC)) any size any shade & design on wall with under layer of 12 mm thick cement plaster 1:3 and jointed with neat cement matched with pigment complete as per drawings,specifications and to the entire satisfaction of engineer- in- charge.		sqm	1233	976	2208
	ALUMINIUM COMPOSITE PANELS					
8.32	Designing, fabricating, testing, installing and fixing in position Curtain Wall with Aluminium Composite Panel Cladding, with open grooves for linear as well as curvilinear portions of the building , for all heights and all levels etc. including:					
	(a) Structural analysis & design and preparation of shop drawings for pressure equalisation or rain screen principle as required, proper drainage of water to make it watertight including checking of all the structural and functional design.					

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
	(b) Providing, fabricating and supplying and fixing panels of aluminium composite panel cladding in pan shape in metallic colour of approved shades made out of 4mm thick aluminium composite panel material consisting of 3mm thick FR grade mineral core sandwiched between two Aluminium sheets (each 0.5mm thick). The aluminium composite panel cladding sheet shall be coil coated, with Kynar 500 based PVDF / Lumiflon based fluoropolymer resin coating of approved colour and shade on face # 1 and polymer (Service) coating on face # 2 as specified using stainless steel screws, nuts, bolts, washers, cleats, weather silicone sealant, backer rods etc.				
	(c) The fastening brackets of Aluminium alloy 6005 T5 / MS with Hot Dip Galvanised with serrations and serrated washers to arrest the wind load movement, fasteners, SS 316 Pins and anchor bolts of approved make in SS 316, Nylon separators to prevent bi-metallic contacts all complete required to perform as per specification and drawing The item includes cost of all material & labour component, the cost of all mock ups at site, cost of all samples of the individual components for testing in an approved laboratory, field tests on the assembled working curtain wall with aluminium composite panel cladding, cleaning and protection of the curtain wall with aluminium composite panel cladding till the handing over of the building for occupation. Base frame work for ACP cladding is payable under the relevant aluminium items. The Contractor shall provide curtain wall with aluminium composite panel cladding, having all the performance characteristics all complete , as per the Architectural drawings, as per item , as specified, as per the approved shop drawings and as directed by the Engineer-in-Charge. However, for the purpose of payment, only the actual area on the external face of the curtain wall with Aluminium Composite Panel Cladding (including width of groove) shall be measured in sqm up to two decimal places.	sqm	632	2140	2772

CHAPTER NO. 9

HOISTING and ROOFING

CHAPTER 9.0: HOISTING AND ROOFING

LIST OF BUREAU OF INDIAN STANDARDS CODES

Sr. No.	B.I.S. No.	Subject
1	IS 277	Galvanised steel sheets (plain and corrugated)
2	IS 651	Glazed stoneware pipes and fittings
3	IS 1200 (PT.IX)	Method of measurements of building and civil engineering works: Part – 9 Roof covering (including cladding)
4	IS 1200 (PTX)	Method of measurements of building and civil engineering works:
5		Part -10 ceiling and lining
6	IS 1230	Cast iron rain water pipes and fitting
7	IS 2095 (PT-1)	Gypsum plaster boards (Pt.1) plain Gypsum plaster boards
8	IS 2115	Code of practice for flat roof finish: mud phuska
9	IS 2633	Method of testing uniformity of coating on zinc coated articles
10	IS 3087	Particle boards of wood and other lignocellulogic materials (medium density) for general purposes – specifications
11	IS 5382	Specification for rubber sealing rings for gas mains, water mains and sewers
12	IS 13592	Unplasticised polyvinyl chloride (UPVC) pipes for soil and Waste discharge system for inside and outside building
13	IS 14753	Specifications for polymethyl Methacrylate (PMMA) (Arylic) sheets
14	IS 14862	Fibre cement flat sheets – specifications
15	IS 14871	Specifications for products in fibre reinforced cement – Long corrugated or Asymmetrical section sheets and fittings for roofing and cladding.

CHAPTER 9.0 - HOISTING AND ROOFING

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
	A. HOISTING				
9.1	Hoisting R.C.C. lintels and placing in position up to floor IV level	cum	1809	-	1809
9.2	Hoisting R.C.C. battens and placing in position up to floor IV level	cum	2015	-	2015
9.3	Hoisting R.C.C. shelves and placing in position up to floor IV level.	cum	1262	-	1262
9.4	Hoisting R.C.C. bedplates and placing in position up to floor IV level.	cum	1969	-	1969
9.5	Hoisting wooden battens and placing lintels and placing in position up to floor	cum	1331	-	1331
9.6	Hoisting wooden beams and placing in position up to floor IV level.	cum	1088	-	1088
9.7	Hoisting wooden trusses and placing in position up to floor IV level.	cum	3997	-	3997
9.8	Hoisting R.S.Joists and placing in position up to floor IV level.	kg	4	-	4
9.9	Hoisting steel roof trusses, plate girders of any span for buildings up to floor IV level and plate and trussed girders of any span for bridges.	kg	7	-	7
	B. ROOFING				
9.10	Painting top of roofs with bitumen of approved quality @ 17kg per 10 sqm impregnated with a coat of coarse sand at 60 cudm per 10 sqm, including cleaning the slab surface with brushes and finally with a piece of cloth lightly soaked in kerosene oil complete :				
	9.10.1 With residual type petroleum bitumen of grade VG -10	sqm	17	86	104
9.11	10 cm thick (average) mud phaska of damped brick earth on roofs laid to slope consolidated and plastered with 25 mm thick mud mortar mixed with bhusa @ 35 kg per cum of earth and gobri leaping with mix 1:1 (1 clay : 1 cow dung) and covered with flat tile bricks, grouted with cement mortar 1:3 (1 cement : 3 fine sand) mixed with 2% of integral water proofing compound by weight of cement and finished neat:				
	9.11.1 With common burnt clay non-modular brick tile of class designation 10	sqm	224	323	547
9.12	10cm thick (average) mud phaska of damped brick earth on roofs laid to slope consolidated and plastered with 25 mm thick mud mortar with bhusa @ 35 kg per cum of earth and gobri leaping with mix 1:1 (1 clay : 1 cow-dung) and covered with machine moulded tile bricks, grouted with cement mortar 1:3 (1 cement : 3 fine sand) mixed with 2% of integral water proofing compound by weight of cement and finished neat.				
	9.12.1 With machine moulded common burnt clay non-modular brick tiles of class designation 12.5, conforming to IS 2690	sqm	224	326	550
9.13	Extra for every additional 1 cm thickness of mud phaska.	sqm	6	3	9
9.14	Providing and laying brick tiles over mumty roofs, grouted with cement mortar 1:3 (1 cement : 3 fine sand) mixed with 2% of integral water proofing compound by weight of cement, over 12 mm layer of cement mortar 1:3 (1 cement : 3 fine sand) and finished neat:				
	9.14.1 With common burnt clay non-modular brick tiles of class designation 10	sqm	87	331	419
9.15	Providing and laying pressed clay tiles (as per approved pattern 20 mm nominal thickness of approved size) on roofs jointed with cement mortar 1:4 (1 cement : 4 coarse sand) mixed with 2% integral water proofing compound, laid over a bed of 20 mm thick cement mortar 1:4 (1 cement : 4 coarse sand) and finished neat complete.	sqm	106	257	363
9.16	Providing and fixing pressed clay tile (Mangalore tiles) of size 200mm x 125mm x 10mm on slopping roof top/ window projections with 12mm thick cement, coarse sand mortar 1:3 including cost of ridge wherever required as per approved design complete in all respect up to 4 storey or 15 Meter Height.	sqm	457	361	818
9.17	Providing gola 75x75 mm in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 stone aggregate 10 mm and down gauge), including finishing with cement mortar 1:3 (1 cement : 3 fine sand) as per standard design :				
	9.17.1 In 75x75 mm deep chase	metre	85	40	125

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
9.18	Making khurras 45x45 cm with average minimum thickness of 5 cm cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate of 20 mm nominal size) over P.V.C. sheet 1 m x1 m x 400 micron, finished with 12 mm cement plaster 1:3 (1 cement : 3 coarse sand) and a coat of neat cement, rounding the edges and making and finishing the outlet complete.	each	77	88	165
9.19	Providing sand stone slab for roofing and laying them in cement mortar 1 : 4 (1 cement : 4 coarse sand) over wooden karries or R.C.C. battens or structural steel sections (Karries or battens or structural steel sections to be paid separately), including pointing the ceiling joints with cement mortar 1:3 (1 cement : 3 fine sand) complete :				
9.19.1	Red sand stone slab				
9.19.1.1	40 to 50 mm thick	sqm	237	180	417
9.20	Providing & fixing on roof pressed clay tile (Mangalore tile) of 20 mm nominal thickness and of approved size and as per approved pattern on steel frame work complete (steel frame work to be paid separately).	sqm	56	170	226
9.21	Providing & laying on roof pressed clay tile ridge (Mangalore tile) of 20mm thickness and of approved pattern on steel frame work complete (steel frame work to be paid separately).	metre	12	35	48
	SHEET ROOFING				
9.22	Providing corrugated G.S. sheet roofing including vertical / curved surface fixed with polymer coated J or L hooks, bolts and nuts 8 mm diameter with bitumen and G.I. limpet washers or with G.I. limpet washers filled with white lead, including a coat of approved steel primer and two coats of approved paint on overlapping of sheets complete (up to any pitch in horizontal/ vertical or curved surfaces), excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required.				
9.22.1	1.00 mm thick with zinc coating not less than 275 gm/m²	sqm	83	1213	1296
9.22.2	0.80 mm thick with zinc coating not less than 275 gm/m²	sqm	83	1010	1093
9.22.3	0.63 mm thick with zinc coating not less than 275 gm/ m²	sqm	83	837	920
9.23	Extra for straight cutting in C.G.S. sheet roofing for making opening of area exceeding 40 sq. decimetre for chimney stacks, sky light etc.:				
9.23.1	1.00 mm thick	metre	36	-	36
9.23.2	0.80 mm thick	metre	29	-	29
9.23.3	0.63 mm thick	metre	29	-	29
9.24	Extra for circular cutting in C.G.S. sheet roofing for making opening of area exceeding 40 sq. decimetre:				
9.24.1	1.00 mm thick	metre	191	-	191
9.24.2	0.80 mm thick	metre	153	-	153
9.24.3	0.63 mm thick	metre	153	-	153
9.25	Providing ridges or hips of width 60 cm overall width plain G.S. sheet fixed with polymer coated J or L hooks, bolts and nuts 8 mm dia G.I. limpet and bitumen washers complete.				
9.25.1	0.80 mm thick with zinc coating not less than 275 gm/m²	metre	167	408	575
9.25.2	0.63 mm thick with zinc coating not less than 275 gm/m²	metre	167	332	499
9.26	Providing valleys of 90 cm wide overall in plain G.S. sheet fixed with polymer coated J, or L hooks, bolts and nuts 8 mm dia G.I. limpet and bitumen washers complete :				
9.26.1	1.60 mm thick with zinc coating not less than 350 gm/m²	metre	185	942	1127
9.27	Providing and fixing of 40 cm overall width plain G.S. sheet fixed with polymer coated J or L hooks, bolts and nuts, G.I. limpet and bitumen washer complete, bent to shape and fixed in wall with cement mortar 1:3 (1 cement : 3 coarse sand).				
9.27.1	1.00 mm thick with zinc coating not less than 275 gm/m²	metre	177	250	427
9.28	Providing and fixing 15 cm wide, 45 cm overall semi-circular plain G.S. sheet gutter with iron brackets 40x3mm size, bolts, nuts and washers etc., including making necessary connections with rain water pipes complete.				

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
	9.28.1	0.80 mm thick with zinc coating not less than 275 gm/m²	metre	178	358	536
	9.28.2	0.63 mm thick with zinc coating not less than 275 gm/m²	metre	178	294	472
9.29	Providing flat iron brackets 50x3 mm size with necessary bolts, nuts and washers etc. for fixing G.S. sheets gutters with purlins.		metre	14	40	54
9.30	Supply, fabrication and installation of self-supported arch shaped galvalume/ Zincalume steel sheet roofing 1.00 MM thick (BMT) (only ± 0.2mm tolerance allowed) and 1.075 MM thick (total thickness)(only ± 0.2mm tolerance allowed) tensile strength 350 MPa coating mass 150 gm per sqm etc. of approved make . The manufacturer shall follow the IS codes 15961, type III with Super Durable Polyester paint, IS code 513, IS code 16163 and all other relevant Indian codes as per approved specification, design & drawings.		SqM	195	1234	1429
9.31	Providing and fixing Hi, Rib profiled sheets 0.60mm TT (Total Thickness) (only ± 0.2mm tolerance allowed) Hi Tensile galvalume/Zincalume steel sheet of the approved make having a hot dip metallic Zinc-Aluminium alloy (AZ-150) coating of minimum (150 gms/sqm) with 550 Mpa yield strength of approved blue colour (RAL-5012) the colour coating shall be as per IS 15965 of SMP or Super Durable Polyester Paint XRW fixed with hex head self-drilling screw sloping roof without curvature as per approved specification, drawing and design.		sqm	39	530	569
9.32	Providing & fixing UV stabilised fibreglass reinforced plastic sheet roofing up to any pitch, including fixing with polymer coated 'J' or 'L' hooks, bolts & nuts 8mm dia. G.I plain/bitumen washers complete but excluding the cost of purlins, rafters, trusses etc. The sheets shall be manufactured out of 2400 TEX panel rovigs incorporating minimum 0.3% ultra-violet stabiliser in resin system under approximately 2400 psi and hot cured. They shall be of uniform pigmentation and thickness without air pockets and shall conform to IS 10192 and IS 12866.The sheets shall be opaque or translucent, clear or pigmented, textured or smooth as specified.					
	9.32.1	2 mm thick corrugated (2.5" or 4.2" or 6") or step-down (2" or 3" or 6") as specified	sqm	63	919	982
	9.32.2	2 mm thick flat	sqm	63	826	889
9.33	Providing and fixing precoated galvanised iron profile sheets (size, shape and pitch of corrugation as approved by Engineer-in-charge) 0.50 mm (+ 0.05 %) total coated thickness with zinc coating 120 grams per sqm as per IS: 277, in 240 mpa steel grade, 5-7 microns epoxy primer on both side of the sheet and polyester top coat 15-18 microns. Sheet should have protective guard film of 25 microns minimum to avoid scratches during transportation and should be supplied in single length up to 12 metre or as desired by Engineer-in-charge. The sheet shall be fixed using self drilling /self tapping screws of size (5.5x 55 mm) with EPDM seal, complete up to any pitch in horizontal/ vertical or curved surfaces, excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required.		sqm	36	528	564
9.34	Providing and fixing precoated galvanised steel sheet roofing accessories 0.50 mm (+0.05 %) total coated thickness, Zinc coating 120 grams per sqm as per IS: 277, in 240 mpa steel grade, 5-7 microns epoxy primer on both side of the sheet and polyester top coat 15-18 microns using self drilling/ self tapping screws complete :					
	9.34.1	Ridges plain (500 - 600mm)	metre	35	313	348
	9.34.2	Flashings/ Aprons.(Up to 600 mm)	metre	18	312	330
	9.34.3	North light curves	metre	21	375	396
	9.34.4	Barge board (Up to 300 mm)	metre	17	299	316
	9.34.5	Crimp curve	sqm	20	345	365
	9.34.6	Gutter (600 mm over all girth)	metre	161	642	803
9.35	Providing reinforced by organic fibres and/or inorganic synthetic fibres cement 6 mm thick corrugated sheets (as per IS: 14871) roofing up to any pitch and fixing with polymer coated J, or L hooks, bolts and nuts 8 mm dia. G.I. plain and bitumen washers or with self drilling fastener and EPDM washers etc. complete (excluding the cost of purlins, rafters and trusses), including cutting sheets to size and shape wherever required.		sqm	36	360	396

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
9.36	Extra for straight cutting in reinforced by organic fibres and/or inorganic synthetic fibres cement corrugated, semi corrugated 6 mm thick sheet roofing for making openings of area exceeding 40 square decimetre for chimney stacks, skylights etc.		metre	29	0	29
9.37	Extra for circular cutting in reinforced by organic fibres and/or inorganic synthetic fibres cement corrugated/ semi corrugated 6 mm thick sheet roofing for making openings of area exceeding 40 square decimetre.		metre	80	0	80
9.38	Providing and fixing ridges and hips in fibre cement reinforced by organic fibres and/or inorganic synthetic fibres roofing with suitable fixing accessories or self drilling fastener and EPDM washer etc. complete.					
	9.38.1	Corrugated serrated adjustable ridges	metre	35	329	365
	9.38.2	Plain wing adjustable ridges	metre	35	329	365
	9.38.3	Close fitting adjustable ridges	metre	35	381	417
	9.38.4	Unserrated adjustable hips	metre	35	329	364
9.39	Providing and fixing fibre cement reinforced by organic fibres and/or inorganic synthetic fibres roofing accessories in all colours with polymer coated J or L hooks, bolts and nuts and or G.I. seam bolts and nuts, G.I. plain and bitumen washers or with self drilling fastener and EPDM washer etc. complete:					
	9.39.1	Corrugated apron pieces	metre	18	303	320
	9.39.2	Eave's filler pieces	metre	18	236	254
	9.39.3	North light curves	metre	21	417	438
	9.39.4	Ventilator curves	metre	21	458	479
	9.39.5	Barge boards	metre	15	565	580
	9.39.6	Ridge finials	pair	10	225	235
	9.39.7	Special north light curves	each	21	790	812
	9.39.8	S type louvers	metre	90	231	321
9.40	Extra for providing and fixing wind ties of 40x 6 mm flat iron section.		metre	12	128	140
	CEILING					
9.41	Providing and fixing insulating board ceiling of approved quality with necessary nails etc. complete (frame work to be paid separately) :					
	9.41.1	Natural colour insulating board				
		9.41.1.1 12 mm thick	sqm	175	304	478
	9.41.2	White face insulating board				
		9.41.2.1 12 mm thick	sqm	175	340	514
	9.41.3	Flame retardant face insulating board				
		9.41.3.1 12 mm thick	sqm	175	461	635
9.42	Providing and fixing flat pressed 3 layer medium density particle board or graded particle board (Grade I) IS: 3087 marked, in ceiling with necessary nails etc. complete (frame work to be paid separately):					
	9.42.1	12 mm thick	sqm	175	415	589
9.43	Providing and fixing plain multipurpose cement board(Height pressure steam cured) with suitable screws for cement particle board in ceiling etc. complete (frame work to be paid separately).					
	9.43.1	6 mm thick Cement fibre board as per IS: 14862	sqm	175	304	478
	9.43.2	6 mm thick Cement bonded wood particle board as per IS:14276	sqm	175	282	457
9.44	Extra for Circular cutting including wastages in ceiling with:					
	9.44.1	2nd class teak wood planks 20 mm thick	metre	130	283	413
	9.44.2	Natural colour insulating board				
		9.44.2.1 12 mm thick	metre	138	38	176
	9.44.3	White face insulating board:				
		9.44.3.1 12 mm thick	metre	138	42	180
	9.44.4	Flame retardant face insulating board:				
		9.44.4.1 12 mm thick	metre	138	57	195
	9.44.5	Standard quality hard board sheet:				

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
	9.44.5.1	3 mm thick	metre	138	24	162
	9.44.5.2	4.5 mm thick	metre	138	38	176
9.45	Extra for providing and fixing ceiling to curved surfaces in narrow widths		sqm	143	-	143
9.46	Providing and fixing false ceiling at all height including providing and fixing of frame work made of special sections, power pressed from M.S. sheets and galvanized with zinc coating of 120 gms/sqm (both side inclusive) as per IS : 277 and consisting of angle cleats of size 25 mm wide x 1.6 mm thick with flanges of 27 mm and 37mm, at 1200 mm centre to centre, one flange fixed to the ceiling with dash fastener 12.5 mm dia x 50mm long with 6mm dia bolts, other flange of cleat fixed to the angle hangers of 25x10x0.50 mm of required length with nuts & bolts of required size and other end of angle hanger fixed with intermediate G.I. channels 45x15x0.9 mm running at the spacing of 1200 mm centre to centre, to which the ceiling section 0.5 mm thick bottom wedge of 80 mm with tapered flanges of 26 mm each having lips of 10.5 mm, at 450 mm centre to centre, shall be fixed in a direction perpendicular to G.I. intermediate channel with connecting clips made out of 2.64 mm dia x 230 mm long G.I. wire at every junction, including fixing perimeter channels 0.5 mm thick 27 mm high having flanges of 20 mm and 30 mm long, the perimeter of ceiling fixed to wall/partition with the help of rawl plugs at 450 mm centre, with 25mm long dry wall screws @ 230 mm interval, including fixing of gypsum board to ceiling section and perimeter channel with the help of dry wall screws of size 3.5 x 25 mm at 230 mm c/c, including jointing and finishing to a flush finish of tapered and square edges of the board with recommended jointing compound , jointing tapes , finishing with jointing compound in 3 layers covering up to 150 mm on both sides of joint and two coats of primer suitable for board, all as per manufacturer's specification and also including the cost of making openings for light fittings, grills, diffusers, cut outs made with frame of perimeter channels suitably fixed, all complete as per drawings, specification and direction of the Engineer in Charge but excluding the cost of painting with :					
	9.46.1	12.5 mm thick tapered edge gypsum plain board conforming to IS: 2095- (Part I) :2011 (Board with BIS certification marks)	sqm	262	547	809
	9.46.2	12.5 mm thick tapered edge Glass Reinforced Gypsum (GRG) board conforming to IS: 2095- (Part 3):1996 (Boards with BIS certification marks)	sqm	262	663	925
	9.46.3	12.5 mm thick tapered edge gypsum moisture resistant board	sqm	262	711	972
	9.46.4	Fully Perforated Gypsum Plaster Board of size 1200 x 2400x12.5 mm having approx. 15 % perforated area with perforation size and pattern as approved by the Engineer-in-charge and as per manufacturer's specification, with all 4 side tapered and backed by acoustical tissue with NRC value not less than 0.60	sqm	262	895	1156
9.47	Providing and fixing tiled false ceiling of specified materials of size 595x595 mm in true horizontal level, suspended on inter locking metal grid of hot dipped galvanized steel sections (galvanized @ 120 grams/ sqm, both side inclusive) consisting of main "T" runner with suitably spaced joints to get required length and of size 24x38 mm made from 0.30 mm thick (minimum) sheet, spaced at 1200 mm centre to centre and cross "T" of size 24x25 mm made of 0.30 mm thick (minimum) sheet, 1200 mm long spaced between main "T" at 600 mm centre to centre to form a grid of 1200x600 mm and secondary cross "T" of length 600 mm and size 24x25 mm made of 0.30 mm thick (minimum) sheet to be interlocked at middle of the 1200x600 mm panel to form grids of 600x600 mm and wall angle of size 24x24x0.3 mm and laying false ceiling tiles of approved texture in the grid including, required cutting/making, opening for services like diffusers, grills, light fittings, fixtures, smoke detectors etc. Main "T" runners to be suspended from ceiling using GI slotted cleats of size 27 x 37 x 25 x1.6 mm fixed to ceiling with 12.5 mm dia and 50 mm long dash fasteners, 4 mm GI adjustable rods with galvanised butterfly level clips of size 85 x 30 x 0.8 mm spaced at 1200 mm centre to centre along main T, bottom exposed width of 24 mm of all T-sections shall be pre-painted with polyester paint, all complete for all heights as per specifications, drawings and as directed by Engineer-in-charge.					

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
	9.47.1	GI Metal Ceiling Lay in plain Tegular edge Global white colour tiles of size 595x595 mm, and 0.5 mm thick with 8 mm drop; made of G I sheet having galvanizing of 100 gms/sqm (both sides inclusive) and electro statically polyester powder coated of thickness 60 microns (minimum), including factory painted after bending.	sqm	191	840	1031
	9.47.2	GI Metal Ceiling Lay in perforated Tegular edge global white colour tiles of size 595x595 mm and 0.5 mm thick with 8 mm drop; made of GI sheet having galvanizing of 100 gms/sqm (both sides inclusive) and 20% perforation area with 1.8 mm dia holes and having NRC (Noise Reduction Coefficient) of 0.5, electro statically polyester powder coated of thickness 60 microns (minimum), including factory painted after bending and perforation, and backed with a black Glass fibre acoustical fleece.	sqm	191	962	1154
	9.47.3	12.5 mm thick square edge PVC Laminated Gypsum Tile of size 595x595 mm, made of Gypsum plasterboard, manufactured from natural gypsum as per IS 2095 part I and laminated with white 0.16mm thick fire retardant PVC film on the face side and 12micron metalized polyester on the back side with all edges sealed with the face side PVC film which goes around and wraps the edges and is bonded to the edges and the back side metalized polyester film so as to make the tile a completely sealed unit.	sqm	191	1126	1317
	9.47.4	12.5 mm thick fully Perforated Gypsum Board tile made from plasterboard having glass fibre conforming to IS: 2095 part I, of size 595x595 mm, having perforation of 9.7x9.7 mm at 19.4 mm c/c with centre borders of 48 mm and the side borders of 30 mm, backed with non woven tissue on the back side, having an NRC (Noise Reduction Coefficient) of 0.79, with 50 mm resin bonded glass wool backing.	sqm	191	567	758
	9.46.5	12.5 mm thick tapered edge gypsum fire resistant board conforming to IS: 2095- Part I	sqm	262	608	870
9.48	Providing and Fixing 15 mm thick densified tegular edged eco friendly light weight calcium silicate false ceiling tiles of approved texture of size 595 x 595 mm in true horizontal level, suspended on inter locking metal grid of hot dipped galvanised steel sections (galvanising @ 120 grams per sqm including both side) consisting of main 'T' runner suitably spaced at joints to get required length and of size 24x38 mm made from 0.33 mm thick (minimum) sheet, spaced 1200 mm centre to centre, and cross "T" of size 24x28 mm made out of 0.33 mm (Minimum) sheet, 1200 mm long spaced between main'T' at 600 mm centre to centre to form a grid of 1200x600 mm and secondary cross 'T' of length 600 mm and size 24 x28 mm made of 0.33 mm thick (Minimum) sheet to be inter locked at middle of the 1200x 600 mm panel to from grid of size 600x600 mm, resting on periphery walls /partitions on a Perimeter wall angle pre-coated steel of size(24x24X3000 mm made of 0.40 mm thick (minimum) sheet with the help of rawl plugs at 450 mm centre to centre with 25 mm long dry wall screws @ 230 mm interval and laying 15 mm thick densified edges calcium silicate ceiling tiles of approved texture in the grid, including, cutting/ making opening for services like diffusers, grills, light fittings, fixtures, smoke detectors etc., wherever required. Main 'T' runners to be suspended from ceiling using G.I. slotted cleats of size 25x35x1.6 mm fixed to ceiling with 12.5 mm dia and 50 mm long dash fasteners, 4 mm G.I. adjustable rods with galvanised steel level clips of size 85 x 30 x 0.8 mm, spaced at 1200 mm centre to centre along main 'T', bottom exposed with 24 mm of all Tsections shall be pre-painted with polyester baked paint, for all heights, as per specifications, drawings and as directed by Engineer-in-Charge.		sqm	191	1105	1296

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
	Note :- Only calcium silicate false ceiling area will be measured from wall to wall. No deduction shall be made for exposed frames/opening (cut outs) having area less than 0.30 sqm. The calcium silicate ceiling tile shall have NRC value of 0.50 (Minimum), light reflection > 85%, non-combustible as per B.S. 476 part IV, 100% humidity resistance and also having thermal conductivity <0.043 w/mK.				
9.49	Providing and fixing GI Clip in Metal Ceiling System of 600x600 mm module which includes providing and fixing 'C' wall angle of size 20x30x20 mm made of 0.5 mm thick pre painted steel along the perimeter of the room with help of nylon sleeves and wooden screws at 300 mm centre to centre, suspending the main C carrier of size 10x38x10 mm made of G.I steel 0.7 mm thick from the soffit with help of soffit cleat 37x27x25x1.6 mm, rawl plugs of size 38x12 mm and C carrier suspension clip and main carrier bracket at 1000 mm c/c. Inverted triangle shaped Spring Tee having height of 24 mm and width of 34 mm made of GI steel 0.45 mm thick is then fixed to the main C carrier and in direction perpendicular to it at 600 mm centres with help of suspension brackets. Wherever the main C carrier and spring T have to join, C carrier and spring T connectors have to be used. All sections to be galvanized @ 120 gms/sqm (both side inclusive), fixing with clip in tiles into spring T with :				
9.49.1	GI Metal Ceiling Clip in plain Bevelled edge global white colour tiles of size 600x600 and 0.5 mm thick with 25 mm height, made of G I sheet having galvanizing of 100 gms/ sqm (both sides inclusive) and electro statically polyester powder coated of thickness 60 microns (minimum), including factory painted after	sqm	191	1102	1293
9.49.2	GI Metal Ceiling Clip in plain Bevelled edge global white colour tiles of size 600x600 and 0.5 mm thick with 25 mm height, made of G I sheet having galvanizing of 100 gms/ sqm (both sides inclusive) and 20% perforation area with 1.8 mm dia holes and	sqm	191	1191	1382
9.50	Providing and fixing tiled false ceiling of specified materials of size 595x595 mm in true horizontal level, suspended on interlocking metal grid of hot dipped galvanized steel sections (galvanized @ 120 grams/ sqm, both side inclusive) consisting of main "T" runner with suitably spaced joints to get required length and of size 24x38 mm made from 0.30 mm thick (minimum) sheet, spaced at 1200 mm centre to centre and cross "T" of size 24x25 mm made of 0.30 mm thick (minimum) sheet, 1200 mm long spaced between main "T" at 600 mm centre to centre to form a grid of 1200x600 mm and secondary cross "T" of length 600 mm and size 24x25 mm made of 0.30 mm thick (minimum) sheet to be interlocked at middle of the 1200x600 mm panel to form grids of 600x600 mm and wall angle of size 24x24x0.3 mm and laying false ceiling tiles of approved texture in the grid including, required cutting/making, opening for services like diffusers, grills, light fittings, fixtures, smoke detectors etc. Main "T" runners to be suspended from ceiling using GI slotted cleats of size 27 x 37 x 25 x1.6 mm fixed to ceiling with 12.5 mm dia and 50 mm long dash fasteners, 4 mm GI adjustable rods with galvanized butterfly level clips of size 85 x 30 x 0.8 mm spaced at 1200 mm centre to centre along main T, bottom exposed width of 24 mm of all T-sections shall be pre-painted with polyester paint, all complete for all heights as per specifications, drawings and as directed by Engineer-in-charge.				
9.50.1	8 mm thick fully perforated calcium silicate board made with Calcareous & Siliceous materials reinforced with cellulose fibre manufactured through autoclaving process to give stable crystalline structure with minimum compressive strength 225 kg/ sq. cm, bending strength 100 kg/sq. cm , of size 595x595 mm, having perforation of dia. 10 mm with minimum perforated area 18 % with non woven tissue on the back side, having an NRC (Noise Reduction Coefficient) of 0.85, with 50 mm thick rock wool of 48 kg /cum backing.	sqm	191	1227	1418

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
9.51	Providing & fixing false ceiling at all height including providing & fixing of framework made of special section, power pressed from M.S. sheets and galvanised with zinc coating of 120 gms/ sqm (both side inclusive) as per IS : 277 and consisting of angle cleat of size 25mm wide x 1.6mm thick with flanges of 27mm and 37mm, at 1200mm c/c, one flange fixed to the ceiling with dash fastener 12.5mm dia x 50mm long with 6mm dia bolts, other flange of cleat fixed to the angle hangers of 25 x10 x0.50mm of required length with nuts & bolts of required size and other end of angle hanger fixed with intermediate G.I channels 45 x15 x 0.90mm running at the spacing of 1200 mm c/c, to which the ceiling section 0.5mm thick bottom wedge of 80mm with tapered flanges of 26 mm each having lips of 10.5mm, at 450mm c/c, shall be fixed in a direction perpendicular to G.I intermediate channel with connecting clip made out of 2.64mm dia x 230mm long G.I wire at every junction, including fixing perimeter channels 0.50mm thick 27mm high having flanges of 20mm and 30mm long, the perimeter of ceiling fixed to wall/ partitions with the help of Rawl plugs at 450mm centre, with 25mm long dry wall screws @ 230mm interval, including fixing of Calcium Silicate Board to ceiling section and perimeter channels with the help of dry wall screws of size 3.5 x25mm at 230mm c/c, including jointing & finishing to a flush finish of tapered and square edges of the board with recommended jointing compounds, jointing tapes, finishing with jointing compounds in three layers covering up to 150mm on both sides of joints and two coats of primer suitable for boards, all as per manufacture's specification and also including the cost of making opening for light fittings, grills, diffusers, cut outs made with frame of perimeter channels suitably fixed, all complete as per drawings, specification and direction of the Engineer in charge but excluding the cost of painting with:					
	9.51.1	8 mm thick Calcium Silicate Board made with Calcareous & Siliceous materials reinforced with cellulose fibre manufactured	sqm	261	697	959
	PLASTER OF PARIS WORK					
9.52	Providing 10 mm thick plaster of Paris (gypsum anhydrous) ceiling up to a height of 5 m above floor level, over first class Kail wood strips 25x6 mm with 10 mm gap in between and reinforced with rabbit wire mesh fixed to wooden frame (frame work to be paid separately):					
	9.52.1	Flat surfaces	sqm	422	393	815
	9.52.2	Curved surfaces	sqm	541	393	934
9.53	Extra for sunk or raised mouldings in the plaster of Paris (Gypsum anhydrous) ceiling.		sqm	179	73	252
9.54	Extra for providing plaster of Paris (Gypsum anhydrous) ceiling above 5 metres height from floor level.		sqm per metre	96	-	96
	RAIN WATER SPOUTS AND PIPES					
9.55	Supplying and fixing in position 60 cm long G.I. pipe class 'B' spouts in chajjas and cantilevers					
	9.55.1	15 mm internal dia	metre	54	70	124
	9.55.2	20 mm internal dia	metre	57	147	204
	9.55.3	25 mm internal dia	metre	61	132	193
	9.55.4	40 mm internal dia	metre	65	196	261
	9.55.5	50 mm internal dia	metre	69	243	312
9.56	Providing and fixing 100 mm diameter and 60 cm long rain water spout in cement mortar 1:4 (1 cement : 4 fine sand).					
	9.56.1	Stone ware spout	each	32	54	86
9.57	Providing and fixing on wall face Unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion, (i) Single socketed pipes.					
	9.57.1	75 mm diameter	metre	41	95	136
	9.57.2	110 mm diameter	metre	49	175	224
	9.57.3	150 mm diameter	metre	59	242	301

Item No.	Description			Unit	Labour Rate	Material Rate	Through Rate
9.58	Providing and fixing on wall face Unplasticised - PVC moulded fittings/ accessories for Unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion.						
	9.58.1	Coupler					
		9.58.1.1	75 mm	each	8	47	55
		9.58.1.2	110 mm	each	9	83	92
		9.58.1.3	150 mm	each	10	122	132
	9.58.2	Single push fit Coupler					
		9.58.2.1	75 mm	each	8	47	55
		9.58.2.2	110 mm	each	9	74	83
		9.58.2.3	150 mm	each	10	103	113
	9.58.3	Single tee with door					
		9.58.3.1	75x75x75 mm	each	9	108	117
		9.58.3.2	110x110x110 mm	each	12	162	174
		9.58.3.3	150x150x150 mm	each	14	221	235
	9.58.4	Single tee without door					
		9.58.4.1	75x75x75 mm	each	9	91	100
		9.58.4.2	110x110x110 mm	each	12	148	160
		9.58.4.3	150x150x150 mm	each	14	214	229
	9.58.5	Bend 87.5°					
		9.58.5.1	75 mm bend	each	8	58	66
		9.58.5.2	110 mm bend	each	9	95	104
		9.58.5.3	150 mm bend	each	10	135	145
	9.58.6	Shoe (Plain)					
		9.58.6.1	75 mm Shoe	each	8	48	56
		9.58.6.2	110 mm Shoe	each	9	79	88
		9.58.6.3	150 mm Shoe	each	10	116	126
9.59	Providing and fixing Unplasticised -PVC pipe clips of approved design to Unplasticised - PVC rain water pipes by means of 50x50x50 mm hard wood plugs, screwed with M.S. screws of required length, including cutting brick work and fixing in cement mortar 1:4 (1 cement : 4 coarse sand) and making good the wall etc. complete.						
	9.59.1	75 mm		each	117	41	158
	9.59.2	110 mm		each	117	48	165
	9.59.3	150 mm		each	117	55	172
9.60	Providing and fixing to the inlet mouth of rain water pipe cast iron grating 15 cm diameter and weighing not less than 440 grams.			each	4	35	39
9.61	Providing and fixing to the inlet mouth of rain water pipe PTMT (an Engineering Thermoplastic) grating square (Slit) 150 mm square with a height of 8 mm and weighing not less than 100 gms.			each	4	87	91
9.62	Providing and fixing M.S. holder bat clamps of approved design to C.I. or S.C.I. rain water pipes embedded in and including cement concrete blocks 10x10x10 cm of 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) and cost of cutting holes and making good the walls etc. :						
	9.62.1	100 mm diameter		each	118	44	162
	9.62.2	150 mm diameter		each	118	63	181
9.63	Providing lead caulked joints to sand cast iron rain water pipes and fittings:						
	9.63.1	100 mm dia Pipe		each	86	186	272
	9.63.2	150 mm dia Pipe		each	112	275	387
9.64	Providing, fixing and embedding sand cast iron accessories for rain water pipes in the masonry surrounded with 12 mm thick cement mortar of the same mix, as that of masonry (lead caulking will be paid for separately):						
	9.64.1	Sand cast iron plain shoes :					

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
	9.64.1.1	150 mm diameter	each	16	370	386

CHAPTER NO. 10

FLOORING
and
DADOS

CHAPTER 10.0 - FLOORING AND DADOS

LIST OF BUREAU OF INDIAN STANDARDS CODES

Sr. No.	B.I.S. No.	Subject
1	IS 269	Specification for 33 grade ordinary Portland Cement
2	IS 401	Code of practice for preservation of timber
3	IS 451	Technical supply conditions for wood screws
4	IS 455	Specification for Portland slag cement
5	IS 1130	Specification for marble (blocks, slabs and tiles)
6	IS 1141	Code of practice for Seasoning of timber
7	IS 1200-(Part XI)	Method of measurement of Building and Civil Engineering work (Part 11) paving, floor finishes, dado and skirting
8	IS 1237- Edition 2.3	Specification for cement concrete flooring tiles
9	IS 1443	Code of practice for laying and finishing of cement concrete flooring tiles
10	IS 2114	Code of practice for laying in-situ terrazzo floor finish
11	IS 2571	Code of practice for laying in-situ cement concrete flooring
12	IS 3622	Specification for sand stone (Slab & Tiles)
13	IS 3670	Code of practice for construction of timber floors
14	IS 4457	Acid and/or alkali Resistant tiles.
15	IS 5318	Code of practice for laying of hard wood parquet and wood block floors
16	IS 5766	Code of practice for laying of burnt clay brick floor
17	IS 8041	Specification for rapid hardening Portland cement
18	IS 8042	Specification for white Portland cement
19	IS 8043	Specification for hydrophobic Portland cement
20	IS 8112	Specification for 43 grade ordinary Portland cement
21	IS 12330	Specification for sulphate resisting Portland cement.
22	IS: 13630 (Part-1 to 15)	Methods of Testing of ceramic tiles
23	IS 13712	Specification for ceramic tiles; definition, classification characteristic and marking
24	IS 15622	Specification for pressed ceramic tile

CHAPTER 10.0 - FLOORING AND DADOS

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
	CEMENT CONCRETE FLOORING				
10.1	Providing and laying of base course of floors consisting of 100 mm thick cement 1:8:16 and 100 mm sand or stone filling.	sqm	74	217	291
	10.1.1 Re-compacting excavated soil in plinth under floors, including watering, ramming, consolidating and dressing complete.	cum	82	-	82
10.2	Supplying and filling in plinth with sand (conforming to zone-IV, IS 1542) under floors, including watering, ramming, consolidating and dressing complete.	cum	82	843	925
10.3	Supplying and providing of Tangri River Sand under floors Including watering and compaction in 25cm layers, dressing etc. complete In all respects (As per item 10.2)	cum	61	492	553
10.4	Providing and laying of screed of 50 mm thick cement concrete 1:8:16 to be laid below the topping.	sqm	29	69	98
10.5	Providing and laying of screed of 40 mm thick cement concrete 1:8:16 to be laid below the topping.	sqm	22	56	77
10.6	Providing and laying of screed of 40 mm thick cement concrete 1:4:8 to be laid below the topping.	sqm	15	87	103
10.7	Providing and laying of conglomerate floor 50mm thick cement concrete topping 1:2:4	sqm	86	156	242
10.8	Providing and laying of conglomerate floor 40mm thick cement concrete topping 1:2:4	sqm	78	125	203
10.9	Providing and laying of Conglomerate floor 25 mm thick cement concrete 1:2:4 on 100 mm cement concrete 1:8:16 and 100 mm sand or stone filling.	sqm	82	301	383
10.10	Providing and laying Cement concrete flooring 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate) finished with a floating coat of neat cement, including cement slurry, but excluding the cost of nosing of steps etc. complete.				
	10.10.1 40 mm thick with 20 mm nominal size stone aggregate	sqm	143	157	300
	10.10.2 25 mm thick with 12 mm nominal size stone aggregate	sqm	89	98	188
10.11	Providing and laying of 52 mm thick cement concrete flooring with concrete hardener topping, under layer 40 mm thick cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) and top layer 12 mm thick cement hardener consisting of mix 1:2 (1 cement hardener mix : 2 graded stone aggregate 6 mm nominal size) by volume, hardening compound mixed @ 2 litre per 50 kg of cement or as per manufacturer's specifications. This includes cost of cement slurry, but excluding the cost of nosing of steps etc. complete.	sqm	218	219	437
10.12	Providing and laying of 62 mm thick cement concrete flooring with concrete hardener topping, under layer 50 mm thick cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) and top layer 12mm thick cement hardener consisting of mix 1:2 (1 cement hardener mix : 2 graded stone aggregate, 6mm nominal size) by volume, hardening compound mixed @ 2 litre per 50 kg of cement or as per manufacture's specifications. This includes cost of cement slurry, but excluding the cost of nosing of steps etc. complete.	sqm	222	252	473
10.13	Providing and laying cement plaster skirting up to 30 cm height, with cement mortar 1:3 (1 cement : 3 coarse sand), finished with a floating coat of neat cement.				
	10.13.1 18 mm thick	sqm	173	121	294
10.14	Providing a floating coat of 1.50 mm thick neat cement laid in one operation to the topping.	sqm	18	14	33
10.15	Extra for using hardener at top surface (3.5Kg /sqm) of trimix M25 to finish surface complete in all respect	sqm	-	191	191
10.16	Providing and laying cement concrete pavement with 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), including finishing complete.	cum	1040	3122	4162

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
10.17	Providing and laying polythene sheet under CC M-25 in road and parking complete in all respect	sqm	5	20	25
10.18	Extra for making chequers (2mm deep) of approved pattern on cement concrete floors, steps, landing, pavements etc.	sqm	29	-	29
	TERRAZO FLOORING				
10.19	Providing and laying of 40 mm thick marble chips flooring rubbed and polished to granolithic finish, under layer 34 mm thick cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 12.5 mm nominal size) and top layer 6mm thick with white, black, chocolate, grey, yellow or green marble chips of sizes from 1 mm to 4 mm nominal size, laid in cement marble powder mix 3:1 (3 cement : 1 marble powder) by weight in proportion of 4:7 (4 cement marble powder mix : 7 marble chips) by volume, including cement slurry etc. complete :				
10.19.1	Dark shade pigment with ordinary cement	sqm	337	198	535
10.19.2	Light shade pigment with white cement	sqm	337	227	564
10.19.3	Medium shade pigment with 50% white cement and 50% ordinary	sqm	337	209	546
10.19.4	White cement without any pigment	sqm	329	207	536
10.19.5	Light shade pigment with ordinary cement	sqm	337	194	531
10.19.6	Ordinary cement without any pigment	sqm	337	171	508
10.20	Providing and laying of 40 mm thick marble chips flooring, rubbed and polished to granolithic finish, under layer 31 mm thick cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 12.5 mm nominal size) and top layer 9 mm thick with white, black, chocolate, grey, yellow or green marble chips of sizes from 4 mm to 7 mm nominal size, laid in cement marble powder mix 3:1 (3 cement : 1 marble powder) by weight in proportion of 4:7 (4 cement marble powder : 7 marble chips) by volume, including cement slurry etc. complete.				
10.20.1	Dark shade pigment with Ordinary cement	sqm	333	238	571
10.20.2	Light shade pigment with white cement	sqm	333	280	613
10.20.3	Medium shade pigment with 50% white cement and 50% ordinary	sqm	333	254	587
10.20.4	White cement without any pigment	sqm	329	248	577
10.20.5	Light shade pigment with ordinary cement	sqm	333	234	567
10.20.6	Ordinary cement without any pigment	sqm	327	201	528
10.21	Providing and laying of 40 mm thick marble chips flooring, rubbed and polished to granolithic finish, under layer 28 mm thick cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 12.5 mm nominal size) and top layer 12 mm thick with white, black, chocolate, grey yellow or green marble chips of sizes from 7 mm to 10 mm nominal size, laid in cement marble powder mix 3:1 (3 cement : 1 marble powder) by weight in proportion of 2:3 (2 cement marble powder mix : 3 marble chips) by volume, including cement slurry etc. complete :				
10.21.1	Dark shade pigment with ordinary cement	sqm	329	269	598
10.21.2	Light shade pigment with white cement	sqm	329	327	656
10.21.3	Medium shade pigment with 50% white cement and 50% ordinary	sqm	329	291	621
10.21.4	White cement without any pigment	sqm	327	288	616
10.21.5	Light shade pigment with ordinary cement	sqm	329	261	591
10.21.6	Ordinary cement without any pigment	sqm	327	223	550
10.22	Providing and fixing glass strips in joints of terrazzo/ cement concrete floors.				
10.22.1	40 mm wide and 4 mm thick	metre	21	29	49
10.23	Extra for laying terrazzo flooring on staircase treads not exceeding 30 cm in width, including cost of forming, nosing etc.	sqm	30	-	30

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
10.24	Providing and laying of crazy marble stone flooring, including filling the gaps with light shade pigment with white cement marble powder mixture (3 parts of white cement : 1 part of marble powder) by weight in proportion of 4:7 (4 cement marble powder mix : 7 white, black or white and black marble chips of sizes from 1 mm to 4 mm nominal size by volume), with under layer 25 mm thick cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 12.5 mm nominal size), including rubbing, polishing and cement slurry etc. complete :					
	10.24.1	18 mm thick crazy marble stone white, black or as specified	sqm	315	258	572
10.25	Providing and laying of marble chips skirting up to 30 cm height, rubbed and polished to granolithic finish, top layer 6 mm thick with white, black, chocolate, grey, yellow or green marble chips of sizes from smallest to 4 mm nominal size, laid in cement marble powder mix 3:1 (3 cement : 1 marble powder) by weight in proportion of 4:7 (4 cement marble powder mix : 7 marble chips) by volume :					
	10.25.1	18 mm thick with under layer 12 mm thick in cement plaster 1:3 (1 cement : 3 coarse sand) :				
	10.25.1.1	Dark shade pigment with ordinary cement	sqm	384	149	533
	10.25.1.2	Light shade pigment with white cement	sqm	384	178	563
	10.25.1.3	Medium shade pigment with 50% white cement	sqm	384	161	545
	10.25.1.4	White cement without any pigment	sqm	384	158	542
	10.25.1.5	Light shade pigment with ordinary cement	sqm	384	146	530
	10.25.1.6	Ordinary cement without any pigment	sqm	384	123	507
	TILE FLOORING					
10.26	Providing and laying of precast terrazzo tiles 20 to 22 mm thick with graded marble chips of size up to 12 mm, laid in floors, and landings, jointed with neat cement slurry mixed with pigment to match the shade of the tiles, including rubbing and polishing complete, on 20 mm thick bed of cement mortar 1:4 (1 cement:4 coarse sand) :					
	10.26.1	Light shade pigment using white cement	sqm	312	581	893
	10.26.2	Medium shade pigment using 50% white cement and 50% ordinary cement	sqm	312	533	845
	10.26.3	Dark shade pigment using ordinary cement	sqm	312	492	804
	10.26.4	Ordinary cement without any pigment	sqm	258	492	750
10.27	Extra if terrazzo tiles are laid in treads of steps not exceeding 30 cm in width.		sqm	49	0	49
10.28	Providing and laying of precast terrazzo tiles 20 to 22 mm thick with graded marble chips of sizes up to 12 mm, in skirting and risers of steps not exceeding 30 cm in height, on 12 mm thick cement plaster 1:3 (1 cement : 3 coarse sand), jointed with neat cement slurry mixed with pigment to match the shade of the tiles, including rubbing and polishing complete with tiles of :					
	10.28.1	Light shade pigment using white cement	sqm	317	584	901
	10.28.2	Medium shades pigment using 50% white cement and 50% ordinary cement	sqm	317	526	843
	10.28.3	Dark shade pigment using ordinary cement	sqm	317	479	796
	10.28.4	Ordinary cement without any pigment	sqm	249	479	728
10.29	Providing and laying of chequered terrazzo tiles 20 to 22 mm thick with graded marble chips of size up to 6 mm in floors, jointed with neat cement slurry mixed with pigment to match the shade of the tiles, including rubbing and polishing complete, on 20 mm thick bed of cement mortar 1:4 (1 cement :4 coarse sand) :					
	10.29.1	Light shade pigment using white cement	sqm	312	567	879
	10.29.2	Medium shade pigment using 50% white cement, 50% ordinary cement	sqm	312	576	888
	10.29.3	Dark shade pigment using ordinary cement	sqm	312	507	818
	10.29.4	Ordinary cement without any pigment	sqm	258	479	737

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
10.30	Providing and laying of chequered precast cement concrete tiles 22 mm thick in footpath & courtyard, jointed with neat cement slurry mixed with pigment to match the shade of tiles, including rubbing and cleaning etc. complete, on 20 mm thick bed of cement mortar 1:4 (1 cement: 4 coarse sand).					
	10.30.1	Light shade pigment using white cement	sqm	187	771	958
	10.30.2	Medium shade pigment using 50% white cement 50% Grey cement	sqm	187	657	844
	10.30.3	Dark shade pigment using ordinary cement	sqm	187	486	673
	10.30.4	Ordinary cement without any pigment	sqm	128	465	592
10.31	Providing and fixing 10 mm thick acid and/or alkali resistant tiles of approved make and colour using acid and/or alkali resisting mortar bedding, and joints filled with acid and/or alkali resisting cement as per IS : 4457, complete as per the direction of Engineer-in- Charge.					
	10.31.1	In flooring on a bed of 10 mm thick mortar 1:4 (1 acid proof cement : 4 coarse sand)				
		10.31.1.1 Acid and alkali resistant tile	sqm	193	940	1133
	10.31.2	In dado/skirting on 12 mm thick mortar 1:4 (1 acid proof cement : 4 coarse sand)				
		10.31.2.1 Acid and alkali resistant tile	sqm	235	961	1196
10.32	Providing and laying of tile work in skirting, risers of steps and dado up to 2 m height over 12 mm thick bed of cement mortar 1:3 (1 cement :3 coarse sand) and jointed with grey cement slurry @ 3.3 kg/sqm, including pointing in white cement mixed with pigment of matching shade complete.					
	10.32.1	Marble tiles (polished) Raj Nagar				
		10.32.1.1 8 mm thick	sqm	227	659	887
	BRICK FLOORING					
10.33	Providing and laying of brick on edge flooring with bricks of class designation 7.5 on a bed of 12 mm cement mortar, including filling the joints with same mortar, with common burnt clay non modular bricks:					
	10.33.1	1:4 (1 cement : 4 coarse sand)	sqm	116	530	646
	10.33.2	1:6 (1cement : 6 coarse sand)	sqm	129	485	615
10.34	Providing and laying dry brick on edge flooring in required pattern with bricks of class designation 7.5 on a bed of 12 mm mud mortar, including filling joints with Jamuna sand, with common burnt clay non modular bricks.		sqm	104	426	531
10.35	**FLAT BRICK OR TILE FLOORING**					
	10.35.1	Providing and laying of flat brick or tile flooring with bricks of class designation 7.5 laid in cement sand mortar 1:4 on 100 mm thick cement concrete 1:8:16 and 100 mm sand filling and cement pointing 1:2 on top.	sqm	130	484	614
	10.35.2	Providing and laying of flat brick or tile flooring with bricks of class designation 7.5 laid dry over a bed of 6 mm thick cement sand mortar 1:6 grouted with cement sand mortar 1:4 and top surface to be left clean after wire brushing.	sqm	87	288	374
10.36	Brick on end in soil/edging in required pattern with bricks of class designation		running metre	8	53	61
	KOTA STONE FLOORING					
10.37	Providing and fixing of Kota stone slab flooring over 20 mm (average) thick base laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab, including rubbing and polishing complete with base of cement mortar 1 : 4 (1 cement : 4 coarse sand) :					
	10.37.1	25 mm thick	sqm	301	584	885
10.38	Providing and fixing of Kota stone slabs 20 mm thick in risers of steps, skirting, dado and pillars laid on 12 mm (average) thick cement mortar 1:3 (1 cement: 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slabs, including rubbing and polishing complete.		sqm	365	571	936

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
	SAND STONE FLOORING				
10.39	Providing and fixing of 40 mm thick fine dressed stone flooring over 20 mm (average) thick base of cement mortar 1:5 (1 cement : 5 coarse sand) with joints finished flush.				
	10.39.1 Red sand stone	sqm	381	221	602
10.40	Providing and fixing of 40 mm thick fine dressed stone flooring over 20 mm (average) thick base of cement mortar 1:5 (1 cement : 5 coarse sand), including pointing with cement mortar 1:2 (1 cement : 2 stone dust) with an admixture of pigment to match the shade of stone.				
	10.40.1 Red sand stone	sqm	363	234	597
10.41	Providing and fixing of 40 mm thick rubbed stone flooring over 20 mm (average) thick base of cement mortar 1:5 (1 cement : 5 coarse sand) with joints 3 mm thick, side buttered with cement mortar 1:2 (1 cement : 2 stone dust) admixed with pigment to match the shade of stone and pointing with same mortar.				
	10.41.1 Red sand stone	sqm	403	234	637
10.42	Extra for pre finished nosing in treads of steps of Kota stone/ sand stone slab.	metre	89	-	89
10.43	Extra for Kota stone/ sand stone in treads of steps and risers using single length up to 1.05 metre.	sqm	16	-	16
	MARBLE STONE FLOORING				
10.44	Providing and fixing of marble stone flooring with 18 mm thick marble stone, as per sample of marble approved by Engineer-in-charge, over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with grey cement slurry, including rubbing and polishing complete with :				
	10.44.1 Makrana white second quality	sqm	301	2245	2546
	10.44.2 Raj Nagar plain	sqm	301	1005	1306
	10.44.3 Agaria White	sqm	301	1752	2053
	10.44.4 Black Zebra	sqm	301	1453	1754
	10.44.5 Udaipur green marble	sqm	301	1035	1336
	10.44.6 Pink plain marble	sqm	301	1072	1373
10.45	Extra for pre finished nosing to treads of steps of marble stone.	metre	281	0	281
10.46	Extra for marble stone flooring in treads of steps and risers using single length up to 2.00 metre.	sqm	325	-	325
10.47	Providing and laying Baroda Green marble stone 17mm and above thick in risers of step, skirting , dado, pillars and wall lining included matching the grains of marble slab in any pattern as specified laid over 12mm thick cement sand mortar 1:3 and jointed with white cement slurry mixed with pigment to match the shade of marble including rubbing and polishing. The rates are for all heights / storey. The sample shall be got approved from Engineer In Charge.	sqm	332	1027	1359
10.48	Providing and laying Baroda Green marble stone 17mm and above thick flooring included matching the grains of marble slab in any pattern as specified laid over 12mm thick cement sand mortar 1:3 and jointed with white slurry mixed with pigment to match the shade of marble including rubbing and polishing. The rates are for all heights / storey. The sample shall be got approved from Engineer In Charge.	sqm	302	1027	1329
	GRANITE FLOORING				
10.49	Providing and laying flamed finish Granite stone flooring in required design and patterns, in linear as well as curvilinear portions of the building all complete as per the architectural drawings with 18 mm thick stone slab over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge :				
	10.49.1 Flamed finish granite stone slab Jet Black, Cherry Red, Elite Brown, Cat Eye or equivalent.	sqm	317	1652	1970

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
10.50	Providing and laying Polished Granite stone flooring in required design and patterns, in linear as well as curvilinear portions of the building all complete as per the architectural drawings with 18 mm thick stone slab over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade including rubbing , curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge.				
	10.50.1 Polished Granite stone slab jet Black, Cherry Red, Elite Brown, Cat Eye or equivalent.	sqm	334	2698	3031
10.51	Providing and fixing granite stone in all shades 15mm to 18 mm thick in skirting /dado, risers of steps, pillars and wall facing, laid in any pattern as specified over base of 12mm thick cement coarse sand mortar 1:3 and jointed with white cement slurry mixed with pigment to match the shade of Granite including labour for fixing cramps pins and dowels etc.	sqm	367	2470	2838
	ITALIAN MARBLE STONE FLOORING				
10.52	Providing and laying machine cut, mirror polished, Italian Marble stone flooring laid in required pattern in linear portion of the building all complete as per architectural drawings, with 18 mm thick stone slab laid over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with white cement slurry @ 4.4 kg/sqm including pointing with white cement slurry admixed with pigment to match the marble shade including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge.				
	10.52.1 18 mm thick Italian Marble stone slab, Perlato, Rosso verona, Fire Red or Dark Emperadore etc.	sqm	367	2470	2838
10.53	Providing and laying machine cut, mirror polished Marble stone flooring, in required design (Simple geometrical, abstract etc.) and in patterns in combination with Italian marble stones of different colours, shades and finished surface texture etc., in linear portions of the building, all complete as per the architectural drawings, with 18 mm thick stone slab laid over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with white cement slurry @ 4.4 kg/sqm, including pointing with white cement slurry admixed with pigment to match the marble shade, including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge.				
	10.53.1 18 mm thick Italian Marble stone slab, Perlato, Rosso verona, Fire Red or Dark Emperadore etc.	sqm	398	5151	5548
	WOODEN FLOORING				
10.54	Providing and fixing 25 mm wooden planking, tongued and grooved in flooring, including fixing with iron screws complete with :				
	10.54.1 Second class teak wood	sqm	166	3667	3833
	10.54.2 Second class deodar wood	sqm	133	2386	2519
10.55	providing and fixing 38 mm thick wood block flooring of first class teak wood laid over 25 mm thick levelling layer of cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 10 mm nominal size) to be paid separately, coated with a thin layer of hot bitumen penetration 80/25 (blown type) @ 2.45 kg per sqm, including fixing blocks in position after dipping in hot bitumen (blown type) up to half depth, planed, levelled smooth and finished complete.	sqm	792	4969	5762
10.56	Providing and fixing M.S. angle 50x50x5 mm to act as nosing with lugs of M.S. flat 10x5 mm, 10 cm long, forked at end 60cm apart (minimum three lugs to be provided), including necessary welding and applying a priming coat of approved primer on exposed surface etc. complete.	kg	33	70	103
	CERAMIC GLAZED TILES				
10.57	Providing and laying Ceramic glazed floor tiles of size 300x300 mm (thickness to be specified by the manufacturer) of 1st quality conforming to IS : 15622 of approved make in colours such as White, Ivory, Grey, Fume Red Brown, laid on 20 mm thick cement mortar 1:4 (1 Cement : 4 Coarse sand), Jointing with grey cement slurry @ 3.3 kg/sqm including pointing the joints with white cement and matching pigment etc., complete.	sqm	196	403	599

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
10.58	Providing and fixing 1st quality ceramic glazed wall tiles conforming to IS : 15622 (thickness to be specified by the manufacturer) of approved make in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge in skirting, risers of steps and dados over 12 mm thick bed of cement Mortar 1:3 (1 cement: 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm including pointing in white cement mixed with pigment of matching shade complete.	sqm	235	368	603
10.59	Providing and laying Ceramic glazed floor tiles of size 300x300 mm (thickness to be specified by the manufacturer), of 1st quality conforming to IS : 15622, of approved make, in all colours, shades, except White, Ivory, Grey, Fume Red Brown, laid on 20 mm thick bed of cement mortar 1:4 (1 Cement : 4 Coarse sand), jointing with grey cement slurry @ 3.3 kg/ sqm including pointing the joints with white cement and matching pigments etc., complete.	sqm	196	471	667
10.60	Providing and laying rectified Glazed Ceramic floor tiles of size 300x300 mm or more (thickness to be specified by the manufacturer), of 1st quality conforming to IS : 15622, of approved make, in colours White, Ivory, Grey, Fume Red Brown, laid on 20 mm thick cement mortar 1:4 (1 Cement: 4 Coarse sand), jointing with grey cement slurry @ 3.3 kg/ sqm including grouting the joints with white cement and matching pigments etc., complete.	sqm	196	571	767
10.61	Providing and laying rectified Glazed Ceramic floor tiles of size 300x300 mm or more (thickness to be specified by the manufacturer), of 1st quality conforming to IS : 15622, of approved make, in all colours, shades, except White, Ivory, Grey, Fume Red Brown, laid on 20 mm thick Cement Mortar 1:4 (1 Cement : 4 Coarse sand), jointing with grey cement slurry @ 3.3 kg/ sqm including pointing the joints with white cement and matching pigments etc., complete.	sqm	196	651	847
10.62	Providing and fixing Ist quality ceramic glazed wall tiles conforming to IS: 15622 (thickness to be specified by the manufacturer), of approved make, in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge, in skirting, risers of steps and dados, over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm, including pointing in white cement mixed with pigment of matching shade complete.	sqm	235	403	638
	VITRIFIED FLOOR TILES				
10.63	Providing and laying vitrified floor tiles in different sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS: 15622, of approved make, in all colours and shades, laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand), jointing with grey cement slurry @ 3.3 kg/ sqm including grouting the joints with white cement and matching pigments etc., complete.				
	10.63.1 Size of Tile 500x500 mm	sqm	196	762	958
	10.63.2 Size of Tile 600x600 mm	sqm	196	908	1105
	10.63.3 Size of Tile 800x800 mm	sqm	196	1107	1304
	10.63.4 Size of Tile 1000x1000 mm	sqm	196	1307	1503
10.64	Deduct for not using 20 mm thick cement mortar 1:4 (1 cement : 4 coarse sand) bedding in laying of floor tiles and jointing with grey cement slurry @ 3.3 kg/ sqm	sqm	196	135	331
10.65	Providing and fixing glazed/ Ceramic/ Vitrified floor tiles with cement based high polymer modified quick-set tile adhesive (Water based) conforming to IS: 15477, in average 3mm thickness.	sqm	190	92	282
10.66	Providing and laying of crazy ceramic tile flooring, with under layer 12 mm thick cement mortar 1:4 (1 cement: 4 coarse sand), with joints not exceeding 5 mm, including filling the gaps with ordinary cement mixture & mixing with synthetic polyester fibre, triangular in shape having specific gravity of 1.34 to 1.40, cross section size ranging from 10 to 40 micron & length up to 6 mm , mixing fibre @ 125 grams per 50 kg of cement in cement mortar, including providing and mixing water proofing material in mortar @ 1 kg per 50 kg of cement, all complete as per direction of Engineer-in-charge.	sqm	265	124	389

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
10.67	Providing and laying Vitrified tiles in different sizes (thickness to be specified by manufacturer), with water absorption less than 0.08 % and conforming to I.S. 15622, of approved make, in all colours & shade, in skirting, riser of steps, over 12 mm thick bed of cement mortar 1:3 (1 cement: 3 coarse sand), jointing with grey cement slurry @ 3.3 kg/ sqm including grouting the joint with white cement & matching pigments etc. complete.					
	10.67.1	Size of Tile 500x500 mm	sqm	235	742	977
	10.67.2	Size of Tile 600x600 mm	sqm	235	888	1124
	10.67.3	Size of Tile 800x800 mm	sqm	235	1088	1323
	10.67.4	Size of Tile 1000x1000 mm	sqm	235	1288	1523
10.68	Providing and fixing glazed screen printed border tile 75mm wide having thickness 5mm, of approved quality & make, in all shades, design and prints, in dado, over 12mm thick bed of cement mortar 1:3 (1 Cement : 3 Coarse sand) and jointing with grey cement slurry @ 3.3 kg/sqm including pointing		metre	18	115	133
10.69	Providing and laying Vitrified tiles in different sizes (thickness to be specified by the manufacturer), with water absorption less than 0.08% and conforming to IS: 15622, of approved brand & manufacturer, in all colours and shade, in skirting, riser of steps, laid with cement based high polymer modified quick					
	10.69.1	Size of Tile 500x500 mm	sqm	290	774	1064
	10.69.2	Size of Tile 600x600 mm	sqm	290	921	1211
	10.69.3	Size of Tile 800x800 mm	sqm	290	1120	1410
	10.69.4	Size of Tile 1000x1000 mm	sqm	290	1320	1610
10.70	Extra for grouting the joints of floor tiles having joints of 3 mm width, using epoxy grout mix of 0.70 kg of organic coated filler of desired shade (0.10 kg of hardener and 0.20 kg of resin per kg), including filling / grouting and finishing complete as per direction of Engineer-in-charge.					
	10.70.1	Size of Tile 500x500 mm	sqm	87	101	188
	10.70.2	Size of Tile 600x600 mm	sqm	70	87	157
	10.70.3	Size of Tile 800x800 mm	sqm	54	72	126
	10.70.4	Size of Tile 1000x1000 mm	sqm	37	53	90
10.71	Providing and laying Vitrified tiles in floor with different sizes (thickness to be specified by the manufacturer), with water absorption less than 0.08% and conforming to IS:15622, of approved brand & manufacturer, in all colours and shade, laid with cement based high polymer modified quick set tile adhesive (water based) conforming to IS : 15477, in average 6 mm thickness, including grouting of joints (Payment for grouting of joints to be made separately).					
	10.71.1	Size of Tile 500x500 mm	sqm	237	774	1011
	10.71.2	Size of Tile 600x600 mm	sqm	237	921	1157
	10.71.3	Size of Tile 800x800 mm	sqm	237	1120	1357
	10.71.4	Size of Tile 1000x1000 mm	sqm	237	1320	1557
10.72	Deduct for not grouting the joints with white cement and matching pigment in the items of fixing of vitrified tiles.		sqm	1	3	4
10.73	Providing and fixing ceramic & Glazed tiles/ vitrified tiles/ of any size of approved make in floors / dados, laid in any pattern as specified over base of 3 mm thick adhesive of reputed brands as per IS specification 15477-2004 using 5 Kg. adhesive per sqm area of tiles and jointed with white cement slurry mixed with pigment to match the shade of tiles excluding cost of tiles.		sqm	441	955	1396

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
10.74	Using ready mixed polymer modified based on grey cement/ white cement tile adhesive 3mm to 4mm thick for Ceramic and Vitrified tiles for wall and floors Technical Specifications: i) Mix Density - 1.7 to 1.8 kg/litre ii) Tensile Adhesion a) Dry conditions (24hrs) - Minimum 750N b) Wet Conditions (7daysdry+7 days in water) - Min. 450N iii) Shear Adhesion a) Dry adhesion (24hrs) - Minimum 8 KN b) Wet adhesion (24hrs) - Minimum 4KN	sqm	-	120	120
	CC INTERLOCKING PAVER BLOCKS				
10.75	Providing and laying 50mm thick factory made cement concrete interlocking paver block of M -30 grade made by block making machine with strong vibratory compaction, of approved size, design & shape, laid in required colour and pattern over (BIS 15658:2006) and including 50mm thick compacted bed of coarse sand, filling the joints with line sand etc. all complete as per the direction of Engineer-in-charge.	sqm	128	441	569
10.76	Providing and laying 60mm thick factory made cement concrete interlocking paver block of M -30 grade made by block making machine with strong vibratory compaction, of approved size, design & shape, laid in required colour and pattern over (BIS 15658:2006) and including 50mm thick compacted bed of coarse sand, filling the joints with line sand etc. all complete as per the direction of Engineer-in-charge.	sqm	128	495	623
10.77	Providing and laying 80mm thick factory made cement concrete interlocking paver block of M -35 grade made by block making machine with strong vibratory compaction, of approved size, design & shape, laid in required colour and pattern over (BIS 15658:2006) and including 60mm thick compacted bed of coarse sand, filling the joints with line sand etc. all complete as per the direction of Engineer-in-charge.	sqm	128	586	713
10.78	Providing and laying 100mm thick factory made cement concrete interlocking paver block of M -35 grade made by block making machine with strong vibratory compaction, of approved size, design & shape, laid in required colour and pattern over (BIS 15658:2006) and including 60mm thick compacted bed of coarse sand, filling the joints with line sand etc. all complete as per the direction of Engineer-in-charge.	sqm	128	615	743
	PVC/LINOLEUM FLOORING				
10.79	Providing and laying plain coloured 3.20 mm thick linoleum covering to floors laid dry.	sqm	25	615	640
10.80	Extra on item No.10.79, if linoleum of exact size is used.	sqm	25	677	702
10.81	Providing and fixing of P.V.C.(vinyl) asbestos tiles as per I.S.3461-1961 coloured and marbled or mottled finish flooring on a smooth and damp proof base using adhesive as recommended by manufacturer including rolling with light wooden roller weighing about 5 kg complete in all respect as desired by Engineer-in-Charge.				
10.81.1	2 mm thick	sqm	161	515	676
10.81.2	3 mm thick	sqm	161	583	744
10.82	Providing and fixing of P.V.C. sheet flexible type conforming to I.S.3462-1966 flooring plain coloured marble or mottled finish on a smooth damp proof base laid with adhesive recommended by manufacturer including pressing the sheet with a suitable tool to get a smooth surface all complete as directed by the Engineer-in-Charge.				
10.82.1	1.50 mm thick	sqm	55	411	466
10.82.2	2.00 mm thick	sqm	55	466	520
10.82.3	2.50 mm thick	sqm	55	514	568
10.82.4	3.00 mm thick	sqm	55	548	602
10.82.5	4.00 mm thick	sqm	55	582	636
10.82.6	5.00 mm thick	sqm	55	616	670
	GLASS/ ALUMINIUM/ PVC STRIPS IN FLOORING				

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
10.83	Providing and fixing aluminium strips 2 mm thick complete with nails in floors					
	10.83.1	40 mm wide	metre	13	71	84
	10.83.2	32 mm Wide	metre	13	57	71
	10.83.3	25 mm wide	metre	13	45	58
10.84	Providing and fixing glass strips, 3 mm thick in terrazzo/ cement concrete floors.					
	10.84.1	40 mm wide	metre	12	21	33
	10.84.2	32 mm wide	metre	12	17	29
	10.84.3	25 mm wide	metre	12	14	26
10.85	Providing and fixing glass strips,4 mm thick in terrazzo/ cement concrete floors.					
	10.85.1	40 mm wide	metre	12	29	40
	10.85.2	32 mm wide	metre	12	23	35
	10.85.3	25 mm wide	metre	12	18	30
10.86	Providing and fixing glass strips, 5.5 mm thick 40mm wide in floors		metre	13	40	53
10.87	Providing and fixing P.V.C. strips, 40mm wide in floors.					
	10.87.1	4 mm thick	metre	13	71	85
	10.87.2	5.5 mm thick	metre	13	86	99
	OTHER MISCELLANEOUS ITEMS USED FOR FLOORING					
10.88	Providing of stamping or making grooves for a depth of 2 mm on top of steps in stair case		sqm	36	-	36
10.89	Providing and fixing flat iron strips 40 mm x 3 mm thick in flooring (in stepping of floors) including cutting, straightening and fixing with nails etc. complete fixed in position.		metre	15	61	76
10.90	Providing and fixing of gun metal cramps 15 mm x 6 mm, 16.5 cm long as per design including cost of mortar		each	5	52	57
10.91	Providing and fixing of copper pins 7.5 cm long of 6mm diameter including cost of mortar.		each	2	14	16
10.92	Providing and fixing of stone dowel 10mm x 5x 2.50 cm cut to double wedge shape as per design including cost of mortar.		each	1	8	10
10.93	Providing and Laying of P.O.P on floors with polythene sheet, cleaning, wiping floor and mixing of POP with water on the polythene sheet and removing it after completion and disposing off the same complete in all respects as per direction of Engineer-in-Charge.		sqm	14	93	108
10.94	Providing and filling on joint 6 mm x 8 mm with Epoxy in Kota Stone flooring / Walls with 2.61 Kg/ 9.29 sqm. complete in all respects as per direction of Engineer-in-Charge.		sqm	96	245	341
10.95	Providing and laying 500x500x40 mm thick Turf paver (Turf pave XD) on 150 mm thick sub grade of compacted bed of 20 mm thick nominal size stone aggregate and base course and filling with 150 mm thick jamuna sand, including spreading, well ramming, consolidating and finishing smooth etc. all complete as per direction of Engineer-in-charge.		sqm	116	902	1018
10.96	Providing and fixing Glass mosaic tiles on finished plain wall surface of size 20 mm x 20 mm x 4 mm in all colour, design , fixing in customize design as per direction of Engineer-in- Charge. The glass mosaic tiles to be fixed on the wall surface with the help of approved adhesive applied at the rate of 2.5 kg per sqm and grouting of the same. The rate is inclusive of all operation, material and required pattern approved by Engineer-in-Charge:		sqm	169	2799	2968
10.97	Providing and fixing removable raised/false access flooring with system and its components of approved make for different plenum height with possible height adjustment up to 50 mm, comprising of modular load bearing floor panels supported on G.I. rectangular stinger frame work and G.I. Pedestal etc. all complete, as per the architectural drawings, as specified and as directed by Engineer-in-charge consisting of:					

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
	(a) Providing at required spacing to form modular framework, pedestals made out of GI tube of thickness minimum 2 mm and 25 mm outer diameter, fully welded on to the G.I. Base plate of size 100mm x 100mm x 3mm at the bottom of the pedestal tube, G.I. pedestal head of size 75mmx75mmx3.5 mm welded with GI fully threaded stud 16mm outer diameter with two GI Check nuts screwed on the stud for level adjustment up to 50mm, locking and stabilizing the pedestal head in position at the required level. The pedestals shall be fixed to the subfloor (base) through base plate using epoxy based adhesive of approved make or the machine screw with rawl plug. (b) Stringers system in all steel construction hot dipped galvanized of rectangular size 570x20x30x0.80mm thick having holes at both ends for securing the stringers on to the pedestal head using fully threaded screws ensuring maximum lateral stability in all directions, the grid formed by the pedestal and stringer assembly shall receive the floor panel, this system shall provide adequate solid, rigid support for access floor panel, the system shall provide a minimum clear uninterrupted clearance between the bottom of the floor for electrical conduits and wiring etc. all complete as per the architectural drawings, as specified and as directed by the Engineer-in-charge. (c) Providing and fixing Access Floor panel of 600x600x32 mm medium grade Filled Steel anti static high pressure Lamination of 800H grade (FS800H). Access Floor panel shall be steel welded construction with an enclosed bottom pan with uniform pattern of 64 hemispherical cones. The top and bottom plates of Steel Gauges: top 0.6 mm and bottom 0.7 mm fused spot welded together (minimum 64 welds in each dome and 20 welds along each flange). The panel should be Corroresist epoxy coated for lifetime rust protection and cavity formed by the top and bottom plate is filled with Pyrogrip non-combustible Portland cementitious core mixed with lightweight foaming compound. The access floor shall be factory finished with Anti-static High Pressure laminate with Non Warp technology up to 1mm thickness for superior adhesion and Surface flatness within 0.75mm.The panel is to withstand a Concentrated Load of 363 kgs applied on area 25mm x 25mm without collapse in the centre of the panel which is placed on four steel blocks. The panel will withstand and Uniformly Distributed Load (UDL) minimum 1250 kg/sqm and an impact load of 50kg all complete as per the approved manufacturers specification and as per the direction of Engineer-in-charge. All specification must be printed on the side of the panel to ensure the quality of the product.				
10.97.1	300 mm Finished Floor Height (FFH)	sqm	184	4488	4672
10.97.2	450 mm Finished Floor Height (FFH).	sqm	184	4768	4952
10.98	Providing and fixing Grass paver block of required strength and thickness on 25 mm thick compacted bed of sand and filling the joint with sand complete in all respect	sqm	88	1255	1342
10.99	Providing and fixing covel stone/garden stone of size 150 mm x 150 mm laid in 20 mm thick cement mortar 1:3 including grouting the joint with white cement and matching pigment complete in all respect (Covel/Garden stone to be as per manufacturer's specifications to be got approved from Engineer-in-charge)	sqm	267	1871	2138
10.100	**Cement Concrete 1:8:16 Flooring**				
10.100.1	Cement Concrete 1:8:16 with Over burnt (Jhama) Brick Aggregate: 90 mm to 40 mm size in foundation and plinth.	cum	545	1389	1934
10.100.2	Cement Concrete 1:8:16 with stone aggregate 40 mm size in foundation and plinth.	cum	307	1778	2086
10.101	Providing & laying Epoxy Flooring 2mm thick (overall thickness) with self levelling with Hi-build epoxy primer 100 micron thickness, self leveling epoxy screed 900 micron thickness, FQ sand and self levelling epoxy top coat having thickness 1000 microns with all materials as mentioned / required to provide desired finish to the entire satisfaction of the Engineer in charge,	sqm	121	544	665

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
10.102	Providing & laying Epoxy Flooring 1.5 mm thick (overall thickness) with self levelling with Hi- build epoxy primer 100 micron thickness, self leveling epoxy screed 500 micron thickness, FQ sand and self levelling epoxy top coat having thickness 900 microns with all materials as mentioned / required to provide desired finish to the entire satisfaction of Engineer in charge,	sqm	101	536	637
10.103	Providing & laying Epoxy Flooring 1.1mm thick (overall thickness) with self levelling with Hi- build epoxy primer 100 micron thickness and self levelling epoxy top coat having thickness 1000 microns with all materials as mentioned /required to provide desired finish to the entire satisfaction of Engineer in charge,	sqm	81	375	456
10.104	Mirror polishing on marble work/Granite work/stone work whereever reqired to give high gloss finish complete.	sqm	243	45	288
10.105	Providing and laying matt finished vitrified tile of size 100x100x16mm having water absorption less than 0.5% and conforming to IS: 15622 of approved make in all colours and shades in out door floors such as footpath, court yard multi models etc., laid on 20mm thick base of cement mortar 1:4 (1cement : 4 coarse sand) in all shapes & patterns including grouting the joints with white cement mixed with matching pigments etc. complete as direction of Engineer-in-Charge.	sqm	249	1548	1797
10.106	Providing and laying matt finished vitrified tile of size 300x300x9.8mm having with water absorption less than 0.5% and conforming to IS: 15622 of approved make in all colours and shades in for outdoor floors such as footpath, court yard, multi modals location etc., laid on 20mm thick base of cement mortar 1:4 (1 cement : 4 coarse sand) in all shapes & patterns including grouting the joints with white cement mixed with matching pigments etc. complete as per direction of Engineer-in-Charge.	sqm	249	834	1082
10.107	Providing and laying tactile tile (for vision impaired persons as per standards) of size 300x300x9.8mm having with water absorption less than 0.5% and conforming to IS:15622 of approved make in all colours and shades in for outdoor floors such as footpath, court yard, multi modals location etc., laid on 20mm thick base of cement mortar 1:4 (1 cement : 4 coarse sand) in all shapes & patterns including grouting the joints with white cement mixed with matching pigments etc. complete as per direction of Engineer-in-Charge.	sqm	249	1548	1797
10.108	Providing and fixing 10x10x7.50 cm Granite stone block hand cut and chisel dressed on top, for paving in floors, drains etc. laid over 20mm thick base mortar 1:4 (1 cement : 4 coarse sand) with joints 10mm wide filled with same mortar including ruled pointing etc. complete as per direction of engineer-in-charge.	sqm	231	1241	1473
10.109	Providing and laying gang saw cut 30 mm thick, mirror polished pre moulded and pre polished machine cut granite stone of required size and shape of approved shade, colour and texture in footpath, flooring in road side plazas and similar locations, laid over 20mm thick base of cement mortar 1:4 (1 cement : 4 coarse sand) including grouting the joints with white cement mixed with matching pigment, epoxy touch ups etc. complete as per direction of Engineer-in-Charge.	sqm	187	3930	4117

CHAPTER NO. 11

FINISHING WORKS

CHAPTER 11.0 - FINISHING WORKS

LIST OF BUREAU OF INDIAN STANDARDS CODES

Sr. No.	B.I.S. No.	Subject
1	IS 75	Linseed Oil Raw and Refined
2	IS 77	Linseed Oil Boiled For Paints
3	IS 102	Ready Mixed Paint, Brushing, Red Lead, Nonsetting, Priming
4	IS 104	Specification for Ready Mixed Paint, Brushing, Zinc Chrome, Priming
5	IS 109	Ready Mixed Paint, brushing, priming Plaster to Indian Standard Colour No.361, 631 White and off White
6	IS 117	Ready Mixed Paint, Brushing, Finishing Exterior, Semigloss for General Purposes to Indian Standards Colours.
7	IS 133	Enamel, Interior (a) Under Coating (b) Finishing
8	IS 137	Ready Mixed Paint, Brushing, Matt Or Egg Shell Flat, Finishing Interior to Indian Standard Colour as required
9	IS 158	Ready Mixed Paint, Brushing, Bituminous Black, Lead Free, Acid, Alkali and Heat Resisting
10	IS 217	Specification for Cut Back Bitumen
11	IS 218	Specification for Creosote and Anthracene Oil For Use As Wood Preservatives
12	IS 290	Coal Tar Black Paint
13	IS 337	Varnish, Finishing Interior
14	IS 341	Black Japan, Types 'A', 'B' & 'C'
15	IS 347	Varnish, Shellac for General Purposes
16	IS 348	French Polish
17	IS 427	Distamper, Dry Colour as Required
18	IS 428	Distemper, Oil Emulsion, Colour as Required
19	IS 524	Varnish, Finishing, Exterior, Synthetic Air Drying
20	IS 533	Gum Spirit of Turpentine (Oil of Turpentine)
21	IS 712	Specification For Building Limes
22	IS 1200 (Pt-XII)	Method of Measurements of Building and Civil Engineering Works : Part : XII — Plastering and Pointing
23	IS 1200 (Pt-XIII)	Method of Measurements of Building and Civil Engineering Works : Part : XIII — White Washing, Colour Washing Distempering and Painting of Building Surfaces.
24	IS 1200 (Pt-XV)	Methods of Measurements of Building and Civil Engineering Works : Part : XV — Painting, Polishing, Varnishing etc.
25	IS 2339	Aluminium Paint For General Purposes, in Dual Container
26	IS 2547 (Pt-II)	Gypsum Building Plasters Pt.II Premixed Light Weight Plasters
27	IS 2932	Enamel, Synthetic, Exterior (a) Undercoating, (b) Finishing
28	IS 2933	Enamel, Exterior (a) Undercoating (b) Finishing
29	IS 5410	Cement Paint
30	IS 5411 (Pt-1)	Plastic Emulsion : Paint Part I For Interior Use
31	IS 6278	Code of Practice For White Washing and Colour Washing

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
	Note :- Rates for external plaster are for height up to 10m from ground				
	6MM CEMENT PLASTER				
11.1	6 mm cement plaster of mix :				
	11.1.1 1:3 (1 cement : 3 fine sand)	sqm	46	28	73
11.2	6 mm cement plaster 1:3 (1 cement : 3 fine sand) finished with a floating coat of neat cement and thick coat of Lime wash on top of walls when dry for bearing of R.C.C. slabs and beams.	sqm	74	40	114
11.3	Neat cement punning.	sqm	20	13	33
	CEMENT PLASTER (IN FINE SAND)				
11.4	10 mm thick cement plaster	sqm	46	57	103
	11.4.1 1:2 (1 cement: 2 fine sand)	sqm	46	57	103
	11.4.2 1:3 (1 cement: 3 fine sand)	sqm	46	51	96
11.5	12 mm cement plaster of mix :				
	11.5.1 1:2 (1 cement: 2 fine sand)	sqm	47	76	122
	11.5.2 1:3 (1 cement: 3 fine sand)	sqm	47	61	108
	11.5.3 1:4 (1 cement: 4 fine sand)	sqm	47	47	94
	11.5.4 1:6 (1 cement: 6 fine sand)	sqm	39	37	76
11.6	15 mm cement plaster on the rough side of single or half brick wall of mix :				
	11.6.1 1:4 (1 cement: 4 fine sand)	sqm	58	56	114
	11.6.2 1:6 (1 cement: 6 fine sand)	sqm	53	44	96
11.7	20 mm cement plaster of mix :				
	11.7.1 1:4 (1 cement: 4 fine sand)	sqm	72	73	145
	11.7.2 1:6 (1 cement: 6 fine sand)	sqm	62	57	119
	CEMENT PLASTER (IN COARSE SAND)				
11.8	12 mm cement plaster of mix :				
	11.8.1 1:4 (1 cement: 4 coarse sand)	sqm	44	48	92
	11.8.2 1:6 (1 cement: 6 coarse sand)	sqm	37	38	74
11.9	15 mm cement plaster on rough side of single or half brick wall of mix:				
	11.9.1 1:4 (1 cement: 4 coarse sand)	sqm	58	57	115
	11.9.2 1:6 (1 cement: 6 coarse sand)	sqm	48	45	92
11.10	20 mm cement plaster of mix :				
	11.10.1 1:4 (1 cement: 4 coarse sand)	sqm	69	75	144
	11.10.2 1:6 (1 cement: 6 coarse sand)	sqm	60	58	118
	CEMENT PLASTER WITH A FLOATING COAT OF NEAT CEMENT				
11.11	12 mm cement plaster finished with a floating coat of neat cement of mix :				
	11.11.1 1:3 (1 cement: 3 fine sand)	sqm	63	74	137
	11.11.2 1:4 (1 cement: 4 fine sand)	sqm	63	60	123
11.12	15 mm cement plaster on rough side of single or half brick wall finished with a floating coat of neat cement of mix :				
	11.12.1 1:3 (1 cement: 3 fine sand)	sqm	76	86	162
	11.12.2 1:4 (1 cement: 4 fine sand)	sqm	76	69	145
11.13	Cement plaster 1:3 (1 cement: 3 coarse sand) finished with a floating coat of neat cement.				
	11.13.1 12 mm cement plaster	sqm	63	75	138
	11.13.2 20 mm cement plaster	sqm	93	110	203
11.14	15 mm cement plaster 1:3 (1 cement: 3 coarse sand) finished with a floating coat of neat cement on the rough side of single or half brick wall.	sqm	73	87	160
11.15	6 mm plaster on cement concrete or reinforced cement concrete work with white cement based polymer modified self curing mortar of approved make as per the direction of Engineer-In-Charge.	sqm	34	90	125

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
11.16	Extra for addition of synthetic Polyester triangular fibre of length 6 mm, effective diameter 10-40 microns and specific gravity of 1.34 to 1.40 in cement plaster/mortar by using 125 gms. of synthetic Polyester triangular fibre for 50 kgs. cement used in cement mortar as per directions of Engineer-in-Charge.	per bag of 50 kg of cement	0	65	65
11.17	Providing and fixing of chicken wire mesh for avoiding cracks in plaster with necessary nail/screws etc. complete in all respect to the entire satisfaction of engineer-in-charge	sqm	202	60	262
	CEMENT PLASTER IN TWO COATS				
11.18	18 mm cement plaster in two coats under layer 12 mm thick cement plaster 1:5 (1 cement : 5 coarse sand) finished with a top layer 6 mm thick cement plaster 1:6 (1 cement : 6 fine sand).	sqm	84	61	145
11.19	18 mm thick moulded cement mortar band in two coats under layer 12 mm thick with cement mortar 1:5 (1 cement : 5 coarse sand) top layer 6 mm thick with cement mortar 1:4 (1 cement : 4 fine sand).	cm per metre	7	1	8
11.20	18 mm cement plaster in two coats under layer 12 mm thick cement plaster 1:5 (1 cement : 5 coarse sand) and a top layer 6 mm thick cement plaster 1:3 (1 cement : 3 coarse sand) finished rough with sponge.	sqm	84	74	158
11.21	12 mm cement plaster 1:2 (1 cement : 2 stone dust).	sqm	42	79	121
11.22	15 mm cement plaster 1:2 (1 cement : 2 stone dust) on the rough side of single or half brick wall.	sqm	50	95	144
11.23	20 mm cement plaster 1:2 (1 cement : 2 stone dust).	sqm	59	123	182
11.24	White Cement based polymer modified self curing compound in powder form used for levelling and plastering material, applied on red bricks, Flyash bricks, AAC & Concrete blocks for internal and external work. Technical Specifications: i) Degree Of Whiteness (in terms of reflection) - >80% ii) Bulk density - 1.4 to 1.5 kg/litre iii) Pot life - 110-180 minutes iv) Water retentivity - >95% v) Compressive strength @ 28 days > 10N/mm2 vi) Water absorption 30 minutes @ 28 days - <0.8	sqm	0	108	108
	POINTING ON BRICK WORK				
11.25	Pointing on brick work or brick flooring with cement mortar 1:3 (1 cement : 3 fine sand):				
	11.25.1 Flush / Ruled/ Struck or weathered pointing	sqm	37	13	50
	11.25.2 Raised and cut pointing	sqm	86	19	105
	POINTING ON TILE BRICK WORK				
11.26	Pointing on tile brick work with cement mortar 1:3 (1 cement : 3 fine sand):				
	11.26.1 Flush/ Ruled/ Struck or weathered pointing	sqm	31	20	51
	POINTING ON STONE WORK				
11.27	Pointing on stone work with cement mortar 1:3 (1 cement : 3 fine sand) :				
	11.27.1 Flush/ Ruled pointing	sqm	56	10	66
	11.27.2 Raised and cut pointing	sqm	113	17	130
11.28	Raised and cut pointing on stone work in white cement mortar 1:3 (1 white cement : 3 marble dust).	sqm	113	35	149
11.29	Pointing on stone slab ceiling with cement mortar 1:2 (1 cement : 2 fine sand):				
	11.29.1 Flush/ Ruled pointing	sqm	38	8	46
11.30	Extra for pointing on walls on the outside at height more than 10 m from ground level for every additional height of 3 m or part there of.	sqm	2	-	2
11.31	Lime surkhi pointing 2:3 weathered and struck on brick and tile work	sqm	52	5	58
	ROUGH CAST PLASTER				

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
11.32	Rough cast plaster up to 10 m height above ground level with a mixture of sand and gravel or crushed stone from 6 mm to 10 mm nominal size, dashed over and including the fresh plaster in two layers, under layer 12 mm cement plaster 1:4 (1 cement : 4 coarse sand) and top layer 10 mm cement plaster 1:3 (1 cement : 3 fine sand) mixed with 10% finely grounded hydrated lime by volume of cement.				
	11.32.1 Ordinary cement finish using ordinary cement	sqm	162	113	275
	PEBBLE DASH PLASTER				
11.33	Pebble dash plaster up to 10 m height above ground level with a mixture of washed pebble or crushed stone 6 mm to 12.5 mm nominal size, dashed over and including fresh plaster in two layers under layer 12 mm cement plaster 1:4 (1 cement : 4 coarse sand) and top layer 10 mm cement plaster with cement mortar 1:3 (1 cement : 3 fine sand) mixed with 10% finely grounded hydrated lime by volume of cement.	sqm	141	113	254
11.34	Extra for providing and mixing water proofing material (as per BIS 2645:2003) in cement plaster work in proportion recommended by the manufacturers.	per bag of 50 kg of cement used in mix	-	74	74
11.35	Extra for plastering exterior walls of height more than 10 m from ground level for every additional height of 3 m or part thereof.	sqm	26	-	26
11.36	Extra for plastering on circular work not exceeding 6 m in radius:				
	11.36.1 In one coat	sqm	11	-	11
	11.36.2 In two coats	sqm	17	-	17
11.37	Extra for plastering done on moulding, cornices or architraves including neat finish to line and level:				
	11.37.1 In one coat	sqm	148	-	148
	11.37.2 In two coats	sqm	218	-	218
11.38	Extra for plastering:				
	11.38.1 Spherical ceiling	sqm	40	-	40
	11.38.2 Groined ceiling	sqm	40	-	40
	11.38.3 Flewing soffits	sqm	24	-	24
	WASHED STONE GRIT PLASTER				
11.39	Washed stone grit plaster on exterior walls height up to 10 metre above ground level, in two layers, under layer 12 mm cement plaster 1:4 (1 cement : 4 coarse sand), furrowing the under layer with scratching tool, applying cement slurry on the under layer @ 2 kg of cement per square metre, top layer 15 mm cement plaster 1:1/ 2:2 (1 cement: 1/2 coarse sand : 2 stone chipping 10 mm nominal size), in panels with groove all around as per approved pattern, including scrubbing and washing the top layer with brushes and water to expose the stone chippings ,complete as per specification and direction of Engineer-in-charge (payment for providing grooves shall be made separately).	sqm	206	140	346
11.40	Forming groove of uniform size in the top layer of washed stone grit plaster as per approved pattern using wooden battens, nailed to the under layer, including removal of wooden battens, repair to the edges of panels and finishing the groove complete as per specifications and direction of the Engineer-in-charge :				
	11.40.1 15 mm wide and 15 mm deep groove	metre	25	2	27
	11.40.2 20 mm wide and 15 mm deep groove	metre	25	2	27
11.41	Extra for washed grit plaster on exterior walls of height more than 10 m from ground level for every additional height of 3 m or part thereof.	sqm	40	-	40
11.42	Extra for washed stone grit plaster on circular work not exceeding 6 m in radius (in two coats).	sqm	37	-	37

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
11.43	Forming groove of uniform size from 12x12 mm and up to 25x15 mm in the top layer of washed stone grit plastered surface as per approved pattern, including providing and fixing aluminium channels of appropriate size and thickness (not less than 2 mm), nailed to the under layer with rust proof screws and nails and finishing the groove complete as per specifications and direction of the Engineer-in-Charge.	metre	9	60	69
11.44	Extra for using white cement in place of ordinary cement in the top layer of the item of washed stone grit plaster.	sqm	0	81	81
	ARTIFICIAL STONE PLASTER				
11.45	Extra for lining out plaster to imitate stone or concrete blocks walling.	sqm	31	-	31
	GYPSUM LIGHTWEIGHT PLASTER				
11.46	Providing and applying 12 mm thick (average) premixed formulated one coat gypsum lightweight plaster having additives and light weight aggregates as vermiculite/ perlite respectively conforming to IS: 2547 (Part - 1 & II) 1976, applied on hacked / uneven background such as bare brick/ block/ RCC work on walls & ceiling at all floors and locations, finished in smooth line and level etc. complete.	sqm	78	132	210
	PLAIN CEMENT MORTAR BANDS				
11.47	12 mm thick plain cement mortar bands in cement mortar 1:4 (1 cement : 4 fine sand):				
	11.47.1 Flush Band	cm per metre	2	0	3
	11.47.2 Sunk Band	cm per metre	3	0	3
	11.47.3 Raised Band	cm per metre	3	0	3
	11.47.4 Moulded Band	cm per metre	5	0	6
11.48	18 mm thick plain cement mortar band in cement mortar 1:4 (1 cement : 4 fine sand):				
	11.48.1 Flush Band	cm per metre	3	1	3
	11.48.2 Sunk Band	cm per metre	3	1	4
	11.48.3 Raised Band	cm per metre	4	1	4
	11.48.4 Moulded Band	cm per metre	7	1	8
	RENDERING ON RCC SURFACE				
11.49	Smooth finishing of the exposed surface of R.C.C. work with 6 mm thick cement mortar 1:3 (1 Cement : 3 fine sand).	sqm	62	31	92
11.50	Smooth finishing of the exposed surface of R.C.C. work with 10 mm thick cement mortar 1:3 (1 Cement : 3 fine sand).	sqm	72	51	123
11.51	Smooth finishing of the exposed surface of R.C.C. work with 10 mm thick cement mortar 1:4 (1 Cement : 4 fine sand).	sqm	72	39	111
11.52	Cement rendering on plaster 1 mm thick	sqm	23	8	31
11.53	Extra for rendering smooth the top of suspended floors, landings and staircases (treads and risers) with cement mortar 1:2 (1 cement : 2 coarse sand), including a floating coat of neat cement and protecting the surface with a layer of 7.5 cm of earth laid over 15 mm of fine sand in case of suspended floor and bricks laid in mud mortar in case of landings and steps, including subsequent removal and cleaning of the same.	sqm	37	30	66
11.54	Add for plaster drip course/ groove in plastered surface or moulding to R.C.C. projections.	metre	35	-	35
	INTERIOR FINISHING				
11.55	Corbelling around almirah including 12mm thick cement plaster 1:6	metre	38	64	102
11.56	75mm thick brick architrave to windows and ventilators 115mm projected laid in cement sand mortar 1:4 including 12 mm thick cement plaster 1:4	metre	31	58	89

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
11.57	Providing & laying average 6mm thick POP Coating on walls, Ceiling, beams and lintels etc. complete in all respects as approved by the Engineer-In-Charge.	sqm	47	29	76
11.58	Providing and applying two coats white cement based putty of approved brand and manufacturer, over plastered surface and grinding the surface smooth with sand paper to get en even and smooth finish including cost and carriage of all material , labour charges, scaffolding, sundries etc. complete	sqm	26	10	36
11.59	Providing and applying plaster of paris putty of 2 mm thickness over plastered surface to prepare the surface even and smooth complete.	sqm	64	15	79
11.60	Providing and applying white cement based putty of average thickness 1 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete.	sqm	41	25	66
11.61	White washing with lime to give an even shade :				
11.61.1	New work (three or more coats)	sqm	12	2	15
11.62	Colour washing such as green, blue or buff to give an even shade :				
11.62.1	New work (two or more coats) with a base coat of white washing with lime	sqm	17	3	20
11.62.2	New work (two or more coats) with a base coat of whiting	sqm	17	3	20
11.63	Distempering with dry distemper of approved brand and manufacture (two or more coats) of required shade on new work, over and including water thinnable priming coat to give an even shade.	sqm	24	9	33
11.64	Distempering with oil bound washable distemper of approved brand and manufacture to give an even shade :				
11.64.1	New work (two or more coats) over and including water thinnable priming coat with cement primer	sqm	37	13	50
11.65	Distempering with 1st quality acrylic distemper (ready mixed) having VOC content less than 50 gms/litre, of approved manufacturer, of required shade and colour complete, as per manufacturer's specification.				
11.65.1	Two or more coats on new work	sqm	26	9	35
11.66	Distempering with 1st quality acrylic distemper, having VOC (Volatile Organic Compound) content less than 50 grams/ litre, of approved brand and manufacture, including applying additional coats wherever required, to achieve even shade and colour.				
11.66.1	One coat	sqm	17	3	21
11.66.2	Two coats	sqm	26	5	31
11.67	Applying one coat of water thinnable cement primer of approved brand and manufacture on wall surface :				
11.67.1	Water thinnable cement primer	sqm	21	4	25
11.68	Applying priming coat:				
11.68.1	With ready mixed pink or Grey primer of approved brand and manufacture on wood work (hard and soft wood)	sqm	16	9	25
11.68.2	With ready mixed aluminium primer of approved brand and manufacture on resinous wood and plywood	sqm	16	9	25
11.68.3	With ready mixed red oxide zinc chromate primer of approved brand and manufacture on steel galvanised iron/ steel works	sqm	15	6	22
11.68.4	With ready mixed red oxide zinc chromate primer of approved brand and manufacture on steel work (second coat)	sqm	8	4	12
11.69	Applying priming coats with primer of approved brand and manufacture, having low VOC (Volatile Organic Compound) content.				
11.69.1	With ready mixed pink or grey primer on wood work (hard and soft wood) having VOC content less than 50 grams/ litre	sqm	16	9	25
11.69.2	With water thinnable cement primer on wall surface having VOC content less than 50 grams/litre	sqm	21	4	25

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
11.70	Extra for using White Cement based primer modified with high performance polymers, applied as an undercoat for exterior/interior cementitious surfaces before paint Technical Specifications: i) Degree of whiteness (in terms of reflectance) >93% ii) Fineness (Residue on 63 Micron Sieve) - Minimum 4.0 iii) Bulk Density - 0.8 to 0.9 kg/litre iv) Viscosity by Brookfield, 50rpm, Spindle no RV 05 at 25 - 300cP to 600cP v) Pot Life - Min. 180 minutes vi) Coverage after 1st coat - 80-100 sqft/kg vii) Adhesion cross-cut on 2 coat application after 48 hours - Min. 3B	sqm	0	15	15
11.71	Wall painting on a cement plaster surface with acrylic emulsion paint of approved brand and manufacture to give an even shade :				
	11.71.1 Two or more coats on new work	sqm	34	27	61
11.72	Painting with silicon & acrylic emulsion based water thinnable sealer of approved brand and manufacture on wet or patchy portion of plastered surfaces :				
	11.72.1 One coat	sqm	17	26	43
	11.72.2 Two coats	sqm	28	41	68
11.73	Finishing with Epoxy paint (two or more coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation of surface, etc. complete.				
	11.73.1 On steel work	sqm	50	40	90
	11.73.2 On concrete work	sqm	50	38	88
11.74	Wall painting with acrylic emulsion paint, having VOC (Volatile Organic Compound) content less than 50 grams/ litre, of approved brand and manufacture, including applying additional coats wherever required, to achieve even shade and colour.				
	11.74.1 One coat	sqm	23	6	29
	11.74.2 Two coats	sqm	34	9	43
11.75	Wall painting with premium acrylic emulsion paint of interior grade, having VOC (Volatile Organic Compound) content less than 50 grams/ litre of approved brand and manufacture, including applying additional coats wherever required to achieve even shade and colour.				
	11.75.1 One coat	sqm	23	9	32
	11.75.2 Two coats	sqm	34	15	49
11.76	Preparation of ply wood surface for painting including sand papering the surface and applying filling with approved quality filler consisting of white lead, linseed oil, varnish and chalk mitti including finishing the surface to required finish complete.	sqm	17	24	41
11.77	Applying pink primer or aluminium priming coat on wood work including preparation of surface, Knotting and stopping etc.	sqm	12	9	21
11.78	Painting two coats excluding priming coat with synthetic enamel paint in all shades on new wood work or metallic or plastered or concrete surfaces to give an even shade.	sqm	22	13	35
11.79	Painting with oil type wood preservative of approved brand and manufacture :				
	11.79.1 New work (two or more coats)	sqm	10	14	24
11.80	Providing and applying two coats of fire retardant paint on cleaned wood / ply surface @ 3.5 sqm per litre per coat including preparation of base surface as per recommendations of manufacturer to make the surface fire retardant.	sqm	34	160	194
11.81	Coal tarring two coats on new wood work using 0.16 litre and 0.12 litre coal tar per sqm in the first coat and second coat respectively.	sqm	10	11	21
11.82	Painting the wooden / metal surface with synthetic enamel paint of approved brand and manufacture to give an even shade :				
	11.82.1 Two or more coats on new work	sqm	34	22	55

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
11.83	Painting over the wooden surface with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade :					
	11.83.1	Two or more coats on new work over an under coat of suitable shade with ordinary paint of approved brand and manufacture	sqm	33	21	54
11.84	Painting over the wooden/metal surface with aluminium paint of approved brand and manufacture to give an even shade .					
	11.84.1	Two or more coats on new work	sqm	34	14	47
11.85	Painting over wooden/metal surface with acid proof paint of approved brand and manufacture of required colour to give an even shade :					
	11.85.1	Two or more coats on new work	sqm	34	29	62
11.86	Varnishing with varnish of approved brand and manufacture :					
	11.86.1	Two or more coats of glue sizing with copal varnish over an under coat of flatting varnish	sqm	55	23	78
	11.86.2	Two or more coats glue sizing with spar varnish or an under coat of flatting varnish	sqm	55	24	79
11.87	French spirit polishing :					
	11.87.1	Two or more coats on new works including a coat of wood filler	sqm	143	19	162
11.88	Polishing on wood work with ready mixed wax polish of approved brand and manufacture :					
	11.88.1	New work	sqm	49	12	62
11.89	Floor polishing on masonry or concrete floors with wax polish of approved brand and manufacture.		sqm	25	2	28
11.90	Varnishing with varnish of approved brand and manufacture:					
	11.90.1	One or more coats with copal varnish	sqm	22	9	31
	11.90.2	One or more coats with spar varnish	sqm	22	10	32
11.91	Melamine polishing on wood work (one or more coat).		sqm	21	41	63
11.92	Floor painting with floor enamel paint of approved brand and manufacture of required colour to give an even shade :					
	11.92.1	Two or more coats on new work	sqm	34	41	74
	EXTERIOR FINISHING					
	WALL AND ROOF SURFACES					
11.93	Finishing walls with water proofing cement paint of required shade :					
	11.93.1	New work (Two or more coats applied @ 3.84 kg/10 sqm)	sqm	28	16	44
11.94	Finishing walls with textured exterior paint of required shade :					
	11.94.1	New work (Two or more coats applied @ 3.28 litre/10 sqm) over	sqm	33	119	152
11.95	Finishing walls with Acrylic Smooth exterior paint of required shade :					
	11.95.1	New work (Two or more coat applied @ 1.67 litre/10 sqm over and including priming coat of exterior primer applied @ 2.20 kg/10 sqm)	sqm	33	64	98
11.96	Finishing walls with Premium Acrylic Smooth exterior paint with Silicone additives of required shade:					
	11.96.1	New work (Two or more coats applied @ 1.43 litre/10 sqm over and including priming coat of exterior primer applied @ 2.20 kg/10 sqm)	sqm	33	61	95
11.97	Finishing with Deluxe Multi surface paint system for interiors and exteriors using Primer as per manufacturers specifications :					
	11.97.1	Two or more coats applied on walls @ 1.25 litre/10 sqm over and including one coat of Special primer applied @ 0.75 litre /10 sqm	sqm	33	46	79
	11.97.2	Painting wood work with Deluxe Multi Surface Paint of required shade. Two or more coat applied @ 0.90 litre/10 sqm over an under coat of primer applied @0.75 litre/10 sqm of approved brand and manufacture	sqm	33	36	70

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
	11.97.3	Painting Steel work with Deluxe Multi Surface Paint to give an even shade. Two or more coat applied @ 0.90 litre/10 sqm over an under coat of primer applied @ 0.80 litre/10 sqm of approved brand and manufacture	sqm	33	33	66
11.98	Finishing walls with 100% Premium acrylic emulsion paint having VOC less than 50 gm/litre and UV resistance as per IS 15489:2004, Alkali & fungal resistance, dirt resistance exterior paint of required shade (Company Depot Tinted) with silicon additives.					
	11.98.1	New work (Two or more coats applied @ 1.43 litre/ 10 sqm Over and including priming coat of exterior primer applied @ 0.90 litre/10 sqm	sqm	34	62	96
11.99	Painting on G.S. sheet with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade :					
	11.99.1	New work (two or more coats) including a coat of approved steel primer but excluding a coat of mordant solution	sqm	41	18	60
11.100	Applying a coat of mordant solution on G.S. sheet:					
	11.100.1	With a solution of 38 gms of copper acetate in a litre of soft water	sqm	17	1	17
	11.100.2	With a solution made of 13 gms of hydrochloric acid in a solution of 13 gms each of copper chloride, copper nitrate and ammonium chloride dissolved in a litre of soft water	sqm	17	-	17
	PIPES AND SANITARY HARDWARES					
11.101	Painting (two or more coats) on CI/SCI rain water, soil waste and vent pipes and fittings with black anticorrosive bitumastic paint of approved brand and manufacture, over and including a priming of ready mixed zinc chromate yellow primer on new work:					
	11.101.1	75 mm diameter pipes	metre	14	4	18
	11.101.2	100 mm diameter pipes	metre	17	6	23
	11.101.3	150 mm diameter pipes	metre	25	9	34
11.102	Painting (two or more coats) on rain water, soil waste and vent pipes and fittings with synthetic enamel paint of approved brand and manufacture and required colour over a priming coat of approved steel primer on new work.					
	11.102.1	100 mm diameter pipes	metre	17	10	27
	11.102.2	150 mm diameter pipes	metre	25	14	39
11.103	Painting with black anti-corrosive bitumastic paint of approved brand and manufacture to give an even shade :					
	11.103.1	Two or more coats on new work	sqm	34	10	44
11.104	Painting (two or more coats) on rain water, soil waste and vent pipes and fittings with aluminium paint of approved brand and manufacture over a priming coat of ready mixed zinc chromate yellow primer on new work :					
	11.104.1	75 mm diameter pipes	metre	13	5	18
	11.104.2	100 mm diameter pipes	metre	17	9	26
	11.104.3	150 mm diameter pipes	metre	25	13	38
11.105	Painting sand cast iron/ centrifugally cast (spun) iron soil, waste vent pipes and fittings with two coats of synthetic enamel paint of any colour such as chocolate grey, or buff etc. over a coat of primer (of approved quality) for new work :					
	11.105.1	100 mm diameter pipe	metre	14	8	22
	11.105.2	75 mm diameter pipe	metre	11	6	17
11.106	Painting C.I. cistern with bitumastic or any other anti-corrosive paint inside and white paint over a coat of zinc chromate yellow primer (of approved quality) on the outside surface of the cistern, flush pipe, other fittings, etc. complete for new work.		each	192	148	340
11.107	Painting G.I. pipes and fittings with synthetic enamel white paint with two coats over a ready mixed priming coat, both of approved quality for new work :					
	11.107.1	15 mm diameter pipe	metre	3	2	4
	11.107.2	20 mm diameter pipe	metre	3	2	5

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
	11.107.3 25 mm diameter pipe	metre	4	3	7
	11.107.4 32 mm diameter pipe	metre	5	3	9
	11.107.5 40 mm diameter pipe	metre	6	4	10
	11.107.6 50 mm diameter pipe	metre	8	4	12
11.108	Painting G.I. pipes and fittings with two coats of anti-corrosive bitumastic paint of approved quality :				
	11.108.1 15 mm diameter pipe	metre	2	1	2
	11.108.2 20 mm diameter pipe	metre	2	1	3
	11.108.3 25 mm diameter pipe	metre	3	1	4
	11.108.4 32 mm diameter pipe	metre	4	1	5
	11.108.5 40 mm diameter pipe	metre	4	1	6
	11.108.6 50 mm diameter pipe	metre	5	2	7
	11.108.7 65 mm diameter pipe	metre	7	2	9
	11.108.8 80 mm diameter pipe	metre	8	2	10
	MISCELLANEOUS ITEMS				
11.109	Extra for mixing Soap solution, 1 percent for cement plastering.	sqm	3	12	15
11.110	Satna lime wash on walls with one coat.	sqm	4	1	5
11.111	Oiling woodwork with raw linseed oil (2nd quality oil)	sqm	7	9	16
11.112	Oiling wood work with raw linseed oil (2nd quality oil) and water.	sqm	9	5	13
11.113	Lettering with black Japan paint of approved brand and manufacture	per	2	-	2
11.114	Painting (one or more coats) with black Japan paint of approved brand and	sqm	23	7	30
11.115	Painting one coat with solignum with 2nd quality paint	sqm	9	6	15
11.116	Painting two coats with solignum with 2nd quality paint	sqm	14	11	25
11.117	Painting one coat with creosote	sqm	9	5	14
11.118	Painting two coats with creosote	sqm	14	8	22
11.119	Coal tarring one coat	sqm	17	3	20
11.120	Coal tarring two coats	sqm	26	3	29
11.121	Polyurethane polish (PU) two or more coats to give required finish including two coat of wood sealer Including Preparation of surface/base complete as per specification	sqm	68	214	283
11.122	Painting two or more coats Italian Pigmented PU white glossy or matt in all shades on wood work surface to give an even shade Including Preperation of surface/base complete as per specification	sqm	68	205	273
11.123	Wall painting with (bio grade)plastic emulsion paint of approved brand and manufacturer to give an even shade (two or more coats) Generally used in hospital buildings etc. complete as per Specifications.	sqm	43	53	96

CHAPTER NO. 12

WOOD WORK, PVC and ALUMINIUM DOOR AND WINDOWS

CHAPTER 12.0 - WOOD WORK. PVC AND ALUMINIUM WORK

NOTES:

1. Block Board

A Board having a core made up of strips of wood, each not exceeding 25 mm in width, laid separately or glued or otherwise joined to form a slab which is glued between two or more outer veneers with the direction of the grain of the core blocks running at right angles to that of the adjacent outer veneers.

2. Decorative Veneers

Veneers having attractive appearance due to figure, colour, grain, luster, etc.

3. Dovetail Joint

A joint at the corner of two pieces in such a way that the notches made to one are fitted exactly into projections of corresponding size and shape made in the other. There are various kinds of dovetail joints for instance, lapped dovetail joint, wedge shaped dovetail joint, etc.

4. Hard Wood

A conventional term used to denote the wood obtained from broad-leaved trees. It has no relationship to the physical properties of hardness or strength.

5. Mitred Joint

A joint, between two members at an angle which bisects the joining angle usually the joining faces are cut at 45° to form a right angle

6. Mortise and Tenon Joint

A joint in which the reduced end (tenon) of one member fits into the corresponding slot (mortise) in another member

7. Tongue and Groove Joint

A joint in which a tongue is provided on edge of one member to fit into a corresponding groove on the other

8. Particle Board

A board manufactured from particles of wood or other lignocelluloses material, for example, flakes, granules, shavings, slivers, splinter agglomerated, formed and pressed together by use of an organic binder together with one or more of the agents, such as heat, pressure, moisture and a catalyst.

9. Plywood

A board formed of three or more layers of veneers cemented or glued together, usually with the grain of adjacent veneers running at right angles to each other.

10. Structural Timber

Timber used in framing and load bearing structures or timber used or intended for use in buildings where strength is the primary consideration.

11. First Class Wood

Individual hard and sound knots shall not be more than 25 mm in diameter and the aggregate area of all the knots shall not exceed one per cent of the area of the piece.

12. Second Class Wood

Individual hard and sound knot shall not be more than 40 mm in diameter and aggregate of all the knots shall not exceed one and half per cent of the area of the piece. Wood shall be generally free from sapwood, but traces of sapwood may be allowed.

13. PANELLING MATERIAL

14. Timber

Timber panels shall be preferably made of timber of larger width. The minimum width and thickness of a panel shall be 150 mm and 15 mm respectively. When made from more than one piece, the pieces shall be joined with a continuous tongue and groove joint, glued together and reinforced with metal dowels.

15. Plywood /Plywood Boards

Plywood boards are formed by gluing and pressing three or more layers of veneers with the grains of adjacent veneers running at right angles to each other. Face veneers may be either decorative on both sides or one side commercial and the other decorative. Plywood shall be of BWP grade or BWR grade as per IS 303. Plywood boards are available in thickness ranging from 3 to 25 mm.

16. Particle Boards

Particle boards shall be of medium density and manufactured from particles of agro waste, wood or lignocelluloses i.e. material blended with adhesive and formed into solid panels under the influence of heat, moisture, pressure etc. The particle boards shall be flat pressed three layered or graded and of Grade-I as per IS 3087.

17. Veneered Particle Boards

Veneered Particle Boards with core of FPT-1 or graded board Grade-I particle board (IS 3087) with commercial or general purpose veneer (Type-1) or decorative veneers on both faces or with decorative veneer on one face and commercial /general purpose veneers on the other Type-2. Face veneers are bonded using adhesives under the influence of heat and pressure.

18. Non-Asbestos Fibre Boards

Fibre boards shall be of medium density cement board reinforced with wood fibre, produced by fiberizing steamed wood under pressure, blended with adhesive and wax and formed into solid panels under controlled conditions of heat and pressure as per IS 14862.

19. Wire Gauze

Wire Gauze which shall generally conform to IS 1568 shall be regularly woven with equally spaced galvanised mild steel wires in both warp and weft directions. The wire gauge shall be properly selvedged by one or more wires in each edge. Width of aperture and dia of wire gauge shall be as specified. Unless otherwise stated, wire gauge of 1.40 mm average aperture width woven with 0.63 mm nominal dia galvanised mild steel wire shall be used. Fly-proof wire gauge (aperture 1.40 mm) is generally provided in Kitchen and dining areas while wire gauge of smaller aperture is used in mosquito proof shutters.

20. Veneered Decorative Plywood

Decorative plywood shall be of two grades namely BWR and MR Decorative Plywood shall conform to IS 1328. Requirements of Veneered decorative plywood shall be as under:

(a) Open slits checks or open joints not more than 150 mm in length and 0.5 mm in width shall be permissible.

(b) The decorative veneered surface shall be free from torn grain, dead knots discolourisation and sapwood.

(c) The decorative veneered surface shall be selected for figure, texture, colour and grain etc.

21. Prelaminated Particle Boards

Prelaminated particle boards are available in two grades namely Grade I and II as per IS 12823.

22. Marine Plywood

Marine plywood shall be generally conforming to IS 710. Selection of timber species for manufacture of plywood shall be as prescribed in IS 710 and as far as possible a single species of timber shall be used.

23. Fire Retardant Plywood

Fire retardant plywood shall generally conform to IS 5509. The plywood to be given fire retardant treatment shall conform to BWR grade of IS 303 to be able to stand pressure impregnation.

24. DOOR, WINDOW AND VENTILATOR FRAMES

Timber for door, window and ventilators frames shall be as specified. Timber shall be sawn in the direction of the grains. All members of a frame shall be of the same species of timber and shall be straight without any warp or bow.

25. PANELLED GLAZED OR PANELLED AND GLAZED SHUTTERS

Paneled or glazed shutters for doors, windows, ventilators and cupboards shall be constructed in the form of timber frame work of stiles and rails with panel inserts of timber, plywood, block board, veneered particle board, fibre board wire gauze or float glass. The shutters may be single or multipaneled.

26. Beading

Beadings in paneled shutter shall be provided where specified in architectural drawings or directed by the Engineer-in-Charge. Each length of beading shall be single piece. Joints at the corners shall be mitred and exposed edges shall be rounded. Beading shall be fixed with headless nails at 75 mm intervals. For external shutters, the beading shall be fixed on the outside face.

27. Machine/Factory made Shutters

Machine made shutters, where specified, shall be procured from an approved factory. For machine made shutters, operations like sawing, planning, making tongue and tenons, cutting grooves, mortises and rebates, drilling holes and pressing of joints shall be done by suitable machines. Machines made shutters shall be brought to the site fully assembled but without any priming coat. Panel inserts of sheet glass and wire gauze may, however, be fixed at site.

28. FLUSH DOOR SHUTTERS

Flush door shutters shall have a solid core and may be of the decorative or non-decorative (Paintable type as per IS 2202 (Part I). Nominal thickness of shutters may be 25, 30 or 35 mm. Thickness and type of shutters shall be as specified.

29. Lipping

Lipping, where specified, shall be provided internally on all edges of the shutters. Lipping shall be done with battens of first class hardwood or as specified of depth not less than 25 mm. For double leaved shutters, depth of the lipping at meeting of stiles shall be not less than 35 mm. Joints shall not be permitted in the lipping.

30. WALL LINING

Specified timber shall be used, and it shall be sawn in the direction of the grains. Sawing shall be truly straight and square. The timber shall be planed smooth and accurate to the full dimensions, rebates, roundings, and mouldings as shown in the drawings made, before assembly. Patchings or plugging of, any kind shall not be permitted except as provided.

31. SHELVES

Shelves and vertical partitions of cupboards shall be of timber planks fibre board, particle board, block board or veneered particle board as specified. Thickness and type of planks or boards shall be as specified. Each shelf shall be a single piece and vertical partitions between two consecutive shelves shall be without any joint. Exposed edges of boards having particle board core shall be sealed with 3 mm thick single piece teak wood strips of width equal to the thickness of board with headless pins.

32. TRELLIS (JAFFRI) WORK

Specified timber /bamboo shall be sawn/cut in the direction of the grains. Sawing / cutting shall be truly straight and square. The timber / bamboo shall be planed smooth and accurate to the full dimensions, rebates, roundings, and mouldings as shown in the drawings made, before assembly. Patching or plugging of any kind shall not be permitted except as provided.

33. Plain Trellis (Jaffri)

This shall consist of wooden strips or laths 35 x 10 mm section unless otherwise specified planed and nailed together at every alternate crossing. The strips shall cross each other at right angle and shall be spaced 35 mm apart, so as to form 35 × 35 mm square opening or as shown in the drawing. These shall be fixed with nails to the frame. To cover the ends of strips, 50 × 12 mm beading shall be fixed to the frame with screws.

34. Expanded Metal

This shall be in the form of rhombus with its opening diagonals 20 × 60 mm and strands 3.25 mm wide and 1.6 mm thick weighing 3.633 kg/m^2 unless otherwise specified.

35. Wire Fabric

This shall conform to IS 4948 and shall have rectangular mesh of 75 × 25 mm size with wires of diameter not less than 5 mm longitudinally and 3.15 mm transversely. Its weight shall be not less than 7.75 kg/m^2 unless otherwise specified.

36. FITTINGS

Fitting shall be of mild steel brass, aluminium or as specified. Some mild steel fittings may have components of cast iron. These shall be well made, reasonably smooth, and free from sharp edges and corners, flaws and other defects. Screw holes shall be counter sunk to suit the head of specified wood screws. These shall be of the following types according to the material used.

a) Mild Steel Fittings: These shall be bright finish black stone enameled or copper oxidized (black finish), nickel chromium plated or as specified.

b) Brass Fittings: These shall be finished bright satin finish or nickel chromium plated or copper oxidized or as specified.

c) Aluminium Fittings: These shall be anodized to natural matt finish or dyed anodic coating not less than grade AC 10 of IS 1868.

37. Butt Hinges

These shall be of the following types according to the material used.

(a) Mild steel butt hinges (Medium).

(b) Cast brass butt hinges light/ordinary or heavy.

(c) Extruded aluminium alloy butt hinges.

38. P.T.M.T (Polytetra Methylene Tetra phthalate) Fittings

P.T.M.T. fitting shall be in different colours like White, Green, Blue, Derby Brown, Mushroom, Black, Gold, Silver & Bronze or any colours agreed by the manufactures and purchaser. P.T.M.T. fittings are suitable for internal doors shutters kitchen, bath w.c. & cabinet etc. These shall not be used in external door and where security is concern.

39. LAMINATED VENEER LUMBER (LVL)

Laminated Veneer Lumber door frames and shutters shall conform to IS 14616.

40. Laminated Veneer Lumber (LVL) Door Shutters

This specification lays down requirements regarding types, sizes, material, construction, workmanship and finish, performance evaluation, sampling, measurements, rates and testing of Laminated Veneer Lumber (LVL) door shutter for use in domestic buildings, offices, schools, hospitals etc. This specification does not cover large size door shutters for industrial and special buildings such as workshops, garages, godowns etc.

41. UPVC Door Frame

UPVC door frame shall be made of PVC material conforming to IS 10151. The door frame shall be made from extruded UPVC section having overall dimensions of 48 x 40 mm or 42 x 50 mm having wall thickness of 2.0 mm $\pm$ 0.2 mm. Corners of the door frame to be joined by M.S. galvanized brackets. Joints mitred and plastic welded. The hinge side vertical outer frames shall be reinforced by galvanized M.S. Tube of size 19 x 19 mm of wall thickness 1 mm $\pm$ 0.1 mm and a tie rod shall be provided at the bottom of the frame. The frame shall be fabricated in factory as per nomenclature of the item and directions of Engineer-in-Charge.

42. PVC DOOR SHUTTERS

The shutters shall be fabricated at factory as per nomenclature of the item and directions of Engineer-in-Charge. Shutter shall be made of PVC material conforming to IS 10151.

43. PVC DOOR FRAME

Solid PVC Door Frames consisting of section 50 x 47 mm shall be fabricated from 5 mm PVC sheet having density of 600 kg./cum. The sheet used may be in plain colour, printed design or prelam veneer shade as approved by the Engineer-in-Charge. The weight per running metre of the door frame including reinforcement should be a minimum of 1.5 kg./sq. meter. The depth of the rebate of door frame shall be 10 mm. Frames shall have smooth surface, without any warping or bending in any member. All the parts of the door frame are to be joined to each other using solvent adhesive conforming to IS 14182. A tolerance of $\pm$ 3 mm shall be permitted in the specified dimension of PVC section in the door frames.

44. PANEL PVC DOOR SHUTTER

Panel PVC Shutters are factory made shutter and shall be brought to site fully assembled. The Solid Panel PVC Door shall be fabricated from 5 mm PVC sheet. The sheets used may be in plain colour, printed design or prelam veneer shade as approved by the Engineer-in-Charge. The shutters shall be fabricated at factory as per nomenclature of the item and directions of the Engineer-in-charge.

45. FIBRE GLASS REINFORCED PLASTIC (FRP) DOOR FRAMES

Door Frames shall be three legged of cross section 90 mm x 45 mm having single rebate of size 32 mm x 15 mm to receive shutter of 30 mm thickness. The frame shall be made of laminate of thickness of 2 mm and shall be filled with wooden blocks of exterior grade MDF or seasoned and treated hard wood inside the laminate in all the three legs of the frame. The frame to be moulded by either hand lay up or resin transfer moulding process. The process shall consist of laying gel coat at 1000 gms./m^2 and laid over with layer of FRP Mat (CSM mat) gel coat and FRP (CSM Mat) are defined in IS 14856. The CSM mat shall be bonded with Isophatholic resin in the ratio not less than 1:2 (One part of Mat to two parts of Isophatholic resin and fillers & additives) by weight. The edge shall be sealed with gel coat and FRP mat to obtain smooth finish. Sufficient roving shall be laid in the corner to have smooth curve while laying the CSM mat.FRP door shall be manufactured as per specifications laid down in IS 14856, nomenclature of items & direction of Engineer-in-Charge.

46. FIBRE GLASS REINFORCED PLASTIC (F.R.P.) SHUTTERS

F.R.P. Shutters shall be manufactured conforming to the specifications as per IS 14856 and nomenclature of item & direction of Engineer-in-Charge.

47. SOLID PVC FOAM PROFILE DOORS

Solid PVC Foam Profile Frame

Solid PVC foam profile frame doors are made from solid PVC foam profiles 60 x 30 mm with integral skin cut to required size. Doors are provided with naturally strong stiffener frame and sandwich paneled to offer sound and heat insulation with pressure laminate/infill panel to provide scratch resistance surface. Supporting bar at bottom side of frame shall be provided for maintaining frame in plumb. The frame shall be fabricated in factory as per nomenclature of the item and directions of the Engineer-in-charge. PVC door frame should have shore hardness more than 70.

48. SOLID PVC FOAM SHUTTERS

Solid PVC foam shutters are made from solid PVC foam profiles with integral skin. Doors are provided with naturally strong stiffener frame and sandwich paneled to offer sound and heat insulation with pressure laminate/infill panel provides scratch resistance surface. Door shutters can be nailed, screwed, drilled, glued, sawn lapped or welded just like wood and characterized by excellent screw holding strength (200 kgf.).

49. FACTORY MADE FIBRE GLASS REINFORCED PLASTIC CHAJJA

F.R.P. chajja shall be 4 mm thick of required colour/size, design and drawing as approved. The chajja shall have smooth gradual slope curvature for easy drainage of water & shall be factory manufactured as per nomenclature of item & directions of Engineer-in-Charge.

50. ALUMINIUM WORK

Bar

Any solid section, other than round, with at least one dimension of 10 mm or more.

51. Rod

Any round solid section with a diameter of 10 mm or greater.

52. Extruded Round Tube

A circular hollow extrusion of uniform wall thickness not subjected to cold drawing.

53. Hollow Section

An extruded shape other than round tube, the cross section of which completely encloses a void or voids

54. Anodized Aluminium

Aluminium with an anodic coating, produced by an electrolytic oxidation process, in which the surface of the

55. Sash

It is a complete window unit whether fixed or open type.

56. Composite Window

Window unit having two or more sashes joined together with one or more coupling members.

57. Centre – Hung Ventilator

A ventilator horizontally pivoted at the centre on both sides. Top half opens inwards and bottom half opens outwards.

58. Aluminium Sections

Aluminium sections used for fixed/open able windows, ventilators, partitions, frame work & doors etc. shall be suitable for use to meet architectural designs to relevant works and shall be subject to approval of the Engineer-in-Charge for technical, structural, functional and visual considerations. The aluminium extruded sections shall conform to IS 733 and IS 1285 for chemical composition and mechanical properties. The stainless steel screws shall be of grade AISI 304. The permissible dimensional tolerances of the extruded sections shall be as per IS 6477 and shall be such as not to impair the proper and smooth functioning/operation and appearance of door and windows.

59. Anodizing

Standard aluminium extrusion sections are manufactured in various sizes and shapes in wide range of solid and hollow profiles with different functional shapes for architectural, structural glazing, curtain walls, doors, window & ventilators and various other purposes. The anodizing of these products is required to be done before the fabrication work by anodizing/electro coating plants which ensures uniform coating in uniform colour and shades. The extrusions are anodized up to 30 micron in different colours.

60. Powder Coating

The thickness of the finished polyester powder coating measured by micron meter shall not be less than 50 micron nor more than 120 micron at any point.

61. Aluminium Sheet

Aluminium Sheets for use as panels shall be 1.25 mm thick aluminium alloy sheet conforming to IS 737. Aluminium alloy sheet for use in general paneling work shall be of types and thickness as specified and conforming to the requirement of IS 737. Aluminium sheets shall be of approved make and manufacturer. Aluminium panel may be prefabricated units manufactured on modular or non-modular dimension.

62. EPDM- GASKETS

The EPDM Gaskets shall be of size and profile as shown in drawings and as called for, to render the glazing, doors, windows, ventilators etc. air and water tight.

63. SEALANT

The sealants of approved grade and colour shall only be used. The silicone for perimeter joints (between Aluminium section and RCC/Stone masonry) shall be of make approved by the Engineer in Charge.

64. Reflective Glass

This is an ordinary float glass with a metallic coat to reduce solar heat. Clear glass transmits most of the sunlight that shines upon it, and most of the solar heat as well; the metallic coated glass i.e. reflective glass has better shading coefficients because they reflect rather than absorb infrared energy. However, most of reflective glazing blocks day light more than solar heat.

65. DOOR, WINDOW, VENTILATOR AND PARTITION FRAMES

Frame Work

The fabrication of the individual door/windows/ventilators etc. shall be done as per the actual sizes of the opening left at site. The frames shall be truly rectangular and flat with regular shape corners fabricated to true right angles. The frames shall be fabricated out of section which have been cut to length, mitered and jointed mechanically using appropriate machines. Mitered joints shall be corner crimped or fixed with self tapping stainless steel screws using extruded aluminium cleats of required length and profile. All aluminium work shall provide for replacing damaged/broken glass panes without having to remove or damage any member of exterior finishing material.

66. DOOR, WINDOWS AND VENTILATOR SHUTTERS

Material, fabrication and dimensions of aluminium doors, windows and ventilators manufactured from extruded aluminium alloy sections of standard sizes and designs complete with fittings, ready for being fixed into the building shall be as per IS 1948.

67. Glass Panes

Glass panes shall weigh at least 7.5 kg/m^2 and shall be free from flaws, specks or bubbles. All panes shall have properly squared corners and straight edges.

68. Frames

Frames shall be square and flat, the corners of the frame being fabricated to a true right angle. Both the fixed and opening frames shall be constructed of sections which have been cut to length, mitered and welded at the corners. Where hollow sections are used with welded joints, argon-arc welding or flash butt welding shall be employed (gas welding or brazing not to be done). Subdividing bars of units shall be tenoned and riveted into the frame.

69. Composite Units

The doors shall be coupled to windows or side-lights by extruded aluminium sections made from aluminium alloy conforming to IS Designation HE9-WP of IS 733.

70. Weather Bar

Where a coupling member is fitted over an external opening shutter, the coupling member should incorporate an integrally extruded weather bar.

71. Finish

Aluminium doors, windows and ventilators may be supplied in either matt, scratch-brush or polished finish. They may, additionally, also be anodized, if so required by the Engineer-in-charge. If colour anodizing is to be done then only approved light-fast shades should be used.

A thick layer of clear transparent lacquer based on methacrylates or cellulose butyrate, shall be applied on aluminium doors, windows and ventilators by the supplier to protect the surface from wet cement during installation. This lacquer coating shall be removed after installation is completed.

72. Glazing

Glazing shall be provided on the outside of the frames. If required, glazing clips may be provided as extra fittings. Four glazing clips may be provided per glass pane, except for door type 8HS21 where the glazing clips shall be six per glass pane. In case of doors, windows and ventilators without horizontal glazing bars the glazing clips shall be spaced according to the slots in the vertical members, otherwise the spacing shall be 30 cm.

73. FITTINGS

a) Stainless Steel Friction Stay

The stainless steel friction stays of make approved by the Engineer-in-Charge shall be used. The SS friction stays shall be of grade AISI-304 and of sizes specified in nomenclature of item.

b) Lockable Handles

The lockable handle shall be of make approved by the Engineer-in-Charge and of required colour to match the colour of powder coated /anodized aluminium window sections.

c) Hydraulic Floor Spring

The hydraulic floor spring shall be heavy duty double action floor spring of make approved by the Engineer-in-Charge suitable for door leaf of weight minimum 100 kg. The top cover plate shall be of stainless steel, flushing with floor finish level.

d) Tubular Handle

The tubular handle bar shall be aluminium polyester powder coated minimum 50 micron to required colour/anodized AC 15. Outer dia of tube shall be 32 mm, tube thickness 3.0 mm and centre to centre length 2115 mm $\pm$ 5 mm.

74. LOUVERS

Aluminium extruded sections (anodized or power coated) are used for providing Louvers in aluminium door, window & partition for ventilation.

75. HERMETICALLY SEALED UNIT

Insulating glass shall be a double glazed unit comprising two sheets of float glass panes separated by a spacer, hermetically sealed using primary and secondary sealants. The design of insulating glass system shall consist of:

(a) Hollow Spacer Bar

The hollow aluminium spacer bar shall be of required size and shape and shall be colour anodized. The spacer bar shall have two lines of perforations in the inner surface.

(b) Desiccant

The desiccant shall be Neftomol 3 A Chemetall or equivalent.

(c) Primary Sealant

The primary sealant shall be thermo plastic solvent free sealing compound based on polysosutylene. The sealant surface shall be free from cavities, depression and other defects.

(d) Secondary Sealant

The secondary sealant in double glazed unit shall be silicone sealant.

76. BRASS LOCK

This should generally conform to I S-2209. The size of the lock shall be denoted by the length of the body towards the face and it shall be 100 mm. the measured length shall not vary more than 3 mm from the specified length. Two keys shall be provided with each lock.

77. The rates are inclusive of GST and all other taxes, Labour Welfare Cess and contractor's profit.

LIST OF BUREAU OF INDIAN STANDARD CODES

Sr. No.	B.I.S. No.	Subject
1	IS 204 (Part I)	Specification for tower bolts (ferrous bolt)
2	IS 204 (Part II)	Specification for tower bolts (non ferrous metals)
3	IS 205	Specification for non ferrous metal butt hinges
4	IS 206	Specification for Tee and strap hinges
5	IS 208	Specification for door handles
6	IS 281	Specification for mild steel door bolts for use with pad locks
7	IS 287	Recommendations for maximum permissible moisture contents of timber used for different purpose
8	IS 303	Specification for plywood for general purposes
9	IS 362	Specification for parliament hinges
10	IS 363	Specification for hasps and stapple
11	IS 401	Code of practice for preservation of timber
12	IS 419	Putty for use on window frames
13	IS 452	Specification for door spring rat tail type
14	IS 453	Specification for double acting spring hinge
15	IS 710	Specifications for Marine Plywood
16	IS 729	Specification for drawer lock, cupboard lock and box locks
17	IS 848	Specification for synthetic resin adhesive for plywood (phenolic and amino plastic)
18	IS 851	Specification for synthetic resin adhesive for const. work (non structural in wood)
19	IS 1003 (Part I)	Specification for timber paneled and glazed shutter Part I (door shutters)
20	IS 1003 (Part II)	Specification for timber paneled and glazed shutter Part II (window and ventilator shutter)
21	IS 1200 Part XIV	Method of measurement of building and civil Engg work glazing.
22	IS 1200 Part XII	Wood work and joinery
23	IS 1328	Specification for veneered decorative plywood
24	IS 1341	Specification for steel butt hinges
25	IS 1378	Specification for oxidized copper finishes
26	IS 1566	Specification for hard drawn steel wire fabric
27	IS 1568	Specification for wire gauge for general purpose
28	IS 1658	Specification for hard drawn steel wire fabric
29	IS 1659	Specification for block boards
30	IS 1868	Specification for anodic coating on aluminium and its alloy
31	IS 2095	Specification for gypsum plaster board
32	IS 2096	Specification for asbestos cement flat sheet.
33	IS 2202 (Pt I)	Specification for wooden flush door shutter, solid core type (plywood face panels)
34	IS 2202 (Part II)	Specification for wooden flush door shutter, solid core type (Particle boards and hard board face panels)
35	IS 2209	Specification for mortice lock (Vertical Type)
36	IS 2380	Method of test for wood particle board and board for lignocelluloses Material
37	IS 2547	Specification for gypsum plaster
38	IS 2681	Specification for non-ferrous metal sliding door bolts use with pad locks
39	IS 3087	Specification for wood particle boards (Medium density) for general purpose
40	IS 3097	Specification for veneered particle board
41	IS 3564	Specification for door closer (hydraulically regulated)
42	IS 3818	Specification for continuous (Piano) hinges

43	IS 4948	Specification for welded steel wire fabric for general use
44	IS 4992	Specification for rebated mortice lock
45	IS 5187	Specification for flush bolts
46	IS 5509	Specification for Fire Retardant Plywood
47	IS 6318	Specification for plastic wire window fasteners
48	IS 7534	Specification for sliding locking bolts for use with pad lock
49	IS 9308 (Part II)	Specification for mechanically extracted coir fibres. (Mattress coir fibres)
50	IS 9308 (Part III)	Specification for mechanically extracted coir fibres. (Decorated coir fibre)
51	IS 12817	Specification for stainless steel Butt Hinges
52	IS 12823	Specification for wood products –Prelaminated particle Boards
53	IS 14616	Specifications for laminated veneer lumber
54	IS 14842	Specification for coir veneer board for general purposes
55	IS 14856	Specification for glass fibre reinforced plastic (FRP) panel type door
56	IS 14900	Specifications for transparent float glass
57	IS 733	Wrought Aluminium and Aluminium Alloys, Bars, Rods and Sections (For General Engineering Purposes) –Specification
58	IS 737	Wrought Aluminium and Aluminium alloy sheet and strip for general engineering purposes –Specification
59	IS 1285	Wrought Aluminium and Aluminium Alloy, Extruded Round Tube and Hollow sections (For General Engineering Purposes) – Specification
60	IS 1868	Anodic coating on Aluminium and its Alloys-Specification
61	IS 1948	Specification for Aluminium Doors, Windows and Ventilators
62	IS 3908	Specification for Aluminium equal leg angles
63	IS 3909	Specification for Aluminium unequal leg angles
64	IS 3965	Dimensions for wrought Aluminium and Aluminium Alloys bars, rods and sections.
65	IS 5523	Method of testing anodic coating on aluminium and its alloys.
66	IS 6012	Measurement of coating thickness by Eddy Current Method
67	IS 6315	Floor springs (Hydraulically regulated) for heavy doors-Specifications
68	IS 6477	Dimensions of extruded hollow section and tolerances
69	IS 12823	Wood products- Pre-laminated particle board --Specifications.
70	IS 14900	Transparent Float glass- Specifications.

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
	A. WOOD WORK					
	DOOR FRAMES, SHUTTERS AND WINDOWS					
12.1	Providing wood work in frames of doors, windows, clerestory windows and other frames, wrought framed and fixed in position with hold fast lugs or with dash fasteners of required dia & length (hold fast lugs or dash fastener shall be paid separately).					
	12.1.1	Second class teak wood	cum	10372	106531	116902
	12.1.2	Sal wood	cum	10372	82408	92780
	12.1.3	Kiln seasoned and chemically treated Hollock wood	cum	10372	49320	59691
12.2	Providing laminated veneer lumber conforming to IS:14616 in factory made frames of doors, windows, clerestory windows and other frames, wrought framed and fixing in position with hold fast lugs or with dash fasteners of required dia & length (hold fast lugs or dash fastener shall be paid separately).		cum	6651	96114	102765
12.3	Providing and fixing wooden moulded beading to door and window frames with iron screws, plugs and priming coat on unexposed surface etc. complete :					
	12.3.1	2nd class teak wood				
		12.3.1.1 50x12 mm	metre	53	74	127
		12.3.2.2 50 x 20 mm	metre	53	120	173
	12.3.2	Kiln seasoned and chemically treated Hollock wood				
		12.3.2.1 50x12 mm	metre	53	39	92
		12.3.2.2 50x20 mm	metre	53	61	114
12.4	Providing wood work in frames of false ceiling, partitions etc. sawn and fixed in position with necessary stainless steel screws etc.					
	12.4.1	Sal wood	cum	4783	82024	86807
	12.4.2	Kiln seasoned and chemically treated Hollock wood	cum	4783	48973	53756
12.5	Extra for additional labour for circular works, such as in frames of fan, light					
	12.5.1	Second class teak wood	cum	1037	10653	11690
	12.5.2	Sal wood	cum	1037	8241	9278
	12.5.3	Kiln seasoned and chemically treated Hollock wood	cum	1037	4943	5980
12.6	Providing 40x5 mm flat iron hold fast 40 cm long including fixing to frame with 10 mm diameter bolts, nuts and wooden plugs and embedding in cement concrete block 30x10x15cm 1:3:6 mix (1 cement : 3 coarse sand : 6 graded stone aggregate 20mm nominal size).		each	50	62	112
12.7	Providing and fixing panelled or panelled and glazed shutters for doors, windows and clerestory windows, including ISI marked M.S. pressed butt hinges bright finished of required size with necessary screws, excluding panelling which will be paid for separately, all complete as per direction of Engineer-in-charge. (Note:- Butt hinges and necessary screws shall be paid separately)					
	12.7.1	Second class teak wood				
		12.7.1.1 35 mm thick shutters	sqm	498	2429	2927
		12.7.1.2 30 mm thick shutters	sqm	498	2096	2594
	12.7.2	Kiln seasoned and chemically treated Hollock wood				
		12.7.2.1 35 mm thick shutters	sqm	498	1194	1692
		12.7.2.2 30 mm thick shutters	sqm	498	1031	1529
	12.7.3	Kiln seasoned selected planks of sheesham wood				
		12.7.3.1 35 mm thick shutters	sqm	498	2018	2516
		12.7.3.2 30 mm thick shutters	sqm	498	1741	2239
12.8	Providing and fixing 35 mm thick factory made laminated veneer lumber door shutter conforming to IS : 14616 including ISI marked M.S. pressed butt hinges bright finished of required size with necessary screws, all complete as per directions of Engineer- in-charge and panelling with panels of : (Note:- Butt hinges and necessary screws shall be paid separately)					

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
	12.8.1	12 mm thick plain grade -1, medium density flat pressed three layer particle board FPT - I or graded wood particle board FPT- I, IS : 3087 marked, bonded with BWP type synthetic resin adhesive as per IS : 848 :	sqm	176	2011	2186
	12.8.2	12 mm thick pre-laminated particle board (decorative lamination on both sides) grade -1, medium density flat pressed, three layer particle board FPT- I or graded wood particle board FPT- I, conforming to IS : 3087, bonded with BWP type synthetic resin adhesive as per IS : 848 and pre-laminated conforming to IS : 12823, Grade 1, Type - II marked :	sqm	176	2244	2420
	12.8.3	12 mm thick one side Pre-laminated particle board (decorative lamination on one side and other sides balancing lamination) grade -1, medium density flat pressed, three layer particle board FPT - I or graded wood particle board FPT-1 conforming to IS : 3087 bonded with BWP type synthetic resin adhesive as per IS : 848 and pre-laminated conforming to IS : 12823, Grade -1, Type II marked :	sqm	176	2491	2667
12.9	Providing and fixing panelling or panelling and glazing in panelled or panelled and glazed shutters for doors, windows and clerestory windows (Area of opening for panel inserts excluding portion inside grooves or rebates to be measured). Panelling for panelled or panelled and glazed shutters 25 mm to 40 mm thick :					
	12.9.1	Second class teak wood	sqm	428	2011	2438
	12.9.2	Kiln seasoned and chemically treated Hollock wood	sqm	428	997	1425
	12.9.3	Ply wood 5 ply, 9 mm thick				
		12.9.3.1 Decorative plywood both side decorative veneer (Type - I) conforming to IS 1328 BWR type	sqm	428	1340	1767
		12.9.3.2 Decorative plywood one side decorative veneer and commercial veneer on other face (Type 1) conforming to IS 1328 BWR Type	sqm	428	1371	1799
	12.9.4	Ply wood 7 ply, 9 mm thick				
		12.9.4.1 Decorative plywood one side decorative veneer and commercial veneer on other face (Type 1) conforming to IS 1328 BWR Type	sqm	428	1497	1925
	12.9.5	Particle Board 12 mm thick				
		12.9.5.1 Plain particle board flat pressed, 3 layer or graded wood particle board medium density Grade I, IS : 3087 marked	sqm	428	455	883
		12.9.5.2 Veneered flat pressed three layer or graded wood particle board with commercial veneering on both sides conforming to IS:3097, grade I	sqm	428	757	1185
		12.9.5.3 Pre-laminated particle board with decorative lamination on one side and balancing lamination on other side, Grade I, Type II IS: 12823 marked	sqm	428	852	1279
		12.9.5.4 Pre-laminated particle board with decorative lamination on both sides, Grade I, Type II, IS:12823 marked	sqm	428	907	1334
	12.9.6	Coir Veneer Board (conforming to IS 14842)				
		12.9.6.1 12 mm thick	sqm	428	1056	1484
	12.9.7	Float glass panes				
		12.9.7.1 4 mm thick glass pane (weight not less than 10kg/sqm).	sqm	604	474	1078
		12.9.7.2 5.0 mm thick glass panes (weight not less than 12.50 kg/sqm).	sqm	604	789	1393
	12.9.8	Fly proof stainless steel grade 304 wire gauge with 0.5 mm dia. wire and 1.4mm wide aperture with matching wood beading	sqm	414	632	1046

Item No.	Description			Unit	Labour Rate	Material Rate	Through Rate
12.10	Providing and fixing glazed shutters for doors, windows and clerestory windows using 4 mm thick float glass panes, including ISI marked M.S. pressed butt hinges bright finished of required size with necessary screws.						
	12.10.1	Second class teak wood					
		12.10.1.1	35 mm thick	sqm	551	3045	3596
		12.10.1.2	30 mm thick	sqm	551	2664	3215
	12.10.2	Kiln seasoned and chemically treated Hollock wood					
		12.10.2.1	35 mm thick	sqm	551	1640	2191
		12.10.2.2	30 mm thick	sqm	551	1453	2004
	12.10.3	Kiln seasoned selected planks of sheesham wood					
		12.10.3.1	35 mm thick	sqm	551	2578	3129
		12.10.3.2	30 mm thick	sqm	551	2261	2812
12.11	Providing and fixing 12 mm thick panelling or panelling and glazing in panelled or panelled and glazed shutters for doors, windows and clerestory windows (area of opening for panel inserts excluding portion inside grooves or rebates to be measured). Panelling for panelled or panelled and glazed shutters 25 mm to 40 mm thick.						
	12.11.1	Marine plywood conforming to IS: 710		sqm	428	1096	1523
	12.11.2	Fire retardant plywood conforming to IS: 5509		sqm	428	1340	1767
12.12	Providing & Fixing decorative high pressure laminated sheet of plain / wood grain in gloss / matt/ suede finish with high density protective surface layer and reverse side of adhesive bonding quality conforming to IS : 2046 Type S, including cost of adhesive of approved quality.						
	12.12.1	1.5 mm thick		sqm	82	555	637
	12.12.2	1.0 mm thick		sqm	82	434	515
12.13	Providing and fixing factory made laminated veneer lumber glazed shutter conforming to IS: 14616, using 4 mm thick float glass panes for doors, windows and clerestory windows, including ISI marked M.S. pressed butt hinges bright finished of required size with necessary screws, all as per directions of Engineer-in-charge (Note:- Butt hinges and necessary screws shall be paid separately)						
	12.13.1	30 mm thick shutters		sqm	177	2114	2291
12.14	Extra for providing heavy sheet float glass panes instead of ordinary float glass in glazed doors, windows and clerestory window shutters. (Area of opening for glass panes excluding portion inside rebate shall be measured)						
	12.14.1	5.0 mm thick instead of 4 mm thick.		sqm	-	260	260
12.15	Extra for providing frosted glass panes 4 mm thick instead of ordinary float glass panes 4 mm thick in doors, windows and clerestory window shutters. (Area of opening for glass panes excluding portion inside rebate shall be measured).			sqm	-	208	208
12.16	Deduct for providing pin headed glass panes instead of ordinary float glass panes weighing 4 mm thick in doors, windows and clerestory windows shutters (Area of opening for glass panes excluding portion inside rebate shall be measured).			sqm	-	6	6
12.17	Extra for providing ISI marked Stainless Steel butt hinges instead of M.S. pressed butt hinges bright finished of required size with necessary screws. (Shutter area to be measured).			sqm	-	115	115
12.18	Deduct for not providing hinges in doors, windows or clerestory window shutters with :						
	12.18.1	Stainless steel butt hinges with stainless steel screws :					
		12.18.1.1	For 2nd class teak wood and other class of wood shutters	sqm	-	168	168
	12.18.2	ISI marked M.S. pressed butt hinges bright finished of required size.					
		12.18.2.1	For 2nd class teak wood and other class of wood shutters	sqm	-	54	54

Item No.	Description			Unit	Labour Rate	Material Rate	Through Rate
12.19	Providing and fixing wire gauge shutters using galvanized M.S. wire gauge of average width of aperture 1.4 mm in both directions with wire of dia 0.63 mm, for doors, windows and clerestory windows with hinges and necessary screws :						
	12.19.1	35 mm thick shutters					
		12.19.1.1	with ISI marked M.S. pressed butt hinges bright finished of required size				
			12.19.1.1.1 Second class teak wood	sqm	642	2713	3355
			12.19.1.1.2 Kiln seasoned and chemically treated Hollock wood	sqm	642	1469	2110
			12.19.1.1.3 Kiln seasoned selected class of sheesham wood	sqm	642	2299	2941
		12.19.1.2	With ISI marked stainless steel butt hinges of required size				
			12.19.1.2.1 Second class teak wood	sqm	642	2828	3470
			12.19.1.2.2 Kiln seasoned and chemically treated Hollock wood	sqm	642	1583	2225
			12.19.1.2.3 Kiln seasoned selected class of sheesham wood	sqm	642	2414	3056
	12.19.2	30 mm thick shutters					
		12.19.2.1	with ISI marked M.S. pressed butt hinges bright				
			12.19.2.1.1 Second class teak wood	sqm	592	2361	2952
			12.19.2.1.2 Kiln seasoned and chemically treated Hollock wood	sqm	592	1296	1887
			12.19.2.1.3 Kiln seasoned selected class of sheesham wood	sqm	592	2006	2598
		12.19.2.2	With ISI marked stainless steel butt hinges of				
			12.19.2.2.1 Second class teak wood	sqm	592	2476	3067
			12.19.2.2.2 Kiln seasoned and chemically treated Hollock wood	sqm	592	1411	2002
			12.19.2.2.3 Kiln seasoned selected class of sheesham wood	sqm	592	2121	2713
12.20	Providing and fixing wire gauge laminated veneer lumber shutters conforming to IS : 14616, using galvanised wire gauge with average width of aperture 1.4 mm in both directions with wire of dia 0.63 mm as per IS :1568, for doors, windows and clerestory windows, including ISI marked M.S. pressed butt hinges bright finished of required size with necessary screws, as per directions of Engineer-in-charge: (Note:- Butt hinges and necessary screws shall be paid separately)						
	12.20.1	35 mm thick shutters		sqm	176	2114	2290
	12.20.2	30 mm thick shutters		sqm	176	1868	2044
12.21	Providing and fixing factory made shutters of Pre-laminated particle board flat pressed three layer or graded wood particle board with one side decorative finish and other side balancing lamination conforming to IS: 12823 Grade I Type II, of approved design, and edges sealed with water resistant paint and lipped with aluminium 'U' type edge beading all- round the shutter, including fixing with angle cleat, grip strip, cadmium plated steel screws, including fixing of aluminium hinges 100x63x4 mm etc. complete as per architectural drawing and direction of Engineer-in-Charge (Cost of 'U' beading and hinges will be paid separately).						
	12.21.1	25 mm thick		sqm	95	1221	1315
12.22	Providing and fixing plain lining with necessary screws/nuts & bolts/ nails, including a coat of approved primer on one face, and fixed on wooden /steel frame work, complete as per direction of Engineer-in- charge (Frame work shall be paid separately).						
	12.22.1	12mm thick commercial ply conforming to IS : 1328 BWR type		sqm	114	726	840
12.23	Kail wood planking planed on both sides, rebated and fixed in position including nails and screws etc.						

Item No.	Description			Unit	Labour Rate	Material Rate	Through Rate
	12.23.1	50 mm thick					
		12.23.1.1	Plaining on both sides	sqm	274	2194	2469
		12.23.1.2	Plaining on one side (deduct 50% labour)	sqm	137	2194	2332
	12.23.2	30 mm thick					
		12.23.2.1	Plaining on both sides	sqm	247	1350	1597
		12.23.2.2	Plaining on one side (deduct 50% labour)	sqm	123	1350	1474
	12.23.3	25 mm thick					
		12.23.3.1	Plaining on both sides	sqm	239	1097	1336
		12.23.3.2	Plaining on one side (deduct 50% labour)	sqm	119	1097	1216
	12.23.4	20 mm thick					
		12.23.4.1	Plaining on both sides	sqm	230	844	1074
		12.23.4.2	Plaining on one side (deduct 50% labour)	sqm	115	844	959
	12.23.5	12.5 mm thick					
		12.23.5.1	Plaining on both sides	sqm	220	540	761
		12.23.5.2	Plaining on one side (deduct 50% labour)	sqm	110	540	650
12.24	Planking of commercial hard wood, such as Hollock, champ, chikrassy and chaplash etc., (Non-coniferous timber other than teak conforming to I.S. specification no.1003 kiln-seasoned) planed on both sides, rebated and fixed in position, including nails and screws, etc:-						
	12.24.1	50 mm thick		sqm	274	2954	3228
	12.24.2	45 mm thick		sqm	267	2659	2926
	12.24.3	40 mm thick		sqm	260	2363	2623
	12.24.4	30 mm thick		sqm	246	1772	2018
	12.24.5	25 mm thick		sqm	239	1477	1716
	12.24.6	20 mm thick		sqm	231	1182	1413
	12.24.7	12.5 mm thick		sqm	221	738	959
	CUPBOARD SHUTTERS						
12.25	Providing and fixing 25 mm thick shutters for cup board etc. :						
	12.25.1	Panelled or panelled & glazed shutters :					
		12.25.1.1	Second class teak wood including ISI marked anodised aluminium butt hinges with necessary screws	sqm	682	2238	2920
		12.25.1.2	Second class teak wood including ISI marked nickel plated bright finished M.S. piano hinges with necessary screws	sqm	682	2376	3058
	12.25.2	Glazed shutters :					
		12.25.2.1	Second class teak wood including ISI marked anodized aluminium butt hinges with necessary screws	sqm	551	2358	2909
		12.25.2.2	Second class teak wood including ISI marked nickel plated bright finished M.S. piano hinges with necessary screws	sqm	551	2395	2947
12.26	Providing and fixing flat pressed 3 layer particle board medium density exterior grade (Grade I) or graded wood particle board IS : 3087 marked, to frame, backing or studding with screws etc. complete (Frames, backing or studding to be paid separately):						
	12.26.1	12 mm thick		sqm	95	398	492
	12.26.2	18 mm thick		sqm	95	660	755
12.27	Providing and fixing Pre-laminated flat pressed 3 layer (medium density) particle board or graded wood particle board IS : 3087 marked, with one side decorative and other side balancing lamination Grade I, Type II exterior grade IS : 12823 marked, in shelves with screws and fittings wherever required, edges to be painted with polyurethane primer (fittings to be paid separately).						
	12.27.1	18 mm thick		sqm	145	888	1033

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
	12.27.2 25 mm thick	sqm	145	1229	1374
12.28	Providing and fixing wooden moulded corner beading of triangular shape to the junction of panelling etc. with iron screws, plugs and priming coat on unexposed surface etc. complete 2nd class teak wood.				
	12.28.1 50x50 mm (base and height)	metre	96	143	240
12.29	Providing and fixing 2nd class teak wood lipping/ moulded beading or taj beading of size 18X5 mm fixed with wooden adhesive of approved quality and screws/nails on the edges of the Pre-laminated particle board as per direction of Engineer-in-charge.	metre	18	36	54
12.30	Providing and fixing cup board shutters 25 mm thick, with Pre-laminated flat pressed three layer particle board or graded wood particle board IS: 12823 marked, exterior grade (Grade I Type II), having one side decorative lamination and other side balancing lamination, including IInd class teak wood lipping of 25 mm wide x12 mm thick with necessary screws and bright finished stainless steel piano hinges, complete as per direction of the Engineer-in-Charge	sqm	300	1316	1616
12.31	Providing and fixing cup board shutters with 25 mm thick veneered particle board IS : 3097 marked, exterior grade (Grade I), of approved make, including IInd class teak wood lipping of 25 mm wide x 12 mm thick with necessary screws and bright finished stainless steel piano hinges, complete as per direction of Engineer-in-Charge.				
	12.31.1 With decorative veneering on one side and commercial veneering on other side	sqm	300	1043	1343
	12.31.2 With non decorative veneering on both sides	sqm	300	946	1246
12.32	Providing and fixing wire gauge shutters using stainless steel grade 304 wire gauge with wire of dia 0.5 mm and average width of aperture 1.4 mm in both directions for doors, windows and clerestory windows with necessary screws :				
	12.32.1 35 mm thick shutters				
	12.32.1.1 with ISi marked M.S. pressed butt hinges bright finished of required size				
	12.32.1.1.1 Second class teak wood	sqm	643	2840	3483
	12.32.1.1.2 Kiln seasoned and chemically treated Hollock wood	sqm	643	1596	2238
	12.32.1.1.3 Kiln seasoned selected class of sheesham wood	sqm	643	2426	3069
	12.32.1.2 With ISI marked stainless steel butt hinges of required size				
	12.32.1.2.1 Second class teak wood	sqm	643	2955	3598
	12.32.1.2.2 Kiln seasoned and chemically treated Hollock wood	sqm	643	1711	2353
	12.32.1.2.3 Kiln seasoned selected class of sheesham wood	sqm	643	2541	3184
	12.32.2 30 mm thick shutters				
	12.32.2.1 with ISi marked M.S. pressed butt hinges bright finished of required size				
	12.32.2.1.1 Second class teak wood	sqm	592	2488	3080
	12.32.2.1.2 Kiln seasoned and chemically treated Hollock wood	sqm	592	1423	2015
	12.32.2.1.3 Kiln seasoned selected class of sheesham wood	sqm	592	2134	2725
	12.32.2.2 With ISI marked stainless steel butt hinges of required size				
	12.32.2.2.1 Second class teak wood	sqm	592	2603	3194
	12.32.2.2.2 Kiln seasoned and chemically treated Hollock wood	sqm	592	1538	2129
	12.32.2.2.3 Kiln seasoned selected class of sheesham wood	sqm	592	2248	2840

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
12.33	Providing and fixing fly proof stainless steel grade 304 wire gauge, to windows and clerestory windows using wire gauge with average width of aperture 1.4 mm in both directions with wire of dia. 0.50 mm all complete.					
	12.33.1	With 2nd class teak wood beading 62X19 mm	sqm	150	972	1121
	12.33.2	With 12 mm mild steel U beading	sqm	150	630	780
12.34	Providing and fixing powder coated telescopic drawer channels 300 mm long with necessary screws etc. complete as per directions of Engineer- in-charge.		each	8	300	309
12.35	Providing and fixing sliding arrangement in racks/ cupboards/cabinets shutter by with stainless steel rollers to run inside C or E aluminium channel section (The payment of C or E channel shall be made separately)		each	1	12	13
	FLUSH DOOR SHUTTERS					
12.36	Providing and fixing ISI marked flush door shutters conforming to IS : 2202 (Part I) decorative type, core of block board construction with frame of 1st class hard wood and well matched teak 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters.					
	12.36.1	35 mm thick including ISi marked Stainless Steel butt hinges with necessary screws	sqm	178	2493	2671
	12.36.2	30 mm thick including ISi marked Stainless Steel butt hinges with necessary screws	sqm	178	2233	2412
	12.36.3	25 mm thick (for cupboard) including ISI marked nickel plated bright finished M.S. Piano hinges IS : 3818 marked with necessary screws	sqm	178	1957	2136
12.37	Providing and fixing ISI marked flush door shutters conforming to IS : 2202 (Part I) non-decorative type, core of block board construction with frame of 1st class hard wood and well matched commercial 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters:					
	12.37.1	35 mm thick including ISi marked Stainless Steel butt hinges with necessary screws	sqm	178	1389	1568
	12.37.2	30 mm thick including ISi marked Stainless Steel butt hinges with necessary screws	sqm	178	1325	1503
	12.37.3	25 mm thick (for cupboard) including ISI marked nickel plated bright finished M.S. piano hinges with necessary screws	sqm	178	1295	1474
12.38	Extra for Providing and fixing flush doors with decorative veneering instead of non decorative ISI marked flush door shutters conforming to IS: 2202 (Part I)					
	12.38.1	On one side only	sqm	-	428	428
12.39	Extra for providing lipping with 2nd class teak wood battens 25 mm minimum depth on all edges of flush door shutters (over all area of door shutter to be measured).		sqm	-	390	390
12.40	Extra for providing vision panel not exceeding 0.1 sqm in all type of flush doors (cost of glass excluded) (overall area of door shutter to be measured):					
	12.40.1	Rectangular or square	sqm	-	169	169
	12.40.2	Circular	sqm	-	175	175
12.41	Extra if louvers (not exceeding 0.2 sqm) are provided in flush door shutters (overall area of door shutters to be measured).					
	12.41.1	Decorative type door	sqm	-	344	344
12.42	Extra for cutting rebate in flush door shutters (Total area of the shutter to be measured).		sqm	-	91	91
12.43	Providing and fixing aluminium U beading of required size to Pre-laminated/flush door shutter, including fixing etc. complete as per direction of Engineer-in-charge.		kg	10	358	369
	PELMETS AND CURTAIN RODS					

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
12.44	Providing and fixing 18 mm thick, 150 mm wide pelmet of flat pressed 3 layer or graded wood particle board medium density grade I, IS : 3087 marked, including top cover of 6 mm commercial ply wood conforming to IS: 303 BWR grade, nickel plated M.S. pipe 20 mm dia (heavy type) curtain rod with nickel plated brackets, including fixing with 25x3 mm M.S. flat 10 cm long fixed to pelmet with Hollock wood cleats of size 100 mm x 40 mm x 40 mm on both inner side of pelmet and rawl plugs 75 mm long etc. all complete.	metre	92	282	374
12.45	Providing and fixing 18 mm thick, 150 mm wide pelmet of coir veneer board ISI marked IS : 14842, including top cover of 6 mm coir veneer board, nickel plated M.S. Pipe 20 mm dia. (heavy type) curtain rod with nickel plated brackets, including fixing with 25x3 mm M.S. Flat 10 cm long fixed to pelmet with Hollock wood cleats of size 100 mm x 40 mm x 40 mm on both inner side of pelmet and rawl plugs 75 mm long etc. all complete.	metre	92	405	497
12.46	Extra for using veneered particle board conforming to IS 3097 Grade I, in item of pelmet 18mm thick 150mm wide.				
12.46.1	Non decorative veneer on both sides	metre	-	32	32
12.46.2	Particle board with decorative veneering on both sides	metre	-	104	104
12.47	Providing and fixing teak wood lipping of size 25x3 mm in pelmet.	metre	18	18	36
12.48	Providing and fixing chromium plated brass curtain rod having wall thickness of 1.25mm with two chromium plated brass brackets fixed with C.P. brass screws and PVC sleeves etc., wherever necessary complete :				
12.48.1	12 mm dia	metre	2	254	256
12.48.2	20 mm dia	metre	2	352	354
12.48.3	25 mm dia	metre	2	456	458
12.49	Providing and fixing nickel plated M.S. pipe curtain rods with nickel plated brackets :				
12.49.1	20 mm dia (heavy type)	metre	3	138	140
12.49.2	25 mm dia (heavy type)	metre	3	144	147
	WINDOW GRILLS, METAL MESH, WIRE GAUGE ETC.				
12.50	Providing and fixing M.S. grills of required pattern in frames of windows etc. with M.S. flats, square or round bars etc. including priming coat with approved steel primer all complete.				
12.50.1	Fixed to steel windows by welding	kg	31	72	102
12.50.2	Fixed to openings /wooden frames with rawl plugs screws etc.	kg	46	72	118
12.51	Providing and fixing expanded metal 20x60 mm strands 3.25 mm wide and 1.6mm thick for windows etc. including 62 x19 mm beading of IInd class teak wood and priming coat with approved steel primer all complete.	sqm	170	807	977
12.52	Providing and fixing hard drawn steel wire fabric 75x25 mm mesh of weight not less than 7.75 Kg per sqm to window frames etc. including 62x19 mm beading of second class teak wood and priming coat with approved steel primer all complete.	sqm	165	1021	1186
12.53	Providing and fixing fly proof galvanized M.S. wire gauge to windows and clerestory windows using wire gauge with average width of aperture 1.4 mm in both directions with wire of dia 0.63 mm all complete.				
12.53.1	With 2nd class teak wood beading 62X19 mm	sqm	150	758	908
12.53.2	With 12 mm mild steel U beading	sqm	150	416	566
12.54	Deduct for fixing 75x25 mm hard drawn steel wire fabric of weight not less than 7.75 Kg per sqm in panelled and glazed door and window shutter instead of glass sheet 4 mm thick.	sqm	-	169	169
	BRIGHT FINISHED M.S. FITTINGS				
12.55	Providing and fixing ISI marked M.S. pressed butt hinges bright finished with necessary screws etc. complete :				
12.55.1	125x65x2.12 mm	each	11	26	36
12.55.2	100x58x1.90 mm	each	11	17	28
12.55.3	75x47x1.70 mm	each	11	11	22
12.55.4	50x37x1.50 mm	each	4	8	12

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
12.56	Providing and fixing ISI marked, IS : 1341, M.S. heavy weight bright finished butt hinges with necessary screws etc. complete :					
	12.56.1	125x90x4.00 mm	each	11	35	46
	12.56.2	100x75x3.50 mm	each	11	27	38
	12.56.3	75x60x3.10 mm	each	11	16	27
	12.56.4	50x40x2.50 mm	each	4	12	16
12.57	Providing M.S. Piano hinges ISI marked IS : 3818 finished with nickel plating and fixing with necessary screws etc., complete.					
	12.57.1	Overall width 35 mm	metre	109	71	180
	12.57.2	Overall width 50 mm	metre	109	66	174
	12.57.3	Overall width 65 mm	metre	109	81	190
12.58	Providing and fixing bright finished brass casement window fastener with necessary screws etc. complete.		each	5	64	69
12.59	Providing and fixing bright finished brass casement stays (straight peg type) with necessary screws etc. complete :					
	12.59.1	300 mm weighing not less than 330 gms	each	5	171	176
	12.59.2	250 mm weighing not less than 280 gms	each	5	135	140
	12.59.3	200 mm weighing not less than 240 gms	each	5	129	134
12.60	Providing and fixing bright finished brass hasp and staple (safety type) with necessary screws etc. complete :					
	12.60.1	150 mm	each	4	107	111
	12.60.2	115 mm	each	4	96	100
	12.60.3	90 mm	each	4	83	87
	COPPER OXIDISED MILD STEEL FITTINGS (COPPER OXIDISED AS PER IS: 1378)					
12.61	Providing and fixing ISI marked oxidised M.S. pressed butt hinges with necessary screws etc. complete.					
	12.61.1	125x65x2.12 mm	each	11	25	36
	12.61.2	100x58x1.90 mm	each	11	18	29
	12.61.3	75x47x1.70 mm	each	11	12	23
	12.61.4	50x37x1.50 mm	each	4	9	12
12.62	Providing and fixing ISI marked oxidised M.S. pressed Parliamentary hinges with necessary screws etc. complete :					
	12.62.1	150x125x27x2.80 mm	each	10	50	60
	12.62.2	125x125x27x2.80 mm	each	10	47	57
	12.62.3	100x125x27x2.80 mm	each	10	37	47
	12.62.4	75x100x20x2.24 mm	each	10	30	39
12.63	Providing and fixing ISI marked oxidised M.S. single acting spring hinges with necessary screws etc. complete :					
	12.63.1	150 mm	each	24	187	211
	12.63.2	125 mm	each	24	161	185
	12.63.3	100 mm	each	24	134	158
12.64	Providing and fixing oxidised M.S. double acting spring hinges with necessary screws etc. complete.					
	12.64.1	150 mm	each	24	212	236
	12.64.2	125 mm	each	28	183	212
	12.64.3	100 mm	each	24	160	184
12.65	Providing and fixing ISI marked oxidised M.S. sliding door bolts with nuts and screws etc. complete :					
	12.65.1	300x16 mm	each	12	155	167
	12.65.2	250x16 mm	each	12	142	154
12.66	Providing and fixing ISI marked oxidised M.S. tower bolt black finish, (Barrel type) with necessary screws etc. complete :					
	12.66.1	250x10 mm	each	5	63	67
	12.66.2	200x10 mm	each	5	49	54
	12.66.3	150x10 mm	each	5	42	46

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
	12.66.4	100x10 mm	each	4	30	34
12.67	Providing and fixing ISI marked 85x42 mm oxidised M.S. pull bolt lock conforming to IS : 7534 with necessary screws bolts, nut and washers etc. complete.		each	12	78	90
12.68	Providing and fixing ISI marked oxidised M.S. door latches conforming to IS:5930 with screws etc. complete :					
	12.68.1	300x20x6 mm	each	6	68	74
	12.68.2	250x20x6 mm	each	6	55	61
12.69	Providing and fixing ISI marked oxidised M.S. handles conforming to IS:4992 with necessary screws etc. complete :					
	12.69.1	125 mm	each	3	28	31
	12.69.2	100 mm	each	3	21	24
	12.69.3	75 mm	each	3	18	20
12.70	Providing and fixing oxidised M.S. hasp and staple (safety type) conforming to IS : 363 with necessary screws etc. complete :					
	12.70.1	150 mm	each	4	20	24
	12.70.2	115 mm	each	4	17	21
	12.70.3	90 mm	each	4	14	17
12.71	Providing and fixing oxidised M.S. casement stays (straight peg type) with necessary screws etc. complete.					
	12.71.1	300 mm weighing not less than 200 gms	each	5	48	53
	12.71.2	250 mm weighing not less than 150 gms	each	5	41	46
	12.71.3	200 mm weighing not less than 120 gms	each	5	34	39
12.72	Providing and fixing oxidised M.S. Safety chain with necessary fixtures for doors, (weighting not less than 450 gms)		each	5	77	82
	STAINLESS STEEL FITTINGS					
12.73	Providing and fixing IS : 12817 marked stainless steel butt hinges with stainless steel screws etc. complete :					
	12.73.1	125x64x1.90 mm	each	11	63	74
	12.73.2	100X58X1.90 mm	each	11	51	61
	12.73.3	75x47x1.80 mm	each	11	32	43
	12.73.4	50x37x1.50 mm	each	4	23	27
12.74	Providing and fixing IS : 12817 marked stainless steel butt hinges (heavy weight) with stainless steel screws etc. complete :					
	12.74.1	125x64x2.50 mm	each	11	74	85
	12.74.2	100x60x2.50 mm	each	11	53	64
	12.74.3	75x50x2.50 mm	each	11	38	49
12.75	Providing and fixing bright /matt finished Stainless Steel handles of approved quality & make with necessary screws etc all complete.					
	12.75.1	125 mm	each	3	89	92
	12.75.2	100mm	each	3	65	68
	12.75.3	75 mm	each	3	39	42
	BRASS FITTINGS					
12.76	Providing and fixing bright finished brass butt hinges with necessary screws etc. complete :					
	12.76.1	125x85x5.5 mm (heavy type)	each	9	199	208
	12.76.2	125x70x4 mm (ordinary type)	each	9	129	139
	12.76.3	100x85x5.5 mm (heavy type)	each	9	147	157
	12.76.4	100x70x4 mm (ordinary type)	each	9	99	108
	12.76.5	75x65x4 mm (heavy type)	each	9	120	129
	12.76.6	75x40x2.5 mm (ordinary type)	each	9	61	70
	12.76.7	50x40x2.5 mm (ordinary type)	each	4	25	29
12.77	Providing and fixing bright finished brass parliamentary hinges with necessary screws etc. complete :					
	12.77.1	150x125x27x5 mm	each	10	357	367

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
	12.77.2	125x125x27x5 mm	each	10	317	327
	12.77.3	100x125x27x5 mm	each	10	289	299
	12.77.4	75x100x20x3.2 mm	each	10	254	264
12.78	Providing and fixing bright finished brass tower bolts (barrel type) with necessary screws etc. complete :					
	12.78.1	250x10 mm	each	5	352	357
	12.78.2	200x10 mm	each	5	281	286
	12.78.3	150x10 mm	each	5	215	220
	12.78.4	100x10 mm	each	5	145	150
12.79	Providing and fixing bright finished brass door latch with necessary screws etc. complete :					
	12.79.1	300x16x5 mm	each	6	252	258
	12.79.2	250x16x5 mm	each	6	239	245
12.80	Providing and fixing bright finished brass 100 mm mortice latch and lock with 6 levers and a pair of lever handles of approved quality with necessary screws etc. complete.		each	87	519	606
12.81	Providing and fixing bright finished brass 100 mm mortice latch with one dead bolt and a pair of lever handles of approved quality with necessary screws etc. complete.		each	87	403	489
12.82	Providing and fixing bright finished brass night latch of approved quality including necessary screws etc. complete.		each	87	792	879
12.83	Providing and fixing special quality bright finished brass cupboard or ward robe locks with four levers of approved quality including necessary screws etc. complete.					
	12.83.1	40 mm	each	87	71	158
	12.83.2	50 mm	each	87	110	197
	12.83.3	65 mm	each	87	117	204
	12.83.4	75 mm	each	87	136	223
12.84	Providing and fixing 50 mm bright finished brass cup board or wardrobe knob of approved quality with necessary screws.		each	7	47	54
12.85	Providing and fixing bright finished brass handles with screws etc. complete:					
	12.85.1	125 mm	each	3	192	195
	12.85.2	100 mm	each	3	178	181
	12.85.3	75 mm	each	3	139	142
12.86	Providing and fixing bright finished brass hanging type floor door stopper with necessary screws, etc. complete.		each	1	100	102
12.87	Providing and fixing magnetic catcher of approved quality in cupboard / ward robe shutters, including fixing with necessary screws etc. complete.					
	12.87.1	Triple strip vertical type	each	3	31	34
	12.87.2	Double strip (horizontal type)	each	3	23	26
	HYDRAULIC DOOR CLOSERS					
12.88	Providing and fixing aluminium die cast body tubular type universal hydraulic door closer (having brand logo with ISI, IS : 3564, embossed on the body, door weight up to 35 kg and door width up to 700 mm), with necessary accessories and screws etc. complete.		each	47	885	932
12.89	Providing and fixing aluminium extruded section body tubular type universal hydraulic door closer (having brand logo with ISI, IS : 3564, embossed on the body, door weight up to 36 kg to 80 kg and door width from 701 mm to 1000 mm), with double speed adjustment with necessary accessories and screws etc. complete.		each	47	738	785
	CHROMIUM PLATED BRASS FITTINGS					
12.90	Providing and fixing chromium plated brass 100 mm mortice latch and lock with 6 levers and a pair of lever handles of approved quality with necessary screws etc. complete.		each	87	610	697
12.91	Providing and fixing chromium plated brass night latch of approved quality including necessary screws etc. complete.		each	87	649	736

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
12.92	Providing and fixing special quality chromium plated brass cupboard locks with six levers of approved quality including necessary screws etc. complete.				
12.92.1	Size 40 mm	each	87	78	165
12.92.2	Size 50 mm	each	87	91	178
12.92.3	Size 65 mm	each	87	123	210
12.92.4	Size 75 mm	each	87	156	243
12.93	Providing and fixing chromium plated brass 50 mm cupboard or wardrobe knobs with nuts complete.	each	7	104	111
12.94	Providing and fixing chromium plated brass handles with necessary screws etc. complete:				
12.94.1	125 mm	each	3	213	216
12.94.2	100 mm	each	3	187	190
12.94.3	75 mm	each	3	168	171
12.95	Providing and fixing chromium plated brass casement window fastener with necessary screws etc. complete.	each	5	126	131
12.96	Providing and fixing chromium plated brass casement stays (straight peg type) with necessary screws etc. complete :				
12.96.1	300 mm weighing not less than 330 gms	each	5	191	196
12.96.2	250 mm weighing not less than 280 gms	each	5	165	170
12.96.3	200 mm weighing not less than 240 gms	each	5	139	144
	ANODISED ALUMINIUM FITTINGS (ALL FITTINGS SHALL BE ISI MARKED)				
12.97	Providing and fixing ISI marked aluminium butt hinges anodised (anodic coating not less than grade AC 10 as per IS: 1868) transparent or dyed to required colour or shade with necessary screws etc. complete:				
12.97.1	125x75x4 mm	each	11	112	123
12.97.2	125x63x4 mm	each	9	90	100
12.97.3	100x75x4 mm	each	9	81	91
12.97.4	100x63x4 mm	each	9	72	82
12.97.5	100x63x3.2 mm	each	9	65	75
12.97.6	75x63x4 mm	each	9	55	64
12.97.7	75x63x3.2 mm	each	9	48	57
12.97.8	75x45x3.2 mm	each	9	44	53
	Note :- Aluminium hinges shall not be used in wooden shutters, stainless steel hinges shall be preferred.				
12.98	Providing and fixing aluminium sliding door bolts, ISI marked anodised (anodic coating not less than grade AC 10 as per IS : 1868), transparent or dyed to required colour or shade, with nuts and screws etc. complete :				
12.98.1	300x16 mm	each	24	201	225
12.98.2	250x16 mm	each	24	176	200
12.99	Providing and fixing aluminium tower bolts, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade, with necessary screws etc. complete :				
12.99.1	300x10 mm	each	6	101	107
12.99.2	250x10 mm	each	6	88	94
12.99.3	200x10 mm	each	6	75	81
12.99.4	150x10 mm	each	4	65	69
12.99.5	100x10 mm	each	4	48	52
12.100	Providing and fixing aluminium pull bolt lock, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour and shade, with necessary screws bolts, nut and washers etc. complete.	each	12	60	72
12.101	Providing and fixing 50 cm long aluminium kicking plate of size 100x3.15 mm, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade, with necessary screws etc. complete.	each	6	194	200

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
12.102	Providing and fixing aluminium handles, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade, with necessary screws etc. complete :				
12.102.1	125 mm	each	3	52	55
12.102.2	100 mm	each	3	45	48
12.102.3	75 mm	each	3	38	41
12.103	Providing and fixing aluminium hanging floor door stopper, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour and shade, with necessary screws etc. complete.				
12.103.1	Single rubber stopper	each	1	30	31
12.103.2	Twin rubber stopper	each	1	57	58
12.104	Providing and fixing aluminium casement stays, ISI marked, anodised transparent or dyed to required colour and shade or powder coated or polyester powder coated, with necessary screws etc. complete.				
12.104.1	Anodized (AC-10) Aluminium	each	5	51	56
12.104.2	Anodized (AC-15) Aluminium	each	3	59	62
12.104.3	Powder coated minimum thickness 50 micron aluminium	each	3	63	66
12.104.4	Polyester powder coated minimum thickness 50 micron	each	3	62	65
12.105	Providing and fixing bright finished brass 100 mm mortice latch and lock, ISI marked, with six levers and a pair of anodised (anodic coating not less than grade AC 10 as per IS : 1868) aluminium lever handles of approved quality with necessary screws etc. complete.	each	87	552	639
12.106	Providing and fixing aluminium tee channels (heavy duty) with rollers & stop end in pelmets as curtain rod.	metre	2	130	132
12.107	Providing Aluminium Jali of thickness 7mm thick with openings - 75mm X 75mm of including anodizing and fixing in frame with cost of screws etc.	sqm	97	1956	2053
12.108	Providing fixing aluminium round shape handle of outer dia 100mm with screws etc. complete.				
12.108.1	Anodized (AC-15) Aluminium	each	3	71	74
12.108.2	Powder coated minimum thickness 50 micron	each	3	75	78
12.108.3	Polyester powder coated minimum thickness 50 micron	each	3	80	83
	PTMT (Polytetra Methylene Terephthalate) FITTINGS				
12.109	Providing and fixing PTMT handles with necessary screws etc. complete.				
12.109.1	125x34x24 mm weighing not less than 23 gms	each	3	33	36
12.109.2	150x34x24 mm weighing not less than 26 gms	each	3	33	36
12.110	Providing and fixing PTMT Butt hinges with necessary screws etc. complete.				
12.110.1	75x60x10 mm fitted with 5.5 mm dia M.S. Bright Bar Rod weighing not less than 34 gms	each	9	46	55
12.110.2	100x75x10 mm fitted with 5.5 mm dia MS Bright Bar Rod weighing not less than 53 gms	each	9	62	71
12.111	Providing and fixing PTMT Tower Bolts with 12 mm one piece rod inside and necessary screws etc., complete.				
12.111.1	152x42x18 mm weighing not less than 60 gms	each	4	66	70
12.111.2	202x42x18 mm weighing not less than 78 gms	each	5	92	97
12.112	Providing and fixing PTMT door catcher of length 72 mm and dia. of 42 mm with suitable washers weighing not less than 33 gms	each	1	32	34
12.113	Providing and fixing wooden handrail of required shape and design, with necessary screws, including labour, for rounding, vertical and horizontal bends and curves complete fixed in position.				
12.113.1	Deodar Wood	cum	20672	172887	193559
12.113.2	commercial hard wood, such as Hollock, champ, chikrassy and chaplash, etc., (Non- coniferous timber other than teak, conforming to I.S.specification no.1003,kiln seasoned)	cum	20672	60161	80833
12.113.3	Teak wood	cum	20672	133175	153847

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
12.114	Providing and fixing of roller blinds on windows complete with material and labour complete with push up & down arrangement as per approved design / colour and Engineer-in-charge.	sqm	-	2337	2337
	WOODEN JAFFERIES				
12.115	Providing and fixing plain Jaffri of 35x10 mm laths placed 35 mm apart (frames to be paid separately), including fixing 50x12 mm beading complete with :				
	12.115.1 Second class teak wood	sqm	470	1496	1966
12.116	Providing and fixing Bamboo Jaffri/ fencing consisting of superior quality 25mm dia (Average) half cut bamboo placed vertically and fixed together with three numbers horizontal running members of Hollock wood in scantling of section 50X25 mm, fixed with nails and G.I wire on existing support complete as per direction of Engineer-in-charge.	sqm	89	694	783
	B. PVC Work				
	PUC/uPVC, FRP DOOR/WINDOWS FRAMES AND SHUTTERS				
12.117	Providing and fixing factory made uPVC door frame made of uPVC extruded sections having an overall dimension as below (tolerance ±1mm), with wall thickness 2.0 mm (± 0.2 mm), corners of the door frame to be Jointed with galvanized brackets and stainless steel screws, joints mitred and Plastic welded. The hinge side vertical of the frames reinforced by galvanized M.S. tube of size 19 X 19 mm and 1mm (± 0.1 mm) wall thickness and 3 Nos. stainless steel hinges fixed to the frame complete as per manufacturer's specification and direction of Engineer- in-charge				
	12.117.1 Extruded section profile size 48x40 mm	metre	22	163	185
	12.117.2 Extruded section profile size 42x50 mm	metre	22	208	230
12.118	Providing and fixing to existing door frames.				
	12.118.1 24 mm thick factory made PVC door shutters made of styles and rails of a uPVC hollow section of size 59x24 mm and wall thickness 2 mm (± 0.2 mm) with inbuilt edging on both sides. The styles and rails mitred and joint at the corners by means of M.S. galvanised/ plastic brackets of size 75x220 mm having wall thickness 1.0 mm and stainless steel screws. The styles of the shutter reinforced by inserting galvanised M.S. tube of size 20x20 mm and 1 mm (± 0.1 mm) wall thickness. The lock rail made up of 'H' section, a uPVC hollow section of size 100x24 mm and 2 mm (± 0.2 mm) wall thickness, fixed to the shutter styles by means of plastic/galvanised M.S. 'U' cleats. The shutter frame filled with a uPVC multi-chambered single panel of size not less than 620 mm, having over all thickness of 20 mm and 1 mm (± 0.1 mm) wall thickness. The panels filled vertically and tie bar at two places by inserting horizontally 6 mm galvanised M.S. rod and fastened with nuts and washers, complete as per manufacturer's specification and direction of Engineer-in-charge. (For W.C. and bathroom door shutter).	sqm	126	1410	1536

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
	12.118.2	30 mm thick factory made Polyvinyl Chloride (PVC) door shutter made of styles and rails of a uPVC hollow section of size 60x30 mm and wall thickness 2 mm (± 0.2 mm), with inbuilt decorative moulding edging on one side. The styles and rails mitred and joint at the corners by means of M.S. galvanised/ plastic brackets of size 75x220 mm having wall thickness 1.0 mm and stainless steel screws. The styles of the shutter reinforced by inserting galvanised M.S. tube of size 25x20 mm and 1 mm (± 0.1 mm) wall thickness. The lock rail made up of 'H' section, a uPVC hollow section of size 100x30 mm and 2 mm (± 0.2 mm) wall thickness fixed to the shutter styles by means of plastic/ galvanised M.S. 'U' cleats. The shutter frame filled with a uPVC multi-chambered single panel of size not less than 620 mm, having over all thickness of 20 mm and 1 mm (± 0.1 mm) wall thickness . The panels filled vertically and tie bar at two places by inserting horizontally 6 mm galvanised M.S. rod and fastened with nuts and washers, complete as per manufacturer's specification and direction of Engineer-in-charge.	sqm	126	1622	1747
	12.118.3	25 mm thick PVC flush door shutters made out of a one piece Multi chamber extruded PVC section of the size of 762 mm X 25 mm or less as per requirement with an average wall thickness of 1 mm (± 0.3 mm). PVC foam end cap of size 23x10 mm are provided on both vertical edges to ensure the overall thickness of 25 mm. M.S. tube having dimensions 19 mm x 19 mm and 1.0 mm (± 0.1 mm) is inserted along the hinge side of the door. Core of the door shutter should be filled with High Density Polyurethane foam. The Top & Bottom edges of the shutter are covered with an end-cap of the size 25 mm X 11 mm. Door shutter shall be reinforced with special polymeric reinforcements as per manufacturer's specification and direction of Engineer-in-charge to take up necessary hardware and fixtures. Stickers indicating the locations of hardware will be pasted at appropriate places	sqm	126	2207	2333
12.119	Providing and fixing factory made P.V.C. door frame of size 50x47 mm with a wall thickness of 5 mm, made out of extruded 5mm rigid PVC foam sheet, mitred at corners and joined with 2 Nos. of 150 mm long brackets of 15x15 mm M.S. square tube, the vertical door frame profiles to be reinforced with 19x19 mm M.S. square tube of 19 gauge, EPDM rubber gasket weather seal to be provided through out the frame. The door frame to be fixed to the wall using M.S. screws of 65/100 mm size, complete as per manufacturer's specification and direction of Engineer- in-Charge.		metre	23	327	349
12.120	Providing and fixing factory made panel PVC door shutter consisting of frame made out of M.S. tubes of 19 gauge thickness and size of 19 mm x 19 mm for styles and 15x15 mm for top & bottom rails. M.S. frame shall have a coat of steel primers of approved make and manufacture. M.S. frame covered with 5 mm thick heat moulded PVC 'C' channel of size 30 mm thickness, 70 mm width out of which 50 mm shall be flat and 20 mm shall be tapered in 45 degree angle on both side forming styles and 5 mm thick, 95 mm wide PVC sheet out of which 75mm shall be flat and 20 mm shall be tapered in 45 degree on the inner side to form top and bottom rail and 115 mm wide PVC sheet out of which 75 mm shall be flat and 20 mm shall be tapered on both sides to form lock rail. Top, bottom and lock rails shall be provided both side of the panel. 10 mm (5 mm x 2) thick, 20 mm wide cross PVC sheet be provided as gap insert for top rail & bottom rail, panelling of 5 mm thick both side PVC sheet to be fitted in the M.S. frame welded/ sealed to the styles & rails with 7 mm (5 mm+2 mm) thick x 15 mm wide PVC sheet beading on inner side, and joined together with solvent cement adhesive. An additional 5 mm thick PVC strip of 20 mm width is to be stuck on the interior side of the 'C' Channel using PVC solvent adhesive etc. complete as per direction of Engineer-in-charge, manufacturer's specification & drawing.					
	12.120.1	30 mm thick plain PVC door shutters	sqm	126	2053	2179
	12.120.2	30 mm thick pre laminated PVC door shutters	sqm	126	2053	2179

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
12.121	Providing and fixing factory made door frame (single rebate) made out of single piece extruded solid PVC foam profile with homogenous fine cellular structure having smooth outer integral skin having 62 mm width & 32 mm thickness, frame will be mitred & Jointed with self driven self tapping screws of size 38 mm x 4 mm & PVC solvent cement, including fixing the frame to wall with suitable dia & length anchor fastener as per manufacturer's specification and direction of Engineer-in-charge.	metre	23	409	432
12.122	Providing and fixing factory made 30 mm thick door shutter made of solid PVC foam profile. The styles & rails shall be of size 75 mm x 30 mm having wall thickness 5 mm. The styles, top & bottom rails shall have one side wall thickness of 15 mm integrally extruded on the hinge side of the profile for better screw holding power. The styles and rails shall be reinforced with M.S. tubes of size 33 mm x 17 mmx 1 mm, painted with primer , all four corners of reinforcement to be welded or sealed. Solid PVC extruded bidding (push fit type) will be set inside the styles and the rails with a cavity, to receive single piece extruded 5mm PVC sheet as panel. The styles and rails will be mitred cut and joint with the help of PVC solvent cement & self driven self tapping screws. Single piece extruded solid PVC lock rail of size 100 mm x 30 mm with wall thickness 5 mm & 15 mm integrally extruded in the middle of the lock rail & fixed with styles with the help of PVC solvent cement & self driven self tapping screws of size 100mm x 8 mm complete as per manufacturer's specifications and direction of Engineer-in-charge.				
12.122.1	Non decorative finish	sqm	126	2641	2766
12.122.2	Decorative finish (both side wood grained finish)	sqm	126	2771	2896
12.123	Providing and fixing PVC rigid foam sheet 1 mm thick on existing door shutters (bathroom and W.C. doors) using synthetic rubber based adhesive.	sqm	322	283	605
12.124	Providing and fixing PVC Door Frame of size 50x47 mm with a wall thickness of 5 mm (± 0.2 mm), made out of single piece extruded PVC profile, with mitred cut joints and joint with 2 Nos. of PVC bracket of size 190 mm x 100 mm long arms of cross section size 35 x 15 mm & self driven self taping screws, the vertical door profiles to be reinforced with 40x20 mm M.S. rectangular tube of 0.8 mm , including providing EPDM rubber gasket weather seal throughout the frame, including jointing 5 mm PVC frame strip with PVC solvent cement on the back of the profile. The door frame to be fixed to the wall using 8 x100 mm long anchor fasteners complete, all as per manufacturer's specification and direction of Engineer -in- charge.	metre	23	388	411
12.125	35 mm thick factory made Solid panel PVC Door shutter, made out of single piece extruded solid PVC profiles, 5 mm (± 0.2 mm) thick, having styles & rails (except lock rail) of size 95 mmx 35 mm x 5 mm, out of which 75 mm shall be flat and 20 mm shall be tapered (on both side), having one side thickness of 15 mm integrally extruded on the hinge side of the profile for better screw holding power, including reinforcing with MS tube of size 40 mm X 20 mm x 1 mm, joints of styles & rails to be mitred cut & joint with the help of PVC solvent cement, self driven self tapping screws & M.S. rectangular pipes bracket of size 190 mm X 100 mm of cross section size 35 mm x 17 mm x 1 mm at each corner. Single piece extruded 5 mm thick solid PVC Lock rail of size 115 mm x 35 mm, out of which 75 mm to be flat and 20 mm to be tapered at both ends, having 15 mm solid core in middle of rail section integrally extruded, fixing the styles & rails with the help of solvent and self driven self tapping screws of 125 mm x 11 mm, including providing 5 mm Single piece solid PVC extruded sheet inserted in the door as panel, all complete as per manufacturer's specification and direction of Engineer-in-charge.				
12.125.1	Non decorative finish (matt finish)	sqm	130	2836	2966
12.125.2	Decorative finish (wood grained finish)	sqm	130	3420	3550

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
12.126	Providing and Fixing factory made uPVC door frame, made of uPVC extruded sections, of size 65 mm x 55 mm with wall thickness 2.0 mm (± 0.2 mm), corners of the door frame to be mitred cut and jointed with plastic brackets and stainless steel screws, reinforcing hinge side vertical of the frames with PVC profile of Size 28 mm x 30 mm having wall thickness 2 mm (±0.2 mm), including providing & fixing 3 Nos. of 125 mm long stainless steel hinges to the frame, fixing the frame with jamb with required number & size of anchor dash fasteners, all complete as per manufacturer's specification and direction of Engineer-in-charge.	metre	22	461	483
12.127	Providing and fixing 37 mm thick factory made PVC door shutter, styles and rails made of PVC hollow section of size 100 mm x 37 mm with wall thickness 2 mm (± 0.2 mm), with inbuilt bead on one side, styles and rails mitred cut and joint at the corners by means of 2 Nos. of plastic brackets of size 75 mm x 220 mm at each corner and stainless steel screws, reinforcing the hinge side of style by inserting PVC profile of size 28 mm x 30 mm, with wall thickness 2 mm (± 0.2 mm). Lock rail of size 100 mm x 37 mm, wall thickness 2 mm (+ 0.2 mm) will be fixed to the vertical styles. Providing with PVC snap fit beads and panel of size 100 mm x 20 mm, and inserting 2 Nos. tie bar of 6 mm dia and fastening with nuts and washers complete, all as per manufacturer's specification and direction of Engineer-in-charge.	sqm	126	3116	3242
12.128	Providing and Fixing factory made PVC door frame made of PVC extruded sections of size 75 mm x 53 mm, having wall thickness 2.0 mm (± 0.2 mm). Both verticals sides of the frame reinforced with PVC profile of cross section size 28 mm x 30 mm x 2 mm thickness (± 0.2 mm) and 75 mm x 200 mm long, including reinforcing both ends of the top frame with PVC profile. PVC Door Frame and PVC reinforcement profile to be mitred cut, jointed and fusion welded together, including providing and fixing 3 Nos. of 125 mm long stainless steel hinges to frame, fixing the frame with jamb with required Nos. & sizes of anchor dash fastener, all complete as per manufacturer's specification and direction of engineer- in-charge.	metre	22	519	541
12.129	Providing and fixing 37 mm thick factory made PVC Door shutter, styles and rails made of PVC hollow extruded printed and laminated section having overall dimension 115 mm x 37 mm with wall thickness 2 mm (± 0.2 mm) with inbuilt beading on one side, the styles and rails mitred cut and joint at corners by inserting 2 Nos. PVC profile reinforcement of size 75 mm x 200 mm long with cross section size of 28 mm x 30 mm having wall thickness 2 mm (± 0.2 mm). Styles, rails and reinforcements to be fusion welded together. Only hinge side vertical style to be reinforced with PVC profile reinforcement in full length. Printed and laminated PVC lock rail of size 110 mm x 37 mm having wall thickness 2 mm (± 0.2 mm) to be welded horizontally with the vertical styles after inserting PVC profile reinforcement as in styles and rails, providing with PVC snap fit beading, panels of 100 x 20 mm printed & laminated and inserting 2 Nos. 6 mm dia bright steel rod horizontally with both side threaded and tightened with check nuts and washers complete, all as per manufacturer's specification and direction of engineer-in-charge.	sqm	126	3376	3502
12.130	Providing and fixing of casement and fixed windows made from multi chambered UPVC profiles of 56 to 68mm width in natural from stabilized for heat, light, impact & UV radiation The UPVC profiles should be reinforced with galvanized steel profiles of designed thickness. All openable sashes shall be having weather seal fitted in continuous lengths made from Bubble EPOM Rubber and side hung/ top hung with up to 90 degree opening friction stays of SS 304 with provision of multipoint locking system made from Espag rods. All handle shall be made from Die Cast Zinc alloy (Model ESPAG)BS-1004A in white finish with suitable locking arrangement. The windows shall be fixed to opening using expandable screws and friction stays that shall be able to with stand wind speeds up to 180 km/hr. the shoot bolts in windows shall be rust proof metallic coated steel. The window frames shall be fixed in masonry wall RCC with necessary fasteners, nuts, bolts, washers, caps, silicon sealant etc. complete				
12.130.1	Frame work	sqm	180	3337	3517
12.130.2	Openable shutter	sqm	180	5194	5374

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
	12.130.3	Double glass glazing comprising of 6 mm thick toughened clear glass + 12mm air gap + 5mm annealed clear glass.	sqm	362	1863	2226
12.131	Providing and fixing factory made uPVC white colour casement/casement cum fixed glazed windows comprising of uPVC multi-chambered frame, sash and mullion (where ever required) extruded profiles duly reinforced with 1.60 ± 0.2 mm thick galvanized mild steel section made from roll forming process of required length (shape & size according to uPVC profile), uPVC extruded glazing beads of appropriate dimension, EPDM gasket, stainless steel (SS 304 grade) friction hinges, zinc alloy (white powder coated) casement handles, G.I fasteners 100 x 8 mm size for fixing frame to finished wall, plastic packers, plastic caps and necessary stainless steel screws etc. Profile of frame & sash shall be mitred cut and fusion welded at all corners, mullion (if required) shall be also fusion welded including drilling of holes for fixing hardware's and drainage of water etc. After fixing frame the gap between frame and adjacent finished wall shall be filled with weather proof silicon sealant over backer rod of required size and of approved quality, all complete as per approved drawing & direction of Engineer-in-Charge. (Single / double glass panes and silicon sealant shall be paid separately). Variation in profile dimension in higher side shall be accepted but no extra payment on this account shall be made. **Note: For uPVC frame, sash and mullion extruded profiles minus 5% tolerance in dimension i.e. in depth & width of profile shall be acceptable.**					
	12.131.1	Casement window single panel with S.S. friction hinges (300 x 19 x 1.9 mm), made of (small series) frame 47 x 50 mm & sash 47 x 68 mm both having wall thickness of 1.9 ± 0.2 mm and single glass pane glazing bead of appropriate dimension. (Area of window up to 0.75 sqm)	sqm	909	7588	8497
	12.131.2	Casement window double panels with S.S. friction hinges (300 x 19 x 1.9 mm) made of (small series) frame 47 x 50 mm, sash 47 x 68 mm & mullion 47 x 68 mm all having wall thickness of 1.9 ± 0.2 mm and single glazing bead of appropriate dimension. (Area of window above 0.75 sqm up to 1.50 sqm).	sqm	909	7057	7966
	12.131.3	Casement window double panels with top fixed with S.S. friction hinges (350 x 19 x 1.9 mm) made of (small series) frame 47 x 50 mm, sash 47 x 68 mm & mullion 47 x 68 mm all having wall thickness of 1.9 ± 0.2 mm and single glazing bead of appropriate dimension. (Area of window up to 2.50 sqm).	sqm	909	5453	6362
	12.131.4	Casement window single panel with S.S. friction hinges (400 x 19 x 1.9 mm) made of (big series)frame 67 x 60 mm & sash 67 x 80 mm both having wall thickness of 2.3 ± 0.2 mm and single glazing bead / double glazing bead of appropriate dimension. (Area of window above 0.75 sqm)	sqm	909	7561	8470
	12.131.5	Casement window double panels with S.S. friction hinges (350 x 19 x 1.9 mm) made of (big series)frame 67 x 60 mm & sash / mullion 67 x 80 mm both having wall thickness of 2.3 ± 0.2 mm and single glazing bead/ double glazing bead of appropriate dimension. (Area of window above 1.50 sqm).	sqm	909	8013	8922
	12.131.6	Casement cum fixed panel window having both end single casement panel, middle fixed panels and at top completely fixed ventilator with S.S friction hinges (350 x 19 x 1.9) made of (big series) frame 67 x 60 mm , sash 67 x 80 mm & mullion 67 x 80 mm all having wall thickness of 2.3 ± 0.2 mm and single glazing bead/double glazing bead of appropriate dimension. (Area of window above 3.00 sqm up to 5.00 sqm).	sqm	909	5768	6677

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
12.132	Providing and fixing factory made uPVC white colour fixed glazed windows/ventilators comprising of uPVC multi-chambered frame and mullion (where ever required) extruded profiles duly reinforced with 1.60 ± 0.2 mm thick galvanized mild steel section made from roll forming process of required length (shape & size according to uPVC profile), , uPVC extruded glazing beads of appropriate dimension, EPDM gasket, G.I fasteners 100 x 8 mm size for fixing frame to finished wall, plastic packers, plastic caps and necessary stainless steel screws etc. Profile of frame shall be mitred cut and fusion welded at all comers, mullion (if required) shall be also fusion welded including drilling of holes for fixing hardware's and drainage of water etc. After fixing frame the gap between frame and adjacent finished wall shall be filled with weather proof silicon sealant over backer rod of required size and of approved quality, all complete as per approved drawing & direction of Engineer-in-Charge. (Single / double glass panes and silicon sealant shall be paid separately). Variation in profile dimension in higher side shall be accepted but no extra payment on this account shall be made. **Note: For uPVC frame, sash and mullion extruded profiles minus 5% tolerance in dimension i.e. in depth & width of profile shall be acceptable.**				
12.132.1	Fixed window / ventilator made of (small series) frame 47 x 50 mm & mullion 47 x 68 mm both having wall thickness of 1.9 ± 0.2 mm and single glazing bead of appropriate dimension. (Area up to 0.75 sqm)	sqm	909	4615	5524
12.133	Providing and fixing factory made uPVC white colour casement/ Casement cum fixed glazed door comprising of uPVC multi-chambered frame, sash and mullion (where ever required) extruded profiles duly reinforced with 1.60 ± 0.2 mm thick galvanized mild steel section made from roll forming process of required length (shape & size according to uPVC profile), uPVC extruded glazing beads of appropriate dimension, EPDM gasket, zinc alloy (white powder coated) 3D hinges and one handle on each side of panels along with zinc plated mild steel multi point locking having transmission gear, cylinder with keeps and one side key, G.I fasteners 100 x 8 mm size for fixing frame to finished wall and necessary stainless steel screws, etc. Profile of frame & sash shall be mitred cut and fusion welded at all comers, mullion (if required) shall be also fusion welded including drilling of holes for fixing hardware's and drainage of water etc. After fixing frame the gap between frame and adjacent finished wall shall be filled with weather proof silicon sealant over backer rod of required size and of approved quality, all complete as per approved drawing & direction of Engineer-in-Charge. (Single / double glass panes and silicon sealant shall be paid separately). Variation in profile dimension in higher side shall be accepted but no extra payment on this account shall be made. **Note: For uPVC frame, sash and mullion extruded profiles minus 5% tolerance in dimension i.e. in depth & width of profile shall be acceptable.**				
12.133.1	Casement door with 3D hinges made of (big series) frame 67 x 64 mm & sash 67 x 110 mm both having wall thickness of 2.3 ± 0.2 mm and single glazing bead / double glazing bead of appropriate dimension. (Area of door up to 2.00 sqm).	sqm	909	7520	8429
12.133.2	Casement door with top hung ventilator with 3D and S.S. friction hinges (400 x 19 x 1.9 mm) made of (big series) frame 67 x 64 mm, sash 67 x 110 mm & mullion 67 x 80 mm all having wall thickness of 2.3 ±. 0.2 mm and single glazing bead / double glazing bead of appropriate dimension.(Area of door up to 2.50 sqm)	sqm	909	7745	8654

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
12.134	Providing and fixing factory made uPVC white colour sliding glazed window up to 1.50 m in height dimension comprising of uPVC multi-chambered frame with in-built roller track and sash extruded profiles duly reinforced with 1.60 ± 0.2 mm thick galvanized mild steel section made from roll forming process of required length (shape & size according to uPVC profile), appropriate dimension of uPVC extruded glazing beads and uPVC extruded interlocks, EPDM gasket, wool pile, zinc alloy (white powder coated) touch locks with hook, zinc alloy body with single nylon rollers (weight bearing capacity to be 40 kg), G.I fasteners 100 x 8 mm size for fixing frame to finished wall and necessary stainless steel screws etc. Profile of frame & sash shall be mitred cut and fusion welded at all corners, including drilling of holes for fixing hardware's and drainage of water etc. After fixing frame the gap between frame and adjacent finished wall shall be filled with weather proof silicon sealant over backer rod of required size and of approved quality, all complete as per approved drawing & direction of Engineer-in-Charge. (Single / double glass panes, wire mesh and silicon sealant shall be paid separately). Variation in profile dimension in higher side shall be accepted but no extra payment on this account shall be made. **Note: For uPVC frame and sash extruded profiles minus 5% tolerance in dimension i.e. in depth & width of profile shall be acceptable.**					
12.134.1	Two track two panels sliding window made of (small series) frame 52 x 44 mm &sash 32 x 60 mm both having wall thickness of 1.9 ± 0.2 mm and single glazing bead of appropriate dimension. (Area of window up to 1.75 sqm)		sqm	909	5144	6053
12.134.2	Three track three panels sliding window with fly proof SS wire mesh (Two Nos. glazed & one no. wire mesh panels) made of (small series) frame 92 x 44 mm & sash 32 x 60 mm both having wall thickness of 1.9 ± 0.2 mm and single glazing bead of appropriate dimension (Area of window up to 1.75 sqm).		sqm	909	7322	8231
12.134.3	Two track two panels sliding window made of (big series) frame 67 x 50 mm & sash 46 x 62 mm both having wall thickness of 2.3 ± 0.2 mm and single glazing bead / double glazing bead of appropriate dimension . (Area of window above 1.75 sqm up to 2.50 sqm).		sqm	909	5377	6286
12.134.4	Three track three panels sliding window with fly proof S.S wire mesh (Two Nos. glazed & one no. wire mesh panels) made of (big series) frame 116 x 45 mm & sash 46 x 62 mm both having wall thickness of 2.3 ± 0.2 mm and single glazing bead / double glazing bead of appropriate dimension. (Area of window above 1.75 sqm).		sqm	909	7054	7963
12.134.5	Three track three panels sliding window made of (big series) frame 116 x 45 mm & sash 46 x 62 mm both having wall thickness of 2.3 ± 0.2 mm and single glazing bead / double glazing bead of appropriate dimension. (Area of window above 1.75 sqm)		sqm	909	6628	7537

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
12.135	Providing and fixing factory made uPVC white colour sliding glazed window above 1.50 m in height dimension comprising of uPVC multi-chambered frame with in-built roller track and sash extruded profiles duly reinforced with 1.60 ± 0.2 mm thick galvanized mild steel section made from roll forming process of required length (shape & size according to uPVC profile), appropriate dimension of uPVC extruded glazing beads, uPVC extruded interlocks and uPVC extruded Inline sash adaptor (if required), EPDM gasket, wool pile, zinc alloy (white powder coated) handle on one side of extreme panel along with zinc plated mild steel multi point locking having transmission gear with keeps, zinc alloy (white powder coated) touch lock with hook (if required for wire mesh panel), stainless steel (SS 304 grade) body with adjustable double nylon rollers (weight bearing capacity to be 120 kg), G.I fasteners 100 x 8 mm size for fixing frame to finished wall and necessary stainless steel screws etc. Profile of frame & sash shall be mitred cut and fusion welded at all corners, including drilling of holes for fixing hardware's and drainage of water etc. After fixing frame the gap between frame and adjacent finished wall shall be filled with weather proof silicon sealant over backer rod of required size and of approved quality, all complete as per approved drawing & direction of Engineer-in-Charge. (Single / double glass panes, wire mesh and silicon sealant shall be paid separately). Variation in profile dimension in higher side shall be accepted but no extra payment on this account shall be made. **Note: For uPVC frame and sash extruded profiles minus 5% tolerance in dimension i.e. in depth & width of profile shall be acceptable.**				
12.135.1	Two track two panels sliding window made of (big series) frame 67 x 50 mm & sash 46 x 62 mm both having wall thickness of 2.3 ± 0.2 mm and single glazing bead / double glazing bead of appropriate dimension. (Area of window above 2.50 sqm up to 4.00 sqm)	sqm	909	5390	6299
12.135.2	Two track four panels sliding window made of (big series) frame 67 x 50 mm & sash 46 x 62 mm both having wall thickness of 2.3 ± 0.2 mm and single glazing bead / double glazing bead of appropriate dimension. (Area of window above 4.00 sqm up to 8.00 sqm).	sqm	909	4538	5447
12.136	Providing and fixing factory made uPVC white colour sliding glazed door comprising of uPVC multi-chambered frame with in-built roller track and sash extruded profiles duly reinforced with 1.60 ± 0.2 mm thick galvanized mild steel section made from roll forming process of required length (shape & size according to uPVC profile), appropriate dimension uPVC extruded glazing beads, uPVC extruded interlock and uPVC extruded Inline sash adaptor (if required), EPDM gasket, wool pile, zinc alloy (white powder coated) handle with key on one side of extreme panels along with zinc plated mild steel multi point locking having transmission gear with keeps, zinc alloy (white powder coated) crescent lock (if required), stainless steel (SS 304 grade) body with adjustable double nylon rollers (weight bearing capacity to be 120 kg), G.I fasteners 100 x 8 mm size for fixing frame to finished wall and necessary stainless steel screws etc. Profile of frame & sash shall be mitred cut and fusion welded at all corners, including drilling of holes for fixing hardware's and drainage of water etc. After fixing frame the gap between frame and adjacent finished wall shall be filled with weather proof silicon sealant over backer rod of required size and of approved quality, all complete as per approved drawing & direction of Engineer-in-Charge. (Single / double glass panes, wire mesh and silicon sealant shall be paid separately). Variation in profile dimension in higher side shall be accepted but no extra payment on this account shall be made. **Note: For uPVC frame and sash extruded profiles minus 5% tolerance in dimension i.e. in depth & width of profile shall be acceptable.**				

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
	12.136.1	Two track two panels sliding door made of (big series) frame 67 x 50 mm & sash 46 x 82 mm both having wall thickness of 2.3 ± 0.2 mm and single glazing bead / double glazing bead of appropriate dimension. (Area of door above 2.00 sqm up to 5.00 sqm)	sqm	909	4570	5479
	12.136.2	Two track four panels sliding door made of (big series) frame 67 x 50 mm & sash 46 x 82 mm both having wall thickness of 2.3 ± 0.2 mm and single glazing bead / double glazing bead of appropriate dimension. (Area of door above 8.00 sqm up to 10.00 sqm).	sqm	909	3953	4862
	12.136.3	Three track three panels sliding door made of (big series) frame 116 x 45 mm & sash 46 x 82 mm both having wall thickness of 2.3 ± 0.2 mm and single glazing bead/ double glazing bead of appropriate dimension. (Area of door above 5.00 sqm)	sqm	909	4652	5560
	12.136.4	Three track three panels sliding door with fly proof S.S wire mesh (Two Nos. glazed & one no. wire mesh panels) made of (big series) frame 116 x 45 mm & sash 46 x 82 mm both having wall thickness of 2.3 ± 0.2 mm and single glazing bead / double glazing bead of appropriate dimension. (Area of door above 2.00 sqm up to 5.00 sqm)	sqm	909	6288	7197
12.137	Providing and fixing stainless steel (SS-304 grade) friction hinges to the side/top hung uPVC windows, of approved quality, with necessary stainless steel screws etc. as per direction of Engineer-in-charge.					
	12.137.1	200 x 19 x 1.9 mm	each	10	268	278
	12.137.2	250 x 19 x 1.9 mm	each	10	301	310
	12.137.3	300 x 19 x 1.9 mm	each	10	320	330
	12.137.4	350 x 19 x 1.9 mm	each	10	450	460
	12.137.5	400 x 19 x 1.9 mm	each	10	476	486
12.138	Providing and fixing casement handle made of zinc alloyed (white powder coated) for uPVC casement window with necessary screws etc. complete.		each	6	169	175
12.139	Providing and fixing zinc alloyed (white powder coated) touch lock for uPVC sliding window with necessary screws etc. complete.		each	6	137	143
12.140	Providing and fixing steel roller for uPVC sliding window with necessary screws etc. complete.		each	6	73	79
12.141	Providing and fixing steel roller for uPVC sliding door with necessary screws etc. complete.		each	6	124	130
12.142	Providing and fixing steel (white power coated) crescent lock for uPVC sliding window/ door with necessary screws etc. complete.		each	6	150	156
	FRP DOOR/WINDOW FRAMES AND SHUTTERS					
12.143	Providing and fixing Fibre Glass Reinforced plastic (FRP) Door Frames of cross-section 90 mm x 45 mm having single rebate of 32 mm x 15 mm to receive shutter of 30 mm thickness. The laminate shall be moulded with fire resistant grade unsaturated polyester resin and chopped mat. Door frame laminate shall be 2mm thick and shall be filled with suitable wooden block in all the three legs. The frame shall be covered with fibre glass from all sides. M.S. stay shall be provided at the bottom to steady the frame.		metre	23	606	629
12.144	Providing and fixing to existing door frames.					
	12.144.1	30 mm thick Glass Fibre Reinforced Plastic (FRP) panelled door shutter of required colour and approved brand and manufacture, made with fire - retardant grade unsaturated polyester resin, moulded to 3 mm thick FRP laminate for forming hollow rails and styles, with wooden frame and suitable blocks of seasoned wood inside at required places for fixing of fittings, cast monolithically with 5 mm thick FRP laminate for panels conforming to IS: 14856, including fixing to frames.	sqm	126	3064	3190

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
	12.144.2	30 mm thick Fibreglass Reinforced Plastic (F.R.P.) flush door shutter in different plain and wood finish made with fire retardant grade unsaturated polyester resin, moulded to 3 mm thick FRP laminate all around, with suitable wooden blocks inside at required places for fixing of fittings and polyurethane foam (PUF)/Polystyrene foam to be used as filler material throughout the hollow panel, casted monolithically with testing parameters of F.R.P. laminate conforming to table - 3 of IS: 14856, complete as per direction of Engineer-in-charge.	sqm	126	3517	3643
12.145	Providing and fixing factory made Fibreglass Reinforced plastics (F.R.P.) chajja 4 mm thick of required colour, size and design made by Resin Transfer Moulding (RTM) Machine Technology, resulting in void free compact laminate in single piece, having smooth gradual slope curvature for easy drainage of water and duly reinforced by 2 Nos. vertically and 1 Nos. horizontally 50x2 mm thick M.S. flat with 12 mm in built hole for grouting on the existing wall along with the 50 mm flanges duly inserted and sealed in the wall complete in one single piece casted monolithically, including all necessary fittings . The FRP Chajja should be manufactured using unsaturated Polyester resin as per IS: 6746, duly reinforced with fibre glass chopped strand mat (CSM) as per IS: 11551 complete with protective Gel coat U/V coating on Top for complete resistance from the extreme of temperature, weather & sunlight (Only plan area of chajjas shall be measured for making payment).		sqm	180	3939	4119
	WALL PANELLING					
12.146	Providing and fixing, in position concealed G.I. section for wall panelling using board of required thickness fixed on the 'W' profile (0.55 mm thick) having a knurled web of 51.55 mm and two flanges of 26 mm each with lips of 10.55 mm, placed @ 610 mm C/C in perimeter channel having one flange of 20 mm and another flange of 30 mm with thickness of 0.55 mm and web of length 27 mm. Perimeter channel is fixed on the floor and the ceiling with the nylon sleeves @ 610 mm C/C with fully threaded self-tapping dry wall screws. Board is fixed to the 'W' profile with 25 mm countersunk ribbed head screws @ 200 mm C/C., all complete as per the drawing & directions of engineer-in-charge, the joints of the boards are finished with specially formulated jointing compound and 48mm wide jointing tape to provide seamless finish.					
	12.146.1	Tapered edge calcium silicate board made with calcareous & siliceous materials reinforced with cellulose fibre manufactured through autoclaving process to give stable crystalline structure with compressive strength 225 kg/ sq.cm, Bending strength 100 kg/sq.cm.				
		12.146.1.1 10mm thick	sqm	264	738	1002
	12.146.2	Multipurpose cement board reinforced with suitable fibre cement screw.				
		12.146.2.1 8 mm thick cement fibre board as per IS : 14862	sqm	264	452	716
		12.146.2.2 8 mm thick Cement bonded wood particle board as per IS:14276	sqm	264	445	709
	12.146.3	Plain Gypsum plaster board conforming to IS: 2095 Part -1:2011 (Board with BIS certification marks)				
		12.146.3.1 12.5 mm thick	sqm	264	360	623
	FIRE RESISTANT DOOR FRAMES AND SHUTTERS					
12.147	Providing and fixing fire resistant door frame of section 143 x 57 mm having built in rebate made out of 16 SWG G.I. sheet (zinc coating not less than 120 gm/sqm) duly filled with vermiculite based concrete mix, suitable for mounting 60 minutes fire rated door shutters. The frame is fitted with intumuscent fire seal strip of size 10x4 mm (minimum) all-round the frame and fixing with dash fastener of approved size and make, including applying a coat of approved brand fire resistant primer etc. complete as per direction of Engineer-in-charge (Dash fastener to be paid for separately).		metre	13	1363	1376

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
12.148	Providing and fixing 50 mm thick glazed fire resistant door shutters of 60 minutes fire rating conforming to IS:3614 (Part-II), tested and certified as per laboratory approved by Engineer-in-charge, with suitable mounting on door frame, consisting of vertical styles, lock rail, top rail 100 mm wide, bottom rail 200 mm wide, made out of 16 SWG G.I.sheet (zinc coating not less than 120 gm/m2) duly filled FR insulation material and fixing with necessary stainless steel ball bearing hinges of approved make, including applying a coat of approved fire resistant primer etc. all complete as per direction of Engineer-in-charge (panelling to be paid for separately).	sqm	47	5843	5890
12.149	Providing and fixing glazing in fire resistant door shutters, fixed panels & partitions etc., with G.I. beading made out of 1.6 mm thick G.I. sheet (zinc coating not less than 120 gm/m²) of size 20 x 33 mm screwed with M4 x 38 mm SS screws at distance 75 mm from the edges and 150 mm c/c , including applying a coat of approved fire resistant primer/powder coating of not less than 30 micron on G.I. beading, & special ceramic tape of 5 x 20 mm size etc complete in all respect as per NBC 2016, IS 16231 (Part 3):2016 and as per direction of Engineer-in-charge with glass of required thickness having 60 minutes of fire resistance both integrity & radiation control (EW60) and minimum 20 minutes of insulation (EI20). The manufacturer have to give test report/certification of fire glass and the glass should have the stamp showing the value of E, EW & EI. The glass shall be tested in approved NABL accredited lab or by any other accreditation body which operates in accordance with ISO/IEC 17011 and accredits labs as per ISO/IEC 17025 for testing and calibration scopes shall be eligible. The maximum glazing size shall not be more than 1100x2200 mm (w x h) or 2.42 sqm	sqm	67	34786	34853
12.150	Providing and fixing panic bar / latch (Double point) fitted with a single body, Trim Latch & Lock on back side of the Panic Latch of reputed brand and manufacture to be approved by the Engineer- in- charge, all complete.	each	86	6752	6838
12.151	Providing and fixing fire resistant door frame of section 50 x 60 mm on horizontal side & 35 x 60 mm on vertical sides having built in rebate made out of 1.6 mm thick GI sheet (Zinc coating not less than 120gm/m²) suitable for mounting 120 min Fire Rated Glazed Door Shutters. The frame shall be filled with Mineral wool Insulation having density min 96Kg/m³ . The frame will have a provision of G.I. Anchor fasteners 14 Nos. (5 each on vertical style & 4 on horizontal style of size M10 x 80) suitable for fixing in the opening along with Factory made Template for SS Ball Bearing Hinges of Size 100x89x3mm for fixing of fire rated glazed shutter . The frame shall be finished with a approved fire resistant primer or Powder coating of not less than 30 micron in desired shade as per the directions of Engineer - in- charge . (Cost of SS ball bearing hinges is excluded).	metre	56	1298	1354
12.152	Providing and fixing 60 mm thick glazed fire resistant door shutters of 120 min Fire Rating confirming to IS:3614 (Part II) or EN1634-1:1999, tested and certified as per laboratory approved by Engineer-in-charge, with suitable mounting on door frame, consisting of vertical styles, top rail & side rail 60 mm x 60 mm wide and bottom rail of 110 mm x 60 mm made out of 1.6mm thick G.I. sheet (zinc coating not less than 120gm/m²) duly filled mineral wool insulation having density min 96 kg/m³ and fixing with necessary stainless steel ball bearing hinges of size 100x89x3mm of approved make, including applying a coat of approved fire resistant primer or powder coating not less than 30 micron etc all complete as per direction of Engineer-in-charge (panelling to be paid for separately).	sqm	100	7828	7928

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
12.153	Providing and fixing non load bearing fixed frame for fire resistant glazed Partition for 120 minutes Fire Rating, made out to a profile of dimension 60mm x 70 mm of 1.6 mm thick galvanised steel sheet as per test evidence suitable for fixing fire rated glass for 120 minutes of both integrity & radiation control (EW120) & minimum 20 minutes of insulation (EI20).The profile has to be fixed to the supporting construction by means of anchor fasteners of size M10 x 80, every 150 mm from the edges and every 500 mm (approx) c/c. Linear measurement of frame shall be measured for payment. The frame shall be filled with mineral wool insulation of density min 96kg/ m^3. and finished with a approved fire resistant primer or Powder coating of not less than 30 micron in desired shade as per NBC 2016, IS 16231 (Part 3):2016 and directions of Engineer - in- charge.	metre	60	1298	1359
12.154	Providing and fixing glazing in fire resistant door shutters, fixed panels & partitions etc., with G.I. beading made out of 1.6 mm thick G.I. sheet (zinc coating not less than 120 gm/m^2) of size 20 x 33 mm screwed with M4 x 38 mm SS screws at distance 75 mm from the edges and 150 mm c/c , including applying a coat of approved fire resistant primer/powder coating of not less than 30 micron on G.I. beading, & special ceramic tape of 5 x 20 mm size etc complete in all respect as per NBC 2016, IS 16231 (Part 3):2016 and as per direction of Engineer-in-charge with glass of required thickness having 120 minutes of fire resistance both integrity & radiation control (EW120) and minimum 20 minutes of insulation (EI20). The manufacturer have to give test report/certification of fire glass and the glass should have the stamp showing the value of E, EW & EI. The glass shall be tested in approved NABL accredited lab or by any other accreditation body which operates in accordance with ISO/IEC 17011 and accredits labs as per ISO/IEC 17025 for testing and calibration scopes shall be eligible. The maximum glazing size shall not be more than 1100x2200 mm (w x h) or 2.42 sqm	sqm	67	38032	38099
	PARTITIONS				
12.155	Providing and fixing partition up to ceiling height consisting of G.I. frame and required board, including providing and fixing of frame work made of special section power pressed/ roll form G.I. sheet with zinc coating of 120 gms/sqm(both side inclusive), consisting of floor and ceiling channel 50mm wide having equal flanges of 32 mm and 0.50 mm thick, fixed to the floor and ceiling at the spacing of 610 mm centre to centre with dash fastener of 12.5 mm dia meter 50 mm length or suitable anchor fastener or metal screws with nylon plugs and the studs 48 mm wide having one flange of 34 mm and other flange 36 mm and 0.50 mm thick fixed vertically within flanges of floor and ceiling channel and placed at a spacing of 610 mm centre to centre by 6 mm dia bolts and nuts, including fixing of studs along both ends of partition fixed flush to wall with suitable anchor fastener or metal screws with nylon plugs at spacing of 450 mm centre to centre, and fixing of boards to both side of frame work by 25 mm long dry wall screws on studs, floor and ceiling channels at the spacing of 300 mm centre to centre. The boards are to be fixed to the frame work with joints staggered to avoid through cracks, M.S. fixing channel of 99 mm width (0.9 mm thick having two flanges of 9.5 mm each) to be provided at the horizontal joints of two boards, fixed to the studs using metal to metal flat head screws, including jointing and finishing to a flush finish with recommended jointing compound, jointing tape, angle beads at corners (25 mm x 25 mm x 0.5 mm), joint finisher and two coats of primer suitable for board as per manufacture's specification and direction of engineer in charge all complete.				
12.155.1	75 mm overall thickness partition with 12.5 mm thick double skin fire rated Glass Reinforced Gypsum (GRG) plaster board conforming to IS: 2095: part 3 (Board with BIS certification marks)	sqm	315	976	1291
12.155.2	75mm overall thickness partition with 12.5 mm thick double skin tapered edged plain Gypsum plaster board conforming to IS: 2095: (part I): 2011 (Board with BIS certification marks)	sqm	315	755	1070

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
	12.155.3	66mm overall thickness Partition with 8mm thick double skin Calcium Silicate Board made with Calcareous & Siliceous materials reinforced with cellulose fibre manufactured through autoclaving process with Compressive Strength 225 kg/sq.cm, Bending Strength 100 kg./ sq.cm	sqm	315	1041	1356
	12.155.4	66mm overall thickness partition using 8mm thick double skin multipurpose cement board reinforced with cellulose fibre manufactured through autoclaving process (High pressure steam cured) as per IS : 14862 with suitable fibre cement screws	sqm	315	924	1239
	12.155.5	66 mm overall thickness partition using 8 mm thick double skin multipurpose cement bonded wood particle board manufactured as per IS: 14276 with suitable cement bonded board screws	sqm	315	911	1226
12.156	Providing and fixing frame work for partitions/ wall lining etc. made of 50x50x1.6 mm hollow MS tube, placed along the walls, ceiling and floor in a grid pattern with spacing @ 60 cm centre to centre both ways (vertically & horizontally) or at required spacing near opening, with necessary welding at junctions and fixing the frame to wall/ ceiling/ floors with steel dash fasteners of 8 mm dia, 75 mm long bolt, including making provision for opening for doors, windows, electrical conduits, switch boards etc., including providing with two coats of approved steel primer etc. complete, all as per direction of Engineer-in-charge.		kg	15	96	111
	C. ALUMINIUM WORK					
	DOOR/WINDOW FRAMES AND SHUTTERS					
12.157	Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate Z sections and other sections of approved make conforming to IS: 733 and IS: 1285, fixing with dash fasteners of required dia and size, including necessary filling up the gaps at junctions, i.e. at top, bottom and sides with required EPDM rubber/ neoprene gasket etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / panelling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing, panelling and dash fasteners to be paid for separately) :					
	12.157.1	For fixed portion				
		12.157.1.1 Anodised aluminium (anodised transparent or dyed to required shade according to IS: 1868, Minimum anodic coating of grade AC 15)	kg	45	316	361
		12.157.1.2 Powder coated aluminium (minimum thickness of powder coating 50 micron)	kg	45	347	392
		12.157.1.3 Polyester powder coated aluminium (minimum thickness of polyester powder coating 50 micron)	kg	45	355	401
	12.157.2	For shutters of doors, windows & ventilators including providing and fixing hinges/ pivots and making provision for fixing of fittings wherever required including the cost of EPDM rubber / neoprene gasket required (Fittings shall be paid for separately)				
		12.157.2.1 Anodised aluminium (anodised transparent or dyed to required shade according to IS: 1868, Minimum anodic coating of grade AC 15)	kg	78	341	419
		12.157.2.2 Powder coated aluminium (minimum thickness of powder coating 50 micron)	kg	78	373	451
		12.157.2.3 Polyester powder coated aluminium (minimum thickness of polyester powder coating 50 micron)	kg	78	381	459

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
12.158	Providing and fixing 12 mm thick prelaminated particle board flat pressed three layer or graded wood particle board conforming to IS: 12823 Grade I Type II, in panelling fixed in aluminium doors, windows shutters and partition frames with C.P. brass / stainless steel screws etc. complete as per architectural drawings and directions of engineer-in-charge.				
12.158.1	Pre-laminated particle board with decorative lamination on one side and balancing lamination on other side	sqm	95	741	836
12.158.2	Pre-laminated particle board with decorative lamination on both sides	sqm	95	789	883
12.159	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with EPDM rubber / neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge . (Cost of aluminium snap beading shall be paid in basic item):				
12.159.1	With float glass panes of 4.0 mm thickness (weight not less than 10kg/sqm)	sqm	168	579	747
12.159.2	With float glass panes of 5 mm thickness (weight not less than 12.50 kg/sqm)	sqm	168	865	1034
12.159.3	With float glass panes of 6 mm thickness (weight not less than 15 kg/sqm)	sqm	168	923	1091
12.159.4	With float glass panes of 8 mm thickness (weight not less than 20 kg/sqm)	sqm	168	1024	1193
12.160	Providing and fixing double action hydraulic floor spring of approved brand and manufacture conforming to IS : 6315, having brand logo embossed on the body / plate with double spring mechanism and door weight up to 125 kg, for doors, including cost of cutting floors, embedding in floors as required and making good the same matching to the existing floor finishing and cover plates with brass pivot and single piece M.S. sheet outer box with slide plate etc. complete as per the direction of Engineer-in-charge.				
12.160.1	With stainless steel cover plate minimum 1.25 mm thickness	each	137	1989	2126
12.160.2	With brass cover plate minimum 1.25 mm thickness	each	137	2145	2282
12.161	Providing and fixing double glazed hermetically sealed glazing in aluminium windows, ventilators and partition etc. with 6 mm thick clear float glass both side, having 12 mm air gap, including providing EPDM gasket, perforated aluminium spacers, desiccants, sealant (Both primary and secondary sealant) etc. as per specifications, drawings and direction of Engineer-in-charge complete.	sqm	223	3225	3448
12.162	Providing and fixing stainless steel (SS 304 grade) adjustable friction windows stays of approved quality with necessary stainless steel screws etc. to the side hung windows as per direction of Engineer-in-charge complete.				
12.162.1	205 X 19 mm	each	10	225	235
12.162.2	255 X 19 mm	each	10	290	300
12.162.3	355 X 19 mm	each	10	255	265
12.162.4	510 X 19 mm	each	10	684	694
12.162.5	710 X 19 mm	each	10	1171	1180
12.163	Providing and fixing aluminium tubular handle bar 32 mm outer dia, 3.0 mm thick & 2100 mm long with SS screws etc .complete as per direction of Engineer-in-Charge.				
12.163.1	Anodized (AC 15) aluminium tubular handle bar	each	6	484	491
12.163.2	Powder coated minimum thickness 50 micron aluminium tubular handle bar	each	6	533	539
12.163.3	Polyester powder coated minimum thickness 50 micron	each	6	546	552
12.164	Providing and fixing Brass 100mm mortice latch and lock with 6 levers without pair of handles (best make of approved quality) for aluminium doors including necessary cutting and making good etc. complete.	each	86	273	359

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
12.165	Providing and fixing anodised aluminium (anodised transparent or dyed to required shade according to IS: 1868. Minimum anodic coating of grade AC 15) sub frame work for windows and ventilators with extruded built up standard tubular sections of approved make conforming to IS: 733 and IS: 1285, fixed with dash fastener of required dia and size (Dash fastener to be paid for separately).	kg	13	316	330
12.166	Providing and fixing aluminium casement windows fastener of required length for aluminium windows with necessary screws etc. complete.				
	12.166.1 Anodized (AC 15) aluminium	each	3	59	62
	12.166.2 Powder coated minimum thickness 50 micron aluminium	each	3	63	66
	12.166.3 Polyester powder coated minimum thickness 50 micron aluminium	each	3	62	65
12.167	Providing and fixing aluminium round shape handle of outer dia 100 mm with SS screws etc. complete as per direction of Engineer-in-charge				
	12.167.1 Anodized (AC 15) aluminium	each	3	71	74
	12.167.2 Powder coated minimum thickness 50 micron aluminium	each	3	75	78
	12.167.3 Polyester powder coated minimum thickness 50 micron aluminium	each	3	80	83
12.168	Extra for applying additional anodic coating AC 25 instead of AC 15 to aluminium extruded sections.				
	12.168.1 For fixed portion	kg	-	13	13
	12.168.2 For shutters of doors, windows & ventilators	kg	-	13	13
12.169	Filling the gap in between aluminium frame & adjacent RCC/ Brick/ Stone work by providing weather silicon sealant over backer rod of approved quality as per architectural drawings and direction of Engineer-in-charge complete.				
	12.169.1 Up to 5mm depth and 5 mm width	metre	18	19	37
12.170	Providing and fixing anodised aluminium grill (anodised transparent or dyed to required shade according to IS: 1868 with minimum anodic coating of grade AC 15) of approved design/pattern, with approved standard section and fixed to the existing window frame with C.P. brass/ stainless steel screws @ 200 mm centre to centre, including cutting the grill to proper opening size for fixing and operation of handles and fixing approved anodised aluminium standard section around the opening, all complete as per requirement and direction of Engineer-in-charge. (Only weight of grill to be measured for payment).	kg	47	406	453
12.171	Providing and fixing 12 mm thick frameless toughened glass door shutter of approved brand and manufacture, including providing and fixing top & bottom pivot & double acting hydraulic floor spring type fixing arrangement and making necessary holes etc. for fixing required door fittings, all complete as per direction of Engineer-in-charge (Door handle, lock and stopper etc.to be paid separately).	sqm	376	3448	3824
12.172	Filling the gap in between aluminium/ stone/ wood frame and adjacent RCC/Brick/ Stone/ wood/ Ceramic/ Gypsum work by providing weather/structural non sag elastomeric PU sealant over backer rod of approved quality as per architectural drawings and direction of Engineer-in-charge complete, complying to ASTM C920, DIN 18540-F & ISO 11600				
	12.172.1 Up to 5 mm depth and 5 mm width	metre	24	77	101
	12.172.2 Up to 10 mm depth and 10 mm width	metre	30	112	142
	12.172.3 Up to 20 mm depth and 20 mm width	metre	45	248	293
12.173	Providing and fixing bright finished 100 mm mortice lock with 6 levers without pair of handles of approved quality for aluminium door, with necessary screws etc complete as per direction of Engineer- in-charge.	each	66	487	553
	ALUMINIUM FALSE CEILING				

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
12.174	Providing and fixing powder coated aluminium work (minimum thickness of powder coating 50 micron) consisting of tee/ angle sections, of approved make conforming to IS : 733 in frames of false ceiling including aluminium angle cleats with necessary C.P. brass/ stainless steel sunk screws, aluminium perimeter angles fixed to wall with stainless steel rawl plugs @ 450 mm centre to centre and fixing the frame work to G.I. level adjusting hangers 6 mm dia. with necessary cadmium plated machine screws all complete as per approved architectural drawings and direction of the Engineer-in-charge (level adjusting hangers, ceiling cleats and expansion hold fasteners to be paid for separately).	kg	75	492	567
12.175	Providing and fixing 6 mm dia. G.I. level adjusting hangers (up to 1200mm length), fixed to roof slabs by means of ceiling cleats made out of G.I. flat 40x3mm size 60 mm long and stainless steel expandable dash fastener of 12.5 mm dia and 50 mm long, complete as per direction of Engineer-in-charge.	each	10	45	55
12.176	Providing and fixing machine moulded aluminium covering of approved pattern & design, made out of machine cut aluminium sheet and machine holed for receiving dash fastener, over expansion joints on vertical surfaces/ceiling floors, the fixing on plate in one row on one side of joint only shall be done with stainless steel dash fasteners of 8 mm dia and 75 mm long bolt including providing aluminium washers 2 mm thick & 15 mm dia , at a staggered pitch of 200mm centre to centre including drilling holes in the receiving surface and providing expandable plastic sleeves in holes etc. complete as per direction of Engineer-in-charge.				
12.176.1	Anodised aluminium sheet 2.5mm thick (anodised transparent or dyed to required shade according to IS: 1868, Minimum anodic coating of grade AC 15)	kg	42	465	508
12.176.2	Powder coated aluminium sheet 2.5mm thick (minimum thickness of powder coating 50 micron)	kg	42	497	539
12.177	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with EPDM rubber / neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge . (Cost of				
12.177.1	With toughened glass panes of 6 mm thickness (weight not less than 15 kg/sqm)	sqm	168	1009	1177

CHAPTER NO. 13

STEEL
and
IRON WORK

CHAPTER 13.0 - STEEL & IRON WORK

NOTES:

1.0 Weld: A union between two pieces of metal at faces rendered plastic or liquid by heat or pressure, or both, Filler metal may be used to effect the union.

1.1 Fillet Weld: A weld of approximately triangular cross-section joining two surfaces approximately at the right angles to each other in a lap joint, tee joint or corner joint. It is of two types:

(1) Continuous
(2) Intermittent.

1.2 Fusion Welding: Any welding process in which the weld is made between metals in a state of fusion without hammering or pressure.

1.3 Non- fusion Welding: A term applied to the deposition, by the Oxy-Acetylene process of filler metal on parent metal without fusion of the latter.

2.0 Steel

2.1 Grades: There shall be nine grades of steel as given in the table below. While placing the order the steel should be designated by 'Designation'

Grade

Designation

All finished materials shall be well and cleanly rolled to the dimensions, sections and masses specified. The finished material shall be reasonably free from surface flaws; laminations; rough/ jagged and imperfect edges and all other harmful defects.

2.2 Rivets: Rivets shall be made from rivet bars of mild steel as per IS 1148.

2.3 Bolts: These are of two types - namely turned and fitted bolts and black bolts. Turned & fitted bolts are turned to exact diameter in automatic lathe. Black bolts are not finished to exact sizes. They shall conform to IS 1367

2.4 Electrodes: The electrodes required for metal arc welding shall be covered electrodes and shall conform to IS 814.

3.0 STEEL WORK IN SINGLE SECTION FIXED INDEPENDENTLY WITH CONNECTING PLATE

3.1 Fabrication: No two pieces shall be welded or otherwise jointed to make up the required length of member. All straightening and shaping to form, shall be done by pressure.

3.2 Painting: All surfaces which are to be painted, oiled or otherwise treated shall be dry and thoroughly cleaned to remove all loose scale and loose rust. Part to be encased in concrete shall not be painted or oiled. A priming coat of approved steel primer such as Red Oxide/Zinc Chromate primer conforming to IS 2074 shall be applied before any member of steel structure are placed in position or taken out of workshop.

3.3 Erection: Steel work shall be hoisted and placed in position carefully without any damage to itself and other building work and injury to workmen. Where necessary mechanical appliances such as lifting tackle, winch etc. shall be used.

4.0 STEEL WORK IN BUILT UP SECTIONS (RIVETED AND BOLTED)

4.1 Laying Out: A figure of the steel structure to be fabricated shall be drawn on a level platform to full scale.

4.2 Fabrication: Fabrication shall generally be done as specified in IS 800. In major works or where so specified, shop drawings giving complete information for the fabrication of the component parts of the structure including the location, type, size, length and details or rivets, bolts or welds, shall be prepared in advance of the actual fabrication and approved by the Engineer-in-charge.

4.3 Erection: Steel members shall be hoisted and erected in position carefully, without any damage to itself, other structures and equipment and injury to workmen. The method of hoisting and erection proposed to be adopted by the contractor shall be got approved from the Engineer-in-charge in advance.

4.4 Painting: Before the members of the steel structure are placed in position or taken out of the workshop these shall be painted.

4.5 Measurements: The work as fixed in place shall be measured in running meters correct to a millimeter and weights calculated on the basis of standard tables correct to the nearest kilogram. The standard weight of steel sections shall conform to IS 808 with tolerance in sizes as per IS 1852.

4.6 Rate: Rate includes the cost of labour and materials required for all the operations described above.

5.0 COLLAPSIBLE STEEL GATES: These shall be fabricated from the mild steel sections. The gates shall consist of double or single collapsible gate depending on the size of the opening.

6.0 M.S. SHEET SLIDING SHUTTER: These shall be manufactured as per drawings and specification. These shall be fabricated from mild steel sheets. The shutters shall be double or single leaf shutter as specified.

7.0 M.S. SHEET SHUTTERS: These shall be manufactured as per drawing and specification. These shall be fabricated from mild steel sheets and angle iron.

Painting: All the members of the door including angle iron shall be thoroughly cleaned off rust, scales, dust etc. and given a priming coat of approved steel primer i.e. Red Oxide/ Zinc chrome primer confirming to IS 2074 before fixing them in position.

8.0 ROLLING SHUTTERS: Rolling shutters shall conform to IS 6248. Shutters upto 10 sq. metre shall be of push and pull type and shutters with an area of over 10 sq. metre shall generally be provided with reduction gear operated by mechanical device with chain or handle, if bearings are specified for each of operation, these shall be paid for separately.

8.1 Shutter: The shutter be built up of inter locking lath section formed from cold rolled steel strips.

8.2 Spring: The spring shall be of coiled type manufactured from high tensile spring steel wire or strips of adequate strength conforming to IS 4454- Part I .

8.3 Roller and Brackets: The suspension shaft of the roller shall be made of steel pipe conforming to heavy duty as per IS 1161.

8.4 Guide Channel: The width of guide channel shall be 25 mm.

8.5 Cover: Top cover shall be of mild steel sheets not less than 0.90 mm thick and stiffened with angle or flat stiffeners at top and bottom edges to retain shape.

8.6 Fixing: The arrangement for fixing in different situations in the opening shall be as per IS 6248.

9.0 STEEL DOORS, WINDOWS, VENTILATORS AND COMPOSITE UNITS

Hot rolled steel sections for fabrication of steel doors, windows, ventilators and fixed lights shall conform to IS 7452. Shapes weights and designations of hot rolled sections shall be as per IS 7452.

9.1 Glazing: Glazing shall be provided on the outside of the frame unless otherwise specified. Putty of approved make conforming to IS 419 shall be used for fixing glass panes.

9.2 Finishing: All steel surfaces shall be thoroughly cleaned of rust, scale and dirt. Where so specified. A priming coat of approved steel primer i.e. red oxide/ zinc chromate perimer conforming to IS 2074 shall be given.

10.0 T-IRON DOORS, WINDOWS AND VENTILATORS FRAMES:

T-iron doors, windows and ventilators frames shall be manufactured from uniform mild steel Tee section. The steel shall be of the grade as provided in 10.1.1 The frames shall be got fabricated in approved workshop.

11.0 PRESSED STEEL DOOR FRAMES: Steel door frames shall be manufactured from commercial mild steel sheet of specified thickness, conforming to IS 2062 and 4351.

12.0 TUBULAR / HOLLOW SECTION TRUSSES: Structural Steel Tube shall be of:

1. Hot finished welded (HFW) type, or

2. Hot finished seamless (HFS) type, or

3. Electric resistance or induction butt welded (ERW), having carbon content less than 0.03 percent, yield stress of 21.5 kg/mm^2 (YST 210) type.

13.0 M.S. HOLLOW RECTANGULAR DOOR FRAMES (I-TYPE SECTION)

Steel door frames shall be manufactured from commercial mild steel sheet of 1.60 mm thickness, conforming to IS 2062 and 4351. Steel door frames shall be made in the profiles as per drawings and/or as directed by the Engineer- in-charge.

CHAPTER 13.0 - STEEL & IRON WORK

LIST OF BUREAU OF INDIAN STANDARD CODES

Sr. No.	B.I.S. No.	Subject
1	IS 228	Structural steel (Standard quality)
2	IS 277	Specification for galvanized steel sheets (Plain and corrugated)
3	IS 800	Code of practice for use of structural steel in general in steel construction
4	IS 806	Code of practice for use of steel Tubes in general building construction
5	IS 808	Dimensions for Hot rolled steel beams, columns, channel and angle sections
6	IS 812	Glossary of terms relating to welding and cutting metals
7	IS 813	Scheme of symbols for welding
8	IS 816	Code of practice for use of metal arc welding for general construction in mild steel
9	IS 818	Code of practice for safety and healthy requirements in electric and gas welding and cutting operations
10	IS 822	Code of procedure for inspection of welds
11	IS 823	Manual for metal arc welding in mild steel
12	IS 1038	Steel doors, windows and ventilators
13	IS 1081	Code of practice for fixing and glazing of metal (Steel and Aluminium) doors, windows and ventilators
14	IS 1148	Hot rolled steel rivet bars (up to 40 mm diameters) for structural purposes
15	IS 1161	Steel tubes for structural purposes
16	IS 1200 (Pt.-VIII)	Method of measurements of steel work and iron works
17	IS 1363 Part I, II & III	Hexagon head bolts, screws, and nuts of product grade C (Hexagon Head bolt)
18	IS 1367	Technical supply conditions for threaded steel fasteners
19	IS 1599	Method for bend test
20	IS 1821	Dimensions for clearance holes for bolts and screws
21	IS 1894	Method for tensile testing of steel tubes
22	IS 1977	Structural steel (ordinary quality)
23	IS 2062	Hot Rolled low, medium and high tensile structural steel
24	IS 2074	Ready mixed paint, air drying red oxide zinc chrome priming
25	IS 4351	Specification for steel door frames
26	IS 4711	Methods for sampling of steel pipes, tube and fittings
27	IS 4736	Hot – dip zinc coating on mild steel tubes
28	IS 4923	Hollow Steel Sections for Structural Use
29	IS 6248	Metal rolling shutters and rolling grills
30	IS 7452	Specification for hot rolled steel sections for doors, windows and ventilators.

Item No.	Description			Unit	Labour Rate	Material Rate	Through Rate
	STEEL DOOR/ WINDOW FRAMES AND SHUTTERS						
13.1	Providing and fixing T-iron frames for doors, windows and ventilators of mild steel Tee-sections, joints mitred and welded, including fixing of necessary butt hinges and screws and applying a priming coat of approved steel primer.						
	13.1.1	Fixing with 15x3 mm lugs 10 cm long embedded in cement concrete block 15x10x10 cm of C.C. 1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size).		kg	10	78	88
	13.1.2	Fixing with carbon steel galvanised dash fastener of required dia and size (to be paid for separately)		kg	10	75	86
13.2	Providing and fixing angle iron frames for doors, windows and ventilators of mild steel Angle sections of size 35x35x5 mm, joints mitred and welded by angle iron 35x35x5 mm or 35x 5 mm flat pieces to the existing T-iron frame or to the wall with dash fastener, including fixing of necessary butt hinges and screws and applying a priming coat of approved steel primer, all complete as per the direction of Engineer-In-charge.			kg	10	74	84
13.3	Providing and fixing pressed steel door frames conforming to IS: 4351, manufactured from commercial mild steel sheet of 2.0 mm thickness, including hinges, jamb, lock jamb, bead and if required angle threshold of mild steel angle of section 50x25 mm, or base ties of 2.00 mm, pressed mild steel welded or rigidly fixed together by mechanical means, including M.S. pressed butt hinges 2.5 mm thick with mortar guards, lock strike-plate and shock absorbers as specified and applying a coat of approved steel primer after pre-treatment of the surface as directed by Engineer-in-charge:						
	13.3.1	Profile B					
		13.3.1.1	Fixing with adjustable lugs with split end tail to each jamb	metre	34	348	382
		13.3.1.2	Fixing with carbon steel galvanised dash fastener of required dia and size (to be paid for separately)	metre	34	343	377
	13.3.2	Profile C					
		13.3.2.1	Fixing with adjustable lugs with split end tail to each jamb	metre	34	374	408
		13.3.2.2	Fixing with carbon steel galvanised dash fastener of required dia and size (to be paid for separately)	metre	34	369	402
	13.3.3	Profile E					
		13.3.3..1	Fixing with adjustable lugs with split end tail to each jamb	metre	34	400	434
		13.3.3.2	Fixing with carbon steel galvanised dash fastener of required dia and size (to be paid for separately)	metre	34	395	428
13.4	Providing and fixing M.S. Tubular frames for doors, windows, ventilators and cupboard with rectangular/ L-Type sections, made of 1.60 mm thick M.S. Sheet, joints mitred, welded and grinded finish, with profiles of required size, including fixing of necessary butt hinges and screws and applying a priming coat of approved steel primer.						
	13.4.1	Fixing with 15x3 mm lugs 10 cm long embedded in cement concrete block 15x10x10 cm of C.C. 1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size)		kg	11	101	112
	13.4.2	Fixing with carbon steel galvanised dash fastener of required dia and size (to be paid for separately)		kg	10	96	106
13.5	Providing and fixing carbon steel galvanised (minimum coating 5 micron) dash fastener of 10 mm dia double threaded 6.8 grade (yield strength 480 N/mm2), counter sunk head, comprising of 10 mm dia polyamide PA 6 grade sleeve, including drilling of hole in frame , concrete/ masonry, etc. as per direction of Engineer-in-charge.						
	13.5.1	10 x 60 mm		each	32	34	66

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
	13.5.2	10 x 80 mm	each	32	39	71
	13.5.3	10 x 120 mm	each	40	47	87
	13.5.4	10 x 140 mm	each	40	58	98
	13.5.5	10 x 160 mm	each	47	75	122
13.6	Providing and fixing 1mm thick M.S. sheet door with frame of 40x40x6 mm angle iron and 3 mm M.S. gusset plates at the junctions and corners, all necessary fittings complete, including applying a priming coat of approved steel primer.					
	13.6.1	Using M.S. angels 40x40x6 mm for diagonal braces	sqm	1035	2031	3066
	13.6.2	Using flats 30x6mm for diagonal braces and central cross piece	sqm	1032	1877	2909
13.7	Fixing standard steel glazed doors, windows and ventilators in walls, including fixing of float glass panes with glazing clips and special metal-sash putty of approved make, or metal beading with screws, (only steel windows, glass panes cut to size and glazing clips or metal beading with screws, shall be supplied by department free of cost.					
	13.7.1	Fixing with 15x3 mm lugs 10 cm long embedded in cement concrete block 15x10x10 cm of C.C. 1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size)	kg	24	2	25
	13.7.2	Fixing with carbon steel galvanised dash fastener of required dia and size (to be paid for separately)	kg	16	0	16
13.8	Providing and fixing factory made ISi marked steel glazed doors, windows and ventilators, side /top /centre hung, with beading and all members such as F7D,F4B, K11 B and K12 B etc. complete of standard rolled steel sections, joints mitred and flash butt welded and sash bars tenoned and riveted, including providing and fixing of hinges, pivots, including priming coat of approved steel primer, but excluding the cost of other fittings, complete all as per approved design, (sectional weight of only steel members shall be measured for payment).					
	13.8.1	Fixing with 15x3 mm lugs 10 cm long embedded in cement concrete block 15x10x10 cm of C.C. 1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size)	kg	35	73	108
	13.8.2	Fixing with carbon steel galvanised dash fastener of required dia and size (to be paid for separately)	kg	12	72	84
13.9	Providing & fixing fly proof wire gauze to windows, clerestory windows & doors with M.S. Flat 15x3 mm and nuts & bolts complete.					
	13.9.1	Galvanised M.S. Wire gauze with 0.63 mm dia wire and 1.4 mm aperture on both sides	sqm	133	434	567
	13.9.2	Stainless steel (grade 304) wire gauze of 0.5 mm dia wire and 1.4 mm aperture on both sides	sqm	133	648	781
13.10	Providing & fixing glass panes with putty and glazing clips in steel doors, windows, clerestory windows, all complete with :					
	13.10.1	4.0 mm thick glass panes	sqm	174	430	604
	13.10.2	5.5 mm thick glass panes	sqm	174	715	889
13.11	Extra for providing and fixing steel beading of size 10 x 10 x 1.6 mm (box type), approved shape and section with screws instead of glazing clips and metal sash putty, in steel doors, windows, ventilators and composite units.		metre	3	36	38
13.12	Extra for providing and fixing steel beading of MS flat of size 20mm x 3mm section					
	13.12.1	for doors	sqm	11	124	135
	13.12.2	For windows	sqm	50	256	307
13.13	Providing and fixing bright finished brass handles of minimum weight of 200 grams to side hung steel windows including fixing the same with necessary iron bolt and nut etc. complete		No.	5	63	68
13.14	Providing and fixing bright finished brass peg-stay 300 mm long of minimum weight 330 grams to side hung steel windows including fixing the same with necessary iron bolt and nut etc. complete		No.	5	169	173

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
13.15	Providing and fixing bright finished brass peg-stays 250 mm long of minimum weight 280 grams to steel ventilator including fixing the same with necessary iron bolt and nut etc.complete	No.	5	135	140
13.16	Providing and fixing bright finished brass peg-stays 200 mm long of minimum weight 240 grams to ventilator including fixing the same with necessary iron bolt and nuts etc. complete	No.	5	128	133
13.17	Providing and fixing 14 mm bright finished brass spring catch to steel Centre hung ventilators with necessary iron bolt and nuts etc. complete.	No.	5	14	19
13.18	Providing and fixing hard drawn steel wire fabric 75 mm X 25 mm rectangular mesh with 3.25 mm dia wire fixed on steel windows of standard rolled sections with 3 mm thick flat iron cover moulding of 12.5 mm width fixed with machine screws welded complete in all respect.	sqm	257	744	1001
13.19	Providing and fixing galvanised wire mesh of average width of aperture 1.4 mm and nominal dia of wire 0.63 mm fixed on steel windows of standard rolled steel section, with 3 mm thick MS flat iron cover moulding of 12.5 mm width, fixed with machine screws welded complete in all respects.	sqm	236	491	727
13.20	Providing and Fixing Poly Carbonate Sheet 1.25mm thickness on Gates and grills excluding the cost of MS framework but including the cost of nut bolts, Welding rods complete in all respect as per direction of Engineer-in-Charge.	sqm	267	1200	1467
	PRE-PAINTED / POWDER COATED GALVANISED SHEET				
13.21	Supply & fixing Windows frames (Chowkhats) including mullions consisting frame fabricated from sheet roll formed out of 1.2mm thick galvanized sheet as per IS:277 (Base steel as per IS 513) with zinc of 120 gm/sqm & Powder coated with pure Polyester powder up to 50 microns (as per approved colour), 3 Nos. 100mm butt - hinges 2mm thick, 6 Nos. 1.2mm thick CRCA electroplated stiffner, 6 Nos. M.S hold fast with split and tail welded to stiffner plate 200mm long, receiver for aldrop, weld less corner assembly with brackets & screws, M.S tie rod 50mm x 25mm to be fixed at bottom finished with powder coated total thickness of coating 0.6mm of approved shade, fixed in position including the cost of cement concrete for 1:2:4 for fixing lugs complete in all respects as per drawing, design, specification & entire satisfaction of Engineer-in-charge.				
	13.21.1 Door Frame of size 80mm x 50mm with 37mm wide single rebate for 35mm door shutter	metre	208	853	1061
	13.21.2 Door Frame of size 125mm x 60mm with 37mm wide double rebate for 35mm door shutter	metre	322	1067	1389
13.22	Supply & fixing Windows frames (Chowkhats) including mullions consisting frame fabricated from sheet roll formed out of 0.58mm thick galvanized sheet (Base steel as per IS 513) with zinc of 120 gm/sqm steel sheet pre coated (as per approved colour) with Polyester paint of 12-16 microns thickness under coat of EPOXY primer & back coat with ALKYD backer of 5-7 microns, total sheet thickness with coating 0.58mm of approved shade, weld less corner assembly with brackets & screws, fixed in position by means of PVC & metal hold fastener with PVC cap complete in all respects as per drawing, design, specification & entire satisfaction of Engineer-in-charge.				
	13.22.1 Windows Outer frame of size 72mm x 55mm and central mullion 72mm x 50mm with Double rebate	metre	254	716	970
13.23	Supply & fixing Windows frames (Chowkhats) including mullions consisting frame fabricated from sheet roll formed out of 0.58mm thick galvanized sheet (Base steel as per IS 513) with zinc of 120 gm/sqm steel sheet pre coated (as per approved colour) with Polyester paint of 12-16 microns thickness under coat of EPOXY primer & back coat with ALKYD backer of 5-7 microns, total sheet thickness with coating 0.58mm of approved shade, weld less corner assembly with brackets & screws, fixed in position by means of PVC & metal hold fastener with PVC cap complete in all respects as per drawing, design, specification & entire satisfaction of Engineer-in-charge.				
	13.23.1 Glazed Windows shutter section 47mm x 20mm (Without Glass)	sqm	957	4035	4992

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
	13.23.2	Wire Mesh Windows shutter Section 40mm x 20mm with S.S wire mesh 32 gauge fly mesh with 144 holes per square Inch	sqm	957	4169	5127
	13.23.3	Providing & fixing fixed beading 12mm x 12mm for fixed glass ECO fixed gasket (EPDM)	metre	49	177	226
13.24	Providing & fixing glazing in door, window, ventilator shutters and partitions etc. complete as per the architectural drawings and the directions of engineer-in-charge. (Cost of Gasket / beading shall be paid as per respective item)					
	13.24.1	Float glass panes of 5.5mm thickness	sqm	130	714	844
13.25	Supply & fixing Windows frames (Chowkhats) including mullions consisting frame fabricated from sheet roll formed, total sheet thickness with coating 0.72mm for outer frame & 0.58 mm. for other sections,galvanized sheet (Base steel as per IS 513) with zinc of 120 gm/Sqm as per IS 277 steel sheet pre coated (as per approved colour) with Polyster paint of 12-16 microns thickness under coat of EPOXY primer & back coat with ALKYD backerof 5-7 microns, weldless corner assembly with brackets & screws, fixed in position by means of PVC & metal hold fastner with PVC cap complete in all respects as per drawing, design, specification & entire satisfaction of Engineer-in-charge.					
	13.25.1	Windows Outer frame of size 98mm x 50mm and central mullion 46mm x 70mm and Additional Mullion 29mm x 46mm with Double rebate	metre	254	839	1093
13.26	Supply & fixing Windows frames including mullions consisting frame fabricated from sheet roll formed out of 0.58mm thick galvanized sheet (Base steel as per IS 513) with zinc of 120 gm/Sqm steel sheet pre coated (as per approved colour) with Polyster paint of 12-16 microns thickness under coat of EPOXY primer & back coat with ALKYD backerof 5-7 microns, weldless corner assembly with brackets & screws, fixed in position by means of PVC & metal hold fastner with PVC cap complete in all respects as per drawing, design, specification & entire satisfaction of Engineer-in-charge.					
	13.26.1	Glazed Windows shutter section 46mm x 46mm (Without Glass)	sqm	957	4756	5714
	13.26.2	Wire Mesh Windows shutter Section 40mm x 20mm with S.S wire mesh 32 gauge fly mesh with 144 holes per square Inch	sqm	957	4169	5127
	13.26.3	Providing & fixing fixed beading 25mm x 18mm for fixed glass ECO fixed gasket (EPDM)	metre	49	241	290
	SIGLE/BUILT-UP STEEL/TUBULAR SECTIONS					
13.27	Structural steel work in single section, fixed with or without connecting plate, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete.		kg	11	68	80
13.28	Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete.		kg	14	70	84
13.29	Steel work welded in built up sections/ framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required.					
	13.29.1	In stringers, treads, landings etc. of stair cases, including use of chequered plate wherever required, all complete	kg	5	84	89
	13.29.2	In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works	kg	19	74	93
13.30	Steel work in built up tubular (round, square or rectangular hollow tubes etc.) trusses etc., including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer, including welding and bolted with special shaped washers etc. complete.					
	13.30.1	Hot finished welded type tubes	kg	22	97	118
	13.30.2	Hot finished seamless type tubes	kg	22	110	132
	13.30.3	Electric resistance or induction butt welded tubes	kg	22	83	105
13.31	Providing and fixing mild steel round holding down bolts with nuts and washer plates complete.		kg	8	66	74

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
13.32	Providing and fixing bolts including nuts and washers complete.	kg	27	62	90
13.33	Providing and fixing M.S. rivets of sizes in position.	kg	62	65	127
13.34	Supply and Fixing of Tensile Sheet Shed 650GSM sheet with M.S Iron pipe Frame Pole 125mm Heavy Truss M.S Pipe 60mm Heavy, Membrane M.S Pipe 50mm Heavy, Complete With cost of Painting and Labour for Fixing Paint Complete in all respects	sqm	0	5194	5194
	ROLLING/COLLAPSIBLE/SLIDING DOOR SHUTTERS				
13.35	Providing and fixing in position collapsible steel shutters with vertical channels 20x10x2 mm and braced with flat iron diagonals 20x5 mm size, with top and bottom rail of T-iron 40x40x6 mm, with 40 mm dia steel pulleys, complete with bolts, nuts, locking arrangement, stoppers, handles, including applying a priming coat of approved steel primer.	sqm	2771	2463	5235
13.36	Providing and fixing 1 mm thick M.S. sheet sliding-shutters, with frame and diagonal braces of 40x40x6 mm angle iron, 3 mm M.S. gusset plates at the junctions and corners, 25 mm dia pulley, 40x40x6 mm angle and T- iron guide at the top and bottom respectively, including applying a priming coat of approved steel primer	sqm	999	2652	3651
13.37	Supplying and fixing rolling shutters of approved make, made of required size M.S. laths, interlocked together through their entire length and jointed together at the end by end locks, mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation complete, including the cost of providing and fixing necessary 27.5 cm long wire springs manufactured from high tensile steel wire of adequate strength conforming to IS: 4454 - part 1 and M.S. top cover of required thickness for rolling shutters.				
13.37.1	80x1.25 mm M.S. laths with 1.25 mm thick top cover	sqm	270	1963	2232
13.37.2	80x1.20 mm M.S. laths with 1.20 mm thick top cover	sqm	441	2086	2527
13.37.3	80x0.90 mm M.S. laths with 0.90 mm thick top cover	sqm	332	1941	2273
13.38	Providing and fixing ball bearing for rolling shutters.	each	-	361	361
13.39	Extra for providing mechanical device chain and crank operation for operating rolling shutters.				
13.39.1	Exceeding 10.00 sqm and up to 16.80 sqm in the area	sqm	-	1050	1050
13.39.2	Exceeding 16.80 sqm in area	sqm	-	1050	1050
13.40	Extra for providing grilled rolling shutters manufactured out of 8 mm dia M.S. bar instead of laths as per design approved by Engineer-in- charge, (area of grill to be measured).	sqm	-	649	649
	STAINLESS STEEL RAILING				
13.41	Providing and fixing stainless steel (Grade 304) railing made of Hollow tubes, channels, plates etc., including welding, grinding, buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete, i/c fixing the railing with necessary accessories & stainless steel dash fasteners , stainless steel bolts etc., of required size, on the top of the floor or the side of waist slab with suitable arrangement as per approval of Engineer-in-charge, (for payment purpose only weight of stainless steel members shall be considered excluding fixing accessories such as nuts, bolts, fasteners etc.).	kg	68	375	443
13.42	Providing and fixing hand rail of approved size by welding etc. to steel ladder railing, balcony railing, staircase railing and similar works, including applying priming coat of approved steel primer.				
13.42.1	M.S. tube	kg	22	99	120
13.42.2	E.R.W. tubes	kg	24	86	110
13.42.3	G.I. pipes	kg	21	97	118
	OTHER USEFUL STEEL WORK ITEMS				
13.43	Providing and fixing M.S. fan clamp type I or II of 16 mm dia M.S. bar, bent to shape with hooked ends in R.C.C. slabs or beams during laying, including painting the exposed portion of loop, all as per standard design complete.	each	39	106	145

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
13.44	Providing and fixing circular/ Hexagonal cast iron or M.S. sheet box for ceiling fan clamp, of internal dia 140 mm, 73 mm height, top lid of 1.5 mm thick M.S. sheet with its top surface hacked for proper bonding, top lid shall be screwed into the cast iron/ M.S. sheet box by means of 3.3 mm dia round headed screws, one lock at the corners. Clamp shall be made of 12 mm dia M.S. bar bent to shape as per standard drawing.	each	30	118	148
13.45	Welding by gas or electric plant including transportation of plant at site etc. complete.	cm	3	-	3

CHAPTER NO. 14

LINING and OUTLETS

CHAPTER 14.0 - LINING & OUTLETS

NOTES:

1. The cost of water is included in the rates. Water shall be arranged by the contractor and nothing extra is payable on this account.

2. The rates, for Item Nos. 14.1 to 14.6 include the cost of fine dressing to exact level, watering and preparing sub grade. All basket earthworks, to be paid extra, at the rates for lip cutting.

3. The contractor shall arrange bailing out water in the bed, accumulated due to rains. The pumping out of water caused by springs, sub-soil water, canal or river seepage and broken water mains, or drains, for which the contractor is not responsible; shall be arranged by the department, and the cost for the same is not included in the rate.

4. All type of concreting is to be done with use of mechanical mixer and vibrator. Accordingly the rates of all type of concrete, in this chapter include the cost of mixing with mechanical mixer and with the use of vibrator, which are to be arranged by the contractors at its own expenses. However, an exemption for the use of mechanical mixer and vibrator upto a quantity of 10 cum of concrete for each exceptional / isolated work shall be given with the written approval of Executive Engineer with the reduction of rates accordingly.

CHAPTER 14.0 - LINING AND OUTLETS

Item No.	Description	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	A. LINING					
14.1	Dressing bed and preparation of sub grade for lining by mechanical/ mannual means	sqm	5	-	-	5
14.2	Dressing side slopes and preparation of sub grade for lining by mechanical/ mannual means	sqm	8	-	-	8
14.3	Dressing bed and preparation of sub grade for lining in earth work, with admixture of shingle or kankar by mechanical/ mannual means					
14.3.1	Up to 40 percent	sqm	8	-	-	8
14.3.2	Above 40 percent	sqm	9	-	-	9
14.4	Dressing side slopes and preparation of sub grade for lining in earth work, with admixture of kankar by mechanical/ mannual means					
14.4.1	Up to 40 percent	sqm	9	-	-	9
14.4.2	Above 40 percent	sqm	12	-	-	12
14.5	Dressing bed and preparation of sub grade for lining in mixed gravel and conglomerate reaches by mechanical/ mannual means	sqm	14	-	-	14
14.6	Dressing side slopes and preparation of sub grade for lining in mixed gravel and conglomerate reaches by mechanical/ mannual means	sqm	16	-	-	16
14.7	Double layer tile lining for irrigation channels consisting of: (i) 10 mm thick cement mortar 1 :5 in sub grade. (ii) First layer of 5.08 cm thick tiles 30.48 cm X 15.24 cm laid in 1:5 cement mortar as mentioned above. (iii) Sand-wiched plaster 1:3 cement mortar 15 mm thick (iv) Second layer of tiles, laid in 1:3 cement mortar, with 6 mm thick layer of mortar, over sand-wiched plaster- The above gives total thickness of lining as 13.36 cm					
14.7.1	In bed	sqm	56	-	439	495
14.7.2	On side Slopes-					
14.7.2.1	Up to 3.50 meters height above bed level	sqm	94	-	439	533
14.7.2.2	above 3.50 metres but up to 5.50 metres height.	sqm	97	-	439	536
14.7.2.3	above 5.50 metres, but up to 7.50 metres height	sqm	99	-	439	539
	Note: The height is to be measured vertically					
14.8	Single layer tile lining in bed only, consisting of - (i) 10mm thick cement mortar 1:5 on Sub grade. (ii) Single layer of 5.08 cm. thick tiles 30.48 cm. x 15.24 cm x 5.08 cm. laid in 1:5 cement sand mortar, mentioned above. (iii) 20mm thick cement plaster 1:3 properly rendered and finished.	sqm	58	-	268	326
14.9	Cement concrete lining 15cm thick or less for irrigation channels, using cement concrete 1:3:6 (M-10)					
14.9.1	Concrete lining in bed.	cum	873	-	2540	3413
14.9.2	concrete lining on side slopes for vertical height up to 3.50 m.	cum	882	-	2540	3422
14.9.3	concrete lining on side slopes for vertical height above 3.50 metre but up to 5.50 metres	cum	1049	-	2540	3589
14.9.4	Concrete lining on side slopes for vertical height above 5.50 m. but up to 7.50 m.	cum	1215	-	2540	3756

Item No.	Description	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
14.10	Lining with design mix concrete of grade M-15 with minimum cement content 240kg/cum, 75mm thick in curve portion and side slope manually including rendering with cement sand (1:3) slurry, form work, dressing and preparation of sub grade as per directions of Engineer-in-charge.					
	14.10.1 75mm thickness					
	14.10.1.1 In bed					
	14.10.1.1. Manually	sqm	73	-	233	306
	14.10.1.1. Using Paver	sqm	73	15	233	321
	14.10.1.2 In slope					
	14.10.1.2. Manually	sqm	76	-	233	310
	14.10.1.2. Using Paver	sqm	76	15	233	324
	14.10.2 100 mm thickness					
	14.10.2.1 In bed					
	14.10.2.1. Manually	sqm	95	-	300	396
	14.10.2.1. Using Paver	sqm	95	15	300	410
	14.10.2.2 In slope					
	14.10.2.2. Manually	sqm	98	-	300	399
	14.10.2.2. Using Paver	sqm	98	15	300	413
14.11	Excavating conglomerate for drains and bed sleepers, under the lining by mechanical/ mannual means	cum	320	-	-	320
14.12	Making dry brick drains behind lining 7.50 cm. brick all-round by mechanical/ mannual means	metre	13	-	-	13
14.13	Putting 1:3 Cement sand slurry, 6mm thick on prepared bed and side slopes before laying concrete on bed and side slopes	sqm	2	-	31	33
14.14	Curing Lining for 28 days					
	14.14.1 In bed	sqm	3	-	2	5
	14.14.2 On Side slopes	sqm	8	-	5	14
14.15	Extra allowance for providing templates in curved portion of lining	sqm of curved surface	1	-	6	7
14.16	Extra allowance for form work in concrete lining					
	14.16.1 In Bed	cum	54	-	90	144
	14.16.2 On side slopes	cum	63	-	90	153
14.17	Extra allowance for scaffolding, in tile and concrete lining for side slopes.	sqm	1	-	7	8
	Note: The rates for Item No. 14.17 are payable on area of side slopes only					
14.18	Filling expansion joints, with special impervious hot pour, 12.5 mm wide.	per metre per cm depth	1	-	0	1
14.19	Bending and fixing iron rungs in lined slopes.	each	31	-	529	560
14.20	Making temporary perforated French drain on top of coping of lining for curing consisting of two tiles, laid on edge in 1:7 mortar, on each side of the drain.	metre	7	-	53	60
14.21	Dismantling perforated french drain on top of lining by mechanical/ mannual means	metre	5	-	-	5
	Note: The rates for item Nos. 14.20 and 14.21 are include in the rates of Item No.14.14, for curing ; and are not payable in addition These rates are payable only when curing is done departmentally, and the work of French drain is got done through contractor.					
14.22	Collecting kattals and brick bats from bed, including stacking of collected material, out side the canal.					

Item No.	Description	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	Refer to chapter of carriage of materials by manual labour and add Rs.10.00 per cum for collecting the scattered material					
	Note for Item No. 14.22: For converting lift into horizontal lead, the lift up to 4.0 meters will be multiplied by 10 and from above 4.0 metres to 6 metres, it will be squared and multiplied by 3.25 and beyond 6 metres, it will be multiplied by 20. No cross-leads, what so ever, shall be measured and paid for.					
14.23	Cement pointing 1:2 on lining					
	14.23.1 In bed.	sqm	24	-	10	34
	14.23.2 On side slopes.	sqm	27	-	10	37
	Note: The work of Item No. 14.23 is to be done and paid for only when specially permitted, by the Superintending Engineer.					
14.24	Earth work for 'Lip-cutting' for lining of irrigation channels, inclusive of all allowances, lead and dressing by mechanical/ mannual means.					
	14.24.1 0 to 1.5m depth.	cum	81	-	-	81
	14.24.2 Depth exceeding 1.5 metres but up to 3.0 meters	cum	83	-	-	83
	14.24.3 Depth exceeding 3.00 metres but up to 4.50m	cum	92	-	-	92
	14.24.4 Depth exceeding 4.50 metres but up to 6.00m	cum	105	-	-	105
	14.24.5 Depth exceeding 6.00 m but up to 7.50m	cum	118	-	-	118
	Note: (i) The depth in Item No.14.24 is to be measured vertically.					
	(ii) The rates for lip-cutting are payable for the entire depth, including the bottom curve.					
14.25	Double layer tile lining for water storage tanks, as per specifications of item No. 14.7 but including cost of dressing sub-grade providing scaffolding and curing etc. complete in all respects					
	14.25.1 In bed	sqm	70	-	441	511
	14.25.2 On Side slopes	sqm	116	-	452	568
14.26	Lining of water storage tanks with 5 cm. thick cement concrete 1:3:6 using stone aggregate 20 mm nominal size laid over 7.50 cm thick layer of cement concrete 1:6:12 using brick ballast 40 mm nominal size including dressing of sub-grade, curing form work and scaffolding, etc. complete in all respects.					
	14.26.1 Concrete lining in bed	sqm	65	-	257	322
	14.26.2 Concrete lining On Side Slopes	sqm	75	-	268	343
14.27	Double layer tile lining for water storage tanks, consisting of-					
	(i)10mm thick cement plaster 1:5 in sub-grade					
	(ii) First layer of 3.81 cm thick tiles of 22.86 cm x 11.43 cm laid in 1:5 cement mortar as mentioned above					
	(iii) Sand-wiched plaster 1:3 cement 15 mm thick.					
	(iv) Second layer of tiles laid in 1:3 cement mortar, with 6mm mortar over sand-wiched plaster including cost of dressing sub grade scaffolding and curing etc. complete in all respects-					
	14.27.1 In bed.	sqm	104	-	663	768
	14.27.2 On side slopes.	sqm	131	-	674	805
14.28	Lining of water storage tanks with 5 cm. thick cement concrete 1:3:6 using stone aggregates 20 mm nominal size laid over 7.5 cm .thick layer of cement lime sand concrete 1:2:9:24 , (0.041 cum cement 0.082 cum ground hydrated lime 0.37 cum sand 1.00 cum stone blast 20 mm nominal size) including dressing of sub-grade, curing of work and scaffolding, etc. complete in all respects.					

Item No.	Description	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	14.28.1 Concrete lining in bed.	sqm	76	-	266	343
	14.28.2 Concrete lining on side slopes	sqm	76	-	273	349
14.29	Lining of water storage tanks with 5 cm. thick cement concrete 1:3:6 using stone aggregates 20 mm nominal size laid over 7.5 cm .thick layer of cement lime sand concrete 1:2:9:24 , 0.041 cum cement 0.082 cum ground hydrated lime 0.37 cum sand 1.00 cum stone blast 40 mm nominal size including dressing of sub-grade, curing of work and scaffolding, etc. complete in all respects.					
	14.29.1 concrete lining in bed.	sqm	76	-	161	237
	14.29.2 concrete lining on side slopes	sqm	75	-	171	247
14.30	Double layer brick lining for storage tanks consisting of ;					
	(i) 10 mm thick cement mortar 1:5 in sub grade					
	(ii) 22.86 cm x 11.11 cm size laid in 1:5 cement mortar					
	(iii) sand-wiched plaster in 1:3 cement mortar 12 mm thick					
	(iv) Second layer of brick laid in 1:3 cement mortar with 6 mm thick 1:3 cement mortar over sand-wiched plaster, including cost of dressing of sub-grade, scaffolding and curing etc. complete in all respects					
	14.30.1 in Bed	sqm	134	-	615	750
	14.30.2 in Side slopes	sqm	161	-	615	776
14.31	Single layer brick lining for irrigation channels for discharge up to 150 cusecs consisting of:					
	(i)10 mm thick cement plaster 1:6 on sub grade.					
	(ii)10 mm thick cement plaster 1:3 over first plaster					
	(iii)First layer of 68.3 mm thick brick layer (22.86x11.11 mm) laid in 1:3 mortar over 6 mm thick cement 1:3 the above cost					
	(total thickness of lining as 9.43 cm)					
	14.31.1 In Bed	sqm	67	-	347	415
	14.31.2 On Side Slopes.	sqm	86	-	347	434
14.32	Single layer brick lining for irrigation channels for discharge above 150 cusecs but up to 1000 cusecs, consisting of:					
	(i)10 mm thick cement plaster 1 :6 on sub grade.					
	(ii)12 mm thick cement plaster 1:3 over first plaster.					
	(iii) First layer of 68.3 mm thick brick layer (228.6x111.1 mm) laid in1:3 mortar over 6mm thick 1 :3 cement mortar.					
	(total thickness of lining as 9.63 cm)					
	14.32.1 In Bed	sqm	67	-	359	426
	14.32.2 On Side Slopes	sqm	86	-	359	446
14.33	Single layer brick lining for irrigation channels for discharge above 1000 cusecs, consisting of:					
	(i)10 mm thick cement plaster 1:6 on sub grade.					
	(ii)16 mm thick cement plaster 1:3 over first plaster.					
	(iii)First layer of 68.3 mm thick brick layer (228.6x111.1 mm) laid in 1:3 mortar over 6mm thick 1:3 cement mortar.					
	(total thickness of lining as 10.03 cm)					
	14.33.1 In Bed	sqm	67	-	386	454
	14.33.2 On Side Slopes.	sqm	86	-	386	473
14.34	Single layer brick lining for irrigation channels for any discharge consisting of					
	(i)Laying polythene film 200 micron over sub grade					
	(ii)First layer of 6.83 cm thick bricks 22.86x11.11 cm laid in 1:4 mortar over 6 mm thick cement mortar 1:4					
	14.34.1 In Bed	sqm	96	-	321	417
	14.34.2 In side slopes	sqm	116	-	321	436

Item No.	Description	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
14.35	Providing and fixing in position LDPE film of 1000 micron (1.0 mm) IS mark of grade 231 for bed and sides of canal including cost of all materials, labour, laying, joining as per specifications etc. complete with all leads and lifts	sqm	29	-	273	303
14.36	Providing and fixing in position LDPE film of 500 micron (0.50 mm) IS mark of grade 231 for bed and sides of canal including cost of all materials, labour, laying, joining as per specifications etc. complete with all leads and lifts	sqm	47	-	144	191
14.37	Providing and laying of 150 mm dia. PVC corrugated perforated pipes in longitudinal & transverse drains including joints etc. complete as per specifications.	metre	14	-	312	326
14.38	Providing and forming 610x610x975 mm deep filter drain pocket around pressure relief pipe consisting of 75 mm thick each layer with 20 - 40 mm graded gravel layer & 5-20 mm graded gravel and sand layer including cost of all materials, labour etc. complete with lead up to 50 m and all lifts.	each	154	-	296	450
14.39	Extra for using locally manufactured manual paver for laying in situ vibrated concrete M-15 or any other grade for side lining of canal including finishing the junction of bed and sides to required curvature.	sqm	85	-	-	85
14.40	Providing and fixing 50 mm dia perforated GI pressure relief pipes 125 mm long with one end closed with perforated GI plate and other end provided with aluminium lid hinged to pipe including cost of all materials, labour, drilling 8 mm dia holes etc., complete with all leads and lifts.	each	55	-	93	148
14.41	Providing and fixing 50 mm dia perforated GI pressure relief pipes 225 mm long with one end closed with perforated GI plate and other end provided with aluminium lid hinged to pipe including cost of all materials, labour, drilling 8 mm dia holes etc., complete with all leads and lifts.	each	61	-	132	193
14.42	Providing and fixing 50 mm dia perforated GI pressure relief pipes 300 mm long with one end closed with perforated GI plate and other end provided with aluminium lid hinged to pipe including cost of all materials, labour, drilling 8 mm dia holes etc., complete with all leads and lifts	each	68	-	160	228
14.43	Providing and fixing 50 mm dia perforated GI pressure relief pipes 450 mm long with one end closed with perforated GI plate and other end provided with aluminium lid hinged to pipe including cost of all materials, labour, drilling 8 mm dia holes etc., complete with all leads and lifts	each	87	-	218	305
14.44	Providing and fixing 50 mm dia perforated GI pressure relief pipes 750 mm long with one end closed with perforated GI plate and other end provided with aluminium lid hinged to pipe including cost of all materials, labour, drilling 8 mm dia holes etc., complete with all leads and lifts	each	106	-	333	439
14.45	Providing and forming 350 x 350 x 400 mm deep filter drain consisting of 75 mm thick 10 mm down coarse aggregate around pressure relief pipe and 75 mm thick sand around coarse aggregate filter including cost of all materials, labour, excavation of pit etc., complete with lead up to 50 m and all lifts	each	10	-	51	62
14.46	Providing and fixing 20 mm thick 100 mm depth tar felt expansion joint filler boards for cement concrete lining of canal including cost of all materials, labour etc., complete with all leads and lifts	metre	9	-	60	70
14.47	Providing and fixing 20 mm thick 150 mm depth tar felt expansion joint filler boards for cement concrete lining of canal including cost of all materials, labour etc., complete with all leads and lifts	metre	9	-	91	100
14.48	Fixing control points by Differential Global Position System (DGPS) instrument at every One Km. along the both side of canal including collection of necessary data etc	km (2 points)	1775	-	-	1775

Item No.	Description	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
14.49	Providing computerised detailed cross section drawings in two copies at 100 m interval with actual profile of river (levels at every 30m. distance along cross section) on A-3 size paper with scale 1cm = 15m or 1cm = 30m which is suitable as per site condition. a) up to 100 cs b) 100 Cs. to 500 cs c) 500 Cs to 1000 cs d) over 1000 cs	per km	6882	-	-	6882
14.50	Topographic and cadastral survey for command area including canal of irrigation projects by using Total station GPS, etc. (Minimum 20 number of points reading per hectare, to generate 30mx30m grid and 0.5 m interval contours including transfer of entire data to computer system in different geo-referenced layers / themes using features of standard software, compatible with design software packages, including supply of soft and hard copies of point readings, including digitizing village maps and super imposing the contours on village map (scale 1in 4000) including marking all permanent features like roads, cart tracks, existing canals, temples, tanks, forest boundary and electric poles, etc., including marking of ridges and valleys on survey sheet including supply of 4 soft copies and 4 hard copies after approval of competent authority, preparation & submission of 10m x10m grid for all structures of canal etc.complete.)	per hectare	1735	-	-	1735
14.51	Hire charges for Hydraulic excavator/Loader like JCB/Pock lain, Hitachi etc with all accessories having bucket capacity					
	14.51.1 Hire Charges forJCB with bucket capacity of 0.4 cum	per day	-	7271	-	7271
	14.51.2 Hire Charges for excavator 0.40 to 0.75 cum bucket capacity	per day	-	8310	-	8310
	14.51.3 Hire Charges for excavator with over 0.75 cum bucket capacity	per day	-	10388	-	10388
14.52	Extra for Providing and placing in position M-15 grade Design Mix concrete having air entraining agent by paver machine in bed, side slopes and curvature including cost of all material trimming, batching, mixing, transporting, placing, vibrating, inserting PVC strips at joints, smooth finishing, curing with 50 m lead& lifts of all materials etc. complete. Using graded aggregate of maximum size. **Note: Rate is for air entraining agent only, providing M-15 Design Mix, its mixing, laying and finishing etc. are not included.**	cum	11	-	36	47
14.53	Concrete surface with epoxy mortar of average 25mm thickness having compressive strength equivalent to M35 including preparation of surface by sand blasting and cleaning, applying epoxy mortar with specified pressure , finishing the surface etc. including cost of all material, machinery,T & P and labour with all lead and all lifts and cost of other incidental charges and testing as per relevant specifications etc. complete. - For average 25mm thick layer.	sqm	62	0	1331	1393
	B. OUTLETS **Notes:** **1. The item 'discharge' wherever used in this chapter means, designed full supply discharge of the parent channel, opposite outlet.** **2.The rate of constructing, watching and removing bunds in running water, include the cost of bags.**					
14.54	Earth work for outlets by mechanical/mannual means:-					

Item No.	Description		Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	14.54.1 Earth work for dismantling or constructing new pipe or barrel type outlets (including excavation, refilling, consolidation and dressing)						
	14.54.1.1	Channel discharge up to 1.5 cums per second.	job	291	-	-	291
	14.54.1.2	Channel discharge exceeding 1.5 cum/s but up to 3 cum/s	job	446	-	-	446
	14.54.1.3	Channel discharge exceeding 3 cum/s but up to 6 cum/s	job	748	-	-	748
	14.54.1.4	Channel discharge exceeding 6 cum/s but up to 10 cum/s	job	1182	-	-	1182
	Note: Channels with discharge over 10 cum/s are classified as branches, and, therefore, their payment should be based on actual measurements.						
	14.54.2 Earth work involved in dismantling Open flume, A.P.M. or O.S.M. type Outlets (including excavation, refilling , consolidation and dressing)						
	14.54.2.1	With 'H' up to 0.6 m	job	291	-	-	291
	14.54.2.2	With 'H' more than 0.6 m but up to 0.9 m	job	748	-	-	748
	14.54.2.3	With 'H' more than 0.9 m but up to 1.10m	job	1182	-	-	1182
	14.54.3 Earth work involved in dismantling gullet walls of outlets, for adjusting 'Y' of A.P.M. or 'B' of open flume outlets:-						
	14.54.3.1	With 'H' up to 0.6 m	job	86	-	-	86
	14.54.3.2	With 'H' more than 0.6 m but up to 0.9 m	job	287	-	-	287
	14.54.3.3	With 'H' more than 0.9 m but up to 1.10 m	job	473	-	-	473
	14.54.4 Earth work involved in constructing new O.F., A.P.M. or O.S.M. type outlets:-						
	14.54.4.1	With 'H' up to 0.6 m	job	945	-	-	945
	14.54.4.2	With 'H' more than 0.6 m but up to 0.9 m	job	1772	-	-	1772
	14.54.4.3	With 'H' more than 0.9 m but up to 1.10 m	job	2599	-	-	2599
	Notes: (i) Outlets with 'H' more than 1.10 m, will usually be located in main canal and branches. Payment for these should be based on actual measurements.						
	(ii) In case of dismantling, all earth-work borrowed from outside for making up the deficiency in bank, if any, will be paid for separately in addition to above rate.						
	(iii) The job rates, given above, include all operations, for excavations, refilling and watering in layers, consolidation and dressing.						
14.55	Dismantling outlets including removal of dismantled material involving lead up to 100 metres by mechanical/mannual means:-						
	14.55.1 Pipe or barrel type outlets						
	14.55.1.1	Channel discharge up to 1.5 cum/s	each	266	-	-	266
	14.55.1.2	Channel discharge above 1.5 cum/s but up to 3 cum/s	each	378	-	-	378
	14.55.1.3	Channel discharge above 3 cum/s but up to 6 cum/s	each	414	-	-	414
	14.55.1.4	Channel discharge above 6 cum/s but up to 10 cum/s	each	449	-	-	449

Item No.	Description		Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	14.55.2	Dismantling O.F., A.P.M. or O.S.M. type outlets consisting of total dismantling i.e. concrete R.C. Slab and cement masonry.					
		14.55.2.1 With 'H' up to 0.6 m	job	1536	-	-	1536
		14.55.2.2 With 'H' more than 0.6m but up to 0.9 m	job	3072	-	-	3072
		14.55.2.3 With 'H' more than 0.9 m but up to 1.10m	job	4537	-	-	4537
	14.55.3	Dismantling O.F., A.P.M. Or O.S.M. type outlets involving dismantling cement masonry and removing of precast R.C. Slab-					
		14.55.3.1 With 'H' up to 0.6 m	job	1111	-	-	1111
		14.55.3.2 With 'H' more than 0.6 m but up to 0.9 m	job	2434	-	-	2434
		14.55.3.3 With 'H' more than 0.9 m but up to 1.10m	job	3781	-	-	3781
	14.55.4	Dismantling tail cluster bifurcation-					
		14.55.4.1 Complete dismantling including concrete and masonry	job	2718	-	-	2718
		14.55.4.2 Cement masonry only	job	1938	-	-	1938
	14.55.5	Dismantling tail cluster trifurcation-					
		14.55.5.1 Complete dismantling including concrete and masonry.	job	3781	-	-	3781
		14.55.5.2 Cement masonry only	job	2718	-	-	2718
	14.55.6	Dismantling tail cluster quadrifurcation-					
		14.55.6.1 Complete dismantling concrete as well as masonry	job	4963	-	-	4963
		14.55.6.2 Cement masonry only	job	3545	-	-	3545
14.56	Making temporary A.P.M. Block and fixing at site-						
	14.56.1	In case of new outlets, where no dismantling and reconstructing of gullet walls is involved	job	190	-	150	340
	14.56.2	Extra for dismantling and reconstructing gullet walls where temporary A.P.M. block is to be fixed on existing outlet without change in width of gullet i.e. 'B'					
		14.56.2.1 With 'H' up to 0.6 m	job	257	-	643	900
		14.56.2.2 With 'H' more than 0.6 m but up to 0.9 m	job	395	-	1134	1529
		14.56.2.3 With 'H' more than 0.9 m but up to 1.10m	job	569	-	1458	2027
	14.56.3	Extra over item No. 14.56.1 in case of old Outlets where dismantling and reconstructing of gullet walls is involved, including change in width of gullet i.e. 'B' of the outlet up to 30 mm-					
		14.56.3.1 With 'H' up to 0.6 m	job	367	-	1053	1420
		14.56.3.2 With 'H' more than 0.6 m but up to 0.9 m	job	639	-	2114	2753
		14.56.3.3 With 'H' more than 0.9 m but up to 1.10m	job	997	-	3084	4081
14.57	Adjusting A.P.M. to the correct 'Y' and fixing in position by mechanical/ mannual means:-						
	14.57.1	In case of new outlet where no dismantling and reconstructing of gullet wall is involved.	job	47	-	-	47
	14.57.2	Extra over item No.14.57.1 in case of old outlets where dismantling and reconstructing of gullet walls is involved without change in width of gullet i.e. 'B' of the outlet					
		14.57.2.1 With 'H' up to 0.6 m	job	900	-	-	900

Item No.	Description		Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	14.57.2.2	With 'H' more than 0.6 m but up to 0.9 m	job	1529	-	-	1529
	14.57.2.3	With 'H' more than 0.9 m but up to 1.10m	job	2027	-	-	2027
	14.57.3	Extra over item No. 14.57.1 In case of old outlets where dismantling and reconstructing of gullet walls is involved including change in width of gullet i.e. 'B' of the outlet up to 30 mm					
	14.57.3.1	With 'H' up to 0.6 m	job	1420	-	-	1420
	14.57.3.2	With 'H' more than 0.6 m but up to 0.9 m	job	2753	-	-	2753
	14.57.3.3	With 'H' more than 0.9 m but up to 1.10m	job	4081	-	-	4081
14.58	Adjusting check plates of open flume outlet to the correct 'B' and fixing at site flush with the gullet walls by mechanical/ mannual means:-						
	14.58.1	In case of new outlets where no dismantling and reconstructing of gullet walls is involved.	job	47	-	-	47
	14.58.2	Extra over item No. 14.58.1 In case of old outlets where dismantling and reconstructing of gullet wall is involved without change in width of gullet Walls i.e. 'B' of the outlet					
	14.58.2.1	With 'H' up to 0.6 m	job	900	-	-	900
	14.58.2.2	With 'H' more than 0.6 m but up to 0.9 m	job	1529	-	-	1529
	14.58.2.3	With 'H' more than 0.9 m but up to 1.10m	job	2027	-	-	2027
	14.58.3	Extra over item No. 14.58.1 In case of existing outlets where dismantling and reconstructing side walls is involved including change of 'B' up to 30 mm-					
	14.58.3.1	With 'H' up to 0.6 m	job	425	-	1123	1548
	14.58.3.2	With 'H' more than 0.6 m but up to 0.9 m	job	798	-	2560	3358
	14.58.3.3	With 'H' more than 0.9 m but up to 1.10m	job	1127	-	3824	4951
	Note (i) In case change in 'B' is more than 30 mm, curved approach shall have to be dismantled considerably and therefore, payments may be made on the basis of actual measurements.						
	(ii) Rates for adjusting 'B', of an open flume outlet, without check plates, will be the same; as for Item Nos. 14.58.3.1 to 14.58.3.3 as the case may be.						
14.59	Extra over item Nos. 14.56, 14.57 and 14.58 as the case may be, for adjusting of crest levels of O.F. and A.P.M. outlets with 1:2:4 cement concrete when lowering of crest level is involved.						
	14.59.1	H' up to 0.6 m	job	175	-	49	224
	14.59.2	H' more than 0.6 m but up to 0.9 m	job	267	-	74	340
	14.59.3	H' more than 0.9 m but up to 1.10 m	job	356	-	90	445
14.60	Extra over item Nos. 14.56, 14.57 and 14.58 as the case may be, for Adjusting of crest levels of O.F. and A.P.M. outlets with 1:2:4 cement concrete, when raising of crest level is involved						
	14.60.1	'H' up to 0.6 m	job	133	-	49	183
	14.60.2	'H' more than 0.6 m but up to 0.9 m	job	178	-	74	251
	14.60.3	'H' more than 0.9 m but up to 1.10 m	job	267	-	90	356
14.61	Constructing, watching and removing bund in running water for outlets:-						
	14.61.1	For adjusting 'B','Y' or crest Level of the O.F. and A.P.M. Types-					
	14.61.1.1	For channels with designed F.S. depth up to 0.6 m.	job	532	-	260	792

Item No.	Description		Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	14.61.1.2	for channels with designed F.S. depth above 0.6 m but up to 0.9m	job	864	-	500	1364
	14.61.1.3	for channels with designed F.S. depth above 0 .90 but up to 1.0 m	job	1474	-	818	2292
	14.61.2	For constructing complete O.F. or A.P.M. type outlets in running water-					
	14.61.2.1	For channels with designed F.S. depth up to 0.6 m	job	1052	-	623	1676
	14.61.2.2	for channels with designed F.S. depth above 0.5 m But up to 0.9m	job	1481	-	857	2338
	14.61.2.3	for channels with designed F.S. depth above 0.90 but up to 1.1 m	job	2430	-	1454	3884
	14.61.3	For dismantling or constructing pipe outlets					
	14.61.3.1	For channels with designed F.S. depth up to 0.6 m	job	532	-	260	792
	14.61.3.2	for channels with designed F.S. depth above 0.6 m but up to 0.9 m	job	587	-	357	944
	14.61.3.3	for channels with designed F.S. depth above 0.90 but up to 1.1 m	job	961	-	454	1415
14.62	Adjusting 'B' of tail cluster by dismantling and rebuilding throat walls		each per outlet	162	-	438	600
14.63	Extra labour for dressing bricks on O.F. and A.P.M. type outlets by mechanical/ mannual means:-						
	14.63.1	With 'H' up to 0.6 m	each per outlet	273	-	-	273
	14.63.2	With 'H' more than 0.6 m. but up to 0.9 m	each per outlet	545	-	-	545
	14.63.3	With 'H' more than 0.9 m but up to 1.10m	each per outlet	844	-	-	844
14.64	Repairing damaged reducing collar of hume pipe outlets		each per outlet	194	-	33	226
14.65	Laying iron pipes by mechanical/ mannual means for outlets up to 150 m.m. diameter		per outlet	14	-	-	14
14.66	Laying R.C.C. pipes for outlets and culverts including joining ends and fixing collar with cement mortar 1:2-						
	14.66.1	up to 150 mm inside diameter	metre	28	-	9	36
	14.66.2	above 150 mm but up to 300 mm inside diameter	metre	58	-	17	75
	14.66.3	above 300 mm but up to 600 mm inside diameter	metre	109	-	36	145
	14.66.4	above 600mm but up to 900 mm inside diameter	metre	219	-	60	279
	Note: The through rates for Item No.14.66 are applicable when the joints are plugged with cement mortar 1:2.						
14.67	Hoisting and placing precast R.C. concrete slab or stones in position on outlets or W.C. culverts by mechanical/ mannual means		each per outlet or culvert	91	-	-	91

CHAPTER NO. 15

DEEP FOUNDATIONS

CHAPTER 15.0 - DEEP FOUNDATIONS
(Open, Wells and Piles)

NOTES:

1. For item No. 15.1 specific indication be given while framing estimates whether excavation would be manual or mechanical depending upon the quantum and site conditions.

2. Cost of dewatering for Item No 15.1 has not been added, which would increase with depth of excavation. While estimating, rates may be increased by certain percentage of HSR rates indicated against the sub items.

3. The clauses of MORT&H Specifications,which have been mentioned, may be referred for detailed specifications and construction procedures. The rate mention only brief description of work.

4. The rates include the cost of working of road machinery including cost of fuels, lubricants, stores, establishment, depreciation and intrest chrages. In case the machinery is provided by the department, the working cost as mentioned shall be recovered from the contractor at the rates fixed by the department.

CHAPTER 15.0 -DEEP FOUNDATIONS
(Open, Wells and Piles)

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	Excavation for Structures						
15.1	Earth work in excavation of foundation of structures as per drawing and technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material as per clause 304 of MORT&H specifications	304					
	Ordinary soil,						
15.1.1	Manual Means						
15.1.1.1	Depth up to 3 m		cum	172	-	-	172
	Note:- 1. Cost of dewatering may be added where required up to, 10 per cent of labour cost Assessment for dewatering shall be made as per site conditions.						
	2.The excavated earth can be used partially for backfilling of foundation pit and partly for road work except for marshy soil. Hence cost of disposal has not been added except for marshy soil. This remark is common to all cases of item 15.1 excluding marshy soil.						
	3.The cost of shoring and shuttering, where needed, may be added @ 1 per cent on cost of excavation for open foundation.						
15.1.1.2	Depth 3 m to 6 m		cum	221	-	-	221
	Note:- Cost of dewatering may be added where required up to 15 per cent of labour cost. Assessment for dewatering shall be done as per actual ground conditions.						
15.1.1.3	Depth above 6 m		cum	295	-	-	295
	Note: Cost of dewatering may be added where required up to 20 per cent of labour cost. Assessment for dewatering shall be made as per site conditions.						
15.1.2	Mechanical Means						
15.1.2.1	Depth up to 3 m		cum	16	71	-	88
	Note:- Cost of dewatering up to 5 per cent of labour & machinery cost may be added, where required. Assessment for dewatering shall be made as per site conditions..						
15.1.2.2	Depth 3 m to 6 m		cum	19	82	-	100
	Note:- Cost of dewatering up to 7.5 per cent of labour & machinery cost may be added, where required. Assessment for dewatering shall be made as per site conditions..						
15.1.2.3	Depth above 6m		cum	27	95	-	123

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	Note:- 1. Cost of dewatering up to 10 per cent of labour & machinery cost may be added, where required. Assessment for dewatering shall be made as per site conditions..						
	2.Labour provided for excavation by mechanical means includes that required for trimming of bottom and side slopes.						
15.2	Ordinary Rock (not requiring blasting)						
15.2.1	Manual Means						
15.2.1.1	Depth up to 3 m		cum	246	-	-	246
	Note:- Cost of dewatering up to 10 per cent of labour cost may be added, where required. Assessment for dewatering shall be made as per site conditions..						
15.2.2	Mechanical Means						
15.2.2.1	Depth up to 3 m		cum	16	95	-	112
	Note:- 1.Cost of dewatering up to 10 per cent of labour & machinery cost, may be added, where required Assessment for dewatering shall be made as per site conditions.						
	2.In case of rock, foundation beyond 3 m is not dug and hence not included.						
15.3	Hard Rock (requiring blasting)						
15.3.1	Manual Means		cum	430	55	44	529
	Note:- Cost of dewatering @ 10 per cent of labour & machinery cost may be added, where required Assessment for dewatering shall be made as per site conditions.						
15.4	Hard Rock (blasting prohibited)						
15.4.1	Mechanical Means		cum	246	327	-	573
	Note:- 1. Cost of dewatering upto10 per cent of labour & machinery cost, may be added, where required Assessment for dewatering shall be made as per site conditions.						
	2.In case of rock, foundation beyond3 m is not dug and hence not included.						
15.5	**PCC 1:3:6 in Foundation**	2100					
	Plain cement concrete 1:3:6 nominal mix in foundation with crushed stone aggregate 40 mm nominal size mechanically mixed, placed in foundation and compacted by vibration including curing for 14 days as per clause 2100 of MORT&H specifications		cum	532	712	2634	3879
15.6	**Brick Masonry Work in Cement Mortar 1:3 in Foundation complete excluding Pointing and Plastering, as per Drawing and Technical Specifications MORT&H clause 1300**						

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
15.6.1	Cement Mortar 1:3 (1 cement : 3 sand)	Sub-analysis	cum	444	-	4157	4602
15.6.2	Cement Mortar1:2 (1cement :2 sand)	Sub-analysis (Addl.)	cum	444	-	5095	5540
15.6.3	Cement Mortar1:4 (1cement :4 sand)	Sub-analysis (Addl.)	cum	444	-	3532	3976
15.6.4	Cement Mortar1:6 (1cement :6 sand)	Sub-analysis (Addl.)	cum	444	-	2976	3420
15.7	**Stone Masonry Work in Cement Mortar 1:3 in Foundation complete as per Drawing and Technical Specifications MORT&H clause 1400**	1400					
15.7.1	Square Rubble Coursed Rubble Masonry (first sort)	1405.4	cum	1805	-	3406	5211
15.7.2	Random Rubble Masonry (coursed/uncoursed)	1405.3	cum	1623	-	3452	5075
	Note:- The labour already considered in cement mortar has been taken into account while proposing labour for masonry works.						
15.8	**Plain/Reinforced Cement Concrete in Open Foundation complete as per Drawing and Technical 1500, 1700 and 2000 of MORT&H Specifications.**	1500, 1700 & 2100					
15.8.1	**PCC Grade M15**		cum	717	513	3010	4239
	Note:- Needle Vibrator is an item of minor T & P which is already included in overhead charges. Hence not added in rate analysis of cement concrete works.						
15.8.2	**PCC Grade M20**		cum	717	626	3473	4815
15.8.3	**RCC Grade M20**						
15.8.3.1	Using Concrete Mixer		cum	717	626	3495	4837
15.8.3.2	With Batching Plant, Transit Mixer and Concrete Pump		cum	89	570	3543	4202
15.8.4	**PCC Grade M25**						
15.8.4.1	Using Concrete Mixer		cum	717	626	3829	5172
15.8.4.2	With Batching Plant, Transit Mixer and Concrete Pump		cum	89	570	3894	4553
15.8.5	**RCC Grade M25**						
15.8.5.1	Using Concrete Mixer		cum	717	626	3856	5199
15.8.5.2	With Batching Plant, Transit Mixer and Concrete Pump		cum	89	570	3918	4577
15.8.6	**PCC Grade M30**						
15.8.6.1	Using Concrete Mixer		cum	717	626	3836	5179
15.8.6.2	Using Batching Plant, Transit Mixer and Concrete Pump		cum	89	570	3920	4579
15.8.7	**RCC Grade M30**						
15.8.7.1	Using Concrete Mixer		cum	717	626	3866	5208
15.8.7.2	Using Batching Plant, Transit Mixer and Concrete Pump		cum	89	570	4063	4722

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
15.8.8	**RCC Grade M35**						
15.8.8.1	Using Concrete Mixer		cum	717	626	3942	5284
15.8.8.2	Using Batching Plant, Transit Mixer and Concrete Pump		cum	89	427	4009	4526
	WELL FOUNDATION						
15.9	Providing and Constructing Temporary Island 16 m diameter for Construction of Well Foundation for 8m dia. Well MORT&H clause 1200	1200					
15.9.1	Assuming depth of water 1.0 m and height of island to be 1.25 m.		each	7279	60689	55215	123182
	Note:- It is assumed that earth will be available within the working space of crane with grab bucket.						
15.9.2	Assuming depth of water 4.0 m and height of island 4.5 m.		each	68815	148022	532819	749656
	Note:- For other well diameters rate can be worked out on the basis of cross-sectional area of well. The diameter of the island shall be in the conformity with clause 1203.2 of MoRTH specifications.						
15.9.3	Providing and constructing one span service road to reach island location from one pier location to another pier location assuming span length 30 m, width of service road 10m and depth of water 1m		per metre	98	1788	1039	2925
15.10	Providing and Laying Cutting Edge of Mild Steel weighing 40 kg per metre for Well Foundation complete as per Drawing and Technical specification MORT&H clause 1200 & 1900	1200 & 1900	per tonne	16478	-	76699	93177
15.11	**Plain/Reinforced Cement Concrete, in Well Foundations complete as per Drawing and Technical Specification, in Well Curb MORT&H clause 1200, 1500 & 1700**	1200, 1500 & 1700					
15.11.1	**RCC M20 Grade**						
15.11.1.1	Using Concrete Mixer		cum	717	626	3971	5313
15.11.1.2	With Batching Plant, Transit Mixer and Concrete Pump		cum	89	570	4058	4717
15.11.2	**RCC M25 Grade**						
15.11.2.1	Using Concrete Mixer		cum	717	626	4402	5744
15.11.2.2	With Batching Plant, Transit Mixer and Concrete Pump		cum	89	570	4606	5265
15.11.3	**RCC M35 Grade**						
15.11.3.1	Using Concrete Mixer		cum	717	626	4545	5888
15.11.3.2	With Batching Plant, Transit Mixer and Concrete Pump		cum	89	570	4653	5312
	Note:- If curb concrete is carried out within steel liner, cost of formwork shall be excluded.						
15.12	**Plain/Reinforced Cement Concrete, in Well Foundations complete as per Drawing and Technical Specification, in Well Steining**						
15.12.1	**PCC M15 Grade**						

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
15.12.1.1	Using Concrete Mixer		cum	717	513	3132	4361
15.12.2	**PCC M20 Grade**						
15.12.2.1	Using Concrete Mixer		cum	717	626	3616	4959
15.12.3	**RCC M20 Grade**						
15.12.3.1	Using Concrete Mixer		cum	717	626	3640	4982
15.12.3.2	With Batching Plant, Transit Mixer and Concrete Pump		cum	89	611	3720	4420
15.12.4	**PCC M25 Grade**						
15.12.4.1	Using Concrete Mixer		cum	717	626	4007	5349
15.12.4.2	With Batching Plant, Transit Mixer and Concrete Pump		cum	89	570	4102	4761
15.12.5	**RCC M25 Grade**						
15.12.5.1	Using Concrete Mixer		cum	717	626	4035	5377
15.12.5.2	With Batching Plant, Transit Mixer and Concrete Pump		cum	89	570	4128	4787
15.12.6	**PCC M30 Grade**						
15.12.6.1	Using Concrete Mixer		cum	717	626	4049	5392
15.12.6.2	With Batching Plant, Transit Mixer and Concrete Pump		cum	89	570	4141	4800
15.12.7	**RCC M30 Grade**						
15.12.7.1	Using Concrete Mixer		cum	717	626	4058	5401
15.12.7.2	With Batching Plant, Transit Mixer and Concrete Pump		cum	89	570	4154	4813
15.12.8	**RCC M35 Grade**						
15.12.8.1	Using Concrete Mixer		cum	717	626	4167	5509
15.12.8.2	With Batching Plant, Transit Mixer and Concrete Pump		cum	89	570	4955	5614
15.12.9	**RCC M40 Grade**						
15.12.9.1	Using Batching Plant, Transit Mixer and Concrete Pump		cum	89	570	4390	5049
15.13	Plain/Reinforced Cement Concrete, in Well Foundations complete as per Drawing and Technical Specification, in Bottom Plug Concrete to be placed using tremie pipe **Note: 10% extra cement to be added where under water concreting is involved**						
15.13.1	**PCC Grade M20**						
15.13.1.1	Using Concrete Mixer		cum	718	1162	3732	5612
15.13.1.2	Using Batching Plant, Transit Mixer and Crane/ concrete pump		cum	89	570	3714	4373
15.13.2	**PCC Grade M25**						
15.13.2.1	Using Concrete Mixer		cum	718	1162	3941	5821
15.13.2.2	Using Batching Plant, Transit Mixer and Crane/concrete pump		cum	89	570	3916	4575
15.13.3	**PCC Grade M30**						
15.13.3.1	Using Concrete Mixer		cum	718	1162	3981	5861
15.13.3.2	Using Batching Plant, Transit Mixer and Crane/concrete pump		cum	89	570	3960	4619
15.13.4	**PCC Grade M35**						
15.13.4.1	Using Concrete Mixer		cum	718	1162	4076	5955

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
15.13.4.2	Using Batching Plant, Transit Mixer and Crane/concrete pump		cum	89	570	4055	4714
15.14	Plain/Reinforced Cement Concrete, in Well Foundations complete as per Drawing and Technical Specification, in Intermediate Plug						
15.14.1	**Grade M20 PCC**						
15.14.1.1	Using Concrete Mixer		cum	718	1162	3520	5400
15.14.1.2	Using Batching Plant, Transit Mixer and Crane/concrete pump		cum	89	570	3533	4192
15.14.2	**Grade M25 PCC**						
15.14.2.1	Using Concrete Mixer		cum	718	1162	3719	5599
15.14.2.2	Using Batching Plant, Transit Mixer and Crane/concrete pump		cum	89	570	3725	4384
15.14.3	**Grade M30 PCC**						
15.14.3.1	Using Concrete Mixer		cum	718	1162	3758	5637
15.14.3.2	Using Batching Plant, Transit Mixer and Crane/concrete pump		cum	89	570	3767	4426
15.15	Plain/Reinforced Cement Concrete, in Well Foundations complete as per Drawing and Technical Specification, in Top Plug						
15.15.1	**Grade M15 PCC**						
	Using Concrete Mixer		cum	717	513	3010	4239
15.15.2	**Grade M20 PCC**						
	Using Concrete Mixer		cum	717	626	3287	4630
15.15.3	**Grade M25 PCC**						
15.15.3.1	Using Concrete Mixer		cum	717	626	3642	4985
15.15.3.2	Using Batching Plant, Transit Mixer and Crane/concrete pump		cum	89	570	3894	4553
15.15.4	**Grade M30 PCC**						
15.15.4.1	Using Concrete Mixer		cum	717	626	3681	5023
15.15.4.2	Using Batching Plant, Transit Mixer and Crane/concrete pump		cum	89	570	3765	4424
15.16	Plain/Reinforced Cement Concrete, in Well Foundations complete as per Drawing and Technical Specification, in Well Cap						
15.16.1	**RCC Grade M20**						
15.16.1.1	Using Concrete Mixer		cum	717	626	3455	4797
15.16.1.2	Using Batching Plant, Transit Mixer and Concrete Pump		cum	89	570	3501	4160
15.16.2	**RCC Grade M25**						
15.16.2.1	Using Concrete Mixer		cum	717	626	3856	5199
15.16.2.2	Using Batching Plant, Transit Mixer and Concrete Pump		cum	89	570	3919	4578
15.16.3	**RCC Grade M30**						
15.16.3.1	Using Concrete Mixer		cum	717	626	3866	5208
15.16.3.2	Using Batching Plant, Transit Mixer and Concrete Pump		cum	89	570	3931	4590
15.16.4	**RCC Grade M35**						
15.16.4.1	Using Concrete Mixer		cum	717	626	3942	5284
15.16.4.2	Using Batching Plant, Transit Mixer and Concrete Pump		cum	89	570	4014	4673

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
15.16.5	**RCC M40 Grade**						
	Using Batching Plant, Transit Mixer and Concrete Pump		cum	89	570	4102	4761
15.17	Sinking of 6 m external diameter well (other than pneumatic method of sinking) through all types of strata namely sandy soil, clayey soil and rock as shown against each case, complete as per drawing and technical specifications. Depth of sinking is reckoned from bed level MORT&H clause 1200	Section 1200					
15.17.1	**Sandy Soil**						
15.17.1.1	Depth below bed level up to 3.0 M		per metre	1475	2977	-	4451
15.17.1.2	Beyond 3m up to 10m depth		per metre	1843	4465	-	6308
15.17.1.3	Beyond 10m up to 20m depth		per metre				8331
	Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						
15.17.1.4	Beyond 20m up to 30 m		per metre				15626
	(a) Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						
	(b) Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour.						
15.17.1.5	Beyond 30m up to 40 m		per metre				37122
	(a) Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						
	(b) Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour.						
15.17.2	**Clayey Soil (6m dia. Well)**						
15.17.2.1	Depth below bed level up to 3.0 M		per metre	1843	4465	-	6308
15.17.2.2	Beyond 3m up to 10m depth		per metre	3687	10801	-	14487
15.17.2.3	Beyond 10 m up to 20 m		per metre				19135
	(a) Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						
	(b) Add for dewatering @ 5 per cent of cost, if required.						
15.17.2.4	Beyond 20m up to 30 m		per metre				35893
	(a) Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						
	(b) Add 5 per cent of cost for dewatering of the cost, if required						
	(c) Add 25 per cent of cost for Kentledge including supports, loading arrangement and Labour).						
15.17.2.5	Beyond 30m up to 40 m		per metre				85279
	(a) Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	(b) Add 5 per cent of cost for dewatering, if required						
	(c) Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour).						
15.17.3	Soft Rock (6m dia well)		per metre	11865	10282	-	22147
	Depth in Soft rock strata up to 3m						
15.17.4	Hard Rock (6m dia well)		per metre	9363	10801	1521	21685
	Depth in hard rock strata up to 3 m						
15.18	Sinking of 7 m external diameter well (other than pneumatic method of sinking) through all types of strata namely sandy soil, clayey soil and rock as shown against each case, complete as per drawing and technical specifications. Depth of sinking is reckoned from bed level MORT&H clause 1200	Section 1200					
15.18.1	**Sandy Soil**						
15.18.1.1	Depth below bed level up to 3.0 M		per metre	1843	4837	-	6680
15.18.1.2	Beyond 3m up to 10m depth		per metre	2212	6697	-	8909
15.18.1.3	Beyond 10m up to 20m		per metre				11768
	Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						
15.18.1.4	Beyond 20m up to 30 m		per metre				22073
	(a) Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						
	(b) Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour).						
15.18.1.5	Beyond 30m up to 40 m		per metre				52444
	(a) Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						
	(b) Add 20 per cent of cost for Kentledge including supports, loading arrangement, and Labour etc.						
15.18.2	**Clayey Soil (7m dia. Well)**						
15.18.2.1	Depth below bed level up to 3.0 M		per metre	2212	6697	-	8909
15.18.2.2	Beyond 3m up to 10m depth		per metre	2959	9823	-	12781
15.18.2.3	Beyond 10 m up to 20 m		per metre				16880
	(a) Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						
15.18.2.4	Beyond 20m up to 30 m		per metre				31662
	(a) Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						
	(b) Add 5 per cent of cost for dewatering on the cost, if required						
	(c) Add 25 per cent of cost for Kentledge including supports, loading arrangement and Labour).						

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
15.18.2.5	Beyond 30m up to 40 m		per metre				75226
	(a) Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						
	(b) Add 5 per cent of cost for dewatering, if required						
	(c) Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour).						
15.18.3	**Soft Rock (7m dia well)**						
	Depth in soft rock strata up to 3m		per metre	7730	11102	-	18833
15.18.4	**Hard Rock (7m dia well)**						
	Depth in Hard rock strata up to 3 m		per metre	12777	11484	891	25152
15.19	Sinking of 8 m external diameter well (other than pneumatic method of sinking) through all types of strata namely sandy soil, clayey soil and rock as shown against each case, complete as per drawing and technical specifications. Depth of sinking is reckoned from bed level MORT&H clause 1200	Section 1200					
	Diameter of well - 8 m.						
15.19.1	**Sandy Soil**						
15.19.1.1	Depth below bed level up to 3.0 M		per metre	2212	5953	-	8165
15.19.1.2	Beyond 3m up to 10m depth		per metre	2599	7441	-	10041
15.19.1.3	Beyond 10m up to 20m		per metre				13261
	Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						
15.19.1.4	Beyond 20m up to 30 m		per metre				24875
	(a) Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						
	(b) Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour.						
15.19.1.5	Beyond 30m up to 40 m		per metre				8744
	(a) Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						
	(b) Add 20 per cent of cost for Kentledge including supports, loading arrangement, and Labour etc.						
15.19.2	**Clayey Soil (8m dia. Well)**						
15.19.2.1	Depth from bed level up to 3.0 M		per metre	2703	8185	-	10889
15.19.2.2	Beyond 3m up to 10m depth		per metre	3460	12204	-	15664
15.19.2.3	Beyond 10 m up to 20 m		per metre				20687
	(a) Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						
	(b) Add for dewatering @ 5 per cent of cost, if required.						
15.19.2.4	Beyond 20m up to 30 m		per metre				38803

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	(a) Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						
	(b) Add 5 per cent of cost for dewatering on the cost, if required						
	(c) Add 25 per cent of cost for Kentledge including supports, loading arrangement and Labour).						
15.19.2.5	Beyond 30m up to 40 m		per metre				92192
	(a) Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						
	(b) Add 5 per cent of cost for dewatering, if required						
	(c) Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour).						
15.19.3	**Soft Rock (8m dia well)**						
	Depth in soft rock strata up to 3m		per metre	9003	11947	-	20950
15.19.4	**Hard Rock (8m dia well)**						
	Depth in hard rock strata up to 3 m		per metre	12922	11111	2209	26242
15.20	Sinking of 9 m external diameter well (other than pneumatic method of sinking) through all types of strata namely sandy soil, clayey soil and rock as shown against each case, complete as per drawing and technical specifications. Depth of sinking is reckoned from bed level MORT&H clause 1200	Section 1200					
15.20.1	**Sandy Soil**						
15.20.1.1	Depth below bed level up to 3.0 M		per metre	2335	5953	-	8288
15.20.1.2	Beyond 3m up to 10m depth		per metre	2845	8185	-	11031
15.20.1.3	Beyond 10m up to 20m		per metre				14567
	(a) Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						
15.20.1.4	Beyond 20m up to 30 m		per metre				27325
	(a) Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						
	(b) Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour.						
15.20.1.5	Beyond 30m up to 40 m		per metre				64922
	(a) Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						
	(b) Add 20 per cent of cost for Kentledge including supports, loading arrangement, and Labour etc.						
15.20.2	**Clayey Soil (9m dia. Well)**						
15.20.2.1	Depth below bed level up to 3.0 M		per metre	2949	8558	-	11507
15.20.2.2	Beyond 3m up to 10m depth		per metre	3705	13182	-	16887
15.20.2.3	Beyond 10 m up to 20 m		per metre				22304

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	(a) Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						
	(b) Add for dewatering @ 5 per cent of cost, if required.						
15.20.2.4	Beyond 20m up to 30 m		per metre				41837
	(a) Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						
	(b) Add 5 per cent of cost for dewatering on the cost, if required						
	(c) Add 25 per cent of cost for Kentledge including supports, loading arrangement and Labour).						
15.20.2.5	Beyond 30m up to 40 m		per metre				99400
	(a) Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						
	(b) Add 5 per cent of cost for dewatering, if required						
	(c) Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour).						
15.20.3	**Soft Rock (9m dia well)**						
	Depth in soft rock strata up to 3m		per metre	10210	14597	-	24807
15.20.4	**Hard Rock (9m dia well)**						
	Depth in hard rock strata up to 3 m		per metre	15024	11810	1376	28210
15.21	Sinking of 10 m external diameter well (other than pneumatic method of sinking) through all types of strata namely sandy soil, clayey soil and rock as shown against each case, complete as per drawing and technical specifications. Depth of sinking is reckoned from bed level MORT&H clause 1200	1200					
15.21.1	**Sandy Soil**						
15.21.1.1	Depth below bed level up to 3.0 M		per metre	2458	7441	-	9899
15.21.1.2	Beyond 3m up to 10m depth		per metre	3100	8558	-	11658
15.21.1.3	Beyond 10m up to 20m		per metre				15397
	(a) Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						
15.21.1.4	Beyond 20m up to 30 m		per metre				28880
	(a) Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						
	(b) Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour.						
15.21.1.5	Beyond 30m up to 40 m		per metre				68615
	(a) Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	(b) Add 20 per cent of cost for Kentledge including supports, loading arrangement, and Labour etc.						
15.21.2	**Clayey Soil (10m dia. Well)**						
15.21.2.1	Depth below bed level up to 3.0 M		per metre	3899	8930	-	12829
15.21.2.2	Beyond 3m up to 10m depth		per metre	4206	12672	-	16878
15.21.2.3	Beyond 10 m up to 20 m		per metre				22290
	(a) Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						
	(b) Add for dewatering @ 5 per cent of cost, if required.						
15.21.2.4	Beyond 20m up to 30 m		per metre				41811
	(a) Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						
	(b) Add 5 per cent of cost for dewatering on the cost, if required						
	(c) Add 25 per cent of cost for Kentledge including supports, loading arrangement and Labour).						
15.21.2.5	Beyond 30m up to 40 m		per metre				99337
	(a) Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						
	(b) Add 5 per cent of cost for dewatering, if required						
	(c) Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour).						
15.21.3	**Soft Rock (10m dia well)**						
	Depth in soft rock strata up to 3m		per metre	11426	15114	-	26540
15.21.4	**Hard Rock (10m dia well)**						
	Depth in hard rock strata up to 3 m		per metre	14897	19926	2382	37205
15.22	Sinking of 11 m external diameter well (other than pneumatic method of sinking) through all types of strata namely sandy soil, clayey soil and rock as shown against each case, complete as per drawing and technical specifications. Depth of sinking is reckoned from bed level.						
15.22.1	**Sandy Soil**						
15.22.1.1	Depth from bed level up to 3.0 M		per metre	4736	9823	-	14558
15.22.1.2	Beyond 3m up to 10m depth		per metre	6447	11906	-	18353
15.22.1.3	Beyond 10m up to 20m		per metre				24239
	(a) Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						
15.22.1.4	Beyond 20m up to 30 m		per metre				45465
	(a) Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	(b) Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour.						
15.22.1.5	Beyond 30m up to 40 m		per metre				108020
	(a) Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						
	(b)Add 20 per cent of cost for Kentledge including supports, loading arrangement, and Labour etc.						
15.22.2	**Clayey Soil (11 m dia. Well)**						
15.22.2.1	Depth from bed level up to 3.0 M		per metre	6390	14883	-	21273
15.22.2.2	Beyond 3m up to 10m depth		per metre	9150	25811	-	34961
15.22.2.3	Beyond 10 m up to 20 m		per metre				46172
	(a) Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						
	(b) Add for dewatering @ 5 per cent of cost, if required.						
15.22.2.4	Beyond 20m up to 30 m		per metre				86609
	(a) Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						
	(b) Add 5 per cent of cost for dewatering on the cost, if required						
	(c)Add 25 per cent of cost for Kentledge including supports, loading arrangement and Labour).						
15.22.2.5	Beyond 30m up to 40 m		per metre				205772
	(a) Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						
	(b) Add 5 per cent of cost for dewatering, if required						
	(c) Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour).						
15.22.3	**Soft Rock (11m dia well)**						
	Depth in soft rock strata up to 3m		per metre	25288	33844	-	59132
15.22.4	**Hard Rock (11m dia well)**						
	Depth in hard rock up to 3 m		per metre	31761	50669	5556	87986
15.23	Sinking of 12 m external diameter well (other than pneumatic method of sinking) through all types of strata namely sandy soil, clayey soil and rock as shown against each case, complete as per drawing and technical specifications. Depth of sinking is reckoned from bed level MORT&H clause 1200	1200					
15.23.1	**Sandy Soil**						
15.23.1.1	Depth below bed level up to 3.0 M		per metre	11286	35719	-	47005
15.23.1.2	Beyond 3m up to 10m depth		per metre	14406	38695	-	53101
15.23.1.3	Beyond 10m up to 20m		per metre				70130

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						
15.23.1.4	Beyond 20m up to 30 m		per metre				131544
	(a) Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						
	(b) Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour.						
15.23.1.5	Beyond 30m up to 40 m		per metre				312532
	(a) Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						
	(b) Add 20 per cent of cost for Kentledge including supports, loading arrangement, and Labour etc.						
15.23.2	**Clayey Soil (12 m dia. Well)**						
15.23.2.1	Depth below bed level up to 3.0 M		per metre	14746	37207	-	51953
15.23.2.2	Beyond 3m up to 10m depth		per metre	19340	66429	-	85769
15.23.2.3	Beyond 10 m up to 20 m		per metre				113273
	(a) Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						
	(b) Add for dewatering @ 5 per cent of cost, if required.						
15.23.2.4	Beyond 20m up to 30 m		per metre				212470
	(a) Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						
	(b) Add 5 per cent of cost for dewatering on the cost, if required						
	(c) Add 25 per cent of cost for Kentledge including supports, loading arrangement and Labour).						
15.23.2.5	Beyond 30m up to 40 m		per metre				504799
	(a) Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						
	(b) Add 5 per cent of cost for dewatering, if required						
	(c) Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour).						
15.23.3	**Soft Rock (12m dia well)**						
	Depth in soft rock strata up to 3m		per metre	56157	81171	-	137328
15.23.4	**Hard Rock (12m dia well)**						
	Depth in hard rock strata up to 3 m		per metre	68418	89382	11522	169322
15.24	**Sinking of Twin D Type well (other than pneumatic method of sinking) through all types of strata namely sandy soil, clayey soil**	1200					
15.24.1	**Sandy Soil**						

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
15.24.1.1	Depth from bed level up to 3.0 M		per metre	2458	8185	-	10643
15.24.1.2	Beyond 3m up to 10m depth		per metre	2741	8751	-	11492
15.24.1.3	Beyond 10m up to 20m		per metre				15177
	(a) Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						
15.24.1.4	Beyond 20m up to 30 m		per metre				28468
	(a) Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						
	(b) Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour.						
15.24.1.5	Beyond 30m up to 40 m		per metre				67636
	(a) Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						
	(b) Add 20 per cent of cost for Kentledge including supports, loading arrangement, and Labour etc.						
15.24.2	**Clayey Soil (Twin D Type Well)**						
15.24.2.1	Depth below bed level up to 3.0 M		per metre	3195	9302	-	12497
15.24.2.2	Beyond 3m up to 10m depth		per metre	4585	14137	-	18721
15.24.2.3	Beyond 10 m up to 20 m		per metre				24725
	(a) Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						
	(b) Add for dewatering @ 5 per cent of cost, if required.						
15.24.2.4	Beyond 20m up to 30 m		per metre				46377
	(a) Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						
	(b) Add 5 per cent of cost for dewatering on the cost, if required						
	(c) Add 25 per cent of cost for Kentledge including supports, loading arrangement and Labour).						
15.24.2.5	Beyond 30m up to 40 m		per metre				110184
	(a) Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter						
	(b) Add 5 per cent of cost for dewatering, if required						
	(c) Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour).						
15.24.3	**Soft Rock (Twin D Type Well)**						
	Depth in soft rock strata up to 3m		per metre	11302	18911	-	30213
15.24.4	**Hard Rock (Twin D Type Well)**						
	Depth in hard rock strata up to 3 m		per metre	15521	17689	2920	36131

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
15.25	Pneumatic sinking of wells with equipment of approved design, drawing and specifications worked by competent and trained personnel and comprising of compression and decompression chambers, reducers, two air locks separately for men and plant & materials, arrangement for supply of fresh air to working chambers, check valves, exhaust valves, shafts made from steel plates of riveted construction not less than 6 mm thick to withstand an air pressure of 0.50 MPa, controlled blasting of hard rock where required, staircases and 1 m wide landing platforms with railing, arrangement for compression and decompression, electric lighting of 50 V maximum, proper rooms for rest and medical examinations and compliance with safety precautions as per IS:4138, all as per clause1207.6 of MoRTH Specifications. **Note:- 1.The cost of induction, deinduction and erection of equipment shall be divided by the total quantity of pneumatic sinking for all the wells of a particular bridge to arrive at the per cum rate on account of this item.** **2.Cost of pneumatic sinking per cum of individual wells will be added to the cost indicated at (1) above to arrive at the final rate of pneumatic sinking per cum.** **3.The cost of induction and deinduction will depend upon the distance involved for shifting of equipment which may be assessed in individual cases as per actual ground conditions at the time of making of cost estimates.** **4.In case pneumatic sinking is involved on a dry bed, the provision of barge and boat may be omitted.** **5.The necessity and dimensions of the corbel will be as per actual ground conditions.** **6.Small equipments like welding sets, pumps, vibrators, pneumatic tools, portable lamps, fire extinguishers, hose pipes etc.,** **7.Depth of sinking shall be restricted to 30 m.**	1200					
15.26	Sand Filling and Water Filling of Wells						
15.26.1	Sand Filling in Wells complete as per Drawing and Technical Specifications MORT&H clause 1207	1207	cum	147	-	935	1081
15.26.2	Water Filling in Wells complete as per Drawing and Technical Specifications MORT&H clause 1207	1207	per kiltre	147	-	78	224
15.27	Providing Steel Liner 10 mm thick for Curbs and 6 mm thick for Steining of Wells including Fabricating and Setting out as per Detailed Drawing MORT&H clause 1200 & 1900	1200 & 1900	per tonne	68168	16454	-	84622

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	Pile Foundation						
15.28	Bored cast-in-situ M35 grade R.C.C. Pile using Hydraulic Rig excluding reinforcement complete as per Drawing and Technical Specifications and removal of excavated earth with all lifts and lead up to 1000 m.	1100 & 1700					
	Pile diameter-750 mm		metre	115	1978	2528	4621
15.29	Bored cast-in-situ M35 grade R.C.C. Pile using Hydraulic Rig excluding reinforcement complete as per Drawing and Technical Specifications and removal of excavated earth with all lifts and lead up to 1000 m MORT&H clause 1100 & 1700	1100 & 1700					
	Pile diameter-1000 mm		metre	197	3006	4496	7699
15.30	Bored cast-in-situ M35 grade R.C.C. Pile using Hydraulic Rig excluding reinforcement complete as per Drawing and Technical Specifications and removal of excavated earth with all lifts and lead up to 1000 m MORT&H clause 1100 & 1700	1100 & 1700					
	Pile diameter-1200 mm		metre	246	3377	6472	10094
15.31	Driven cast-in-place vertical M35 grade R.C.C. Pile excluding Reinforcement complete as per Drawing and & Technical Specification MORT&H clause 1100 & 1700	1100 & 1700					
	Pile diameter - 750 mm		per metre	37	3462	3515	7015
	Note: -1.The quantity of concrete required to be removed above the designed top level of concrete, if any, will be provided for in the rate analysis.						
	2.In case steel lining is included in the design for driven cast-in-situ pile and is planned to be retained, the same may be included in the rate analysis. In case the temporary steel casing used during casting is planned to be removed, an additional cost @ 0.50 per cent of cost of concrete may be provided to cover its usage.						
15.32	Driven cast-in-place vertical M35 grade R.C.C. Pile excluding Reinforcement complete as per Drawing and & Technical Specification MORT&H clause 1100 & 1700	1100 & 1700					
	Pile diameter - 1000 mm		per metre	66	4639	5812	10516
	Note: -1.The quantity of concrete required to be removed above the designed top level of concrete, if any, will be provided for in the rate analysis.						

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	2.In case steel lining is included in the design for driven cast-in-situ pile and is planned to be retained, the same may be included in the rate analysis. In case the temporary steel casing used during casting is planned to be removed, an additional cost @ 0.50 per cent of cost of concrete may be provided to cover its usage.						
15.33	Driven cast-in-place vertical M35 grade R.C.C. Pile excluding Reinforcement complete as per Drawing and & Technical Specification MORT&H clause 1100 & 1700	1100 & 1700					
	Pile diameter - 1200 mm		per metre	111	6925	8448	15483
	Note: -1.The quantity of concrete required to be removed above the designed top level of concrete, if any, will be provided for in the rate analysis.						
	2.In case steel lining is included in the design for driven cast-in-situ pile and is planned to be retained, the same may be included in the rate analysis. In case the temporary steel casing used during casting is planned to be removed, an additional cost @ 0.50 per cent of cost of concrete may be provided to cover its usage.						
15.34	Driven precast vertical M35 grade R.C.C. Piles excluding Reinforcement complete as per Drawing and & Technical Specification MORT&H clause 1100 & 1700	1100 & 1700					
	Pile Diameter = 500 mm		per metre	25	2478	2255	4758
	Note: -The quantity of concrete required to be removed above the designed top level of concrete, if any, will be provided for in the rate analysis.						
15.35	Driven precast vertical M35 grade R.C.C. Piles excluding Reinforcement complete as per Drawing and & Technical Specification	1100 & 1700					
	Pile Diameter = 750 mm		per metre	39	3064	3920	7024
	Note:- The quantity of concrete required to be removed above the designed top level of concrete, if any, will be provided for in the rate analysis.						
15.36	Driven precast vertical M35 grade R.C.C. Piles excluding Reinforcement complete as per Drawing and & Technical Specification MORT&H clause 1100 & 1700	1100 & 1700					
	Pile Diameter = 1000 mm		per metre	61	4465	6289	10816
	Note: -The quantity of concrete required to be removed above the designed top level of concrete, if any, will be provided for in the rate analysis.						

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
15.37	Driven precast vertical M35 grade R.C.C. Piles excluding Reinforcement complete as per Drawing and & Technical Specification MORT&H clause 1100 & 1700	1100&1700					
	Size of pile - 300 mm x 300 mm		per metre	25	2450	1442	3917
	Note: -The quantity of concrete required to be removed above the designed top level of concrete, if any, will be provided for in the rate analysis.						
15.38	Driven precast vertical M35 grade R.C.C. Piles excluding Reinforcement complete as per Drawing and & Technical Specification MORT&H clause 1100 & 1700	1100 &1700					
	Size of pile - 500 mm x 500 mm		per metre	39	2974	2476	5489
	Note: -The quantity of concrete required to be removed above the designed top level of concrete, if any, will be provided for in the rate analysis.						
15.39	Driven precast vertical M35 grade R.C.C. Piles excluding Reinforcement complete as per Drawing and & Technical Specification MORT&H clause 1100 & 1700	1100 &1700					
	Size of pile - 750 mm x 750 mm		per metre	55	3717	4616	8389
	Note: -The quantity of concrete required to be removed above the designed top level of concrete, if any, will be provided for in the rate analysis.						
15.40	Driven Vertical Steel Piles complete as per Drawing and & Technical Specification MORT&H clause 1100 & 1900	1100, 1900					
	Section of the pile - H Section steel column 400 x 250 mm (ISHB Series)		per metre	21	2100	5640	7761
15.41	Driven Vertical Steel Piles complete as per Drawing and & Technical Specification MORT&H clause 1100 & 1900	1100 &1900					
	Section of the pile - H Section steel column 450 x 250 mm (ISHB Series)		per metre	29	2450	6352	8831
15.42	Pile Load Test on single Vertical Pile in accordance with IS:2911(Part-IV) MORT&H clause 1100	1100					
	(a)Initial and routine load test		tonne				844
	(b)Lateral load test		tonne				6492
	Note:- Although, this item is incidental to work and is not required to be included in BOQ of contract, the same is required to be added in the estimate to assess cost of work.						
15.43	Cement Concrete for Reinforced Concrete in Pile Cap complete as per Drawing and Technical Specification MORT&H clause 1100, 1500 & 1700	1100, 1500 &1700					
15.43.1	**RCC Grade M20**						
15.43.1.1	Using Concrete Mixer		cum	744	626	3456	4826

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
15.43.1.2	Using Batching Plant, Transit Mixer and Concrete Pump		cum	129	583	3505	4217
	Note:- The value of a, b and c may be taken as applicable i.e. either using concrete mixer or batching plant.						
15.43.2	**RCC Grade M25**						
15.43.2.1	Using Concrete Mixer		cum	744	626	3843	5213
15.43.2.2	Using Batching Plant, Transit Mixer and Concrete Pump		cum	129	518	3902	4549
15.43.3	**RCC Grade M30**						
15.43.3.1	Case I: Using Concrete Mixer		cum	744	626	3892	5262
15.43.3.2	Using Batching Plant, Transit Mixer and Concrete Pump		cum	129	583	3956	4667
15.43.4	**RCC Grade M35**						
15.43.4.1	Using Concrete Mixer		cum	744	626	3994	5364
15.43.4.2	Using Batching Plant, Transit Mixer and Concrete Pump		cum	129	518	3903	4550
15.44	**Levelling Course for Pile cap**	1100&1700					
	Providing and laying of PCC M15 levelling course 100mm thick below the pile cap MORT&H clause 1100 & 1700		cum	711	626	2847	4184
15.45	Supplying, Fitting and Placing un-coated HYSD bar Reinforcement in Foundation complete as per Drawing and Technical Specifications MORT&H clause 1600	1600	per tonne	4001	-	68542	72543
15.46	Supplying, fitting and placing un-coated Mild steel reinforcement complete in foundation as per drawing and technical specification MORT&H clause 1600	1600	per tonne	4374	-	67179	71552
15.47	Integrity testing of Pile using Low Strain/ Sonic Integrity Test/ Sonic Echo Test method in accordance with IS 14893 including surface preparation of pile top by removing soil, mud, dust & chipping lean concrete lumps etc. and use of computerised equipment and high skill trained personal for conducting the test & submission of results, all complete as per direction of Engineer-in-charge.		per test	263	390	-	653

CHAPTER NO. 16

RIVER and CANAL PROTECTION WORKS

CHAPTER 16.0 - RIVER AND CANAL PROTECTION WORKS

Notes:

1. The rate of Item No.16.5 for making pilchi, farash or sarkanda rolls, excludes supply of materials. This item is only to be paid if pilchi, farash and sarkanda are supplied in loose form according to item No.16.1. When supply of this material is taken as compacted in rolls of required diameter and length, no payment over and above Item No.16.1 (b) shall be made. Items 16.8, 16.9 and 16.10 involve the use of pilchi, farash and sarkanda, made into rolls, of 15 cm diameter, and 1.5 meters long. These rates include the cost of making rolls of pilchi farash and sarkanda. No payment for making rolls shall be made over and above the rate of these items, as given in this chapter.

2. The through rates, of item No.16.38, include the cost of stone, at site of work, irrespective of the distance from the source. Variations in actual lead, in such cases, will be taken care of premium / abatement over the scheduled rates. Where, however, stone is not available within the lead specified, but has to be brought from long distance, extra provision for carriage of stone shall be made in the estimates and for calculating the financial implications on tenders. This difference, however, is not payable to the contractor.

CHAPTER 16.0 - RIVER AND CANAL PROTECTION WORKS

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
16.1	Cutting pilchi, farash and sarkanda, and carriage to work site, lead 2 Km including loading and unloading by mechanical/ mannual means.				
16.1.1	Loose	cum	50	-	50
16.1.2	Compacted in rolls of required diameter and length	cum	219	-	219
16.2	Loading pilchi, farash and sarkanda in boats within 15 metres by mechanical/ mannual means.				
16.2.1	Loose	cum	11	-	11
16.2.2	Compacted in rolls	cum	26	-	26
16.3	Carriage of pilchi farash and sarkanda by boats including loading and unloading				
16.3.1	Loose				
16.3.1.1	1 Km	cum	22	-	22
16.3.1.2	2 Km	cum	34	-	34
16.3.1.3	3 Km	cum	44	-	44
16.3.1.4	4 Km	cum	52	-	52
16.3.1.5	5 Km	cum	60	-	60
16.3.1.6	subsequent Km (per Km)	cum	5	-	5
16.3.2	Compacted				
16.3.2.1	1 Km	cum	52	-	52
16.3.2.2	2 Km	cum	84	-	84
16.3.2.3	3 Km	cum	104	-	104
16.3.2.4	4 Km	cum	130	-	130
16.3.2.5	5 Km	cum	143	-	143
16.3.2.6	subsequent Km (per Km)	cum	13	-	13
16.4	Unloading pilchi, farash and sarkanda from boats, and carriage to yard up to 1 Km by mechanical/ mannual means.				
16.4.1	loose	cum	32	-	32
16.4.2	Compacted	cum	77	-	77
16.5	Making pilchi, farash or sarkanda rolls, excluding supply of materials by mechanical/ mannual means-				
16.5.1	20 cm or 23 cm dia and 9 m long	each	43	-	43
16.5.2	15 cm dia and 9 m long	each	30	-	30
16.5.3	15 cm dia and 1.5 m long	each	4	-	4
	Note: The payment under item No. 16.5 is not to be made, in addition to those of Item No. 16.1(b), 16.8, 16.9 and 16.10				
16.6	Making 0.75 m dia and 5.5 m long pilchi rolls for permeable spurs by mechanical/ mannual means.	each	193	-	193
16.7	launching the above and placing position by mechanical/ mannual means.	each	145	-	145
16.8	Pilchi, farash or sarkanda pitching on slope, with rolls 15 cm dia, and 1.5 m long including supply of pilchi, involving carriage within 2 Km and labour for making rolls by mechanical/ mannual means. Note: For above item, pitching shall be of 15 cm dia, layers of pitching, laid as a header, and 1.5 m in length alternating with 15 cm covering of earth for consolidation, including pegs and tying with wire (cost of wire is to be paid extra).	sqm	216	-	216
16.9	Extra for carriage, beyond 2 Km of pilchi rolls, 15 cm dia and 1.5 long				
16.9.1	3rd Km	sqm of pitching surface	-	45	45
16.9.2	Subsequent Km (per Km)	sqm of pitching surface	-	29	29

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
16.10	Pilchi, farash or sarkanda pitching (1 metre depth)	sqm of pitching surface	80%	-	80%
	Note: Rate: 80%of rates of item no 16.8 and 16.9				
16.11	Pilchi revetment including carriage up to 2 Km by mechanical/ mannual means.	sqm	76	-	76
16.12	Surface protection with pilchi mattress; lead up to 2 Km by mechanical/ mannual means.	sqm	57	-	57
16.13	Weaving mattresses of pilchi, 30 cm thick by mechanical/ mannual means.	sqm	38	-	38
16.14	Rolling pilchi mattress to river edge and floating after unrolling by mechanical/ mannual means.-				
	16.14.1 area of mattress up to 200 sqm	sqm	17	-	17
	16.14.2 area of mattress exceeding 200 sqm but up to 250 sqm	sqm	22	-	22
	16.14.3 area of mattress above 250 sqm	sqm	25	-	25
16.15	laying kahi mattress, lead up to 2 Km by mechanical/ mannual means.	sqm	57	-	57
16.16	Special kahi revetment double, lead up to 2 Km by mechanical/ mannual means.	sqm	104	-	104
16.17	Gachi pitching with average thickness of 30 cm (joints to be broken) by mechanical/ mannual means.	sqm	53	-	53
16.18	Gachi pilchi (done with silt clearance and berm dressing) with thickness of 30 cm (joints to be broken) by mechanical/ mannual means.	sqm	51	-	51
16.19	Fixing floating spurs, in channels, with material from canal plantation, with in 2 Km by mechanical/ mannual means.				
	16.19.1 F.S. depth up to 0.5 m	each	1	-	1
	16.19.2 F.S. depth exceeding 0.5 m but up to 1.00 m	each	2	-	2
	16.19.3 F.S. depth exceeding 1.0 m but up to 1.25 m	each	3	-	3
	16.19.4 above 1.25 m F.S. depth	each	4	-	4
16.20	Stacking and bushing with canal plantation with in 1 Km by mechanical/ mannual means.				
	16.20.1 Pegs 1 m long				
	16.20.1.1 Pegs 1 m long, 5 cm dia	100	142	-	142
	16.20.1.2 Driving Pegs 1 m long 5 cm dia	100	83	-	83
	16.20.1.3 Wattling brush-wood between stakes and intertwining	metre of one row	2	-	2
	16.20.2 Pegs 1 m long				
	16.20.2.1 pegs 1.25 m long, 7.5 cm dia sharpened at one end	100	158	-	158
	16.20.2.2 Driving page 1.25 m long 7.5 cm dia	100	118	-	118
	16.20.2.3 Wattling brush wood between stakes and intertwining	metre of one row	2	-	2
	16.20.3 Pegs 1 m long				
	16.20.3.1 pegs 1.5 m long, 7.5 cm dia sharpened at one end	100	165	-	165
	16.20.3.2 Driving pegs 1.5 m long 7.5 cm dia	100	125	-	125
	16.20.3.3 Wattling brush wood between stakes and intertwining	metre of one row	3	-	3
	16.20.4 Pegs 1 m long				
	16.20.4.1 pegs 2 m long, 7.5 cm dia sharpened at one end	100	236	-	236
	16.20.4.2 Driving page 1.5 m long 7.5 cm dia	100	158	-	158
	16.20.4.3 Wattling brush-wood between stakes and intertwining	metre of one row	4	-	4
16.21	Filling brush wood only by mechanical/ mannual means.	cum	14	-	14
16.22	Filling cement bags with sand or earth, and sewing, including cost of strings by mechanical/ mannual means.	each	2	-	2
16.23	Loading cement bags filled with sand or earth, into trucks or boats within 3 chains lead (per chain of 30 metres) by mechanical/ mannual means.	each	3	-	3
16.24	Carriage of sand, filled in bags, by boats by mechanical/ mannual means-				

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
	16.24.1 1st chain of 30 metres	100	17	-	17
	16.24.2 2nd to 4th chain (per chain of 30 metres)	100	10	-	10
	16.24.3 5th and subsequent chains (per chain of 30 metres)	100	7	-	7
16.25	Unloading from boats, bags filled with sand by mechanical/ mannual means.-				
	16.25.1 Placing in dry	100	225	-	225
	16.25.2 Placing in water	100	442	-	442
16.26	Filling cement bags with sand, sewing and laying in position within 30 metres, in dry including cost of strings by mechanical/ mannual means.	each	4	-	4
16.27	Filling cement bags with sand, sewing and laying in position within 30 metres in water including cost of strings by mechanical/ mannual means.	each	6	-	6
16.28	Sewing empty cement bags in to sheets by mechanical/ mannual means.	100	123	-	123
16.29	Weaving wire-netting for wire crates, including binding sides, and partition to make crate of 15 cm x 15 cm, or 25 cm x 7.5 cm mesh by mechanical/ mannual means.	sqm	24	-	24
16.30	Filling brick-bats in crates, and hand-packing by mechanical/ mannual means.	cum	42	-	42
16.31	Filling bricks in crates and hand-packing by mechanical/ mannual means.	cum	79	-	79
16.32	Filing stones or spalls into crates, and hand-packing by mechanical/ mannual means.	cum	109	-	109
16.33	Tipping wire crates including equipment by mechanical/ mannual means.	cum	79	-	79
16.34	Opening out old wire crates, and remaking after filling by mechanical/ mannual means.	sqm	10	-	10
16.35	Labour for dismantling existing portion of old protection work, including cutting old trangger and stacking old stones for re-use by mechanical/ mannual means.	cum	98	-	98
16.36	Filling spaces and foundations with old stones, obtained from dismantling, including labour for dismantling by mechanical/ mannual means.	cum	213	-	213
16.37	Spreading wire crates over pitching, connecting with side protective walls, inclusive of wire, etc by mechanical/ mannual means.	sqm	18	-	18
16.38	Wire Crates 1.20 m x1.20 m from all directions of G.I. Wire, filled with boulders with square-cut faces, against the wire-				
	16.38.1 4mm dia G.I. Wire, 25 cm x 7.5 cm mesh (diagonal wise)	cum	186	1925	2111
	16.38.2 4.00 mm dia G.I. wire 15 cm x 15 cm mesh (diagonal wise)	cum	247	1564	1812
	16.38.3 4.75 mm, dia G.1. wire, 25 cm. x 7.5 cm mesh (diagonal wise)	cum	186	2347	2533
	16.38.4 4.75 mm, dia. G.I. wire 15 cm x 15 cm mesh (diagonal wise)	cum	186	1849	2035
	16.38.5 3.25 mm dia G.I. wire 25 cm x 7.5 cm mesh (diagonal wise)	cum	186	1543	1728
	16.38.6 3.25 mm dia G.I. wire. 15 cm. x 15 cm mesh (diagonal wise)	cum	186	1312	1498
16.39	Dumping stone by mechanical/ mannual means.	cum	59	-	59
16.40	Extra for anchoring boat for dumping in position by mechanical/ mannual means.	cum	8	-	8
16.41	Dismantling brush-wood boulder bund by mechanical/ mannual means.	cum	158	-	158
16.42	Stone or kankar block pitching by mechanical/ mannual means-				
	16.42.1 horizontal	cum	193	-	193
	16.42.2 On slopes of guide banks and protection works	cum	253	-	253
16.43	Stone pitching, top coping only by mechanical/ mannual means.	cum	403	-	403
16.44	Filling stone or spalls by mechanical/ mannual means.-				
	16.44.1 on level	cum	57	-	57
	16.44.2 On side slopes behind pitching	cum	63	-	63
16.45	Grouting stone filling or pitching by mechanical/ mannual means.-				
	16.45.1 with bajri or shingle	sqm	25	-	25
	16.45.2 With mortar	sqm	43	-	43
16.46	Grouting masonry joints of floors, including finishing by mechanical/ mannual means.				
	16.46.1 When stones are up to 23 cm square	sqm	19	-	19

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
	16.46.2 When stones are more than 23 cm square but under 45 cm square	sqm	13	-	13
16.47	Sand grouting stone apron sqm with high pressure hose	sqm	3	-	3
16.48	Providing, laying & filling Geo Bags of size 0.55mx0.65m(130 GSM woven geo bag made up of VT 1300) Weight 90 gm, volume of filled bags 1.1cft, weight of filled Geo bag 46 kg with local sand including stitching four lines by approved Nylon thread with stitching machine and generator, Stacking and placing after loading, unloading and carriage with the help of trolley within 150 meter lead and boat all complete as per specification and direction of Engineer-in-charge (Where boat is used) (a) Stitching, filling and stacking of bags (b)Charge for placing and dumping with the help of power boat of 40 quintal.	per bag	53	110	163
16.49	Providing, laying & filling Geo Bags of size 0.55mx0.65m(130 GSM woven geo bag made up of VT 1300) Weight 90 gm, volume of filled bags 1.1cft, weight of filled Geo bag 46 kg with local sand including stitching four lines by approved Nylon thread with stitching machine and generator, Stacking and placing after loading, unloading and carriage with the help of trolley within 150 meter lead and boat all complete as per specification and direction of Engineer-in-charge	per bag	19	114	133
16.50	Providing, laying & filling Geo Bags of size 0.762mx0.508m(130 GSM woven geo bag made up of VT 1300) Weight 95 gm, volume of filled bags 1.2cft, weight of filled Geo bag 50 kg with local sand including stitching four lines by approved Nylon thread with stitching machine and generator, Stacking and placing after loading, unloading and carriage with the help of trolley within 150 meter lead and boat all complete as per specification and direction of Engineer-in-charge (Where boat is used)	per bag	60	121	181
16.51	Providing, laying & filling Geo Bags of size 0.762mx0.508m(130 GSM woven geo bag made up of VT 1300) Weight 95 gm, volume of filled bags 1.2cft, weight of filled Geo bag 50 kg with local sand including stitching four lines by approved Nylon thread with stitching machine and generator, Stacking and placing after loading, unloading and carriage with the help of trolley within 150 meter lead and boat all complete as per specification and direction of Engineer-in-charge	per bag	19	124	143
16.52	Providing, laying & filling Geo Bags of size 1.09mx0.69m(200 GSM PPMFwoven geo bag made up of VT 2000 Weight 310 gm, volume of filled bags 0.07cum, weight of filled Geo bag 130 kg with local sand including stitching four lines by approved Nylon thread with stitching machine and generator, Stacking and placing after loading, unloading and carriage with the help of trolley within 150 meter lead and boat all complete as per specification and direction of Engineer-in-charge (Where boat is used)	per bag	72	208	280
16.53	Providing, laying & filling Geo Bags of size 1.09mx0.69m(200 GSM PPMFwoven geo bag made up of VT 2000 Weight 310 gm, volume of filled bags 0.07cum, weight of filled Geo bag 130 kg with local sand including stitching four lines by approved Nylon thread with stitching machine and generator, Stacking and placing after loading, unloading and carriage with the help of trolley within 150 meter lead and boat all complete as per specification and direction of Engineer-in-charge	per bag	31	211	242
16.54	Providing, laying, & filling Geo Textile Tube of VT-3300, size 20 mx3.0m dia (cubic content 60 cum) made up of woven poly propylene multifilament, stacking and placing after loading, unloading and carriage with the help of trolley within 150 m lead and boat all complete as per specifications and direction of Engineer-in-charge. Specifications: Polymer: Polypropylene, woven with multifilament yarn in both Warp and weft direction, mass 330gm/sqm, tensile strength 80 KN/m, Elongation 25%, Trapezoidal Tearing strength 1600 N, Puncture strength 600N, permeability 18 l/sqm/s, Filling Port Length 2m and dia 0.50 m, Filling spacing 5 m	each	52808	243821	296629

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
	Alternative: Providing laying and placing in position segment of a/b/c diameter UV Resistance Geotextile tubes as per design and drawing of High strength woven Geotextile made from polypropylene multifilament woven in both Warf and weft directions, with cover of UV protective pp tape woven Geotextile with pore size less than 0.075 millimetre and permeability greater than 9.00 litre/square metre/second conforming specification IS:1969 and ASTM standards placed parallel to high water line and duly filled with sea sand mechanically by sand dredging machine so as to act as main burnt and toe berm at offshore to hold accumulated sand on beach including all labour, plant, equipment and machinery required including shuttering and scaffolding as directed by Engineer-in-Charge of the work etc. complete. (Maharashtra PWD 2018-19)[Practical Manual for use of Technical Textiles in water resources works, Ministry of water Resources, River development and ganga Rejuvenation R& D Division] **Note: Earthwork for seating of Geo-textile Tube, Supply and dumping of Boulders, Turfing etc if required are not included, and would be paid as per relevant items**				
16.55	Providing, laying, & filling P.P.Rope Gabian (1.8mx1.2mx0.5) 150x150 mm mesh, 9 mm dia, 4 strands, made up of woven Rope poly propylene multifilament, (42 gm/meter+8%) Woven Rope poly propylene multifilament, as per IS 5175-1992 (reaffirmed 1997), Tensile strength A' Rope 1560 kg breaking strength (Min) as per IS 7071 (Part 4): 1986 reaffirmed-1999, 'B' Rope NET 10000 kg/m breaking strength stacking and placing after loading, unloading and carriage with the help of trolley within 150 m lead and boat all complete as per specifications and direction of Engineer-in-charge	each	626	1948	2574
16.56	Providing, laying, & filling P.P.Rope Gabian (1.8mx1.8mx0.5) 150x150 mm mess size, made up of 9 mm x 4 strands (42 gm/meter+8%) Woven Rope poly propylene multifilament, as per IS 5175-1992 (reaffirmed 1997), Tensile strength A' Rope 1560 kg breaking strength (Min) as per IS 7071 (Part 4): 1986 reaffirmed-1999, 'B' Rope NET 10000 kg/m breaking strength stacking and placing after loading, unloading and carriage with the help of trolley within 150 m lead and boat all complete as per specifications and direction of Engineer-in-charge **Note: Filling material like boulders or bricks will be paid extra as per relevant item**	each	1187	3246	4433
	Note: Alternative specifications and rates: Similar item from USoR of West Bengal: Supplying at site 9 mm polypropylene (PP) rope gabion (4-strand mesh size 75mm x 75mm) of size 2.0mx1mx1m with intermediate partition at every 1 mas per specification, laying along sea/riverside toe of embankment , closing and locking the gabions, inter locking the adjoining gabions, after placement of full bricks/boulders inside, including cost of all materials (excluding bricks/boulders), labours, transportation to site by all means, all leads and lifts complete as per direction of the Engineer-in-charge. Note: Paragraph 2.9 under the Chapter of "Specification for Works" in the USoR shall be reproduced and included in the tender document as "Specification and Special Terms & Conditions for Polypropylene (PP) Rope Gabion", in case of use of this item in the estimate." ['Unified Schedule of Rates' (USoR) of Irrigation & Waterways Department. (W.B)] 2018	each	-	5412	5412

CHAPTER NO. 17

ROAD WORKS

CHAPTER 17.0 - ROAD WORKS

NOTES:

1. The clauses of MORT&H Specifications, which have been mentioned, may be referred for detailed specifications and construction procedures. The rate mention only brief description of work.

2. The rates include the cost of working of road machinery including cost of fuels, lubricants, stores, establishment, depreciation and intrest chrages. In case the machinery is provided by the department, the working cost as mentioned shall be recovered from the contractor at the rates fixed by the department.

3. The through rates of road items are based on the rates of bitumen from Panipat Refinery as on 15.04.2021 and rates of aggregates at the quarry site. The through rates for each road work will be worked out based on the rate of the bitumen on that date and overall lead of quarry materials from nearest quarry from shortest route.

4. The lead of material like sand, bajri, stone aggregate, earth, fly ash etc. shall be taken for one side only.

5. Where 7% plastic waste is used, the bitumen content in the item shall be taken as 93% of the quantity provided in item 17.31.1, 17.31.2, 17.33.1, 17.33.2.

CHAPTER 17.0 - ROAD WORK

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	Clearing Grass and Removal of Rubbish						
17.1	Clearing grass and removal of rubbish up to a distance of 50 metres outside the periphery of the area, as per technical clause 201 of MORT&H specifications.	201					
	By Manual Means		hectare	24577	-	-	24577
	Clearing and Grubbing Road Land .						
17.2	Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned, up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness, as per technical clause 201 of MORT&H specifications.	201					
17.2.1	In area of light jungle (By Manual Means)		hectare	73731	221	-	73951
17.2.2	In area of thorny jungle (By Manual Means)		hectare	107760	441	-	108202
17.2.3	In area of light jungle (By Mechanical Means)		hectare	1966	34305	-	36271
17.2.4	In area of thorny jungle (By Mechanical Means)		hectare	2949	41232	-	44181
17.3	Dismantling of flexible pavement by Mechanical Means						
	Bituminous course		cum	147	89	-	236
17.4	**Scarifying Existing Bituminous Surface to a depth of 50 mm by Mechanical Means**						
	Scarifying the existing bituminous road surface to a depth of 50 mm and disposal of scarified material with in all lifts and lead up to 1000 metres, as per technical clause 202 of MORT&H specifications		sqm	1	6	-	7
17.5	**Compacting Original Ground**	305					
17.5.1	**Compacting original ground below road crust**						
	Loosening of the ground up to a level of 500 mm below the road crust, watered, graded and compacted at OMC in layers to meet requirement of table 300-2 for embankment construction as per technical clause 305 of MORT&H specifications		cum	2	54	3	59
17.5.2	**Compacting original ground below embankment**						
	Loosening, levelling and Compacting original ground supporting embankment to facilitate placement of first layer of embankment, scarified to a depth of 150 mm, mixed with water at OMC and then compacted by rolling so as to achieve minimum dry density as given in Table 300-2 for embankment construction as per technical clause 305 of MORTH specifications		cum	2	19	3	24
17.5.3	**Compaction of Earthwork**						

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	Compaction of & preparation of sub grade including loosening, levelling of earth 225 mm thick top layer, rough dressing of soil, final dressing of earth to give level, camber, watering, rolling with road roller, compacting the bed to achieve minimum dry density as given in the Table 3000-2 as per technical clause 305 of MORT&H specifications (in case of link roads earthwork to be done by villagers)		sqm	0	15	1	16
17.6	**Construction of Embankment with Material obtained from Borrow pits**						
	Construction of Embankment with approved material obtained from borrow pits, including compensation of earth, with all lifts and leads, transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2, as per technical clause 305 of MORT&H specifications	305	cum	5	160	42	206
	Note:- Compensation for earth will vary from place to place and will have to be assessed realistically as per particular ground situation. In case earth is available from Govt. land, compensation for earth will not be required. The position is required to be clearly stated in the cost estimate.						
17.7	**Construction of Embankment with Material Deposited from Roadway Cutting or Excavation**						
	Construction of embankment with approved materials deposited at site from roadway cutting and excavation from drain and foundation of other structures graded and compacted to meet requirement of table 300-2.as per technical clause 305 of MORT&H specifications	305	cum	2	105	16	123
	Note: In case the earth cutting is done by dozer and pushed for filling in the embankment, the input of dozer in the cost of embankment shall be deleted as the same is already provided in the cost of excavation. However, if the earth is dumped by tippers from roadway cutting, the input of dozer for spreading is required to be provided.						
17.8	**Compaction**						
17.8.1	Extra for laying earth/fly ash as per specifications in 20 cm layers and dressing but excluding the cost of rolling		cum	1	53	-	54
17.8.2	Extra for watering the earth/fly ash laid in 20 cm layers as per specifications		cum	1	13	16	30
17.8.3	Extra for rolling to specifications		cum	1	30	-	30
17.9	**Excavation for Roadway in Soil by Manual Means .**						

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
17.9.1	Excavation for roadway in soil using manual means including carrying of cut earth to embankment site with all lifts and lead up to 50 m, as per technical clause 301 of MORT&H specifications	301	cum	184	-	-	184
	Note:- In case there is a situation where the cross-section is of cut and fill and cut earth						
17.9.2	**Excavation For Roadway in Ordinary Rock by Manual Means**						
	Excavation in ordinary rock using manual means including loading in a truck and carrying of excavated material to embankment site with in all lifts and leads up to 1000 metres as per technical clause 301 of MORT&H specifications	301	cum	287	27	-	314
	Note:- In case there is a situation where the cross-section is of cut and fill and cut earth is required to be used in embankment in the immediate vicinity, the item of carriage in the truck shall be omitted.						
17.10	**Excavation for Roadway in Soil by Mechanical means and Tippers with Disposal up to 1000 metres.**						
17.10.1	Excavation for roadwork in soil by mechanical means including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transporting to the embankment location within all lifts and lead up to 1000m as per technical clause 301 of MORT&H specifications	301	cum	3	94	-	97
17.10	**Excavation for Roadway in Ordinary Rock by Mechanical means and Tippers with Disposal up to 1000 metres.**						
17.10.2	Excavation for roadway in ordinary rock with hydraulic excavator including cutting and loading in tippers, transporting to embankment site within all lifts and lead up to 1000 m, trimming bottom and side slopes in accordance with requirements of lines, grades and cross sections.	301	cum	4	119	-	123
17.10	**Excavation in Hard Rock (requiring blasting) with disposal up to 1000 metres**						
17.10.3	Excavation for roadway in hard rock (requiring blasting) by drilling, blasting and breaking, trimming of bottom and side slopes in accordance with requirements of lines, grades and cross sections, loading and disposal of cut road with in all lifts and leads up to 1000 metres		cum	14	237	-86	166
17.10	**Excavation in Hard Rock (controlled blasting) with disposal up to 1000 metres**						

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
17.10.4	Excavation for roadway in hard rock with controlled blasting by drilling, blasting and breaking, trimming of bottom and side slopes in accordance with requirements of lines, grades and cross sections, loading and disposal of cut road with in all lifts and leads up to 1000 metres		cum	19	220	-40	199
17.11	**Turfing with Sods**						
	Furnishing and laying of the live sods of perennial turf forming grass on embankment slope, verges or other locations shown on the drawing or as directed by the engineer including preparation of ground, fetching of sods and watering as per technical clause 308 of MORT&H specifications	307	sqm	15	15	9	39
17.12	**Seeding and Mulching**						
	Preparation of seed bed on previously laid top soil, furnishing and placing of seeds, fertilizer, mulching material, applying bituminous emulsion at the rate of 0.23 litres per sqm and laying and fixing jute netting, including watering for 3 months all as per technical clause 308 of MORT&H specifications	308	sqm	20	40	81	142
17.13	**Granular Sub-Base (Mix in place)**	401					
	Construction of granular sub-base by providing Material, spreading in uniform layers with motor grader on prepared surface, mixing by mix in place method with Rotavator at OMC, and compacting with vibratory roller to achieve the desired density, complete as per technical clause 401 of MORT&H technical specifications		cum	22	176	1028	1225
17.14	**Granular Sub-Base with Close Graded Material - (Table:- 400-1) Plant mix method**						
	Construction of granular sub-base by providing Material as per Grading III (Table 400-I of MORT&H 5th revision) mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per technical clause 401 of MORT&H specifications	401					
17.14.1	Grading I material		cum	22	269	1028	1319
17.14.2	Grading II material		cum	22	269	1038	1329
17.14.3	Grading III material		cum	22	269	1049	1340
17.15	**Granular Sub-Base with Coarse Graded Material - Grading-I or II or III (Table:- 400-2)**						
	Construction of granular sub-base by providing coarse graded material, spreading in uniform layers with motor grader on prepared surface, mixing by mix in place method with Rotavator at OMC, and compacting with vibratory roller to achieve the desired density, complete as per clause 401.of MORT&H specifications	401					
17.15.1	Grading I material		cum	16	131	872	1020

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
17.15.2	Grading II material		cum	16	131	1022	1169
17.15.3	Grading III material		cum	16	131	1022	1169
	Note:- Any one of the grading for material may be adopted as per design						
17.16	**Lime Stabilisation for Improving Sub-grade**	402					
	Providing, Laying and spreading available soil in the sub-grade on a prepared surface, pulverising, mixing the spreading soil in place with Rotavator with 3 per cent slaked lime having minimum content of 70 per cent of CaO with motor grader and compacting with the road roller at OMC to achieve a desired dry density to form a layer of improved sub grade as per technical clause 402 of MORT&T specifications.						
17.16.1	By Mechanical Means		cum	15	145	220	380
	Note:- Though vibratory roller is required only for 3 hours as per norms, but the same has to be available at site for 6 hours as other machines for spreading and mixing will take 6 hours. The usage rates of roller have been multiplied with a factor of 0.65.						
17.16.2	By Manual Means		cum	118	69	223	411
17.17	**Lime Treated Soil for Sub- Base**	402					
	Providing, laying and spreading soil on a prepared sub grade, pulverising, mixing the spread soil in place with Rotavator with 3 per cent slaked lime with minimum content of 70 per cent of CaO, grading with motor grader and compacting with the road roller at OMC to achieve at least 98 per cent of the max dry density to form a layer of sub base as per technical clause 402 of MORT&H specifications		cum	20	226	220	465
17.18	**Cement Treated Soil Sub Base/ Base**	403					
	Providing, laying and spreading soil on a prepared sub grade, pulverising, adding the designed quantity of cement to the spread soil, mixing in place with Rotavator, grading with the motor grader and compacting with the road roller at OMC to achieve the desired unconfined compressive strength and to form a layer of sub-base/base as per technical clause 403 of MORT&H specifications		cum	20	226	465	710
17.19	**Cement Treated Crushed Rock or combination as per clause 403.2 and table 400.4in Sub base/ Base**	403					
	Providing, laying and spreading Material on a prepared sub grade, adding the designed quantity of cement to the spread Material, mixing in place with Rotavator, grading with the motor grader and compacting with the road roller at OMC to achieve the desired unconfined compressive strength and to form a layer of sub-base/base as per technical clause 403 of MORT&H specifications						

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
17.19.1	For Sub-Base course		cum	20	157	1544	1720
17.19.2	For Base course		cum	**20**	**157**	**1575**	**1752**
	Note:- Quantities of aggregates provided under 'c' above are uncompacted quantities.						
17.20	**Making 50 mm x 50 mm Furrows**	404.3.1					
	Making 50 mm x 50 mm furrows, 45 degree to the centre line of the road and at one metre interval in the existing thin bituminous wearing coarse including sweeping and disposal of excavated material within 1000 metres lead as per technical clause 404 of MORT&H specifications						
17.20.1	25mm deep furrow cutting		sqm	5	-	-	5
17.20.2	50mm deep furrow cutting		sqm	9	-	-	10
17.21	**Inverted Choke**						
	Construction of inverted choke by providing, laying, spreading and compacting screening B type/ coarse sand of specified grade in uniform layer on a prepared surface with motor grader and compacting with power roller complete as per technical clause 404 of MORT&H specifications.	404.3.2	cum	19	82	1024	1125
17.22	**Water Bound Macadam Gr I**	404					
17.22.1	**Water Bound Macadam Grading I (without screenings for low volume roads (undesignated)**						
	Providing, laying, spreading and compacting stone aggregates of specific sizes to water bound macadam specification including spreading in uniform thickness, hand packing, rolling with 3 wheeled steel/ vibratory roller 8-10 tonnes in stages to proper grade and camber, applying and brooming requisite type of screening/ binding Materials to fill up the interstices of coarse aggregate, watering and compacting to the required density complete as per technical clause 404 of MORT&H specifications		cum	23	107	1031	1162
17.22.2	**Water Bound Macadam Grading I with screening Type 'A'**						
	Providing, laying, spreading and compacting stone aggregates of specific sizes to water bound macadam specification including spreading in uniform thickness, hand packing, rolling with 3 wheeled steel/ vibratory roller 8-10 tonnes in stages to proper grade and camber, applying and brooming requisite type of screening/ binding Materials to fill up the interstices of coarse aggregate, watering and compacting to the required density complete as per technical clause 404 of MORT&H specifications		cum	23	107	1241	1372
17.22.3	**Water Bound Macadam Grading I with crushable screenings**						

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	Providing, laying, spreading and compacting stone aggregates of specific sizes to water bound macadam specification including spreading in uniform thickness, hand packing, rolling with 3 wheeled steel/ vibratory roller 8-10 tonnes in stages to proper grade and camber, applying and brooming requisite type of screening/ binding Materials to fill up the interstices of coarse aggregate, watering and compacting to the required density complete as per technical clause 404 of MORT&H specifications		cum	23	107	1265	1395
	Grading-I						
	Without screenings		cum	23	107	1241	1372
	using Screening Type-A (13.2 mm aggregates)		cum	23	107	1031	1162
17.23	**Water Bound Macadam Grading - II**						
17.23.1	**Water Bound Macadam Grading II (without screenings for low volume roads (undesignated)**						
	Providing, laying, spreading and compacting stone aggregates of specific sizes to water bound macadam specification including spreading in uniform thickness, hand packing, rolling with 3 wheeled steel/ vibratory roller 8-10 tonnes in stages to proper grade and camber, applying and brooming requisite type of screening/ binding Materials to fill up the interstices of coarse aggregate, watering and compacting to the required density complete as per technical clause 404 of MORT&H specifications		cum	23	107	1031	1162
17.23.2	**Water Bound Macadam - II with Screening Type 'A' / Type B**						
	Providing, laying, spreading and compacting stone aggregates of specific sizes to water bound macadam specification including spreading in uniform thickness, hand packing, rolling with 3 wheeled steel/ vibratory roller 8-10 tonnes in stages to proper grade and camber, applying and brooming requisite type of screening/ binding Materials to fill up the interstices of coarse aggregate, watering and compacting to the required density complete as per technical clause 404 of MORT&H specifications		cum	23	107	1156	1286
17.23.3	**Water Bound Macadam - II with crushable screenings**						

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	Providing, laying, spreading and compacting stone aggregates of specific sizes to water bound macadam specification including spreading in uniform thickness, hand packing, rolling with 3 wheeled steel/ vibratory roller 8-10 tonnes in stages to proper grade and camber, applying and brooming requisite type of screening/ binding Materials to fill up the interstices of coarse aggregate, watering and compacting to the required density complete as per technical clause 404 of MORT&H specifications		cum	23.211	107.33767	1259.46	1390
17.24	**Wet Mix Macadam**						
	Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density as per technical clause 406 of MORT&H specifications	406	cum	26	229	1059	1315
17.25	**Prime Coat @ 0.85kg per sqm**						
	Providing and applying primer coat with bitumen emulsion on prepared surface of granular Base including clearing of road surface and spraying primer at the rate of 0.85 kg/sqm using mechanical means as per technical clause 503 of MORT&H specifications	502	sqm	0	3	39	42
17.26	**Tack Coat**	503					
17.26.1	Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.25 kg per sqm on the prepared bituminous/granular surface cleaned with mechanical broom as per technical clause 503 of MORT&H specifications		sqm	0	2	11	14
17.26.2	Providing and applying tack coat with penetration grade bitumen VG - 10 using bitumen pressure distributor at the rate of 0.30 kg per sqm on the prepared bituminous/ granular surface cleaned with mechanical broom as per technical clause 503 of MORT&H specifications		sqm	0	3	15	18
17.26.3	Providing and applying tack coat with penetration grade bitumen VG-10 pressure distributor at the rate of 1.0 kg per sqm on the prepared granular surface cleaned with mechanical broom as per technical clause 503 of MORT&H specifications		sqm	0	3	50	53
17.27	**Bituminous Macadam with batch type HMP**						
17.27.1	**Bituminous Macadam 80 to 100 mm thickness (grading I) with batch type hot mix plant 100-120 TPH**						

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	Providing and laying bituminous macadam 80-100 mm thick with Batch type hot mix plant 100-120 TPH using crushed aggregates of specified grading premixed with bituminous binder VG -30 @3.3% transported to site, laid over a previously prepared surface with paver finisher to the required grade, level and alignment and rolled as per clauses 501.6 and 501.7 to achieve the desired compaction complete as per technical clause 504 of MORT&H specifications	504					
	Grading I (40 mm nominal size)		cum	50	1021	4795	5866
17.27.2	**Bituminous Macadam 50 to 75 mm thickness (grading II) with batch type hot mix plant 100 - 120 TPH**						
	Providing and laying bituminous macadam 50-75 mm thick with Batch type hot mix plant 100-120 TPH using crushed aggregates of specified grading premixed with bituminous binder VG -30 @3.4% transported to site, laid over a previously prepared surface with paver finisher to the required grade, level and alignment and rolled as per clauses 501.6 and 501.7 to achieve the desired compaction complete as per technical clause 504 of MORT&H specifications						
	Grading II (19 mm nominal size)		cum	50	1021	4907	5978
17.27	**Bituminous Macadam with continuous type HMP**						
17.27.3	**Grading I (40 mm nominal size) for thickness 80 -100 mm with Bitumen @ 3.3% (Continuous Type HMP)**						
	Providing and laying bituminous macadam 80-100 mm thick with continuous type HMP 30.40 using crushed aggregates of specified grading premixed with bituminous binder VG -30 @3.3% transported to site, laid over a previously prepared surface with paver finisher to the required grade, level and alignment and rolled as per clauses 501.6 and 501.7 to achieve the desired compaction complete as per technical clause 504 of MORT&H specifications						
	Grading I (40 mm nominal size)		cum	50	836	4795	5682
17.27.4	**Grading II (19 mm Nominal size), for thickness 50-75 mm , Bitumen @ 3.4 % (continuous HMP type)**						
	Providing and laying bituminous macadam 50-75 mm thick with Batch type hot mix plant 100-120 TPH using crushed aggregates of specified grading premixed with bituminous binder VG -30 @3.4% transported to site, laid over a previously prepared surface with paver finisher to the required grade, level and alignment and rolled as per clauses 501.6 and 501.7 to achieve the desired compaction complete as per technical clause 504 of MORT&H specifications						

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	Grading II (19 mm nominal size)		cum	50	836	4907	5793
	Note: -*1. Although the rollers are required only for 3 hours as per norms of output, but the same have to be available at site for six hours as the hot mix plant and paver will take six hours for mixing and paving the output of 450 tonnes considered in this analysis. To cater for the idle period of these rollers, their usage rates have been multiplied by a factor of 0.65.						
	2.Quantity of Bitumen has been taken for analysis purpose. The actual quantity will depend upon job mix formula.						
	3. Labour for traffic control, watch and ward and other miscellaneous duties at site including sundries have been included in administrative overheads of the contractor.						
	4. In case BM is laid over freshly laid tack coat, provision of Mechanical broom and 2 mazdoors for the same shall be deleted as the same has been included in the cost of tack coat.						
17.28	**Bituminous Penetration Macadam**						
	Construction of penetration macadam over prepared Base by providing a layer of compacted crushed coarse aggregate using chips spreader with alternate applications of bituminous binder and key aggregates and rolling with a smooth wheeled steel roller 8-10 tonne capacity to achieve the desired degree of compaction as per technical clause 505 of MORT&H specifications	505					
17.28.1	50 mm thick		sqm	1	12	313	326
17.28.2	75 mm thick		sqm	1	12	431	444
	Note:-2 tippers and 2 rollers will be needed to match the capacity of chip spreader and front end loader.						
17.29	**Built-up-Spray Grout**						
	Providing, laying and rolling of built-up-spray grout layer over prepared base consisting of a two layer composite construction of compacted crushed coarse aggregates using motor grader for aggregates. key stone chips spreader may be used with application of bituminous binder after each layer, and with key aggregates placed on top of the second layer to serve as a Base conforming to the line, grades and cross-section specified, the compacted layer thickness being 75 mm	506	sqm	2	18	241	261
	Note: - 2 tippers will be needed to match the capacity of hydraulic chip spreader and front end loader.						
17.30	**Dense Graded Bituminous Macadam with Batch Type HMP**	505					

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
17.30.1	**Dense Graded Bituminous Macadam 80 mm to 100 mm thickness (Grading I)**						
	Providing and laying 80mm -100 mm dense graded bituminous macadam with 100-120 TPH batch type HMP producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder VG 30 @ 4.0% by weight of total mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction complete, as per technical clause No. 505 of MORT&H specifications		cum	53	813	6002	6868
17.30.2	**Dense Graded Bituminous Macadam 50 mm to 75 mm thickness (Grading II)**						
	Providing and laying 50mm - 75 mm dense graded bituminous macadam with 100-120 TPH batch type HMP producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder VG 30 @ 4.5% by weight of total mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction complete, as per technical clause No. 505 of MORT&H specifications		cum	53	813	6590	7456
17.31	**Bituminous Concrete with Batch type HMP**	509					
17.31.1	**Bituminous Concrete 50 mm to 65 mm thickness (grading I) with 100-120 TPH batch type HMP**						
	Providing and laying 50 mm - 65 mm bituminous concrete with 100-120 TPH batch type hot mix plant producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder VG - 30 @ 5.2% per cent of mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction complete in all respects as per technical clause 507 of MORT&H specifications as per MORTH specification		cum	54	1074	7560	8688
17.31.2	**Bituminous Concrete 30 mm to 45 mm thickness (grading II) with 100-120 TPH batch type HMP**						

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	Providing and laying 30mm - 45 mm bituminous concrete with 100-120 TPH batch type hot mix plant producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder VG - 30 @ 5.4% per cent of mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction complete as per technical clause 507 of per MORTH specifications		cum	54	1074	7800	8928
17.32	**Surface Dressing**	510					
	Providing and laying surface dressing as wearing course in single coat using crushed stone aggregates of specified size on a layer of bituminous binder VG - 10 laid on prepared surface and rolling with 8-10 tonne smooth wheeled steel roller complete as per technical clause 509 of MORT&H specifications						
17.32.1	19 mm nominal chipping size, with bitumen		sqm	1	7	73	80
17.32.2	19 mm nominal chipping size, with Bituminous emulsion		sqm	1	7	93	101
	Note:- 1.Where the proposed aggregate fails to pass the stripping test, an approved adhesion agent may be added to the binder as per clause 510.2.4. Alternatively, chips may be pre-coated as per clause 510.2.5 **2.Input for the second coat, where required, will be the same as per the Ist coat mentioned above**						
17.33	**Open - Graded Premix Surfacing 20 mm thickness**	511					
17.33.1	Providing, laying and rolling of open - graded premix surfacing of 20 mm thickness composed of crushed stone aggregates of specified grading premixed in a continuous type of hot mix plant of appropriate capacity not less not less than 75 tonne per hour, with bituminous binder VG - 10 @ 1.46 kg per sqm, laid with Paver Finisher Mechanical and rolling with a smooth wheeled roller 8-10 tonne capacity, finished to required level and grades complete as per technical clause 510 of MORT&H specifications.		sqm	1	18	94	113

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
17.33.2	Providing, laying and rolling of open - graded premix surfacing of 20 mm thickness composed of crushed stone aggregates of specified grading premixed in a continuous type of hot mix plant of appropriate capacity not less not less than 75 tonne per hour, with bituminous binder VG - 30 @ 1.46 kg per sqm, laid with Paver Finisher Mechanical and rolling with a smooth wheeled roller 8-10 tonne capacity, finished to required level and grades complete as per technical clause 510 of MORT&H specifications.		sqm	1	18	95	114
17.34	**Close Graded Premix Surfacing/Mixed Seal Surfacing Surfacing 20 mm thickness (Type A) with VG-30**	512					
17.34.1	Providing, laying and rolling of open - graded premix surfacing of 20 mm thickness Type A composed of crushed stone aggregates of specified grading premixed in a continuous type of hot mix plant of appropriate capacity not less not less than 75 tonne per hour, with bituminous binder VG - 30 @ 2.2 kg per sqm, laid with Paver Finisher Mechanical and rolling with a smooth wheeled roller 8-10 tonne capacity, finished to required level and grades complete as per technical clause 508 of MORT&H specifications.		sqm	1	18	133	152
17.34.2	Providing, laying and rolling of open - graded premix surfacing of 20 mm thickness Type A composed of crushed stone aggregates of specified grading premixed in a continuous type of hot mix plant of appropriate capacity not less not less than 75 tonne per hour, with bituminous binder VG - 10 @ 2.2 kg per sqm, laid with Paver Finisher Mechanical and rolling with a smooth wheeled roller 8-10 tonne capacity, finished to required level and grades complete as per technical clause 508 of MORT&H specifications.		sqm	1	18	131	150
17.35	**Close Graded Premix Surfacing/Mixed Seal Surfacing Surfacing 20 mm thickness (Type B) with VG-30**	512					
17.35.1	Providing, laying and rolling of open - graded premix surfacing of 20 mm thickness Type B composed of crushed stone aggregates of specified grading premixed in a continuous type of hot mix plant of appropriate capacity not less not less than 75 tonne per hour, with bituminous binder VG - 30 @ 1.9 kg per sqm, laid with Paver Finisher Mechanical and rolling with a smooth wheeled roller 8-10 tonne capacity, finished to required level and grades complete as per technical clause 508 of MORT&H specifications.		sqm	1	18	118	137

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
17.35.2	Providing, laying and rolling of open - graded premix surfacing of 20 mm thickness Type B composed of crushed stone aggregates of specified grading premixed in a continuous type of hot mix plant of appropriate capacity not less not less than 75 tonne per hour, with bituminous binder VG - 10 @ 1.9 kg per sqm, laid with Paver Finisher Mechanical and rolling with a smooth wheeled roller 8-10 tonne capacity, finished to required level and grades complete as per technical clause 508 of MORT&H specifications.		sqm	1	18	116	135
17.36	**Seal Coat**	513					
17.36.1	**Seal Coat Type A with VG -10**						
	Providing and laying seal coat Type A (liquid Seal Coat) sealing the voids in a bituminous surface using crushed stone aggregates and penetration grade bitumen VG- 10 @ 0.98 kg/sqm laid to the specified levels, grade and cross fall complete as per technical clause 511 of MORT&H specifications.		sqm	0	5	57	62
17.36.2	**Seal Coat Type A with VG -30**						
	Providing and laying seal coat Type A (liquid Seal Coat) sealing the voids in a bituminous surface using crushed stone aggregates and penetration grade bitumen VG- 30 @ 0.98 kg/sqm laid to the specified levels, grade and cross fall complete as per technical clause 511 of MORT&H specifications.		sqm	0	5	56	61
17.36.3	**Type B with VG - 10 bituminous binder**		sqm	0	5	39	44
	Providing and laying of premix sand seal coat premixed in continuous type HMP of appropriate capacity not less than 75 tonnes/ hours using specified fine aggregates and penetration grade bitumen @0.68 kg/sqm laid to specified levels, grade and cross fall complete as per technical clause 511 of MORT&H specifications.						
17.36.4	**Type B with VG - 30 bituminous binder**		sqm	0	5	40	45
	Providing and laying of premix sand seal coat premixed in continuous type HMP of appropriate capacity not less than 75 tonnes/ hours using specified fine aggregates and penetration grade bitumen @0.68 kg/sqm laid to specified levels, grade and cross fall complete as per technical clause 511 of MORT&H specifications.						
	Note:- Since seal coat is required to be provided over the premix carpet on the same day, out of the 6 working hours of the HMP, 4.00 hours are proposed to be utilised for the premix carpet and the balance 2.00 hours for the seal coat. Hence 2.00 hours have been considered for this case. This may be linked to rate analysis worked out under clause 511.						
17.37	**Mastic Asphalt**						

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	Providing and laying 25 mm/ 50 mm thick mastic asphalt wearing course with paving grade bitumen 85/25 or VG - 30/40 @ 10.2%, fine aggregates, course aggregates, lime filler @ 17.92% of total, prepared by using mastic cooker and laid to required level and slope after cleaning the surface, including providing antiskid surface with bitumen precoated fine-grained hard stone chipping at an approximate spacing of 10 cm centre to centre in both directions, pressed into surface when the temperature of surfaces is not less than 100C, protruding 1 mm to 4 mm over mastic surface, all complete as per clause 516 of MORT&H specifications (5th Revision, 2013)	516	sqm	154	501	361	1017
	Note:- 1.The rates for 50 mm & 40 mm thick layers may be worked out on pro-rata basis. **2.Where tack coat is required to be provided before laying mastic asphalt, the same is required to be measured and paid separately.** **3.The quantities of binder, filler and aggregates are for estimating purpose. Exact quantities shall be as per mix design.** **4.This rate analysis is based on design made by CRRI for a specific case and is meant for estimating purposes only. Actual design is required to be done for each case.**						
17.38	**Stone Matrix Asphalt (SMA) 50 mm thick**						
	Providing and laying 50 mm thick stone matrix asphalt (SMA) using stabilising additives @ 0.30% by weight in the mix, hydrated lime @ 100% using stone aggregate 20 mm, 10 mm and Drum type batch mixing plant as per standard job mix formula including additional aggregates of size 1 to 3 mm applied over the hot surface @ 1 to 2 kg per sqm immediately after compaction to achieve density of 2.3 gm per cc and Bitumen grade CRMB - 55 @ 5.8% by weight complete as per HSR specifications						
	Grading - I (19 mm Nominal Size)		cum	55	712	8933	9700
17.39	**Slurry Seals**						
17.39.1	**Slurry Seal Type I (2-3 mm thickness)**	516					
	Providing and laying slurry seal Type I 2-3 mm thickness consisting of a mixture of fine aggregates, portland cement filler, bituminous emulsion Grade SS2 @ 10.50% and water on a road surface including cleaning of surface, mixing of slurry seal in a suitable mobile plant, laying and compacting to provide even riding surface complete as per technical clause 512 of MORT&H specifications.		sqm	0	4	58	63
17.39.2	**Slurry Seal Type II (4-6 mm thickness)**						

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	Providing and laying slurry seal Type II 4-6 mm thickness consisting of a mixture of fine aggregates, portland cement filler, bituminous emulsion Grade SS2 @ 10.50% and water on a road surface including cleaning of surface, mixing of slurry seal in a suitable mobile plant, laying and compacting to provide even riding surface complete as per technical clause 512 of MORT&H specifications.		sqm	0	3	43	45
17.39.3	**Slurry Seal Type III (6-8 mm thickness)**						
	Providing and laying slurry seal Type II 6-8 mm thickness consisting of a mixture of fine aggregates, portland cement filler, bituminous emulsion SS2 @ 10.50% and water on a road surface including cleaning of surface, mixing of slurry seal in a suitable mobile plant, laying and compacting to provide even riding surface complete as per technical clause 512 of MORT&H specifications.		sqm	0	6	71	78
17.40	**Fog Spray**						
	Providing and applying low viscosity bitumen emulsion Grade SS-I @ 0.75 kg/sqm for sealing cracks less than 3 mm wide or incipient fretting or disintegration in an existing bituminous surfacing complete as per technical clause 513 of MORT&H specifications	518	sqm	0	2	34	37
17.41	**Crack Prevention Courses**						
17.41.1	**Stress absorbing membrane (SAM) crack width less than 6 mm**	517	sqm	0	4	55	60
	Providing and laying of a stress absorbing membrane over a cracked road surface, after cleaning the road using modified binder CRMB-55 complying with clause 517, sprayed at the rate of 0.9 kg per sqm and spreading crushed stone aggregates of specified grading, spraying binder and spreading crushed stone aggregates, sweeping the surface for uniform spread of aggregates complete as per technical clause 517 of MORT&H specifications.						
17.41.2	**Stress absorbing membrane (SAM) with crack width 6 mm to 9 mm**		sqm	0	4	66	70
	Providing and laying of a stress absorbing membrane over a cracked road surface, after cleaning the road using modified binder CRMB-55 complying with clause 517, sprayed at the rate of 1.1 kg per sqm and spreading crushed stone aggregates of specified grading, spraying binder and spreading crushed stone aggregates, sweeping the surface for uniform spread of aggregates complete as per technical clause 517 of MORT&H specifications.						
17.41.3	**Stress absorbing membrane (SAM) crack width above 9 mm and cracked area above**		sqm	0	4	88	93

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	Providing and laying of a stress absorbing membrane over a cracked road surface, after cleaning the road using modified binder CRMB-55 complying with clause 517, sprayed at the rate of 1.5 kg per sqm and spreading crushed stone aggregates of specified grading, spraying binder and spreading crushed stone aggregates, sweeping the surface for uniform spread of aggregates complete as per technical clause 517 of MORT&H specifications. **Note:- In case 2nd coat is also required to be provided, material provided for the 2nd coat shall be as per table 500-47.**						
17.42	**Crack Prevention Courses (Bitumen impregnated geotextile)**						
	Providing and laying a bitumen impregnated geotextile layer after cleaning the road surface, laid over a tack coat of paving grade bitumen VG - 10 @1.05 kg per sqm complete as per technical clause 517 & 702 of MORT&H specifications. **Note:- As bitumen overlay construction shall follow closely the fabric placement on the same day, an output of 3500 sqm only has been considered for the analysis which will cover a length of 500 m, of 7 m wide carriageway. This can be conveniently overlaid by a bituminous course in a day**		sqm	2	4	110	116
17.43	**Laying of recycled Bituminous Pavement with Central Recycling Plant upto 75mm**	517					
17.43.1	Providing & laying 50 mm - 75 mm DBM using the reclaimed material to the extent of 30% per cent of the required quantity after carrying out necessary check and evaluation, adding fresh mateerial including rejuvenation as required, grade, level and thickness, all as specified in clause No.519. (5th revision) 2013 using bitumen VG-30 (minimum Bitumen content 4.50% i/c bitumen of retrieved material as per job mix formula) using 100-120 TPH batch type hot mix plant with appropriate arrangement for use of R.A.P, appropriate roller and with hydraulic paver finisher with sensor control to the required grade. The milled material to be used in DBM shall be minimum 80% of the theoretical quantity. Note:- If bitumen required is more than 4.50% as per job mix formula, no extra payment will be paid. Extra bitumen required will be considered as incidental to work.		cum	49	844	5208	6102
	Milling on Bituminous Surface						
17.43.2	Dismantling of existing damaged Bitumen surface by cold Milling Machine up to 50 mm depth and hauling the milled material up to 10 km and stacking at nearest recycling Plant site		cum	11	749	-	760
	CEMENT CONCRETE PAVEMENTS						

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
17.44	**Dry Lean Cement Concrete Sub- base**	601					
	Construction of dry lean cement concrete Sub-base over a prepared sub-grade with coarse and fine aggregate conforming to IS: 383, the size of coarse aggregate not exceeding 25 mm, aggregate cement ratio not to exceed 15:1, aggregate gradation after blending to be as per table 600-1, cement content not to be less than 150 kg/ cum, optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant, transported to site, laid with a paver with electronic sensor, compacting with 8-10 tonnes vibratory roller, finishing and curing, as per clause 601 of MORT&H specifications		cum	31	223	2051	2304
	Note:- Quantity provided for aggregate is for estimating purpose. Exact quantity shall be as per mix design.						
17.45	**Cement Concrete Pavement**	602					
	Construction of un-reinforced M-40 grade concrete pavement with dowel jointed, over a prepared sub base with 43 grade OPC cement concrete coarse and fine aggregate conforming to IS 383, maximum size of coarse aggregate not exceeding 25 mm, mixed in a fully computerised batching and mixing plant as per approved mix design, transported to site in transit mixer with a fixed form or slip form paver, spread, compacted and finished in a continuous operation including provision of contraction, expansion, construction and longitudinal joints, joint filler, separation membrane, sealant primer, joint sealant, debonding strip, dowel bar, tie rod, admixtures as approved, curing compound, finishing to lines and grades as per drawing, complete as per clause 602 of MORT&H specifications.		cum	202	712	4987	5901
17.46	**Rolled Cement Concrete Base**	603					
	Construction of rolled cement concrete base course with coarse and fine aggregate conforming to IS:383, the size of coarse aggregate not exceeding 25 mm with minimum, aggregate cement ratio 15:1 and minimum cement content of 200 kg/cum, aggregate gradation to be as per table 600-4 after blending, mixing in batching plant at optimum moisture content, transporting to site, laying with a paver with electronic sensor, compacting with 8-10 tonnes smooth wheeled vibratory roller to achieve, the designed flexural strength, finishing and curing as per technical clause 603 of MORT&H specifications		cum	33	216	2360	2609
	Note: - The quantities for cement, coarse aggregate and fine aggregates are for estimating only .The exact quantities will be as per mix design.						
	MAINTENANCE OF ROADS						
17.47	**Restoration of Rain Cuts**	3002					

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	Restoration of rain cuts with soil, moorum, gravel or a mixture of these, clearing the loose soil, benching for 300 mm width, laying fresh material in layers not exceeding 250 mm and compacting with plate compactor or power rammers to restore the original alignment, levels and slopes, as per clause 3002 of MORT&H specifications		cum	98	70	-	168
	Note: - Only 75 per cent of fresh material has been provided as 25 per cent can be retrieved at site from earth that is flown down the slope in the form of slurry and deposited at the foot of there in cuts						
17.48	**Maintenance of Earthen Shoulder (filling with fresh soil)**	3003					
	Making up loss of material/ irregularities on shoulder to the design level by adding fresh approved soil and compacting it with appropriate equipment as per technical clause 3003 of MORT&H specifications		cum	147	488	-	635
17.49	**Maintenance of Earth Shoulder (stripping excess soil)**	3003	cum	163	289	-	452
	Stripping excess soil from the shoulder surface to achieve the approved level and compacting with plate compactor, as per clause 3003 of MORT&H specifications						
	Note: - The earth stripped from earthen shoulders to be dumped on the side slopes locally for disposal.						
17.50	**Patch Work with close graded Premix Surfacing/Mixed seal Surfacing 20 mm thickness (Type B)**	3004.2					
	Providing and laying patch work with close graded premixed surfacing material of 20 mm thickness Type B using penetration grade Bitumen VG - 10 @ 1.9 kg per sqm and crushed aggregates of specified grading after trimming the pot holes, removal of failed material, including mixing in a continuous type of HMP, carriage of mixed material and rolling with a smooth wheeled roller to match the adjoining surface complete as per technical clause 508 of MORT&H specifications		sqm	1	20	104	126
17.51	**Patch work Seal coat Type B**						
	Providing and laying of premix sand seal coat premixed in continuous type HMP of appropriate capacity not less than 75 tonnes/ hours using specified fine aggregates and penetration grade bitumen @0.68 kg/sqm laid to specified levels, grade and cross fall complete as per technical clause 511 of MORT&H specifications.		sqm	6	7	39	52
17.52	**Patch work with Bituminous Macadam 50 to 75 mm thickness (grading II)**						

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	Providing and laying bituminous macadam 80-100 mm thick with continuous type HMP 40 -60 TPH using crushed aggregates of specified grading premixed with bituminous binder VG - 30 @3.4% transported to site, laid over a previously prepared surface with paver finisher to the required grade, level and alignment and rolled to achieve the desired compaction complete as per technical clause 504 of MORT&H specifications		cum	69	1349	4907	6325
	Grading II (19 mm nominal size)						
17.53	**Patch work with Water Bound Macadam Grading - II (with screening)**						
17.53.1	Providing, laying patchwork with stone aggregates of Grading - II laid to water bound macadam specifications after trimming the pot holes, removal of failed material, hand packing, applying and brooming requisite type of screening/binding materials to fill up the interstices of coarse aggregates, watering, and rolling with smooth wheeled roller 8 - 10 tonne to match the adjoining surface complete as per technical clause 404 of MORT&H specifications		cum	319	87	1156	1561
17.53	**Patch work with Water Bound Macadam Grading - II (without screening)**						
17.53.2	Providing, laying patchwork with stone aggregates of Grading - II laid to water bound macadam specifications after trimming the pot holes, removal of failed material, hand packing, applying and brooming requisite type of screening/binding materials to fill up the interstices of coarse aggregates, watering, and rolling with smooth wheeled roller 8 - 10 tonne to match the adjoining surface complete as per technical clause 404 of MORT&H specifications		cum	319	87	1031	1436
17.54	**Filling Pot-holes and Patch Repairs with Bituminous concrete, 40mm.**	3004.2					
	Removal of all failed material, trimming of completed excavation to provide firm vertical faces, cleaning of surface, painting of tack coat on the sides and base of excavation as per clause 503, back filling the pot holes with hot bituminous material as per clause 504, compacting, trimming and finishing the surface to form a smooth continuous surface, all as per clause 3004.2 of MORT&H specifications						
	Grading I - 19mm(Nominal size)		sqm	3	56	287	346
	Grading-II 13mm (Nominal size)		sqm	3	56	273	332
	Note: - For detailed working of quantities of aggregates, refer item 5.8 of chapter 5						
17.55	**Crack Filling**	3004.3.3					
	Filling of crack using slow - curing bitumen emulsion and applying crusher dust in case crack are wider than 3mm as per clause 3004.3.3 of MORT&H specifications		per metre	1	-	3	4
17.56	**Dusting**	3004.4					

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	Applying crusher dust to areas of road where bleeding of excess bitumen has occurred as per clause 3004.4 of MORT&H specifications		sqm	0	-	1	2
17.57	**Repair of Joint Grooves with Epoxy Mortar**	3005.1					
	Repair of spalled joint grooves of contraction joints, longitudinal joints and expansion joints in concrete pavements using epoxy mortar or epoxy concrete as per clause 3005. of MORT&H specifications		per metre	49	3	554	605
17.58	**Repair of old Joints Sealant**	3005.20					
	Removal of existing sealant and re sealing of contraction, longitudinal or expansion joints in concrete pavement with fresh sealant material, as per technical clause 3005 of MORT&H specifications		per metre	25	3	25	53
17.59	**Hill Side Drain Clearance**	3000					
	Removal of earth from the choked hill side drain and disposing it on the valley side manually, as per technical clause 3000 of MORT&H specifications		per metre	51	-	-	51
17.60	**Land Slide Clearance in soil**	3000					
	Clearance of land slides in soil and ordinary rock by a bull-dozer D 80 A-12, 180 HP and disposal of the same on the valley side, as per technical clause 3000 of MORT&H specifications **Note: - Land Slide clearance involves pushing of loose earth slided on the road surface from hill face on the valley side. Since no cutting of original ground is involved, the output of dozer has been taken as 60 cum per hour for soil, ordinary rock and blasted hard rock. However, if there are objection to disposing of earth on valley side, additional resources for its disposal shall be considered as per site conditions.**		cum	5	57	-	62
17.61	**PIPE CULVERTS**						
17.61.1	**Providing and Laying 600 mm dia Reinforced Cement Concrete Pipe NP3 / NP-4P /prestressed Concrete Pipe on First Class Bedding in Single Row**	2900					
	Providing and Laying Reinforced cement concrete pipe NP3 /NP-4/prestressed concrete pipe for culverts on first class bedding of granular material in single row including fixing collar with cement mortar 1:2 but excluding excavation, protection works, backfilling, concrete and masonry works in head walls and parapets 1000 mm dia, as per clause 2900 of MORT&H specifications		metre	112	-	2757	2869
17.61.2	**Providing and Laying 600 mm dia Reinforced Cement Concrete Pipe NP3 / NP-4P /prestressed Concrete Pipe on First Class Bedding in Double Row**	2900					

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	Providing and Laying Reinforced cement concrete pipe NP3 /NP-4/prestressed concrete pipe for culverts on first class bedding of granular material in single row including fixing collar with cement mortar 1:2 but excluding excavation, protection works, backfilling, concrete and masonry works in head walls and parapets 1000 mm dia, as per clause 2900 of MORT&H specifications		metre	211	-	5570	5781
17.62	**Providing and Laying 1000 mm dia Reinforced Cement Concrete Pipe NP4 / Prestressed Concrete Pipe on First Class Bedding in Single Row**	2900					
17.62.1	Providing and Laying Reinforced cement concrete pipe NP4/prestressed concrete pipe for culverts on first class bedding of granular material in single row including fixing collar with cement mortar 1:2 but excluding excavation, protection works, backfilling, concrete and masonry works in head walls and parapets 1000 mm dia, as per clause 2900 of MORT&H specifications		metre	181	-	6123	6304
17.62	**Providing and Laying 1200 mm Reinforced Cement Concrete Pipe NP4 / Prestressed Concrete Pipe on First Class Bedding in Single Row .**						
17.62.2	Providing and Laying Reinforced cement concrete pipe NP4/prestressed concrete pipe for culverts on first class bedding of granular material in single row including fixing collar with cement mortar 1:2 but excluding excavation, protection works, backfilling, concrete and masonry works in head walls and parapets 1200 mm dia, as per clause 2900 of MoRTH specifications		metre	284	-	7070	7354
17.63	**Providing and Laying 1000 mm dia Reinforced Cement Concrete Pipe NP3/ Prestressed Concrete Pipe on First Class Bedding in Single Row .**	2900					
17.63.1	Providing and Laying Reinforced cement concrete pipe NP3/prestressed concrete pipe for culverts on first class bedding of granular material in single row including fixing collar with cement mortar 1:2 but excluding excavation, protection works, backfilling, concrete and masonry works in head walls and parapets 1000 mm dia as per clause 2900 of MORT&H specifications		metre	181	-	6123	6304
17.63	**Providing and Laying 1200 mm dia Reinforced Cement Concrete Pipe NP3/ Prestressed Concrete Pipe on First Class Bedding in Single Row .**						

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
17.63.2	Providing and Laying Reinforced cement concrete pipe NP3/prestressed concrete pipe for culverts on first class bedding of granular material in single row including fixing collar with cement mortar 1:2 but excluding excavation, protection works, backfilling, concrete and masonry works in head walls and parapets 1200 mm dia, as per clause 2900 of MORT&H specifications		metre	284	-	7458	7741
17.64	**Providing and Laying 1000 mm dia Reinforced Cement Concrete Pipe NP4 / Prestressed Concrete Pipe on First Class Bedding in Double Row .**	2900					
17.64.1	Providing and Laying Reinforced cement concrete pipe NP4 / prestressed concrete pipe for culverts on first class bedding of granular material in double row including fixing collar with cement mortar 1:2 but excluding excavation, protection works, backfilling, concrete and masonry works in head walls and parapets as per clause 2900 of MORT&H specifications		metre	362	-	12463	12825
17.64	**Providing and Laying 1200 mm dia Reinforced Cement Concrete Pipe NP4 / Prestressed Concrete Pipe on First Class Bedding in Double Row .**						
17.64.2	Providing and Laying Reinforced cement concrete pipe NP4 / prestressed concrete pipe for culverts on first class bedding of granular material in double row including fixing collar with cement mortar 1:2 but excluding excavation, protection works, backfilling, concrete and masonry works in head walls and parapet as per clause 2900 of MORT&H specifications		metre	567	-	14373	14940
17.65	**Providing and Laying 1000 mm dia Reinforced Cement Concrete Pipe NP3 / Prestressed Concrete Pipe on First Class Bedding in Double Row .**	2900					
17.65.1	Providing and Laying Reinforced cement concrete pipe NP3/ prestressed concrete pipe for culverts on first class bedding of granular material in double row including fixing collar with cement mortar 1:2 but excluding excavation, protection works, backfilling, concrete and masonry works in head walls and parapets as per clause 2900 of MORT&H specifications		metre	362	-	12463	12825
17.65	**Providing and Laying 1200 mm dia Reinforced Cement Concrete Pipe NP3 / Prestressed Concrete Pipe on First Class Bedding in Double Row .**						

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
17.65.2	Providing and Laying Reinforced cement concrete pipe NP3/ prestressed concrete pipe for culverts on first class bedding of granular material in double row including fixing collar with cement mortar 1:2 but excluding excavation, protection works, backfilling, concrete and masonry works in head walls and parapets as per clause 2900 of MORT&H specifications **Notes: For item no. 17.63 to 17.65** **1. In case of cement cradle bedding, quantity of PCC M15 is to be calculated as per design and priced separately and added .** **2. The rate analysis does not include excavation, cement /masonry works in head walls, backfilling, protection works and parapet walls. The same are to be calculated as per approved design and drawings and priced separately on rates available under respective sections**		metre	567	-	15148	15715
17.66	**Rectangular Concrete Block Pavement**	1500					
17.66.1	Providing and laying of cement concrete blocks of size 0.450 m x 0.300 m x 0.15 m of cement concrete (C.C) M30 grade and spreading 25 mm thick sand underneath filling joints with sand on existing W.B.M. base as per technical specification clause 1503		cum	657	1205	4566	6428
17.67	Removal of existing CC Block		cum	196	305	-	500
17.68	Relaying of available (removed and stacked) C.C. Block M-30 Size 450x300x150mm		cum	0	-	409	409
17.69	**Interlocking Concrete Block Pavement**	1500					
17.69.1	Providing and Laying 100 mm thick ISI marked Interlocking Paver Blocks conforming to IS 15658:2006/IRC SP 63: 2004 of all shapes and colours in design mix cement M 50 over the bed of 30 mm thick fine sand complete in all respect.		sqm	45	6	715	766
17.69.2	Providing and Laying 80 mm thick ISI marked Interlocking Paver Blocks conforming to IS 15658:2006/IRC SP 63: 2004 of all shapes and colours in design mix cement M 40 over the bed of 30 mm thick fine sand complete in all respect.		sqm	45	6	629	680
17.69.3	Providing and Laying 60 mm thick ISI marked Interlocking Paver Blocks conforming to IS 15658:2006/IRC SP 63: 2004 of all shapes and colours in design mix cement M 35 over the bed of 25 mm thick fine sand complete in all respect.		sqm	38	6	545	589
17.70	Removal of existing IPB by manual means and disposal of dismantled material with all lifts and up to a lead of 1000 m as per technical specification clause 202.3		sqm	29	46	-	76

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
17.71	Relaying of available (removed and stacked) Interlocking Paver Block Pavement having thickness 100mm/80 mm/ 60 mm (average = 80mm) as per drawings and Technical Specification Clause 1504		sqm	43	6	26	74
	Unreinforced Vaccum Concrete Pavement						
17.72	Construction of unreinforced plain cement concrete pavement in M-30 mix design over a prepared sub base with OPC 43 grade conforming to IS:383 mixed with concrete mixer using batch type concrete mixer as per IS:1791, laid in position, compacted with needle vibrator, screed vibrator and plate vibrator, dewatering of free water with vaccum pump, finishing the surface with power floater, finishing to required lines and grades as per drawings and technical clause 1501 of MORTH specifications		cum	246	134	5143	5523
17.73	Construction of unreinforced plain cement concrete pavement in M-25 mix design over a prepared sub base with OPC 43 grade conforming to IS:383 mixed with concrete mixer using batch type concrete mixer as per IS:1791, laid in position, compacted with needle vibrator, screed vibrator and plate vibrator, dewatering of free water with vaccum pump, finishing the surface with power floater, finishing to required lines and grades as per drawings and technical clause 1501 of MORTH specifications		cum	246	134	5077	5457

CHAPTER NO. 18

MESCELLANEOUS (BUILDINGS)

CHAPTER 18.0 - MISCELLANEOUS (BUILDINGS)

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
	BRICK MASONRY				
18.1	Brick work with common burnt clay bricks of class designation 7.5 in mud mortar	cum	890	3201	4091
	STONE MASONRY				
18.2	Extra for stone work (veneer work) curved on plan with a mean radius not exceeding 6 m.	cum	779	-	779
18.3	Providing and fixing stone dowels 10x5x2.50 cm cut to double wedge shape as per design in cement mortar 1:2 (1 cement : 2 coarse sand), including making the necessary chases.	each	5	13	19
	ROOFING				
18.4	Providing, erecting, laying and fixing in position in 3.5 to 4 mm thick bamboo mat corrugated sheet (BMCS) as per IS: 15476-2004 in roofing with self drilling screws along with EPDM washers complete or with galvanized iron J or L hooks 8mm dia G.I. plain and bitumen washers etc, all complete as per direction of Engineer-in-Charge.	sqm	28	4910	4938
18.5	Providing and fixing in position ridges of 3.5 to 4 mm thick bamboo mat ridge cap (BMRC) as per IS: 15476-2004 in roofing with self drilling screws along with EPDM washers complete or with galvanized iron J or L hooks 8mm dia G.I. plain and bitumen washers etc, all complete as per direction of Engineer-in-Charge.	metre	18	3979	3997
18.6	Providing and fixing at all height false ceiling of 4mm thick phenol bonded Bamboo Mat board (595x595mm) conforming to IS:13958-1994 including providing and fixing of frame work made of GI angle 25x25x0.4 mm thick all around suitably fixed to wall with the help of dash fastener and hanger frame (600x600 c/c) made GI slotted Tee having powder coating on bottom side (30x25x0.3 mm thick for main member & 25x25x0.3 mm for cross member) connected to ceiling with 2.64mm GI wire and anchor fastener at every junction and also including cost of making openings for light fittings, grills, diffusers, cut outs made with frame of perimeter channels suitably fixed all complete as per direction of Engineer-in-charge.	sqm	187	2756	2943
	FLOORING & DADOS				
18.7	Providing & fixing in position Phenol bonded Bamboo wood flooring with planks of sizes 14mm thick, 1800mm length (minimum) and 130 mm wide(minimum), in approved colour, texture and finish, having Performance Appraisal Certificate (PAC) issued by Building Materials & Technology Promotion Council (BMTPC). The flooring shall be fixed with tongue and groove interlocking system, with underlayment of 4mm thick expanded polyethylene foam sheets having density 40kg/cum, over prepared surface with necessary quarter round planks of size 1900mm x 18mm and door reducer of size 1900mm x 44mm, wherever required. The bamboo wood planks shall have minimum density of 1000 kg/cum & minimum Hardness 1000 kgf. with Eco friendly UV coating, all complete as per direction of the Engineer in-charge.	sqm	23	5070	5093
18.8	Providing & fixing in position Phenol bonded Bamboo wood in wall skirting with planks of sizes 14mm thick, 1900mm length (minimum) and 85mm wide(minimum), in approved colour, texture and finish, having Performance Appraisal Certificate (PAC) issued by Building Materials & Technology Promotion Council (BMTPC). The skirting shall be fixed with SS screws & rawl plugs, over underlayment of 4mm thick, expanded polyethylene foam sheets having 40kg/cum density over prepared surface. The bamboo wood planks shall have minimum density of 1000kg/cum & minimum Hardness 1000 kgf. with Eco friendly UV coating, all complete as per direction of the Engineer in-charge.	sqm	74	4837	4911
	WOOD WORK				
18.9	Providing beams including hoisting, fixing in position and applying wood preservative for the unexposed surfaces, etc. complete with :				
	18.9.1 Sal wood	cum	5399	79685	85085
	18.9.2 Hollock wood	cum	5399	46569	51968

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
18.10	Providing and fixing panelling or panelling and glazing in panelled or panelled and glazed shutters for doors, windows and clerestory windows (area of opening for panel inserts excluding portion inside grooves or rebated to be measured). Panelling for panelled and glazed shutters 25mm to 40mm thick: Pre-laminated with decorative lamination on both side exterior Grade - I MDF Board 12 mm thick confirming to IS:14587	sqm	428	726	1153
18.11	Providing and fixing Pre -laminated medium density fibre board exterior grade (Grade-I) IS:14587:1998 marked, to frame, backing or studding with screws etc. complete (Frames, backing or studding to be paid separately).				
18.11.1	Pre-laminated with decorative lamination on both side exterior Grade - I MDF Board 12 mm thick confirming to IS:14587	sqm	95	632	727
18.11.2	Pre-laminated with decorative lamination on both side exterior Grade - I MDF Board 18 mm thick confirming to IS:14587	sqm	95	819	914
18.12	Providing and fixing Pre-laminated medium density fibre board IS: 14587:1998 marked, with one side decorative lamination other side balancing lamination Grade-I(exterior grade) in shelves with screws and fittings wherever required, edges to be sealed with PVC edge bending tape 2.00 mm thick of approved brand (fittings to be paid separately).				
18.12.1	Pre-laminated with decorative lamination one side and other side balancing lamination exterior Grade - I MDF Board 18 mm thick confirming to IS:14587	sqm	121	902	1023
18.12.2	Pre-laminated with decorative lamination one side and other side balancing lamination exterior Grade - I MDF Board 25 mm thick confirming to IS:14587	sqm	121	1304	1426
18.13	Providing and fixing in wall lining medium density fibre board IS: 14587:1998 marked, Pre-laminated one side decorative lamination and other side balancing lamination, with necessary fixing arrangement and screws etc. complete.				
18.13.1	12 mm thick.	sqm	273	618	891
18.13.2	18 mm thick.	sqm	273	810	1084
18.13.3	25 mm thick.	sqm	211	1232	1443
18.14	Providing and fixing 25mm thick pre-laminated medium density fibre board exterior grade (Grade-I) IS:14587:1998 marked with one side decorative and other side balancing lamination for cupboard shutters edges to be sealed with PVC edge bending tape 2.00 mm thick of approved brand including ISI marked nickel plated bright finishing M.S. piano hinges conforming to IS:3818 marked with necessary screw etc all complete.	sqm	178	1331	1509
18.15	Providing and fixing skirting with Pre-laminated medium density fibre board exterior grade (Grade-I) conforming to IS: 14587:1998 marked, with (one side decorative and other side balancing lamination and edges to be sealed with PVC edge bending tape 2.00 mm thick of approved brand with necessary fixing arrangements and screws, including drilling necessary holes for rawl plugs etc. all complete.				
18.15.1	18 mm thick.	sqm	102	1508	1611
18.15.2	25 mm thick.	sqm	102	1930	2032
	DOORS & WINDOWS				
18.16	Providing & fixing in position Phenol bonded Bamboo wood panelled or panelled and glazed shutters for doors windows, clerestory windows with pre-molded 30mm thick planks, in approved colours, texture & finished. It shall have 10mm wide, 25mm deep grove to fit in panels. The bamboo wood shall have minimum density of 1000 kg/cum, minimum Hardness 1000 kgf. All styles and rails shall have profiled interlocking system locked in place by bamboo pins, all complete as per direction of Engineer in charge. (The panelling will be paid for separately).	sqm	111	5036	5147

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
18.17	Providing & fixing in position Phenol bonded Bamboo wood panelling of 10mm thick, in 25 to 40 mm thick panelled or panelled & glazed shutters for doors, windows, clerestory windows, in approved colour, texture & finish. The bamboo wood planks shall have minimum density of 1000 kg/cum & minimum Hardness 1000 kgf. The panels shall have profiled interlocking system locked in place with bamboo pins all complete as per direction of the Engineer in-charge. (area of opening for panel inserts excluding portion inside grooves or rebates to be measured)	sqm	414	2644	3058
18.18	Providing & fixing in position 65 mm thick factory made door frame of Phenol bonded Bamboo wood (superior class, interior use), in approved colour, texture and finish. The bamboo wood shall have minimum density of 1000 kg/cum, minimum hardness 1000 kgf. The door frame shall have tenon & mortise interlocking system, to be fixed to the wall with 100 mm size G.I screws all a complete as per direction of Engineer-in charge.	cudm	11	224	235
18.19	Providing and fixing concealed hinge of approved quality for 19-20mm thick door with stainless steel screws complete :	each	9	83	92
	PARTITIONS				
18.20	Providing and laying Gypsum panel partitions 100 mm thick with water proof Gypsum panels of size 666x500x100 mm, made of calcite phosphor Gypsum fixed with tongue and groove, jointed with bonding plaster as per manufacturer's specifications in superstructure above plinth level up to floor IV level. Gypsum blocks will have a minimum compressive strength of 9.3 kg/cm2	sqm	77	706	783
18.21	Extra for Gypsum panel Partitions in superstructure above floor IV level for every three floors or part thereof.	sqm	41	0	41
18.22	Providing and fixing at Bamboo Mat board conforming to IS:13958-1994 for partition to frame by bucking or studding with screws etc. complete (Frames,				
18.22.1	3mm thickness	sqm	95	2102	2196
18.22.2	4mm thickness	sqm	95	2437	2531
18.22.3	6mm thickness	sqm	95	2949	3044
18.22.4	9mm thickness	sqm	95	3796	3891
18.22.5	12mm thickness	sqm	95	4400	4494
18.23	Providing and fixing at all height wall panelling with phenol bonded Bamboo Mat board conforming to IS:13958-1994 including providing and fixing to frame work made of 50mm x 50mm hardwood plugs including cutting brick work and fixing in cement mortar and making good the wall etc. and also providing and fixing wooden moulded corner beading of triangular shape to the junction of panelling etc. with iron screws all complete as per direction of Engineer-in-Charge.				
18.23.1	9mm thickness	sqm	71	4150	4220
18.23.2	12mm thickness	sqm	71	4754	4825
	CLADDING				
18.24	Providing & fixing in position Phenol bonded Bamboo wood wall cladding at all height with planks of sizes 10mm thick, 1800mm length (minimum) and 130 mm wide (minimum), in approved colour, texture and finish, having Performance Appraisal Certificate (PAC) issued by Building Materials & Technology Promotion Council (BMTPC), with necessary profiled edges fixed with 40mm SS screws 5 Nos. in each tile to frame work made of second class teak wood of size 20x15 mm in centre of each tile and bottom and top of work height, 40x15mm placed at ends of each tile. The cladding shall be laid over back layer of 1.00 mm thick expanded polyethylene foam of density 40kg/cum in two layers, first layer on wall surface before fixing wooden frame and second layer on frame under cladding. The bamboo wood planks shall have minimum density of 1000 kg/cum & minimum Hardness 1000 kgf. with Eco friendly UV coating, all complete as per direction of the Engineer in-charge.	sqm	64	5245	5309
	uPVC PROFILED PRODUCTS				

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
18.25	Providing and fixing factory made solid Foam uPVC profile for kitchen cabinet frame (45 x 20 mm) of approved shade, quality and make. The profile shall be laminated on both sides, made from rigid foam sheets (Single extruded) having density 600 kg/cum and the exposed edges sealed with PVC edge beading of same shade and colour. The frame shall be fire retardant with necessary screw holding capacity. Frame shall be fixed to wall using Expendable Fastener with necessary stainless steel screws, all complete as per direction of Engineer-in-charge.	metre	34	287	321
18.26	Providing and fixing factory made Kitchen Cabinet Shutter/Partition 20 mm nominal thickness of approved shade, quality and make, made from rigid foam sheets (Single extruded) having density 600 kg/cum and laminated on both side by laminate Sheet/PVC foil lamination. The exposed edges shall be sealed with PVC edge beading of same shade and colour. The shutter shall be fire retardant having necessary screw holding capacity. Shutter shall be fixed to frame using approved hinges with necessary stainless steel screws, all complete as per direction of Engineer-in-charge.	sqm	516	3084	3599
	PE-AL-PE COMPOSITE PRESSURE PIPE				
18.27	Providing and fixing Polyethylene-Aluminium-Polyethylene PE-AL-PE Composite Pressure Pipes conforming to IS - 15450, U.V. stabilized with carbon black having thermal stability for hot & cold water supply, capable to withstand temperature up to 80°C, including all special fittings of composite material (engineering plastic blend and brass inserts wherever required) e.g. elbows, tees, reducers, couplers & connectors etc., with clamps at 1.00 metre spacing. This includes testing of joints complete as per direction of the Engineer-in-charge.				
	INTERNAL WORK - EXPOSED ON WALL				
18.27.1	1216 (16 mm OD) pipe	metre	63	105	168
18.27.2	1620 (20 mm OD) pipe	metre	70	132	202
18.27.3	2025 (25 mm OD) pipe	metre	78	186	264
18.27.4	2532 (32 mm OD) pipe	metre	86	265	351
18.27.5	3240 (40 mm OD) pipe	metre	109	397	506
18.27.6	4050 (50 mm OD) pipe	metre	109	558	667
18.28	Providing and fixing Polyethylene-Aluminium- Polyethylene PE-AL-PE Composite Pressure Pipes conforming to IS - 15450, U.V. stabilized with carbon black having thermal stability for hot & cold water supply, capable to withstand temperature up to 80°C, including all special fittings of composite material (engineering plastic blend and brass inserts wherever required) e.g. elbows, tees, reducers, couplers & connectors etc., with clamps at 1.00 metre spacing. This includes the costs of cutting chases and including testing of joints complete as per direction of the engineer in charge.				
	Concealed work, including cutting chases and making good				
18.28.1	1216 (16 mm OD) pipe	metre	118	151	269
18.28.2	1620 (20 mm OD) pipe	metre	118	187	305
18.28.3	2025 (25 mm OD) pipe	metre	118	260	378
18.28.4	2532 (32 mm OD) pipe	metre	118	367	485
18.29	Providing and fixing Polyethylene-Aluminium- Polyethylene PE-AL-PE Composite Pressure Pipes conforming to IS - 15450, U.V. stabilized with carbon black having thermal stability for hot & cold water supply, capable to withstand temperature up to 80°C, including all special fittings of composite material (engineering plastic blend and brass inserts wherever required) e.g. elbows, tees, reducers, couplers & connectors etc., with trenching, refilling and testing of joints complete as per direction of the engineer in charge.				
	External work				
18.29.1	1216 (16 mm OD) pipe	metre	39	105	144
18.29.2	1620 (20 mm OD) pipe	metre	39	132	171
18.29.3	2025 (25 mm OD) pipe	metre	39	186	225
18.29.4	2532 (32 mm OD) pipe	metre	39	265	304

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
	18.29.5	3240 (40 mm OD) pipe	metre	47	397	443
	18.29.6	4050 (50 mm OD) pipe	metre	47	557	604
	PP-R PIPES					
18.30	Providing and fixing 3 layer PP-R (Poly propylene Random copolymer) pipes confirming to IS 15801, UV stabilized & anti - microbial fusion welded, having thermal stability for hot & cold water supply, including all PP - R plain & brass threaded polypropylene random fittings, i/c fixing the pipe with clamps at 1.00 m spacing. This includes testing of joints complete as per direction of Engineer-in-Charge.					
	Internal Exposed on walls					
	18.30.1	PN - 16 Pipe, 20mm OD (SDR-7.4)	metre	70	73	143
	18.30.2	PN - 16 Pipe, 25mm OD (SDR-7.4)	metre	78	113	191
	18.30.3	PN - 16 Pipe, 32mm OD (SDR-7.4)	metre	78	167	245
	18.30.4	PN - 16 Pipe, 40mm OD (SDR-7.4)	metre	109	241	350
	18.30.5	PN - 10 Pipe, 50mm OD (SDR-11)	metre	109	377	486
18.31	Providing and fixing 3 layer PP-R (Poly propylene Random copolymer) pipes confirming to IS:15801, UV stabilized & anti - microbial fusion welded, having thermal stability for hot & cold water supply, including all PP - R plain & brass threaded polypropylene random fittings, i/c fixing the pipe with clamps at 1.00 m spacing. This includes the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer-in-Charge.					
	Concealed work, including cutting chases and making good the wall etc.					
	18.31.1	PN - 16 Pipe, 20mm OD (SDR-7.4)	metre	118	108	226
	18.31.2	PN - 16 Pipe, 25mm OD (SDR-7.4)	metre	118	162	280
	18.31.3	PN - 16 Pipe, 32mm OD (SDR-7.4)	metre	118	219	336
18.32	Providing and fixing 3 layer PP-R (Poly propylene Random copolymer) pipes confirming to IS:15801 UV stabilized & anti - microbial fusion welded, having thermal stability for hot & cold water supply, including all PP - R plain & brass threaded polypropylene random fittings, including trenching, refilling & testing of joints complete as per direction of Engineer-in-Charge.					
	External work					
	18.32.1	PN - 16 Pipe, 20mm OD (SDR-7.4)	metre	54	67	121
	18.32.2	PN - 16 Pipe, 25 mm OD (SDR-7.4)	metre	59	104	163
	18.32.3	PN - 16 Pipe, 32 mm OD (SDR-7.4)	metre	59	167	225
	18.32.4	PN - 16 Pipe, 40 mm OD (SDR-7.4)	metre	62	251	313
	18.32.5	PN - 10 Pipe, 50 mm OD (SDR-11)	metre	62	393	455
	18.32.6	PN - 10 Pipe, 63 mm OD (SDR-11)	metre	75	439	514
	18.32.7	PN - 10 Pipe, 75 mm OD (SDR-11)	metre	75	651	726
	18.32.8	PN - 10 Pipe, 90 mm OD (SDR-11)	metre	98	932	1029
18.33	Providing and fixing PPR Unions					
	18.33.1	PPR Union 20mm	each	80	64	143
	18.33.2	PPR Union 25mm	each	80	127	207
	18.33.3	PPR Union 32mm	each	80	179	259
	18.33.4	PPR Union 40mm	each	80	241	321
	18.33.5	PPR Union 50mm	each	80	459	539
	18.33.6	PPR Union 63mm	each	80	629	709
	18.33.7	PPR Union 75mm	each	80	1213	1292
	WATER PROOFING					
18.34	Water proofing treatment of Vertical joints (of external side and internal side) between door frame, window & ventilator frames (on all four sides) of outer wall over the Zycosil/equivalent & Zycoprime/equivalent solution already applied (before the installation of door / window / ventilator frames in position) and fine finish with Grout RW/equivalent.		sqm	19	9	28

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
18.35	Water proofing treatment of RCC sunshade with Zycosil/equivalent water proofing Solution (1 litre of Zycosil/equivalent & 20 litres of water stirred first & 2 litres of Zycoprime/equivalent added and stirred (total 23 litres)) till it meets the saturation level and testing as per RILEM or by water drops test in which water drops do not absorb but drops remain or rolls.	sqm	31	72	103
18.36	In-filling / sealing of joint between RCC lintel cum sunshade and wall (on external side) in all floors by pushing in Grout RW/equivalent in paste form and coving 20 mm x 20 mm after applying a coat of Zycosil/equivalent & Zycoprime/equivalent solution before cement plastering of top, bottom and sides of RCC sunshade.	sqm	19	9	28
	OTHER USEFUL BUILDING CONSTRUCTION ITEMS				
18.37	Supplying and installation of moisture resistant/fire resistant 6 mm thick Heavy duty fibre cement board (High pressure steam cured) conforming to IS 14862:2000 of category III type B as per standard sizes fixed with self-drilling / taping screws. Screws shall be of counter sunk rib head of 1.60mm to 4 mm thick of 8 to 10 gauge of length varying from 25 to 45 mm.	sqm	141	784	925
18.38	Providing and fixing Scaffolding net of required width made of high density Polyethylene UV stabilized knitted on warp knitting machines having density 100grams/sqm and shading coefficient minimum 75% around the construction site/ for vertical extension as per requirement including fastening/tying with building/scaffolding pipes or with any other fixtures etc. complete as per direction of Engineer-in-Charge. (One time payment shall be made for providing Scaffolding net from start of work till completion of work including shifting if any. The Scaffolding net shall be the property of the contractor on completion of the work)	sqm	1	21	22
18.39	Providing and fixing in all exterior face panels breathable vapour barrier underneath the cement fibre board as per National Building Code 2009 complete as per direction of Engineer-in-charge.	sqm	16	250	266
18.40	Supplying & laying of drainage composite for use behind walls, between two different fills, alongside drains of road, below concrete lining of canals etc. Geocomposite for planar drainage, realized by thermo bonding a draining core in extruded monofilaments with two filtering nonwoven geotextile that may also be working as separation or protecting layers. The draining three dimensional core will have a "W" configuration as longitudinal parallel channels. Minimum thickness to be 7.2mm, with two filtering UV stabilized polypropylene nonwoven geotextile of minimum thickness of 0.75mm characteristic opening size (O90) of 110 micron and tensile strength of 8.0 kN/m that will be working as separation or protecting layer, Geocomposite having in plane flow capacity of 2.1 L / (m.s) at hydraulic gradient of 1.0 & 20 kPa pressure and tensile strength of 18 kN/m , with mass per unit area of 740 gsm, supplied in the form of roll for easy transportation to site of work as per detailed specification all complete as per directions of Engineer in charge.	sqm	10	757	767
18.41	Supplying & laying of drainage composite for use behind walls, between two different fills, alongside drains of road, below concrete lining of canals etc. having thermo bonding a draining core - HDPE geonet comprises of two sets of parallel overlaid ribs integrally connected to have a rhomboidal shape with a polyethylene film and a nonwoven geotextile having mass per unit area 130 gsm and tensile strength of 8.0 kN/m that will be working as separation or protecting layer, Geocomposite having in plane flow capacity of 0.7 L / (m.s) at hydraulic gradient of 1.0 & 20 kPa pressure and tensile strength of 13.5 kN/m , with mass per unit area of 830 gsm, at easily accessible location including top and bottom, with all leads and lifts, manpower and machinery, materials, labour etc. complete and as directed by Engineer - In - Charge.	sqm	910	-	910
18.42	Mud mortar made with local clay good earth.	cum	230	231	461
	SECURITY GUARDS				

Item No.	Description			Unit	Labour Rate	Material Rate	Through Rate
18.43	Providing round the clock security guard without gun for watch & ward of Government premises and its all belongings by deploying neatly dressed security guards in 8 hour's shift including necessary T&P like torch, lathi and uniform etc.complete, as per the direction of Engineer-in-charge. (One job means 8 hour's duty).			per day	575	-	575
18.44	Providing round the clock security guard with gun for watch & ward of Government premises and its all belongings by deploying neatly dressed security guards in 8 hour's shift including necessary T&P like torch, lathi and uniform etc.complete, as per the direction of Engineer-in-charge.(One job means 8 hour's duty).			per day	604	-	604
18.45	Cutting Girders with Hack-saw.						
	18.45.1	Up to 300 mm depth.		per cut	180	-	180
	18.45.2	Above 300mm to 450mm depth.		per cut	210	-	210
18.46	Drilling holes in girders.			each	20	-	20
18.47	Cutting/Fixing of copper sheets						
	18.47.1	Cutting of copper sheets 1.5 mm, thick flashing.		metre	68	-	68
	18.47.2	Fixing copper flashing into position.		metre	27	-	27
18.48	Assembling 40 mm. pressure pipes.			metre	15	-	15
18.49	Boring and fixing 40 mm pressure pipes.			metre	75	-	75
18.50	Boring for hand-pump in clay fitting strainer and pipe.						
	18.50.1	Up to 75mm dia bore.					
		18.50.1.1	From 0 to 15 m.	metre	90	-	90
		18.50.1.2	Exceeding 15 m but up to 30 m.	metre	228	-	228
		18.50.1.3	Exceeding 30 m.	metre	338	-	338
	18.50.2	Above 75mm dia bore but not exceeding 100mm.					
		18.50.2.1	From 0 to 15 m.	metre	120	-	120
		18.50.2.2	Exceeding 15 m but up to 30 m.	metre	283	-	283
		18.50.2.3	Exceeding 30 m.	metre	338	-	338
18.51	Boring hand-pump in soil with admixture of shingle.						
	18.51.1	Up to 75mm dia bore.					
		18.51.1.1	From 0 to 15 m.	metre	159	-	159
		18.51.1.2	Exceeding 15 m but up to 30 m.	metre	283	-	283
		18.51.1.3	Exceeding 30 m.	metre	338	-	338
	18.51.2	Above 75mm dia bore but not exceeding 100mm.					
		18.51.2.1	From 0 to 15 m.	metre	179	-	179
		18.51.2.2	Exceeding 15 m but up to 30 m.	metre	338	-	338
		18.51.2.3	Exceeding 30 m.	metre	397	-	397
18.52	Hand pumps						
	18.52.1	Pulling out pipe and filters.		metre	28	-	28
	18.52.2	Lowering pipe in the hole up to 40mm dia.		metre	28	-	28
	18.52.3	fixing head including clamps and handle.		each	138	-	138
18.53	Fixing E.I gauges flush with masonry including cost of hooks.			metre	111	-	111
18.54	Fixing handles to iron rammers including cost of handles.			each	50	-	50
18.55	Cutting down trees, filling holes and levelling of ground, lopping branches trimming, removal not exceeding 100 m stacking clearing site.						
	18.55.1	girth up to 60 cm		each	170	-	170
	18.55.2	girth more than 60 cm. but up to 120 cm.		each	303	-	303
	18.55.3	girth more than 120 cm. but up to 180 cm.		each	605	-	605
	18.55.4	girth more than 180 cm. but up to 250 cm.		each	1010	-	1010
	Notes :-						
	(i) The girth is to be measured 1.25 m above ground level.						

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
	(ii) When stumps are grubbed up in addition, take rates as double the above rates for trees cut and grubbed. payment for grubbing will only be made when specially ordered by the Sub- Divisional officer in cases where it is essential to remove the stumps.				
	(iii) Trees requiring to be cut will normally be sold as they stand, the purchase price including the purchasers liability to cut or grub and remove the tree from Govt. Land.				
	(iv) Where these have not been sold, the trees cut and removed will be the property of the Govt.				
18.56	Felling trees, cutting and stacking fuel wood from plantation.	quintal	70	-	70
18.57	Splitting fuel wood.	quintal	100	-	100
18.58	Supply of wooden pegs for levelling work 40 mm to 50mm dia and 15cm to 23 cm long.	100 nos	170	-	170
18.59	Supply of wooden pegs for alignment work, 40 cm long 75mm dia	100 nos	675	-	675
18.60	Supply of bamboo jhandies 3 m to 3.5 m including iron shoes and flags 40 cm Square painted black and white.	each	170	-	170
18.61	Fixing glass pieces on top of walls.	metre	44	-	44
18.62	Digging pits and fixing distance marks or boundary stones.	each	50	-	50
18.63	Supplying manure or compost, including carriage of 100 m.	cum	430	-	430
18.64	Ploughing two times.	hectare	3000	-	3000
18.65	Filling 200 litres drums with diesel oil (not payable to diesel dealer)	each	14	-	14
18.66	Jungle clearance.	hectare	1076 to 5283	-	1076 to 5283
	Notes for Item No.18.64 to 18.66				
	(i) The rates are applicable to areas acquired for new canals, and drains, extension of channels and for construction of roads and Buildings.				
	(ii) The rate is to be decided by the Executive Engineer according to density of jungle to be cleared.				
18.67	Ordinary jungle clearance of both banks of running distributaries, minors and drains with discharge up to 9cum/s including boundary road :-				
	18.67.1 Discharge up to 1.5 cum/s	km	1398 to 2151	-	1398 to 2151
	18.67.2 Discharge exceeding 1.5 cum/s but up to 4.5 cum/s	km	2151 to 2796	-	2151 to 2796
	18.67.3 Discharge exceeding 4.5 cum/s.	km	2796 to 3549	-	2796 to 3549
18.68	Jungle clearance on running canals and branches, and drains with discharge more than 9 cum/s.				
	18.68.1 Light	km	8606	-	8606
	18.68.2 Medium	km	10752	-	10752
	18.68.3 Heavy	km	21504	-	21504
18.69	Filling loose cement in empty cement bags weighing, sewing and stacking with in 30m including cost of string.	per bag	9	-	9
18.70	Filling cement bags with steam coal or kankar lime, sewing including cost of string.	cum	98	-	98
18.71	Stencilling and bundling empty cement bags.	100 nos	41	-	41
18.72	Tempering of Kassies, Belchas, Khurpas and pick axes etc.	each	50	-	50

CHAPTER NO. 19

QUANTITY
OF
MATERIALS

CHAPTER 19.0 - QUANTITY OF MATERIALS

Item No.	Ref. of connected Item	CONCRETE WORK			Materials						
					OPC 43	Stone Aggregate			Fine Aggregates		Plasticizer
						40 mm	20 mm	10 mm	Coarse sand (zone II)	Fly Ash	
		Description	Unit	Quantity	tonne	cum	cum	cum	cum	cum	kg
19.1	6.1	**Cement Concrete**									
19.1.1	6.1.1	1:1½:3 (1 Cement: 1½ coarse sand : 3 stone aggregate 20 mm)	cum	1	0.40		0.57	0.28	0.425		
19.1.2	6.1.2	1:2:4 (1 Cement : 2 coarse sand : 4 stone aggregate 20 mm)	cum	1	0.32		0.67	0.22	0.445		
19.1.3	6.1.3	1:2:4 (1 Cement : 2 coarse sand : 4 stone aggregate 40 mm)	cum	1	0.32	0.52	0.22	0.11	0.445		
19.1.4	6.1.4	1:3:6 (1 Cement : 3 coarse sand : 6 stone aggregate 20 mm)	cum	1	0.22		0.70	0.24	0.47		
19.1.5	6.1.5	1:3:6 (1 Cement : 3 coarse sand : 6 stone aggregate 40 mm)	cum	1	0.22	0.65	0.24		0.47		
19.1.6	6.1.6	1:4:8 (1 Cement : 4 coarse sand : 8 stone aggregate 40 mm)	cum	1	0.17	0.65	0.24		0.47		
19.1.7	6.1.7	1:5:10 (1 Cement : 5 coarse sand : 10 stone aggregate 40 mm)	cum	1	0.13	0.65	0.24		0.47		
19.2		**Cement Concrete with Flyash**									
19.2.1	6.1.9	1:2:3½:9 (1 Cement : 2 Fly ash : 3½ coarse sand : 9 stone aggregate 40 mm)	cum	1	0.17	0.65	0.24		0.37	0.21	
19.2.2	6.1.10	1:2½:4:11 (1 Cement : 2½ fly ash : 4 coarse sand : 11 stone aggregate 40 mm)	cum	1	0.13	0.65	0.24		0.34	0.21	
19.3	6.11	**12 mm thick cement plaster damp-proof course 1:3 with 2 coats of bitumen at 1.65 kg. per SqM, laid hot and sanded:**									
19.3.1	6.11.1	**Vertical**	SqM	1	0.0075				0.0150		
19.3.2	6.11.2	**Horizontal**	SqM	1	0.0075				0.0150		
19.4	6.12	**20 mm thick cement plaster damp-proof course 1:3 with 2 coats of bitumen at 1.65 kg. per SqM, laid hot and sanded:**									
19.4.1	6.12.1	**Vertical**	SqM	1	0.0125				0.0250		
19.4.2	6.12.2	**Horizontal**	SqM	1	0.0125				0.0250		
19.5	6.13	**Ready Mix Plain Cement Concrete**									
19.5.1	6.22.1.1	M-20 grade plain cement concrete (cement content considered @ 300 kg/cum)	cum	1	0.3	0.65	0.24		0.47		1.5
19.5.2	6.22.1.2	M-15 grade plain cement concrete (cement content considered @ 240 kg/cum)	cum	1	0.24	0.65	0.24		0.47		1.20
19.5.3	6.22.1.3	M-10 grade plain cement concrete (cement content considered @ 220 kg/cum)	cum	1	0.22	0.65	0.24		0.47		1.10
19.6	6.23	**Ready Mix Concrete with Fly Ash**									
19.6.1	6.23.1.1	M-15 grade plain cement concrete (cement content considered @ 240 kg/cum)	cum	1	0.24	0.65	0.24		0.37	0.21	1.20
19.6.2	6.23.1.2	M-10 grade plain cement concrete (cement content considered @ 220 kg/cum)	cum	1	0.22	0.65	0.24		0.37	0.21	1.10

Item No.	Ref. of connected item	REINFORCED CEMENT CONCRETE			Materials						
					OPC 43	Stone Aggregate			Fine Aggregates		Plasticizer
						40 mm	20 mm	10 mm	Coarse sand (zone III)	Flyash	
		Description	Unit	Quantity	tonne	cum	cum	cum	cum	cum	kg
19.7	6.25	DESIGN MIX									
19.7.1	6.25.1	M-25 (Cement content 330 kg/cum)	cum	1	0.33		0.57	0.28	0.425		1.65
19.7.2	6.25.2	M-30 (Cement content 340 kg/cum)	cum	1	0.34						1.70
19.7.3	6.26.2	M-35 (Cement content 350 kg/cum)	cum	1	0.35						1.75
19.7.4	6.26.3	M-40 (Cement content 360 kg/cum)	cum	1	0.36						1.80
19.8	6.28	DESIGN MIX WITH FLY ASH									
19.8.1	6.28.1	M-25 (Cement content 330 kg/cum)	cum	1	0.33	0.65	0.24		0.37	0.21	1.65

Item No.	Ref. of connected item	MORTARS			Materials		
					OPC 43	Fine Sand (Zone IV)	Coarse sand (zone III)
		Description	Unit	Quantity	tonne	cum	cum
19.9	7.1	Cement mortar 1:1 (1 cement : 1 fine sand)	cum	1	1.02	0.71	
19.10	7.2	Cement mortar 1:2 (1 cement : 2 fine sand).	cum	1	0.68	0.95	
19.11	7.3	Cement mortar 1:3 (1 cement : 3 fine sand).	cum	1	0.51	1.07	
19.12	7.4	Cement mortar 1:4 (1 cement : 4 fine sand).	cum	1	0.38	1.07	
19.13	7.5	Cement mortar 1:5 (1 cement : 5 fine sand).	cum	1	0.31	1.07	
19.14	7.6	Cement mortar 1:6 (1 cement : 6 fine sand).	cum	1	0.25	1.07	
19.15	7.7	Cement mortar 1:2 (1 cement : 2 coarse sand).	cum	1	0.68		0.95
19.16	7.8	Cement mortar 1:3 (1 cement : 3 coarse sand).	cum	1	0.51		1.07
19.17	7.9	Cement mortar 1:4 (1 cement : 4 coarse sand).	cum	1	0.38		1.07
19.18	7.10	Cement mortar 1:5 (1 cement : 5 coarse sand).	cum	1	0.31		1.07
19.19	7.11	Cement mortar 1:6 (1 cement : 6 coarse sand).	cum	1	0.25		1.07

Item No.	Ref. of connected item	BRICK WORK			OPC 43	Fire cement (fire clay)	Stone Aggregate (Single size) : 20 mm nominal size	Stone Aggregate (Single size) : 06 mm nominal size	Coarse Sand	Fine sand	Materials						
											Common burnt clay non-modular bricks	Common burnt clay /machine moulded modular bricks	Common burnt clay /machine moulded non-modular tiles	Fire bricks	Cement mortar 1:3 (1 cement : 3 coarse sand)	Cement mortar 1 : 4 (1 cement : 4 coarse sand)	Cement mortar 1:6 (1 cement : 6 coarse sand)
		Description	Unit	Quantity	tonne	tonne	cum	cum	cum	cum	nos.	nos.	nos.	nos.	cum	cum	cum
19.20	7.20	Brick work with common burnt clay modular bricks															
19.20.1	7.20.1	Cement mortar 1:4 (1 cement : 4 coarse sand)	cum	1								487				0.22	
19.20.2	7.20.2	Cement Mortar 1:6 (1 cement : 6 coarse sand).	cum	1								487					0.22
19.21	7.21	Brick work with common burnt clay non-modular bricks															
19.21.1	7.21.1	Cement mortar 1:4 (1 cement : 4 coarse sand)	cum	1							494					0.25	
19.21.2	7.21.2	Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	1							494						0.25
19.22	7.26	Brick work 7 cm thick with common burnt clay non-modular brick in cement mortar 1:3 (1 cement : 3 coarse sand)	sqm	10							377				0.181		
19.23	7.27	Half brick masonry with common burnt clay non-modular bricks															
19.23.1	7.27.1	Cement mortar 1:3 (1 cement : 3 coarse sand)	sqm	10							565				0.28		
19.23.2	7.27.2	cement mortar 1:4 (1 cement : 4 coarse sand)	sqm	10							565					0.28	
19.24	7.32	Tile brick masonry with common burnt clay non-modular tile bricks															
19.24.1	7.32.1	Cement mortar 1:4 (1 cement : 4 coarse sand)	cum	1									777			0.40	
19.24.2	7.32.2	Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	1									777				0.40
19.25	7.33	Tile brick masonry with common burnt clay machine moulded tile bricks in cement mortar 1:6 (1 cement : 6 coarse sand).	cum	1									777				0.40
19.26	7.39	Brick work with common burnt clay selected non-modular bricks in exposed brick work including making horizontal and vertical grooves 10 mm wide 12 mm deep complete in cement mortar 1:6 (1 cement : 6 coarse sand)	cum	1							494						0.26
19.27	7.40	Brick work with common burnt clay machine moulded non-modular bricks in exposed brick work including making horizontal and vertical grooves 10 mm wide 12 mm deep complete in cement mortar 1:6 (1 cement : 6 coarse sand).	cum	1									494				0.25
19.28	7.41	Brick work with common burnt clay modular bricks in exposed brick work including making horizontal and vertical grooves 10mm wide 12 mm deep complete in cement mortar 1:6 (1 cement : 6 coarse sand).	cum	1								487					0.22
19.29	7.42	Brick work with common burnt clay machine moulded modular bricks in exposed brick work including making horizontal and vertical grooves 10 mm wide 12 mm deep complete in cement mortar 1:6 (1 cement : 6 coarse sand).	cum	1								487					0.22
19.30	7.55	Brick edging 7cm wide 11.4 cm deep to plinth protection with common burnt clay non-modular bricks of class designation 7.5 including grouting with cement mortar 1:4 (1 cement : 4 fine sand).	metre	10							46					0.0036	
19.31	7.61	Maroo-corners making from first class bricks, and fixing in position, with cement mortar 1:4	each	1							6.000						
19.32	7.67	Fire brick work in lining of fire places flues, etc. (excepting chimney shafts)	cum	1		0.173			0.240					460.000			

Item No.	Ref. of connected item	STONE MASONRY			Materials					
					Stone for masonry work	Through and bond stone	Cement mortar 1 : 6 (1 cement : 6 coarse sand)	Stone Aggregate (Single size) : 06 mm	Coarse Sand	Fine sand
		Description	Unit	Quantity	cum	nos.	cum			
19.33	7.83	Random rubble masonry with hard stone with :								
19.33.1	7.83.1	Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	1	1.00	7	0.33			
19.34	7.86	Extra for random rubble masonry with hard stone curved on plan for a mean radius not exceeding 6 m.	cum	1	0.10					
19.35	7.87	Coursed rubble masonry (first sort) with hard stone with :								
19.35.1	7.87.1	Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	1	1.21	7	0.30			
19.36	7.88	Coursed rubble masonry (second sort) with hard stone with :								
19.36.1	7.88.1	Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	1	1.10	7	0.30			
19.37	7.91	Extra for coursed rubble masonry with hard stone (first or second sort) curved on plan for a mean radius not exceeding 6 m.	cum	1	0.11					
		PRECAST STONE BLOCK MASONRY								
19.38	7.92	Stone block masonry (including quoin-blocks, jamb blocks, closer etc.) with precast solid concrete blocks of approved size laid in cement sand mortar 1:6 (1 cement : 6 fine sand) in foundation and plinth								
19.38.1	7.92.1	precast cement concrete block made from medium size stone 15 to 20 cm, 35% in volume at the face and cement concrete 1:4:8 (with stone aggregate of 20 mm and down gauge) 65% in volume.	cum	1	0.095		0.520	0.300		0.260
19.38.2	7.92.2.	precast cement concrete block made from medium size stone 15 to 20 cm, 35% in volume at the face and cement concrete 1:5:8 (with stone aggregate of 20 mm and down gauge) 65% in volume.	cum	1	0.089		0.500	0.300		0.310
19.38.3	7.92.3	precast cement concrete block made from medium size stone 15 to 20 cm, 35% in volume at the face and cement concrete 1:5:10 (with stone aggregate of 20 mm and down gauge) 65% in volume.	cum	1	0.078		0.540	0.300		0.270
19.39	7.93	**Stone block masonry 15 cm thick (including quoin-blocks, jamb blocks, closer etc.) with precast solid concrete blocks of approved size laid in cement sand mortar 1 : 6 (1 cement : 6 fine sand) in foundation and plinth.**								
19.39.1	7.93.1	precast cement concrete block made from medium size stone 15 to 20 cm, 35% in volume at the face and cement concrete 1 :4:8 (with stone aggregate of 20 mm and down gauge) 65% in volume.	SqM	10	0.143		0.800	0.450		0.400
19.39.2	7.93.2	precast cement concrete block made from medium size stone 15 to 20 cm, 35% in volume at the face and cement concrete 1 :5:8 (with stone aggregate of 20 mm and down gauge) 65% in volume.	SqM	10	0.134		0.740	0.450		0.460

Item No.	Ref. of connected item	STONE MASONRY			Materials					
					Stone for masonry work	Through and bond stone	Cement mortar 1 : 6 (1 cement : 6 coarse sand)	Stone Aggregate (Single size) : 06 mm	Coarse Sand	Fine sand
		Description	Unit	Quantity	cum	nos.	cum			
19.39.3	7.93.3	precast cement concrete block made from medium size stone 15 to 20 cm, 35% in volume at the face and cement concrete 1:5:10 (with stone aggregate of 20 mm and down gauge) 65% in volume.	SqM	10	0.118		0.820	0.450		0.410
19.40	7.94	**Stone block masonry 10 cm thick (including quoin-blocks, jamb blocks, closer etc.) with precast solid concrete blocks of approved size laid in cement sand mortar 1 : 6 (1 cement: 6 fine sand) in foundation and plinth.**								
19.40.1	7.94.1	precast cement concrete block made from medium size stone 15 to 20 cm, 35% by volume at the face and cement concrete 1:4:8 (with stone aggregate of 20 mm and down gauge) 65% in volume.	SqM	10	0.100		0.560	0.320		0.280
19.40.2	7.94.2	precast cement concrete block made from medium size stone 15 to 20 cm, 35% by volume at the face and cement concrete 1:5:8 (with stone aggregate of 20 mm and down gauge) 65% in volume.	SqM	10	0.094		0.510	0.320		0.320
19.40.3	7.94.3	Precast cement concrete block made from medium size stone 15 to 20 cm, 35% by volume at the face and cement concrete 1:5:10 (with stone aggregate of 20 mm and down gauge) 65% in volume.	SqM	10	0.082		0.580	0.320		0.290

Item No.	Ref. of connected Item	CLADDING WORK			Materials								
					OPC 43	Raj nagar plain white marble/ granite/ Italian marble	8 mm thick marble tiles-Raj Nagar/granite	White Cement Slurry	Red sand stone block	Kotastone slab	Cement mortar 1:3	White cement mortar 1:2	Cement mortar 1:4
		Description	Unit	Quantity	tonne	sqm	sqm	tonne	10 cudm	sqm	cum	cum	cum
19.41	8.4	Marble work for wall lining (veneer work), backing filled with a grout of average 12 mm thick in cement mortar 1:3 (1 cement : 3 coarse sand), including pointing with white cement mortar 1:2 (1 white cement : 2 marble dust)											
19.41.1	8.4.1	Raj Nagar Plain white marble/ Udaipur green marble/ Zebra black marble.											
19.41.1.1	8.4.1.1	Area of slab up to 0.50 sqm	sqm	0.50		0.60					0.008	0.0012	
19.41.1.2	8.4.1.2	Area of slab over 0.50 sqm	sqm	1		1.20					0.0144	0.0025	
19.42	8.8	Stone tile (polished) work for wall lining over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and cement slurry @ 3.3 kg/sqm including pointing in white cement complete.											
19.42.1	8.8.1	8mm thick											
19.42.1.1	8.8.1.1	Raj nagar plain white marble/ Udaipur green marble/ Zebra black marble	sqm	1	0.0033		1.025				0.014		
19.42.1.2	8.8.1.2	Granite of any colour and shade	sqm	1	0.0033		1.025				0.014		
19.43	8.9	Stone work (machine cut edges) for wall lining etc. (veneer work) up to 10 metre height, backing filled with a grout of average 12 mm thick cement mortar 1:3 (1 cement : 3 coarse sand) including pointing in white cement mortar 1:2 (1 white cement : 2 stone dust) with an admixture of pigment matching the stone shade : (To be secured to the backing and the sides by means of cramps and pins which shall be paid for separately) :											
19.43.1	8.9.1	Red sand stone - exposed face fine dressed with rough											
19.43.1.1	8.9.1.1	70 mm thick	sqm	1					9.333		0.018		
19.43.1.2	8.9.1.2	60 mm thick	sqm	1					8.00				
19.43.1.3	8.9.1.3	50 mm thick	sqm	1					6.67				
19.43.1.4	8.9.1.4	40 mm thick	sqm	1					5.333				
19.43.1.5	8.9.1.5	30 mm thick	sqm	1					3.999				
19.44	8.13	Stone work (machine cut edges Veneer work) for wall lining up to 10 m height, backing filled with a grout of 12 mm thick cement mortar 1:3 (1 Cement : 3 coarse sand) and jointed with Cement mortar 1:2 (1 cement : 2 stone dust), including rubbing and polishing complete.											
19.44.1	8.13.1	Kota stone slabs exposed face dressed and rubbed.											
19.44.1.1	8.13.1.1	25 mm thick	sqm	10						11.50	0.144		

Item No.	Ref. of connected Item	CLADDING WORK			Materials								
					OPC 43	Raj nagar plain white marble/ granite/ Italian marble	8 mm thick marble tiles-Raj Nagar/granite	White Cement Slurry	Red sand stone block	Kotastone slab	Cement mortar 1:3	White cement mortar 1:2	Cement mortar 1:4
		Description	Unit	Quantity	tonne	sqm	sqm	tonne	10 cudm	sqm	cum	cum	cum
19.45	8.15	Providing and fixing machine cut, mirror/ eggshell polished , Marble stone work for wall lining (veneer work) including dado, skirting, risers of steps etc., in required design and pattern wherever required, stones of different finished surface texture, on 12 mm (average) thick cement mortar 1:3 (1 cement : 3 coarse sand) laid and jointed with white cement slurry @ 3.3 kg/sqm including pointing with white cement slurry admixed with pigment of matching shade, including rubbing, curing, polishing etc. all complete as per Architectural drawings, and as directed by the Engineer-in-Charge.											
19.45.1	8.15.1	18 mm thick Italian Marble stone slab, Perlato, Rosso verona, Fire Red or Dark Emperadore etc.	sqm	0.5		0.60		0.00165			0.008		
19.46	8.26	Providing and fixing 18 mm thick gang saw cut, mirror polished, premoulded and prepolished, machine cut for kitchen platforms, vanity counters, window sills, facias and similar locations of required size, approved shade, colour and texture laid over 20 mm thick base cement mortar 1:4 (1 cement : 4 coarse sand), joints treated with white cement, mixed with matching pigment, epoxy touch ups, including rubbing, curing, moulding and polishing to edges to give high gloss finish etc. complete at all levels.											
19.46.1	8.28.1	Raj Nagar Plain white marble/ Udaipur green marble/ Zebra black marble											
19.46.1.1	8.26.1.1	Area of slab up to 0.50 sqm	sqm	0.50		0.525							0.012
19.46.1.2	8.26.1.2	Area of slab over 0.50 sqm	sqm	1		1.05							0.024
19.46.2	8.28.2	Granite of any colour and shade											
19.46.2.1	8.26.2.1	Area of slab up to 0.50 sqm	sqm	0.50		0.525							0.012
19.46.2.2	8.26.2.2	Area of slab over 0.50 sqm	sqm	2.10		2.10							0.048
19.47	7.103.1	Stone tile work for wall lining up to 10 m height with special adhesive over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand), including pointing in white cement with an admixture of pigment to match the stone shade.											
19.47.1	7.103.1	8mm thick (mirror polished and machine cut edge)											
19.47.1.1	7.103.1.1	Granite stone of any colour and shade	sqm	10		10.25		0.033			0.14		
19.47.1.2	7.103.1.2	Raj Nagar plain white marble/ Udaipur green marble/ Zebra black marble	sqm	10		10.25		0.033			0.14		

Item No.	Ref. of connected Item	ROOFING			Materials											
					OPC 43	20mm Stone Aggregate	10mm Stone Aggregate	Coarse sand (zone III)	Red sand stone slab	Common burnt clay non-modular bricks tiles	Paving bitumen VG 10	Tiles	Mud (dry)	Mud mortar	Cement mortar 1 : 4	Cement mortar 1:3
		Description	Unit	Quantity	tonne	cum	cum	cum	sqm	nos.	tonne	nos.	cum	cum	cum	cum
19.48	9.10	Painting top of roofs with bitumen of approved quality @ 17kg per 10 sqm impregnated with a coat of coarse sand at 60 cudm per 10 sqm, including cleaning the slab surface with brushes and finally with a piece of cloth lightly soaked in kerosene oil complete :														
19.48.1	9.10.1	With residual type petroleum bitumen of grade VG -10	sqm	10				0.060			0.017					
19.49	9.11	10 cm thick (average) mud phaska of damped brick earth on roofs laid to slope consolidated and plastered with 25 mm thick mud mortar mixed with bhusa @ 35 kg per cum of earth and gobri leaping with mix 1:1 (1 clay : 1 cow dung) and covered with flat tile bricks, grouted with cement mortar 1:3 (1 cement : 3 fine send) mixed with 2% of integral water proofing compound by weight of cement and finished neat:														
19.49.1	9.11.1	With common burnt clay F.P.S.(non modular) brick tile	sqm	10						380.000			1.257	0.263		0.061
19.50	9.14	Providing and laying brick tiles over mumty roofs, grouted with cement mortar 1:3 (1 cement : 3 fine sand) mixed with 2% of integral water proofing compound by weight of cement, over 12 mm layer of cement mortar 1:3 (1 cement : 3 fine sand) and finished neat:														
19.50.1	9.14.1	With common burnt clay non-modular brick tiles	sqm	10						380.000						0.179
19.51	9.15	Providing and laying pressed clay tiles (as per approved pattern 20 mm nominal thickness of approved size) on roofs jointed with cement mortar 1:4 (1 cement : 4 coarse sand) mixed with 2% integral water proofing compound, laid over a bed of 20 mm thick cement mortar 1:4 (1 cement : 4 coarse sand) and finished neat complete.	sqm	10											0.261	
19.52	9.16	Providing and fixing pressed clay tile (Mangalore tiles) of size 200mm x 125mm x 10mm on slopping roof top/ window projections with 12mm thick cement, coarse sand mortar 1:3 including cost of ridge wherever required as per approved design complete in all respect up to 4 storey or 15 Meter Height.	SqM	1	0.0125			0.025				55				
19.53	9.17	Providing gola 75x75 mm in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 stone aggregate 10 mm and down gauge), including finishing with cement mortar 1:3 (1 cement : 3 fine sand) as per standard design :														
19.53.1	9.17.1	In 75x75 mm deep chase	metre	10	0.030		0.084	0.042								0.009
19.54	9.18	Making khurras 45x45 cm with average minimum thickness of 5 cm cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate of 20 mm nominal size) over P.V.C. sheet 1 m x1 m x 400 micron, finished with 12 mm cement plaster 1:3 (1 cement : 3 coarse sand) and a coat of neat cement, rounding the edges and making and finishing the outlet complete.	Each	1	0.004	0.007	0.002	0.004								0.004

Item No.	Ref. of connected Item	ROOFING			Materials											
					OPC 43	20mm Stone Aggregate	10mm Stone Aggregate	Coarse sand (zone III)	Red sand stone slab	Common burnt clay non-modular bricks tiles	Paving bitumen VG 10	Tiles	Mud (dry)	Mud mortar	Cement mortar 1 : 4	Cement mortar 1:3
		Description	Unit	Quantity	tonne	cum	cum	cum	sqm	nos.	tonne	nos.	cum	cum	cum	cum
19.55	9.19	Providing sand stone slab for roofing and laying them in cement mortar 1 : 4 (1 cement : 4 coarse sand) over wooden karries or R.C.C. battens or structural steel sections (Karries or battens or structural steel sections to be paid separately), including pointing the ceiling joints with cement mortar 1:3 (1 cement : 3 fine sand) complete :														
19.55.1	9.19.1.1	40 to 50 mm thick	sqm	10					11.000						0.010	0.008

Item No.	Ref. of connected item	FLOORING			Materials															
					Cement			Common burnt clay non-modular bricks	Coarse & Fine Aggregates								Tiles			
					OPC 43	White	Acid Proof		40mm stone	20mm stone	12.5mm stone	10mm stone	6mm stone chips	Coarse sand	Fine sand	Brick Aggregate	Precast terrazzo / Chequered	Acid/Alkali resistant & border	Ceramic Glazed/Rectified Ceramic/ Vitrified
		Description	Unit	Quantity	tonne	tonne	tonne	1000 Nos	cum	cum	cum	cum	cum	cum	cum	cum	sqm	nos.	sqm
19.56	10.1	Base course of floors consisting of 100 mm thick cement 1:8:16 and 100 mm sand or stone filling.	sqm	10	0.090									0.500	1.000	1.000			
19.57	10.9	Conglomerate floor 25 mm thick cement concrete 1:2:4 on 100 mm cement concrete 1:8:16 and 100 mm sand or stone filling.	sqm	1											1.000				
19.58	10.10	Cement concrete flooring 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate) finished with a floating coat of neat cement including cement slurry																	
19.58.1	10.10.1	40 mm thick with 20 mm nominal size stone aggregate	sqm	10	0.17					0.267		0.089		0.178					
19.59	10.11	52 mm thick cement concrete flooring with concrete hardener topping, under layer 40 mm thick cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) and top layer 12 mm thick cement hardener consisting of mix 1:2 (1 cement hardener mix : 2 graded stone aggregate 6 mm nominal size) by volume, hardening compound mixed @ 2 litre per 50 kg of cement or as per manufacturer's specifications including cement slurry.	sqm	10	0.231					0.267		0.089	0.115	0.178					
19.60	10.12	62 mm thick cement concrete flooring with concrete hardener topping, under layer 50 mm thick cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) and top layer 12mm thick cement hardener consisting of mix 1:2 (1 cement hardener mix : 2 graded stone aggregate, 6mm nominal size) by volume, hardening compound mixed @ 2 litre per 50 kg of cement or as per manufacture's specifications including cement slurry.	sqm	10	0.263					0.334		0.111	0.115	0.222					
19.61	10.13	Cement plaster skirting up to 30 cm height, with cement mortar 1:3 (1 cement : 3 coarse sand), finished with a floating coat of neat cement.																	
19.61.1	10.13.1	19 mm thick	sqm	10	0.02														
19.62	10.14	Floating coat of 1.60 mm thick neat cement laid in one operation to the topping.	sqm	90	0.202														
19.63	10.19	40 mm thick marble chips flooring rubbed and polished to granolithic finish, under layer 34 mm thick cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 12.5 mm nominal size) and top layer 6mm thick with white, black, chocolate, grey, yellow or green marble chips of sizes from 1 mm to 4 mm nominal size, laid in cement marble powder mix 3:1 (3 cement : 1 marble powder) by weight in proportion of 4:7 (4 cement marble powder mix : 7 marble chips) by volume, including cement slurry etc. complete :																	
19.63.1	10.19.1	Dark/Light shade pigment with ordinary cement	sqm	10	0.170				0.303		0.227	0.076		0.151					
19.63.2	10.19.2	Light shade pigment with white cement	sqm	10	0.129				0.303		0.227	0.076		0.151					
19.63.3	10.19.3	Medium shade pigment with 50% white cement and 50% ordinary cement	sqm	10	0.150				0.303		0.227	0.076		0.151					
19.63.4	10.19.4	White cement without any pigment	sqm	10	0.129	0.0405			0.303		0.227	0.076		0.151					
19.63.5	10.19.5	Ordinary cement without any pigment	sqm	10	0.170				0.303		0.227	0.076		0.151					
19.64	10.20	40 mm thick marble chips flooring, rubbed and polished to granolithic finish, under layer 31 mm thick cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 12.5 mm nominal size) and top layer 9 mm thick with white, black, chocolate, grey, yellow or green marble chips of sizes from 4 mm to 7 mm nominal size, laid in cement marble powder mix 3:1 (3 cement : 1 marble powder) by weight in proportion of 4:7 (4 cement marble powder : 7 marble chips) by volume, including cement slurry etc. complete.																	
19.64.1	10.20.1	Dark shade pigment with Ordinary cement	sqm	10	0.1783						0.21	0.07		0.140					
19.64.2	10.20.2	Light shade pigment with white cement	sqm	10	0.1205	0.0578					0.21	0.07		0.140					
19.64.3	10.20.3	Medium shade pigment with 50% white cement and 50% ordinary cement	sqm	10	0.1583	0.0289					0.21	0.07		0.140					
19.64.4	10.20.4	White cement without any pigment	sqm	10	0.1205	0.0578					0.21	0.07		0.140					
19.64.5	10.20.5	Light shade pigment with ordinary cement	sqm	10	0.1783						0.21	0.07		0.140					

Item No.	Ref. of connected item	FLOORING			Materials															
					Cement			Common burnt clay non-modular bricks	Coarse & Fine Aggregates								Tiles			
					OPC 43	White	Acid Proof		40mm stone	20mm stone	12.5mm stone	10mm stone	6mm stone chips	Coarse sand	Fine sand	Brick Aggregate	Precast terrazzo / Chequered	Acid/Alkali resistant & border	Ceramic Glazed/Rectified Ceramic/ Vitrified
		Description	Unit	Quantity	tonne	tonne	tonne	1000 Nos	cum	cum	cum	cum	cum	cum	cum	cum	sqm	nos.	sqm
19.64.6	10.20.6	Ordinary cement without any pigment	sqm	10	0.1783						0.21	0.07		0.140					
19.65	10.21	40 mm thick marble chips flooring, rubbed and polished to granolithic finish, under layer 28 mm thick cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 12.5 mm nominal size) and top layer 12 mm thick with white, black, chocolate, grey yellow or green marble chips of sizes from 7 mm to 10 mm nominal size, laid in cement marble powder mix 3:1 (3 cement : 1 marble powder) by weight in proportion of 2:3 (2 cement marble powder mix : 3 marble chips) by volume, including cement slurry etc. complete :																	
19.65.1	10.21.1	Dark shade pigment with ordinary cement	sqm	10	0.1907				0.25		0.19	0.06		0.125					
19.65.2	10.21.2	Light shade pigment with white cement	sqm	10	0.1097	0.081			0.25		0.19	0.06		0.125					
19.65.3	10.21.3	Medium shade pigment with 50% white cement and 50% ordinary cement	sqm	10	0.1502	0.0405			0.25		0.19	0.06		0.125					
19.65.4	10.21.4	White cement without any pigment	sqm	10	0.1097	0.081			0.25		0.19	0.06		0.125					
19.65.5	10.21.5	Light shade pigment with ordinary cement	sqm	10	0.1907				0.25		0.19	0.06		0.125					
19.65.6	10.21.6	Ordinary cement without any pigment	sqm	10	0.1907				0.25		0.19	0.06		0.125					
19.66	10.25	Marble chips skirting up to 30 cm height, rubbed and polished to granolithic finish, top layer 6 mm thick with white, black, chocolate, grey, yellow or green marble chips of sizes from smallest to 4 mm nominal size, laid in cement marble powder mix 3:1 (3 cement : 1 marble powder) by weight in proportion of 4:7 (4 cement marble powder mix : 7 marble chips) by volume :																	
19.66.1	10.25.1	18 mm thick with under layer 12 mm thick in cement plaster 1:3 (1 cement : 3 coarse sand) :																	
19.66.1.1	10.25.1.1	Dark shade pigment with ordinary cement	sqm	10	0.0405														
19.66.1.2	10.25.1.2	Light shade pigment with white cement	sqm	10		0.0405													
19.66.1.3	10.25.1.3	Medium shade pigment with 50% white cement and 50% ordinary cement	sqm	10	0.0202	0.0203													
19.66.1.4	10.25.1.4	White cement without any pigment	sqm	10		0.0405													
19.66.1.5	10.25.1.5	Light shade pigment with ordinary cement	sqm	10	0.0405														
19.66.1.6	10.25.1.6	Ordinary cement without any pigment	sqm	10	0.0405														
19.67	10.26	Precast terrazzo tiles 22 mm thick with graded marble chips of size up to 12 mm, laid in floors, and landings, jointed with neat cement slurry mixed with pigment to match the shade of the tiles, including rubbing and polishing complete, on 20 mm thick bed of cement mortar 1:4 (1 cement:4 coarse sand) :																	
19.67.1	10.26.1	Light shade pigment using white cement	sqm	10	0.044	0.044											11.000		
19.67.2	10.26.2	Medium shade pigment using 50% white cement and 50% ordinary cement	sqm	10	0.066	0.044											11.000		
19.67.3	10.26.3	Dark shade pigment using ordinary cement	sqm	10	0.088												11.000		
19.67.4	10.26.4	Ordinary cement without any pigment	sqm	10	0.088												11.000		
19.68	10.28	Precast terrazzo tiles 22 mm thick with graded marble chips of sizes up to 12 mm, in skirting and risers of steps not exceeding 30 cm in height, on 12 mm thick cement plaster 1:3 (1 cement : 3 coarse sand), jointed with neat cement slurry mixed with pigment to match the shade of the tiles, including rubbing and polishing complete with tiles of :																	
19.68.1	10.28.1	Light shade pigment using white cement	sqm	10		0.066											11.000		
19.69.2	10.28.2	Medium shades pigment using 50% white cement and 50% ordinary cement	sqm	10	0.033	0.033											11.000		
19.69.3	10.28.3	Dark shade pigment using ordinary cement	sqm	10	0.066												11.000		
19.68.4	10.26.4	Ordinary cement without any pigment	sqm	10	0.066												11.000		

Item No.	Ref. of connected Item	FLOORING			Materials															
					Cement			Common burnt clay non-modular bricks	Coarse & Fine Aggregates								Tiles			
					OPC 43	White	Acid Proof		40mm stone	20mm stone	12.5mm stone	10mm stone	6mm stone chips	Coarse sand	Fine sand	Brick Aggregate	Precast terrazzo / Chequered	Acid/Alkali resistant & border	Ceramic Glazed/Rectified Ceramic/ Vitrified
		Description	Unit	Quantity	tonne	tonne	tonne	1000 Nos	cum	cum	cum	cum	cum	cum	cum	cum	sqm	nos.	sqm
19.69	10.29	Chequered terrazzo tiles 22 mm thick with graded marble chips of size up to 6 mm in floors, jointed with neat cement slurry mixed with pigment to match the shade of the tiles, including rubbing and polishing complete, on 20 mm thick bed of cement mortar 1:4 (1 cement :4 coarse sand) :																	
19.69.1	10.29.1	Light shade pigment using white cement	sqm	10	0.044	0.044											11.000		
19.69.2	10.29.2	Medium shade pigment using 50% white cement, 50% ordinary cement	sqm	10	0.066	0.022											11.000		
19.69.3	10.29.3	Dark shade pigment using ordinary cement	sqm	10	0.088												11.000		
19.69.4	10.29.4	Ordinary cement without any pigment	sqm	10	0.088												11.000		
19.70	10.30	Chequered precast cement concrete tiles 22 mm thick in footpath & courtyard, jointed with neat cement slurry mixed with pigment to match the shade of tiles, including rubbing and cleaning etc. complete, on 20 mm thick bed of cement mortar 1:4 (1 cement: 4 coarse sand).																	
19.70.1	10.30.1	Light shade pigment using white cement	sqm	10	0.044	0.048											11.000		
19.70.2	10.30.2	Medium shade pigment using 50% white cement 50% Grey cement	sqm	10	0.068	0.024											11.000		
19.70.3	10.30.3	Dark shade pigment using ordinary cement	sqm	10	0.092												11.000		
19.70.4	10.30.4	Ordinary cement without any pigment	sqm	10	0.092												11.000		
19.71	10.31	Providing and fixing 10 mm thick acid and/or alkali resistant tiles of approved make and colour using acid and/or alkali resisting mortar bedding, and joints filled with acid and/or alkali resisting cement as per IS : 4457, complete as per the direction of Engineer-in- Charge.																	
19.71.1	10.31.1	In flooring on a bed of 10 mm thick mortar 1:4 (1 acid proof cement : 4 coarse sand)																	
19.71.1.1	10.31.1.1	Acid and alkali resistant tile	sqm	1	-0.0048		0.0079											12.000	
19.71.2	10.31.2	In dado/skirting on 12 mm thick mortar 1:4 (1 acid proof cement : 4 coarse sand)																	
19.71.2.1	10.31.2.1	Acid and alkali resistant tile	sqm	1	-0.0066		0.0119											12.000	
19.72	10.32	Tile work in skirting, risers of steps and dado up to 2 m height over 12 mm thick bed of cement mortar 1:3 (1 cement :3 coarse sand) and jointed with grey cement slurry @ 3.3 kg/sqm, including pointing in white cement mixed with pigment of matching shade complete.																	
19.72.1	10.32.1.1	6 mm thick Marble tiles (polished) Raj Nagar	sqm	1	0.0033														1.061
19.73	10.33	Brick on edge flooring with common burnt clay non modular bricks on a bed of 12 mm cement mortar, including filling the joints with same mortar																	
19.73.1	10.33.1	1:4 (1 cement : 4 coarse sand)	sqm	10	0.02			0.565											
19.73.2	10.33.2	1:6 (1cement : 6 coarse sand)	sqm	10	0.02			0.565											
19.74	10.34	Dry brick on edge flooring in required pattern with common burnt clay non modular bricks on a bed of 12 mm mud mortar including filling joints with fine sand	sqm	10				0.645							0.150				
19.75	10.36	Flat brick on tile flooring with bricks of class designation 7.5 laid dry over a bed of 6 mm thick cement sand mortar 1:6 grouted with cement sand mortar 1:4 and top surface to be left clean after wire brushing.	sqm	1	0.0035			40.000						0.013					
19.76	10.37	25mm thick kota stone slab flooring over 20 mm (average) thick base laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab, including rubbing and polishing complete with base of cement mortar 1 : 4 (1 cement : 4 coarse sand) :	sqm	10	0.064														

Item No.	Ref. of connected Item	FLOORING			Materials															
					Cement			Common burnt clay non-modular bricks	Coarse & Fine Aggregates									Tiles		
					OPC 43	White	Acid Proof		40mm stone	20mm stone	12.5mm stone	10mm stone	6mm stone chips	Coarse sand	Fine sand	Brick Aggregate	Precast terrazzo / Chequered	Acid/Alkali resistant & border	Ceramic Glazed/Rectified Ceramic/ Vitrified
		Description	Unit	Quantity	tonne	tonne	tonne	1000 Nos	cum	cum	cum	cum	cum	cum	cum	cum	sqm	nos.	sqm
19.77	10.38	20mm thick kota stone slabs in risers of steps, skirting, dado and pillars laid on 12 mm (average) thick cement mortar 1:3 (1 cement: 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slabs, including rubbing and polishing complete.	sqm	10	0.064														
19.78	10.39	40 mm thick fine dressed sand stone flooring over 20 mm (average) thick base of cement mortar 1:5 (1 cement : 5 coarse sand) with joints finished flush.	sqm	10															
19.79	10.40	40 mm thick fine dressed sand stone flooring over 20 mm (average) thick base of cement mortar 1:5 (1 cement : 5 coarse sand), including pointing with cement mortar 1:2 (1 cement : 2 stone dust) with an admixture of pigment to match the shade of stone.	sqm	10															
19.80	10.44	Marble stone flooring with 18 mm thick marble stone (all types), as per sample of marble approved by Engineer-in-charge, over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with grey cement slurry, including rubbing and polishing complete with :	sqm	10	0.05														11.500
19.81	10.49	Providing and laying flamed finish Granite stone flooring in required design and patterns, in linear as well as curvilinear portions of the building all complete as per the architectural drawings with 18 mm thick stone slab over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge :																	
19.81.1	10.49.1	Flamed finish granite stone slab Jet Black, Cherry Red, Elite Brown, Cat Eye or equivalent.	sqm	10	0.05														
19.82	10.50	Providing and laying Polished Granite stone flooring in required design and patterns, in linear as well as curvilinear portions of the building all complete as per the architectural drawings with 18 mm thick stone slab over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade including rubbing , curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge.																	
19.82.1	10.50.1	Polished Granite stone slab jet Black, Cherry Red, Elite Brown, Cat Eye or equivalent.	sqm	10	0.05														
19.83	10.52	Providing and laying machine cut, mirror polished, Italian Marble stone flooring laid in required pattern in linear portion of the building all complete as per architectural drawings, with 18 mm thick stone slab laid over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with white cement slurry @ 4.4 kg/sqm including pointing with white cement slurry admixed with pigment to match the marble shade including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge.																	
19.83.1	10.52.1	18 mm thick Italian Marble stone slab, Perlato, Rosso verona, Fire Red or Dark Emperadore etc.	sqm	10		0.05													

Item No.	Ref. of connected Item	FLOORING			Materials															
					Cement			Common burnt clay non-modular bricks	Coarse & Fine Aggregates								Tiles			
					OPC 43	White	Acid Proof		40mm stone	20mm stone	12.5mm stone	10mm stone	6mm stone chips	Coarse sand	Fine sand	Brick Aggregate	Precast terrazzo / Chequered	Acid/Alkali resistant & border	Ceramic Glazed/Rectified Ceramic/ Vitrified
		Description	Unit	Quantity	tonne	tonne	tonne	1000 Nos	cum	cum	cum	cum	cum	cum	cum	cum	sqm	nos.	sqm
19.84	10.53	Providing and laying machine cut, mirror polished Marble stone flooring, in required design (Simple geometrical, abstract etc.) and in patterns in combination with Italian marble stones of different colours, shades and finished surface texture etc., in linear portions of the building, all complete as per the architectural drawings, with 18 mm thick stone slab laid over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with white cement slurry @ 4.4 kg/sqm, including pointing with white cement slurry admixed with pigment to match the marble shade, including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge.																
19.84.1	10.53.1	18 mm thick Italian Marble stone slab, Perlato, Rosso verona, Fire Red or Dark Emperadore etc.	sqm	10		0.050													
19.85	10.54	25 mm wooden planking, tongued and grooved in flooring, including fixing with iron screws complete with :																	
19.85.1	10.54.1	Second class teak wood/ Second class deodar wood	sqm	10															
19.86	10.55	38 mm thick wood block flooring of first class teak wood laid over 25 mm thick levelling layer of cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 10 mm nominal size) to be paid separately, coated with a thin layer of hot bitumen penetration 80/25 (blown type) @ 2.45 kg per sqm, including fixing blocks in position after dipping in hot bitumen (blown type) up to half depth, planed, levelled smooth and finished complete.	sqm	1															
19.87	10.57	Providing and laying Ceramic glazed floor tiles of size 300x300 mm (thickness to be specified by the manufacturer) of 1st quality conforming to IS : 15622 of approved make in colours such as White, Ivory, Grey, Fume Red Brown, laid on 20 mm thick cement mortar 1:4 (1 Cement : 4 Coarse sand), Jointing with grey cement slurry @ 3.3 kg/sqm including pointing the joints with white cement and matching pigment etc., complete.	sqm	1	0.0033														1.025
19.88	10.58	Providing and fixing 1st quality ceramic glazed floor tiles conforming to IS : 15622 (thickness to be specified by the manufacturer) of approved make in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge in skirting, risers of steps and dados over 12 mm thick bed of cement Mortar 1:3 (1 cement: 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm including pointing in white cement mixed with pigment of matching shade complete.	sqm	1	0.0033														1.025
19.89	10.62	Providing and fixing 1st quality ceramic glazed wall tiles conforming to IS: 15622 (thickness to be specified by the manufacturer), of approved make, in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge, in skirting, risers of steps and dados, over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm, including pointing in white cement mixed with pigment of matching shade complete.	sqm	1	0.0033														1.025
19.90	10.63	Providing and laying vitrified floor tiles in different sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS: 15622, of approved make, in all colours and shades, laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand), jointing with grey cement slurry @ 3.3 kg/ sqm including grouting the joints with white cement and matching pigments etc., complete.	sqm	1	0.0033														1.025

Item No.	Ref. of connected Item	FLOORING			Materials															
					Cement			Common burnt clay non-modular bricks	Coarse & Fine Aggregates								Tiles			
					OPC 43	White	Acid Proof		40mm stone	20mm stone	12.5mm stone	10mm stone	6mm stone chips	Coarse sand	Fine sand	Brick Aggregate	Precast terrazzo / Chequered	Acid/Alkali resistant & border	Ceramic Glazed/Rectified Ceramic/ Vitrified
		Description	Unit	Quantity	tonne	tonne	tonne	1000 Nos	cum	cum	cum	cum	cum	cum	cum	cum	sqm	nos.	sqm
19.91	10.67	Providing and laying Vitrified tiles in different sizes (thickness to be specified by manufacturer), with water absorption less than 0.08 % and conforming to I.S. 15622, of approved make, in all colours & shade, in skirting, riser of steps, over 12 mm thick bed of cement mortar 1:3 (1 cement: 3 coarse sand), jointing with grey cement slurry @ 3.3 kg/ sqm including grouting the joint with white cement & matching pigments etc. complete.	sqm	1	0.0033														1.025
19.92	10.68	Providing and fixing glazed screen printed border tile 75mm wide having thickness 5mm, of approved quality & make, in all shades, design and prints, in dado, over 12mm thick bed of cement mortar 1:3 (1 Cement : 3 Coarse sand) and jointing with grey cement slurry @ 3.3 kg/sqm including pointing with white cement mixed with pigment of matching shade, all complete as approved by Engineer - in - Charge	sqm	1	0.0033													68.000	
19.93	10.75	Providing and laying 50 mm thick interlocking paver blocks of all shapes and colours in design mix cement M-30 over a bed of25mm thick fine sand complete in all respect.	sqm	1										0.50	0.125				
19.94	10.76	Providing and laying 60 mm thick interlocking paver blocks of all shapes and colours in design mix cement M-35 over a bed of 25mm thick fine sand complete in all respect	sqm	1										0.50	0.150				
19.95	10.77	Providing and laying 80 mm thick interlocking paver blocks of all shapes and colours in design mix cement M-35 over a bed of 30mm thick fine sand complete in all respect	sqm	1										0.80	0.200				
19.96	10.95	Providing and laying 500x500x40 mm thick Turf paver (Turfpave XD) on 150 mm thick sub grade of compacted bed of 20 mm thick nominal size stone aggregate and base course and filling with 150 mm thick jamuna sand, including spreading, well ramming, consolidating and finishing smooth etc. all complete as per direction of Engineer-in-charge.	sqm	10					1.5	1.5					1.500				
19.97	10.98	Providing and fixing Grass paver block of required strength and thickness on 25 mm thick compacted bed of sand and filling the joint with sand complete in all respect	sqm	10											0.25				

Item No.	Ref. of connected item	FLOORING			Materials														
					Marble/ Granite/K ota Stone/ sand	Timber	Pigment	Marble	Marble chips	Turf Paver (500 x 500 x 40 mm)	Mortars								
											CM 1:6	CM 1:5	CM 1:4	CM 1:3	CM 1:2	White Cement Mortar 1:4	Mud Mortar		
		Description	Unit	Quantity	sqm	10 cudm	kg	cum	quintal	sqm	cum	cum	cum	cum	cum		cum		
19.56	10.1	Base course of floors consisting of 100 mm thick cement 1:8:16 and 100 mm sand or stone filling.	sqm	10															
19.57	10.9	Conglomerate floor 25 mm thick cement concrete 1:2:4 on 100 mm cement concrete 1:8:16 and 100 mm sand or stone filling.	sqm	1															
19.58	10.1	Cement concrete flooring 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate) finished with a floating coat of neat cement including cement slurry																	
19.58.1	10.10.1	40 mm thick with 20 mm nominal size stone aggregate	sqm	10															
19.59	10.11	52 mm thick cement concrete flooring with concrete hardener topping, under layer 40 mm thick cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) and top layer 12 mm thick cement hardener consisting of mix 1:2 (1 cement hardener mix : 2 graded stone aggregate 6 mm nominal size) by volume, hardening compound mixed @ 2 litre per 50 kg of cement or as per manufacturer's specifications including cement slurry.	sqm	10															
19.60	10.12	52 mm thick cement concrete flooring with concrete hardener topping, under layer 50 mm thick cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) and top layer 12mm thick cement hardener consisting of mix 1:2 (1 cement hardener mix : 2 graded stone aggregate, 6mm nominal size) by volume, hardening compound mixed @ 2 litre per 50 kg of cement or as per manufacture's specifications including cement slurry.	sqm	10															
19.61	10.13	Cement plaster skirting up to 30 cm height, with cement mortar 1:3 (1 cement : 3 coarse sand), finished with a floating coat of neat cement.																	
19.61.1	10.13.1	18 mm thick	sqm	10										0.235					
19.62	10.14	Floating coat of 1.60 mm thick neat cement laid in one operation to the topping.	sqm	90															
19.63	10.19	40 mm thick marble chips flooring rubbed and polished to granolithic finish, under layer 34 mm thick cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 12.5 mm nominal size) and top layer 6mm thick with white, black, chocolate, grey, yellow or green marble chips of sizes from 1 mm to 4 mm nominal size, laid in cement marble powder mix 3:1 (3 cement : 1 marble powder) by weight in proportion of 4:7 (4 cement marble powder mix : 7 marble chips) by volume, including cement slurry etc. complete :																	
19.63.1	10.19.1	Dark/Light shade pigment with ordinary cement	sqm	10			2.84	0.007	0.872										
19.63.2	10.19.2	Light shade pigment with white cement	sqm	10			2.84	0.007	0.872										
19.63.3	10.19.3	Medium shade pigment with 50% white cement and 50% ordinary cement	sqm	10			2.84	0.007	0.872										
19.63.4	10.19.4	White cement without any pigment	sqm	10				0.007	0.958										
19.63.5	10.19.5	Ordinary cement without any pigment	sqm	10				0.007	0.872										
19.64	10.2	40 mm thick marble chips flooring, rubbed and polished to granolithic finish, under layer 31 mm thick cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 12.5 mm nominal size) and top layer 9 mm thick with white, black, chocolate, grey, yellow or green marble chips of sizes from 4 mm to 7 mm nominal size, laid in cement marble powder mix 3:1 (3 cement : 1 marble powder) by weight in proportion of 4:7 (4 cement marble powder : 7 marble chips) by volume, including cement slurry etc. complete.																	
19.64.1	10.20.1	Dark shade pigment with Ordinary cement	sqm	10			4.05	0.012	1.4										
19.64.2	10.20.2	Light shade pigment with white cement	sqm	10			4.05	0.012	1.4										
19.64.3	10.20.3	Medium shade pigment with 50% white cement and 50% ordinary cement	sqm	10			4.05	0.012	1.4										
19.64.4	10.20.4	White cement without any pigment	sqm	10				0.012	1.4										
19.64.5	10.20.5	Light shade pigment with ordinary cement	sqm	10			4.05	0.012	1.4										
19.64.6	10.20.6	Ordinary cement without any pigment	sqm	10				0.012	1.4										

Item No.	Ref. of connected item	FLOORING			Materials														
					Marble/ Granite/K ota Stone/ sand	Timber	Pigment	Marble	Marble chips	Turf Paver (500 x 500 x 40 mm)	Mortars								
											CM 1:6	CM 1:5	CM 1:4	CM 1:3	CM 1:2	White Cement Mortar 1:4	Mud Mortar		
		Description	Unit	Quantity	sqm	10 cudm	kg	cum	quintal	sqm	cum	cum	cum	cum	cum		cum		
19.65	10.21	40 mm thick marble chips flooring, rubbed and polished to granolithic finish, under layer 28 mm thick cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 12.5 mm nominal size) and top layer 12 mm thick with white, black, chocolate, grey yellow or green marble chips of sizes from 7 mm to 10 mm nominal size, laid in cement marble powder mix 3:1 (3 cement : 1 marble powder) by weight in proportion of 2:3 (2 cement marble powder mix : 3 marble chips) by volume, including cement slurry etc. complete :																		
19.65.1	10.21.1	Dark shade pigment with ordinary cement	sqm	10			5.87	0.017	1.734										
19.65.2	10.21.2	Light shade pigment with white cement	sqm	10			5.87	0.017	1.734										
19.65.3	10.21.3	Medium shade pigment with 50% white cement and 50% ordinary cement	sqm	10			5.87	0.017	1.734										
19.65.4	10.21.4	White cement without any pigment	sqm	10				0.017	1.918										
19.65.5	10.21.5	Light shade pigment with ordinary cement	sqm	10			5.87	0.017	1.734										
19.65.6	10.21.6	Ordinary cement without any pigment	sqm	10				0.017	1.734										
19.66	10.25	Marble chips skirting up to 30 cm height, rubbed and polished to granolithic finish, top layer 6 mm thick with white, black, chocolate, grey, yellow or green marble chips of sizes from smallest to 4 mm nominal size, laid in cement marble powder mix 3:1 (3 cement : 1 marble powder) by weight in proportion of 4:7 (4 cement marble powder mix : 7 marble chips) by volume :																	
19.66.1	10.25.1	18 mm thick with under layer 12 mm thick in cement plaster 1:3 (1 cement : 3 coarse sand) :																	
19.66.1.1	10.25.1.1	Dark shade pigment with ordinary cement	sqm	10			2.84	0.007	0.872					0.174					
19.66.1.2	10.25.1.2	Light shade pigment with white cement	sqm	10			2.84	0.007	0.872					0.174					
19.66.1.3	10.25.1.3	Medium shade pigment with 50% white cement and 50% ordinary cement	sqm	10			2.84	0.007	0.872					0.174					
19.66.1.4	10.25.1.4	White cement without any pigment	sqm	10				0.007	0.958					0.174					
19.66.1.5	10.25.1.5	Light shade pigment with ordinary cement	sqm	10			2.84	0.007	0.872					0.174					
19.66.1.6	10.25.1.6	Ordinary cement without any pigment	sqm	10				0.007	0.872					0.174					
19.67	10.26	Precast terrazzo tiles 22 mm thick with graded marble chips of size up to 12 mm, laid in floors, and landings, jointed with neat cement slurry mixed with pigment to match the shade of the tiles, including rubbing and polishing complete, on 20 mm thick bed of cement mortar 1:4 (1 cement:4 coarse sand) :																	
19.67.1	10.26.1	Light shade pigment using white cement	sqm	10			3.08						0.224						
19.67.2	10.26.2	Medium shade pigment using 50% white cement and 50% ordinary cement	sqm	10			3.08						0.224						
19.67.3	10.26.3	Dark shade pigment using ordinary cement	sqm	10			3.08						0.224						
19.67.4	10.26.4	Ordinary cement without any pigment	sqm	10									0.224						
19.68	10.28	Precast terrazzo tiles 22 mm thick with graded marble chips of sizes up to 12 mm, in skirting and risers of steps not exceeding 30 cm in height, on 12 mm thick cement plaster 1:3 (1 cement : 3 coarse sand), jointed with neat cement slurry mixed with pigment to match the shade of the tiles, including rubbing and polishing complete with tiles of :																	
19.68.1	10.28.1	Light shade pigment using white cement	sqm	10			4.62							0.144					
19.68.2	10.28.2	Medium shades pigment using 50% white cement and 50% ordinary cement	sqm	10			4.62							0.144					
19.68.3	10.28.3	Dark shade pigment using ordinary cement	sqm	10			4.62							0.144					
19.68.4	10.28.4	Ordinary cement without any pigment	sqm	10										0.144					
19.69	10.29	Chequered terrazzo tiles 22 mm thick with graded marble chips of size up to 6 mm in floors, jointed with neat cement slurry mixed with pigment to match the shade of the tiles, including rubbing and polishing complete, on 20 mm thick bed of cement mortar 1:4 (1 cement :4 coarse sand) :																	
19.69.1	10.29.1	Light shade pigment using white cement	sqm	10			3.08						0.224						
19.69.2	10.29.2	Medium shade pigment using 50% white cement, 50% ordinary cement	sqm	10			3.08						0.224						
19.69.3	10.29.3	Dark shade pigment using ordinary cement	sqm	10			3.08						0.224						

Item No.	Ref. of connected Item	FLOORING			Materials														
					Marble/ Granite/K ota Stone/ sand	Timber	Pigment	Marble	Marble chips	Turf Paver (500 x 500 x 40 mm)	Mortars								
											CM 1:6	CM 1:5	CM 1:4	CM 1:3	CM 1:2	White Cement Mortar 1:4	Mud Mortar		
		Description	Unit	Quantity	sqm	10 cudm	kg	cum	quintal	sqm	cum	cum	cum	cum	cum		cum		
19.69.4	10.29.4	Ordinary cement without any pigment	sqm	10									0.224						
19.70	10.3	Chequered precast cement concrete tiles 22 mm thick in footpath & courtyard, jointed with neat cement slurry mixed with pigment to match the shade of tiles, including rubbing and cleaning etc. complete, on 20 mm thick bed of cement mortar 1:4 (1 cement: 4 coarse sand).																	
19.70.1	10.30.1	Light shade pigment using white cement	sqm	10			3.08						0.22						
19.70.2	10.30.2	Medium shade pigment using 50% white cement 50% Grey cement	sqm	10			3.08						0.22						
19.70.3	10.30.3	Dark shade pigment using ordinary cement	sqm	10			3.08						0.22						
19.70.4	10.30.4	Ordinary cement without any pigment	sqm	10									0.22						
19.71	10.31	Providing and fixing 10 mm thick acid and/or alkali resistant tiles of approved make and colour using acid and/or alkali resisting mortar bedding, and joints filled with acid and/or alkali resisting cement as per IS : 4457, complete as per the direction of Engineer-in- Charge.																	
19.71.1	10.31.1	In flooring on a bed of 10 mm thick mortar 1:4 (1 acid proof cement : 4 coarse sand)																	
19.71.1.1	10.31.1.1	Acid and alkali resistant tile	sqm	1									0.012						
19.71.2	10.31.2	In dado/skirting on 12 mm thick mortar 1:4 (1 acid proof cement : 4 coarse sand)																	
19.71.2.1	10.31.2.1	Acid and alkali resistant tile	sqm	1									0.014						
19.72	10.32	Tile work in skirting, risers of steps and dado up to 2 m height over 12 mm thick bed of cement mortar 1:3 (1 cement :3 coarse sand) and jointed with grey cement slurry @ 3.3 kg/sqm, including pointing in white cement mixed with pigment of matching shade complete.																	
19.72.1	10.32.1.1	8 mm thick Marble tiles (polished) Raj Nagar	sqm	1										0.014					
19.73	10.33	Brick on edge flooring with common burnt clay non modular bricks on a bed of 12 mm cement mortar, including filling the joints with same mortar																	
19.73.1	10.33.1	1:4 (1 cement : 4 coarse sand)	sqm	10									0.434						
19.73.2	10.33.2	1:6 (1 cement : 6 coarse sand)	sqm	10							0.434								
19.74	10.34	Dry brick on edge flooring in required pattern with common burnt clay non modular bricks on a bed of 12 mm mud mortar including filling joints with fine sand	sqm	10													0.15		
19.75	10.36	Flat brick on tile flooring with bricks of class designation 7.5 laid dry over a bed of 6 mm thick cement sand mortar 1:6 grouted with cement sand mortar 1:4 and top surface to be left clean after wire brushing.	sqm	1															
19.76	10.37	25mm thick kota stone slab flooring over 20 mm (average) thick base laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab, including rubbing and polishing complete with base of cement mortar 1 : 4 (1 cement : 4 coarse sand) :	sqm	10	11.50		4.50						0.224						
19.77	10.38	20mm thick kota stone slabs in risers of steps, skirting, dado and pillars laid on 12 mm (average) thick cement mortar 1:3 (1 cement: 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slabs, including rubbing and polishing complete.	sqm	10	11.50		4.50							0.144					
19.78	10.39	40 mm thick fine dressed sand stone flooring over 20 mm (average) thick base of cement mortar 1:5 (1 cement : 5 coarse sand) with joints finished flush.	sqm	10	11.00							0.25							
19.79	10.4	40 mm thick fine dressed sand stone flooring over 20 mm (average) thick base of cement mortar 1:5 (1 cement : 5 coarse sand), including pointing with cement mortar 1:2 (1 cement : 2 stone dust) with an admixture of pigment to match the shade of stone.	sqm	10	11.00							0.25			0.023				
19.80	10.44	Marble stone flooring with 18 mm thick marble stone (all types), as per sample of marble approved by Engineer-in-charge, over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with grey cement slurry, including rubbing and polishing complete with :	sqm	10									0.224						

Item No.	Ref. of connected item	FLOORING			Materials														
					Marble/ Granite/Kota Stone/ sand	Timber	Pigment	Marble	Marble chips	Turf Paver (500 x 500 x 40 mm)	Mortars								
											CM 1:6	CM 1:5	CM 1:4	CM 1:3	CM 1:2	White Cement Mortar 1:4	Mud Mortar		
		Description	Unit	Quantity	sqm	10 cudm	kg	cum	quintal	sqm	cum	cum	cum	cum	cum		cum		
19.81	10.49	Providing and laying flamed finish Granite stone flooring in required design and patterns, in linear as well as curvilinear portions of the building all complete as per the architectural drawings with 18 mm thick stone slab over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge :																	
19.81.1	10.49.1	Flamed finish granite stone slab Jet Black, Cherry Red, Elite Brown, Cat Eye or equivalent.	sqm	10	11.50		4.50						0.224						
19.82	10.5	Providing and laying Polished Granite stone flooring in required design and patterns, in linear as well as curvilinear portions of the building all complete as per the architectural drawings with 18 mm thick stone slab over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade including rubbing , curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge.																	
19.82.1	10.50.1	Polished Granite stone slab jet Black, Cherry Red, Elite Brown, Cat Eye or equivalent.	sqm	10	11.50		4.50						0.224						
19.83	10.52	Providing and laying machine cut, mirror polished, Italian Marble stone flooring laid in required pattern in linear portion of the building all complete as per architectural drawings, with 18 mm thick stone slab laid over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with white cement slurry @ 4.4 kg/sqm including pointing with white cement slurry admixed with pigment to match the marble shade including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge.																	
19.83.1	10.52.1	18 mm thick Italian Marble stone slab, Perlato, Rosso verona, Fire Red or Dark Emperadore etc.	sqm	10	11.50								0.224						
19.84	10.53	Providing and laying machine cut, mirror polished Marble stone flooring, in required design (Simple geometrical, abstract etc.) and in patterns in combination with Italian marble stones of different colours, shades and finished surface texture etc., in linear portions of the building, all complete as per the architectural drawings, with 18 mm thick stone slab laid over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with white cement slurry @ 4.4 kg/sqm, including pointing with white cement slurry admixed with pigment to match the marble shade, including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge.																	
19.84.1	10.53.1	18 mm thick Italian Marble stone slab, Perlato, Rosso verona, Fire Red or Dark Emperadore etc.	sqm	10	12.00								0.224						
19.85	10.54	25 mm wooden planking, tongued and grooved in flooring, including fixing with iron screws complete with :																	
19.85.1	10.54.1	Second class teak wood/ Second class deodar wood	sqm	10		29.81													
19.89	10.55	38 mm thick wood block flooring of first class teak wood laid over 25 mm thick levelling layer of cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 10 mm nominal size) to be paid separately, coated with a thin layer of hot bitumen penetration 80/25 (blown type) @ 2.45 kg per sqm, including fixing blocks in position after dipping in hot bitumen (blown type) up to half depth, planed, levelled smooth and finished complete.	sqm	1		4.18													

Item No.	Ref. of connected item	FLOORING			Materials														
					Marble/ Granite/K ota Stone/ sand	Timber	Pigment	Marble	Marble chips	Turf Paver (500 x 500 x 40 mm)	Mortars								
											CM 1:6	CM 1:5	CM 1:4	CM 1:3	CM 1:2	White Cement Mortar 1:4	Mud Mortar		
		Description	Unit	Quantity	sqm	10 cudm	kg	cum	quintal	sqm	cum	cum	cum	cum	cum		cum		
19.87	10.57	Providing and laying Ceramic glazed floor tiles of size 300x300 mm (thickness to be specified by the manufacturer) of 1st quality conforming to IS : 15622 of approved make in colours such as White, Ivory, Grey, Fume Red Brown, laid on 20 mm thick cement mortar 1:4 (1 Cement : 4 Coarse sand), Jointing with grey cement slurry @ 3.3 kg/sqm including pointing the joints with white cement and matching pigment etc., complete.	sqm	1												0.024			
19.88	10.58	Providing and fixing 1st quality ceramic glazed floor tiles conforming to IS : 15622 (thickness to be specified by the manufacturer) of approved make in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge in skirting, risers of steps and dados over 12 mm thick bed of cement Mortar 1:3 (1 cement: 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm including pointing in white cement mixed with pigment of matching shade complete.	sqm	1											0.014				
19.89	10.62	Providing and fixing 1st quality ceramic glazed wall tiles conforming to IS: 15622 (thickness to be specified by the manufacturer), of approved make, in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge, in skirting, risers of steps and dados, over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm, including pointing in white cement mixed with pigment of matching shade complete.	sqm	1											0.014				
19.90	10.63	Providing and laying vitrified floor tiles in different sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS: 15622, of approved make, in all colours and shades, laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand), jointing with grey cement slurry @ 3.3 kg/ sqm including grouting the joints with white cement and matching pigments etc., complete.	sqm	1									0.024						
19.91	10.67	Providing and laying Vitrified tiles in different sizes (thickness to be specified by manufacturer), with water absorption less than 0.08 % and conforming to I.S. 15622, of approved make, in all colours & shade, in skirting, riser of steps, over 12 mm thick bed of cement mortar 1:3 (1 cement: 3 coarse sand), jointing with grey cement slurry @ 3.3 kg/ sqm including grouting the joint with white cement & matching pigments etc. complete.	sqm	1											0.014				
19.92	10.68	Providing and fixing glazed screen printed border tile 75mm wide having thickness 5mm, of approved quality & make, in all shades, design and prints, in dado, over 12mm thick bed of cement mortar 1:3 (1 Cement : 3 Coarse sand) and jointing with grey cement slurry @ 3.3 kg/sqm including pointing with white cement mixed with pigment of matching shade, all complete as approved by Engineer - in - Charge	sqm	1											0.014				
19.93	10.75	Providing and laying 50 mm thick interlocking paver blocks of all shapes and colours in design mix cement M-30 over a bed of25mm thick fine sand complete in all respect.	sqm	1															
19.94	10.76	Providing and laying 60 mm thick interlocking paver blocks of all shapes and colours in design mix cement M-35 over a bed of 25mm thick fine sand complete in all respect	sqm	1															
19.95	10.77	Providing and laying 80 mm thick interlocking paver blocks of all shapes and colours in design mix cement M-35 over a bed of 30mm thick fine sand complete in all respect	sqm	1															
19.96	10.95	Providing and laying 500x500x40 mm thick Turf paver (Turfpave XD) on 150 mm thick sub grade of compacted bed of 20 mm thick nominal size stone aggregate and base course and filling with 150 mm thick jamuna sand, including spreading, well ramming, consolidating and finishing smooth etc. all complete as per direction of Engineer-in-charge.	sqm	10						10									

Item No.	Ref. of connected Item	FLOORING			Materials															
					Marble/ Granite/K ota Stone/ sand	Timber	Pigment	Marble	Marble chips	Turf Paver (500 x 500 x 40 mm)	Mortars									
											CM 1:6	CM 1:5	CM 1:4	CM 1:3	CM 1:2	White Cement Mortar 1:4	Mud Mortar			
		Description	Unit	Quantity	sqm	10 cudm	kg	cum	quintal	sqm	cum	cum	cum	cum	cum		cum			
19.97	10.98	Providing and fixing Grass paver block of required strength and thickness on 25 mm thick compacted bed of sand and filling the joint with sand complete in all respect	sqm	10																

Item No.	Ref. of connected Item	FINISHING			Materials																			
						Mortars					Lime		Distemper		Emulsions		Primers		Synthetic Paints		Exterior paints	
					OPC 43	Cement Mortar 1:6	Cement Mortar 1:5	Cement Mortar 1:4	Cement Mortar 1:3	Cement Mortar 1:2	Dehradun white /Satna lime	Water thinnable cement primer for interior wall surface	Dry distemper	Acrylic distemper 1st quality/OBD	Premium acrylic/ Acrylic Emulsion of interior grade	Plastic emulsion paint	Red Oxide Zinc Chromate Primer/Pink primer	Exterior Primer	Synthetic enamel paint	Epoxy paint	Water proofing cement paint	Premium acrylic/Acrylic/ dirt resistance/Textured exterior paint
		Description	Unit	Quantity	tonne	cum		cum	cum		quintal	litre	kg	kg	litre	litre	litre	kg	litre	litre	kg	litre
19.99	11.1	6 mm cement plaster of mix :																				
19.99.1	11.1.1	1:3 (1 cement: 3 fine sand)							0.072													
19.99	11.2	6 mm cement plaster 1:3 (1 cement : 3 fine sand) finished with a floating coat of neat cement and thick coat of Lime wash on top of walls when dry for bearing of R.C.C. slabs and beams.	sqm	10	0.02				0.072		0.01											
19.100	11.3	Neat cement punning.	sqm	10	0.022																	
19.101	11.4	10 mm thick cement plaster																				
19.101.1	11.4.1	1:2 (1 cement: 2 fine sand)	sqm	1						0.12												
19.101.2	11.4.2	1:3 (1 cement: 3 fine sand)	sqm	1					0.12													
19.102	11.5	12 mm cement plaster of mix :																				
19.102.1	11.5.1	1:2 (1 cement: 2 fine sand)	sqm	10						0.144												
19.102.2	11.5.2	1:3 (1 cement: 3 fine sand)	sqm	10					0.144													
19.102.3	11.5.3	1:4 (1 cement: 4 fine sand)	sqm	10				0.144														
19.102.4	11.5.4	1:6 (1 cement: 6 fine sand)	sqm	10		0.144																
19.103	11.6	15 mm cement plaster on the rough side of single or half brick wall of mix :																				
19.103.1	11.6.1	1:4 (1 cement: 4 fine sand)	sqm	10				0.172														
19.103.2	11.6.2	1:6 (1 cement: 6 fine sand)	sqm	10		0.172																
19.104	11.7	20 mm cement plaster of mix :																				
19.104.1	11.7.1	1:4 (1 cement: 4 fine sand)	sqm	10				0.224														
19.104.2	11.7.2	1:6 (1 cement: 6 fine sand)	sqm	10		0.224																
19.105	11.8	12 mm cement plaster of mix :																				
19.105.1	11.8.1	1:4 (1 cement: 4 coarse sand)	sqm	10				0.144														
19.105.2	11.8.2	1:6 (1 cement: 6 coarse sand)	sqm	10		0.144																
19.106	11.9	15 mm cement plaster on rough side of single or half brick wall of mix																				
19.106.1	11.9.1	1:4 (1 cement: 4 coarse sand)	sqm	10				0.172														
19.106.2	11.9.2	1:6 (1 cement: 6 coarse sand)	sqm	10		0.172																
19.107	11.10	20 mm cement plaster of mix :																				
19.107.1	11.10.1	1:4 (1 cement: 4 coarse sand)	sqm	10				0.224														
19.107.2	11.10.2	1:6 (1 cement: 6 coarse sand)	sqm	10		0.224																
19.11	11.11	12 mm cement plaster finished with a floating coat of neat cement of mix :																				
19.108.1	11.11.1	1:3 (1 cement: 3 fine sand)	sqm	10	0.02				0.144													
19.108.2	11.11.2	1:4 (1 cement: 4 fine sand)	sqm	10	0.02			0.144														
19.109	11.12	15 mm cement plaster on rough side of single or half brick wall finished with a floating coat of neat cement of mix :																				
19.109.1	11.12.1	1:3 (1 cement: 3 fine sand)	sqm	10	0.02				0.172													
19.109.2	11.12.2	1:4 (1 cement: 4 fine sand)	sqm	10	0.02			0.172														
19.110	11.13	Cement plaster 1:3 (1 cement: 3 coarse sand) finished with a																				
19.110.1	11.13.1	12 mm cement plaster	sqm	10	0.02				0.144													
19.110.2	11.13.2	20 mm cement plaster	sqm	10	0.02				0.224													
19.111	11.14	15 mm cement plaster 1:3 (1 cement: 3 coarse sand) finished with a floating coat of neat cement on the rough side of single	sqm	10	0.02				0.172													
19.112	11.18	18 mm cement plaster in two coats under layer 12 mm thick cement plaster 1:5 (1 cement : 5 coarse sand) finished with a top layer 6 mm thick cement plaster 1:6 (1 cement : 6 fine sand).					0.144															
19.113	11.20	18 mm cement plaster in two coats under layer 12 mm thick cement plaster 1:5 (1 cement : 5 coarse sand) and a top layer 6 mm thick cement plaster 1:3 (1 cement : 3 coarse sand) finished rough with sponge.					0.144															
19.114	11.21	12 mm cement plaster 1:2 (1 cement : 2 stone dust).								0.144												
19.115	11.22	15 mm cement plaster 1:2 (1 cement : 2 stone dust) on the rough side of single or half brick wall.								0.172												
19.116	11.23	20 mm cement plaster 1:2 (1 cement : 2 stone dust).								0.224												

Item No.	Ref. of connected Item	FINISHING			Materials																			
						Mortars						Lime		Distemper		Emulsions		Primers		Synthetic Paints		Exterior paints	
					OPC 43	Cement Mortar 1:6	Cement Mortar 1:5	Cement Mortar 1:4	Cement Mortar 1:3	Cement Mortar 1:2	Dehradun white /Satna lime	Water thinnable cement primer for interior wall surface	Dry distemper	Acrylic distemper 1st quality/OBD	Premium acrylic/ Acrylic Emulsion of interior grade	Plastic emulsion paint	Red Oxide Zinc Chromate Primer/Pink primer	Exterior Primer	Synthetic enamel paint	Epoxy paint	Water proofing cement paint	Premium acrylic/Acrylic/ dirt resistance/Textured exterior paint
		Description	Unit	Quantity	tonne	cum		cum	cum		quintal	litre	kg	kg	litre	litre	litre	kg	litre	litre	kg	litre
19.117	11.25	Pointing on brick work or brick flooring with cement mortar 1:3 (1 cement : 3 fine sand):																				
19.117.1	11.25.1	Flush / Ruled/ Struck or weathered pointing	sqm	10					0.03													
19.117.2	11.25.2	Raised and cut pointing	sqm	10					0.048													
19.118	11.26	Pointing on tile brick work with cement mortar 1:3 (1 cement : 3 fine sand):																				
19.118.1	11.26.1	Flush/ Ruled/ Struck or weathered pointing	sqm	10					0.048													
19.119	11.27	Pointing on stone work with cement mortar 1:3 (1 cement : 3 fine sand) :																				
19.119.1	11.27.1	Flush/ Ruled pointing	sqm	10					0.023													
19.119.2	11.27.2	Raised and cut pointing	sqm	10					0.038													
19.120	11.28	Raised and cut pointing on stone work in white cement mortar 1:3 (1 white cement : 3 marble dust).	sqm	10					0.038													
19.121	11.29	Pointing on stone slab ceiling with cement mortar 1:2 (1 cement : 2 fine sand):																				
19.121.1	11.29.1	Flush/ Ruled pointing	sqm	10						0.015												
19.122	11.48	18 mm thick plain cement mortar band in cement mortar 1:4 (1 cement : 4 fine sand):																				
19.122.1	11.48.1	Flush/ Sunk/ Raised Band	h per me	100				0.02														
19.122.2	11.48.4	Moulded Band	h per me	100				0.024														
19.123	11.50	Plastering on under side of ceiling with 10 mm thick cement plaster 1:3 (1 cement: 3 fine sand)	sqm	1					0.12													
19.124	11.51	Plastering on under side of ceiling with 10 mm thick cement plaster 1:4 (1 cement: 4 fine sand)	sqm	1				0.12														
19.125	11.52	Cement rendering on plaster 1 mm thick	sqm	1	0.0012																	
19.126	11.61	White washing with lime to give an even shade :																				
19.126.1	11.61.1	New work (three or more coats)	sqm	10							0.03											
19.127	11.62	Colour washing such as green, blue or buff to give an even shade :																				
19.127.1	11.62.1	New work (two or more coats) with a base coat of white washing with lime	sqm	10							0.03											
19.127.2	11.62.2	New work (two or more coats) with a base coat of whiting	sqm	10							0.03											
19.128	11.63	Distempering with dry distemper of approved brand and manufacture (two or more coats) of required shade on new work, over and including water thinnable priming coat to give an even shade.	sqm	10								0.7	1.50									
19.129	11.64	Distempering with oil bound washable distemper of approved brand and manufacture to give an even shade :																				
19.129.1	11.64.1	New work (two or more coats) over and including water thinnable priming coat with cement primer	sqm	10								0.7		1.50								
19.130	11.65	Distempering with 1st quality acrylic distemper (ready mixed) having VOC content less than 50 gms/litre, of approved manufacturer, of required shade and colour complete, as per manufacturer's specification.																				
19.130.1	11.65.1	Two or more coats on new work	sqm	10										1.50								
19.131	11.66	Distempering with 1st quality acrylic distemper, having VOC (Volatile Organic Compound) content less than 50 grams/ litre, of approved brand and manufacture, including applying																				
19.131.1	11.66.1	One coat	sqm	10										0.62								
19.131.2	11.66.2	Two coats	sqm	10										0.99								
19.132	11.71	Wall painting with acrylic emulsion paint of approved brand																				
19.132.1	11.71.1	Two or more coats on new work	sqm	10												1.21						
19.133	11.73	Finishing with Epoxy paint (two or more coats) at all locations prepared and applied as per manufacturer's specifications																				
19.133.1	11.73.2	On concrete work	sqm	10								0.84								1.21		
19.134	11.74	Wall painting with acrylic emulsion paint, having VOC (Volatile Organic Compound) content less than 50 grams/ litre, of approved brand and manufacture, including applying																				
19.134.1	11.74.1	One coat	sqm	10											0.53							

Item No.	Ref. of connected Item	FINISHING			Materials																			
						Mortars					Lime		Distemper		Emulsions		Primers		Synthetic Paints		Exterior paints	
					OPC 43	Cement Mortar 1:6	Cement Mortar 1:5	Cement Mortar 1:4	Cement Mortar 1:3	Cement Mortar 1:2	Dehradun white /Satna lime	Water thinnable cement primer for interior wall surface	Dry distemper	Acrylic distemper 1st quality/OBD	Premium acrylic/ Acrylic Emulsion of interior grade	Plastic emulsion paint	Red Oxide Zinc Chromate Primer/Pink primer	Exterior Primer	Synthetic enamel paint	Epoxy paint	Water proofing cement paint	Premium acrylic/Acrylic/ dirt resistance/Textured exterior paint
		Description	Unit	Quantity	tonne	cum		cum	cum		quintal	litre	kg	kg	litre	litre	litre	kg	litre	litre	kg	litre
19.134.2	11.74.2	Two coats	sqm	10											0.84							
19.135	11.75	Wall painting with premium acrylic emulsion paint of interior grade, having VOC (Volatile Organic Compound) content less than 50 grams/ litre of approved brand and manufacture,																				
19.135.1	11.75.1	One coat	sqm	10											0.38							
19.135.2	11.75.2	Two coats	sqm	10											0.60							
19.136	11.82	Painting with synthetic enamel paint of approved brand and																				
19.136.1	11.82.1	Two or more coats on new work	sqm	10															1.16			
19.137	11.83	Painting with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade :																				
19.137.1	11.83.1	Two or more coats on new work over an under coat of suitable shade with ordinary paint of approved brand and	sqm	10													0.75		1.18			
19.138	11.93	Finishing walls with water proofing cement paint of required																				
19.138.1	11.93.1	New work (Two or more coats applied @ 3.84 kg/10 sqm)	sqm	10																	3.84	
19.139	11.94	Finishing walls with textured exterior paint of required shade :																				
19.139.1	11.94.1	New work (Two or more coats applied @ 3.28 litre/10 sqm) over and including priming coat of exterior primer applied @	sqm	10														2.2				3.28
19.140	11.95	Finishing walls with Acrylic Smooth exterior paint of required																				
19.140.1	11.95.1	New work (Two or more coat applied @ 1.87 litre/10 sqm over and including priming coat of exterior primer applied @	sqm	10														2.2				1.87
19.141	11.96	Finishing walls with Premium Acrylic Smooth exterior paint																				
19.141.1	11.96.1	New work (Two or more coats applied @ 1.43 litre/10 sqm over and including priming coat of exterior primer applied @	sqm	10														2.2				1.43
19.142	11.98	Finishing walls with 100% Premium acrylic emulsion paint having VOC ! lessthan 50 gm/litre and UV resistance as per IS 15489:2004, Alkali & fungal resistance, dirt resistance																				
19.142.1	11.98.1	New work (Two or more coats applied @ 1.43 litre/ 10 sqm. Over and including priming coat of exterior primer applied @	sqm	10														0.90				1.43
19.143	11.99	Painting on G.S. sheet with synthetic enamel paint of approved brand and manufacture of required colour to give																				
19.143.1	11.99.1	New work (two or more coats) including a coat of approved steel primer but excluding a coat of mordant solution	sqm	10													0.36		0.80			
19.144	11.102	Painting (two or more coats) on rain water, soil waste and vent pipes and fittings with synthetic enamel paint of																				
19.144.1	11.102.1	100 mm diameter pipes	metre	30													0.54		1.16			
19.144.2	11.102.2	150 mm diameter pipes	metre	30													0.8		1.72			
19.145	11.110	Satna lime wash on walls with one coat.	sqm	10							0.01											

Item No.	Ref. of connected item	WOOD WORK			Materials	
					Timber in scantlings	Timber in planks
		Description	Unit	Quantity	10 cudm	10 cudm
19.146	12.1	Providing wood work in frames of doors, windows, clerestory windows and other frames				
19.146.1	12.1.1	Second class teak wood/ Sal wood/ Hollock wood	cum	0.038	3.80	
19.147	12.3	Providing and fixing wooden moulded beading to door and window frames				
19.147.1	12.3.1	Second class teak wood/ Hollock wood				
19.147.1.1	12.3.1.1	50x12 mm	metre	5		0.33
19.147.1.2	12.3.2.2	50x20 mm	metre	5		0.55
19.148	12.4	Providing wood work in frames of false ceiling, partitions etc. sawn and fixed in position				
19.148.1	12.4.1	Sal wood/ Hollock wood	cum	0.038	16.60	
19.149	12.7	Providing and fixing panelled or panelled and glazed shutters for doors, windows and clerestory windows				
19.149.1	12.7.1	Second class teak wood/ Hollock wood/ Sheesham wood				
19.149.1.1	12.7.1.1	35 mm thick shutters	sqm	2.16		5.10
19.149.1.2	12.7.1.2	30 mm thick shutters	sqm	2.16		4.40
19.150	12.9	Providing and fixing panelling or panelling and glazing in panelled or panelled and glazed shutters for doors, windows and clerestory windows				
19.150.1	12.9.1	Second class teak wood/ Hollock wood	sqm	2.16		1.29
19.151	12.10	Providing and fixing glazed shutters for doors, windows and clerestory windows				
19.151.1	12.10.1	Second class teak wood/ Hollock wood				
19.151.1.1	12.10.1.1	35 mm thick	sqm	2.16		5.80
19.151.1.2	12.10.1.2	30 mm thick	sqm	2.16		5.00
19.152	12.19	Providing and fixing wire gauge shutters for doors, windows and clerestory windows				
19.152.1	12.19.1.1.1	Second class teak wood/ Hollock wood/ Sheesham wood				
19.152.1.1	12.19.1	35 mm thick shutters	sqm	2.16		5.14
19.152.1.2	12.19.2	30 mm thick shutters	sqm	2.16		4.40

Item No.	Ref. of connected item	WOOD WORK			Materials	
					Timber in scantlings	Timber in planks
		Description	Unit	Quantity	10 cudm	10 cudm
19.153	12.23	Kail wood planking planed on both sides, rebated and fixed in position including nails and screws etc.				
19.153.1	12.23.1	50 mm thick	sqm	1	6.5	
19.153.2	12.23.2	30 mm thick	sqm	1	4.000	
19.153.3	12.23.3	25 mm thick	sqm	1	3.25	
19.153.4	12.23.4	20 mm thick	sqm	1	2.5	
19.153.5	12.23.5	12.5 mm thick	sqm	1	1.6	
19.154	12.25	Providing and fixing 25 mm thick panelled or panelled & glazed shutters for cup board etc. :				
19.154.1	12.25.1.1	Second class teak wood	sqm	2.16		4.00
19.155	12.25.2	Providing and fixing 25 mm thick glazed shutters for cup board etc. :				
19.155.1	12.25.2.1	Second class teak wood	sqm	2.16		4.30
19.156	12.53	Providing and fixing fly proof galvanized M.S. wire gauge to windows and clerestory windows				
19.156.1	12.53.1	with second class teak wood beading 62X19 mm	sqm	1.54		0.60
19.157	12.113	Providing and fixing wooden handrail of required shape and design, with necessary screws, including labour, for rounding, vertical and horizontal bends and curves complete fixed in position.				
19.157.1	12.113.2	commercial hard wood, such as Hollock, champ, chikrassy and chaplash, etc., (Non- coniferous timber other than teak, conforming to I.S.specification no.1003,kiln seasoned)	cum	0.225	29.7	
19.157.2	12.113.3	Teak wood/Deodar wood	cum	0.225	29.7	

Item No.	Ref. of connected item	LINING AND OUTLETS			Materials															
					OPC 43	Aggregates						Bricks/Tiles		Cement/ Cement Lime Concrete				Timber	Bitumen
						20-40 mm Stone	5-20 mm Stone	10mm downsize stone	Bajri	Coarse sand	Fine sand	Bricks	Tiles	CC 1:2:4	CC 1:3:6	CC 1:6:12	Cement Lime Concrete 1:2:9:24		
		Description	Unit	Quantity	tonne	cum	cum	cum	cum	cum	cum	nos.	nos.	cum	cum	cum	cum	cum	quintal
19.159	14.7	Double layer tile lining for irrigation channels consisting of:																	
		(i) 10 mm thick cement mortar 1 :5 in sub grade.																	
		(ii) First layer of 5.08 cm thick tiles 30.48 cm X 15.24 cm laid in 1:5 cement mortar as mentioned above.																	
		(iii) Sand-wiched plaster 1:3 cement mortar 15 mm thick																	
		(iv) Second layer of tiles, laid in 1:3 cement mortar, with 6 mm thick layer of mortar, over sand-wiched plaster-																	
		The above gives total thickness of lining as 13.36 cm																	
19.158.1	14.7.1	In bed/ side slopes for any height above bed level	sqm	1.00	0.0175					0.049			44.00						
19.159	14.8	Single layer tile lining in bed only, consisting of -	sqm	1.00	0.0135					0.040			22.00						
		(i) 10mm thick cement mortar 1:5 on Sub grade.																	
		(ii) Single layer of 5.08 cm. thick tiles 30.48 cm. x 15.24 cm x 5.08 cm. laid in 1:5 cement sand mortar, mentioned above.																	
		(iii) 20mm thick cement plaster 1:3 properly rendered and finished.																	
19.160	14.9	Cement concrete lining 15cm thick or less for irrigation channels, using cement concrete 1:3:6 (M-10)																	
19.160.1	14.9.1	Concrete lining in bed/ side slopes	Cum	1.00											1.00				
19.161	14.13	Putting 1:3 Cement sand slurry, 6mm thick on prepared bed and side slopes before laying concrete on bed and side slopes	sqm	1.00	0.0038					0.008									
19.162	14.14	Curing Lining for 29 days																	
19.162.1	14.14.1	In bed	sqm	24000.00	0.63					3.000			5160.00						
19.162.2	14.14.2	On Side slopes	sqm	6000.00	0.488					2.33			4000.00						
19.163	14.15	Extra allowance for providing templates in curved portion of lining	sqm of curved															0.052	
19.164	14.16	Extra allowance for form work in concrete lining																	
19.164.1	14.16.1	In Bed/ side slopes	cum	1.35														0.054	
19.165	14.17	Extra allowance for scaffolding, in tile and concrete lining for side slopes.	sqm	6000.00														1.01	
19.166	14.18	Filling expansion joints, with special impervious hot pour, 12.5 mm wide.	per metre	30.00							0.030								0.28
19.167	14.20	Making temporary perforated French drain on top of coping of lining for curing consisting of two tiles, laid on edge in 1:7 mortar, on each side of the drain.	Metre	30.00	0.0235					0.113			200.00						
19.169	14.23	Cement pointing 1:2 on lining																	
19.166.1	14.23.1	In bed / side slopes	sqm	1.00	0.00135					0.0023									
19.169	14.26	Lining of water storage tanks with 6 cm. thick cement concrete 1:3:6 using stone aggregate 20 mm nominal size laid over 7.50 cm thick layer of cement concrete 1:8:12 using brick ballast 40 mm nominal size including dressing of sub-grade, curing form work and scaffolding, etc. complete in all respects.																	
19.169.1	14.26.1	Concrete lining in bed/side slopes	sqm	1.00											0.05	0.075			
19.170	14.27	Double layer tile lining for water storage tanks, consisting of-																	
19.170.1	14.27.1	In bed/side slopes	sqm	1.00	0.0175					0.049			78.00						
19.171	14.28	Lining of water storage tanks with 5 cm. thick cement concrete 1:3:6 using stone aggregates 20 mm nominal size laid over 7.6 cm .thick layer of cement lime sand concrete 1:2:9:24 , (0.041 cum cement 0.082 cum ground hydrated lime 0.37 cum sand 1.00 cum stone blast 20 mm nominal size) including dressing of sub-grade, curing of work and scaffolding, etc. complete in all respects.																	

Item No.	Ref. of connected item	LINING AND OUTLETS			Materials															
					OPC 43	Aggregates						Bricks/Tiles		Cement/ Cement Lime Concrete				Timber	Bitumen
						20-40 mm Stone	5-20 mm Stone	10mm downsize stone	Bajri	Coarse sand	Fine sand	Bricks	Tiles	CC 1:2:4	CC 1:3:6	CC 1:6:12	Cement Lime Concrete 1:2:9:24		
		Description	Unit	Quantity	tonne	cum	cum	cum	cum	cum	cum	nos.	nos.	cum	cum	cum	cum	cum	quintal
19.171.1	14.28.1	Concrete lining in bed/ side slopes	sqm	1.00											0.05		0.075		
19.172	14.29	Lining of water storage tanks with 5 cm. thick cement concrete 1:3:6 using stone aggregates 20 mm nominal size laid over 7.5 cm .thick layer of cement lime sand concrete 1:2:9:24 , 0.041 cum cement 0.082 cum ground hydrated lime 0.37 cum sand 1.00 cum stone blast 40 mm nominal size including dressing of sub-grade, curing of work and scaffolding, etc. complete in all respects.																	
19.172.1	14.29.1	Concrete lining in bed/ side slopes	sqm	1.00											0.05		0.075		
19.173	14.30	Double layer brick lining for storage tanks consisting of ;																	
		(i) 10 mm thick cement mortar 1:5 in sub grade																	
		(ii) 22.86 cm x 11.11 cm size laid in 1:5 cement mortar																	
		(iii) sand-wiched plaster in 1:3 cement mortar 12 mm thick																	
		(iv) Second layer of brick laid in 1:3 cement mortar with 6 mm thick 1:3 cement mortar over sand-wiched plaster, including cost of dressing of sub-grade, scaffolding and curing etc. complete in all respects																	
19.173.1	14.30.1	In Bed / side slopes	sqm	1.00	0.0175					0.042		74.00							
19.174	14.31	Single layer brick lining for irrigation channels for discharge up to 150 cusecs consisting of:																	
		(i)10 mm thick cement plaster 1:6 on sub grade.																	
		(ii)10 mm thick cement plaster 1:3 over first plaster																	
		(iii)First layer of 6.83 mm thick brick layer (22.86x11.11 mm) laid in 1:3 mortar over 6 mm thick cement 1:3 the above cost																	
19.174.1	14.31.1	In Bed/ side slopes	sqm	1.00	0.013					0.037		37.00							
19.175	14.32	Single layer brick lining for irrigation channels for discharge above 150 cusecs but up to 1000 cusecs, consisting of:																	
		(i)10 mm thick cement plaster 1 :6 on sub grade.																	
		(ii)12 mm thick cement plaster 1:3 over first plaster.																	
		(iii) First layer of 68.3 mm thick brick layer (228.6x111.1 mm) laid in1:3 mortar over 6mm thick 1 :3 cement mortar.																	
19.175.1	14.32.1	In bed / side slopes	sqm	1.00	0.0145					0.040		37.00							
19.176	14.33	Single layer brick lining for irrigation channels for discharge above 1000 cusecs, consisting of:																	
		(i)10 mm thick cement plaster 1:6 on sub grade.																	
		(ii)16 mm thick cement plaster 1:3 over first plaster.																	
		(iii)First layer of 68.3 mm thick brick layer (228.6x111.1 mm) laid in 1:3 mortar over 6mm thick 1:3 cement mortar.																	
19.176.1	14.33.1	In Bed / Side slopes	sqm	1.00	0.0175					0.050		37.00							
19.177	14.38	Providing and forming 610x610x975 mm deep filter drain pocket around pressure relief pipe consisting of 75 mm thick each layer with 20 - 40 mm graded gravel layer & 5-20 mm graded gravel and sand layer including cost of all materials, labour etc. complete with lead up to 50 m and all lifts.	Each	10.00		1.8	1.1			0.9									
19.178	14.45	Providing and forming 350 x 350 x 400 mm deep filter drain consisting of 75 mm thick 10 mm down coarse aggregate around pressure relief pipe and 75 mm thick sand around coarse aggregate filter including cost of all materials, labour, excavation of pit etc., complete with lead up to 50 m and all lifts	Each	10.00				0.15		0.35									
19.179	14.56	Making temporary A.P.M. Block and fixing at site-																	
19.179.1	14.56.1	In case of new outlets, where no dismantling and reconstructing of gullet walls is involved	Each	1.00										0.05					

Item No.	Ref. of connected item	LINING AND OUTLETS			Materials															
					OPC 43	Aggregates						Bricks/Tiles		Cement/ Cement Lime Concrete				Timber	Bitumen
						20-40 mm Stone	5-20 mm Stone	10mm downsize stone	Bajri	Coarse sand	Fine sand	Bricks	Tiles	CC 1:2:4	CC 1:3:6	CC 1:5:12	Cement Lime Concrete 1:2:9:24		
		Description	Unit	Quantity	tonne	cum	cum	cum	cum	cum	cum	nos.	nos.	cum	cum	cum	cum	cum	quintal
19.180	14.59	Extra for adjusting of crest levels of O.F. and A.P.M. outlets with 1:2:4 cement concrete when lowering of crest level is involved.	Each	0.60	0.0051				0.0142										
19.180.1	14.59.1	H' up to 0.6 m																	
19.180.2	14.59.2	H' more than 0.6 m but up to 0.9 m	Each	0.90	0.0076				0.0212										
19.180.3	14.59.3	H' more than 0.9 m but up to 1.10 m	Each	1.10	0.0101				0.0212										
19.181	14.64	Repairing damaged reducing collar of hume pipe outlets	Each	1.00	0.0051														
19.182	14.66	Laying R.C.C. pipes for outlets and culverts including joining ends and fixing collar with cement mortar 1:2-																	
19.182.1	14.66.1	up to 150 mm inside diameter	Metre	1.00	0.0021					0.003									
19.182.2	14.66.2	above 150 mm but up to 300 mm inside diameter	Metre	1.00	0.0041					0.01									
19.182.3	14.66.3	above 300 mm but up to 600 mm inside diameter	Metre	1.00	0.0117					0.016									
19.182.4	14.66.4	above 600mm but up to 900 mm inside diameter	Metre	1.00	0.0195					0.027									

Item No.	Ref. of connected item	RIVER AND CANAL PROTECTION WORKS			Material			
					Stone required for refilling	G.I. wire, 4 mm dia	G.I. wire, 4.75 mm dia	G.I. wire, 3.25 mm dia
		Description	Unit	Quantity	cum	quintal	quintal	quintal
19.183	16.38	**Wire Crates 1.20 m x1.20 m from all directions of G.I. Wire, filled with boulders with square-cut faces, against the wire-**						
19.183.1	16.38.1	**4mm dia G.I. Wire, 25 cm x 7.5 cm mesh (diagonal wise)**	Cum	1.728	1.728	0.300		
19.183.2	16.38.2	**4.00 mm dia G.I. wire 15 cm x 15 cm mesh (diagonal wise)**	Cum	1.728	1.728	0.200		
19.183.3	16.38.3	**4.75 mm, dia G.1. wire, 25 cm. x 7.5 cm mesh (diagonal wise)**	Cum	1.728	1.728		0.417	
19.183.4	16.38.4	**4.75 mm, dia. G.I. wire 15 cm x 15 cm mesh (diagonal wise)**	Cum	1.728	1.728		0.279	
19.183.5	16.38.5	**3.25 mm dia G.I. wire 25 cm x 7.5 cm mesh (diagonal wise)**	Cum	1.728	1.728			0.194
19.183.6	16.38.6	**3.25 mm dia G.I. wire. 15 cm. x 15 cm mesh (diagonal wise)**	Cum	1.728	1.728			0.130

CHAPTER NO. 20

WATER SUPPLY

CHAPTER 20: WATER SUPPLY

NOTES:

1. The rates are inclusive of GST and all other taxes, Labour Welfare Cess and contractor's profit.

2. The rates for stringing out cast iron, A.C., P.V.C. and hume pipes and their specials etc. provided under this chapter which are in the wider sense labour rates in case of which the material is generally issued to the constructions free of cost from the stores of the engineer-in-charge or the nearest Railway station include the carriage of material within a radius of 5 Km of the site of works.

CHAPTER 20: WATER SUPPLY

LIST OF BUREAU OF INDIAN STANDARD CODES

Sr. No.	B.I.S. No.	Subject
1	IS 554	Pipe threads where pressure tight joints are required on the threads- Dimensions, tolerances and designation.
2	IS 778	Specification for copper alloy gate, and check valves for water works purposes
3	IS 779	Water meters (domestic type) –Specification
4	IS 780	Specification for sluice valves for water works purposes (50 to 300 mm size)
5	IS 781	Specification for cast copper alloy screw down bib taps and stop valves for water services
6	IS 782	Specification for caulking lead
7	IS 909	Underground fire hydrant, sluice valve type-Specification
8	IS 1239 (Part 1)	Steel tubes tubular and other wrought steel fittings, Part 1- Steel tubes- Specification
9	IS 1239 (Part 2)	Specification for mild steel tubes tubular and other wrought steel fittings, Part 2-Mild street tubular and other wrought steel pipe fittings
10	IS 1536	Centrifugally cast (spun) iron pressure pipes for water gas and sewage- Specification
11	IS 1537	Specification for vertically cast iron pressure pipes for water, gas and sewage
12	IS 1538	Cast iron fittings for pressure pipes for water, gas and sewage – Specification
13	IS 1703	Water fittings - copper alloy float valves (horizontal plunger type) –Specification
14	IS 2692	Ferrules for water services- Specification
15	IS 3950	Specification for surface boxes for sluice valves
16	IS 4736	Specification for Hot-dip Zinc Coatings on mild steel tubes
17	IS 5312 (Part 1)	Swing type reflex (non return) valves for water works purposes. Part 1- Single door pattern
18	IS 5312 (Part 2)	Swing type reflex (non return) valves for water works purposes. Part 2- Multi door pattern
19	IS 5382	Rubber sealing rings for gas mains, water mains and sewers
20	IS 9762	Specification for polyethylene floats (spherical) for float valves
21	IS 9763	Plastic Bib taps and stop valves (rising spindle) for cold water services- specifications
22	IS 15450	PE-AL-PE Pipes for hot and cold water supplies-Specifications
23	IS 15778	Chlorinated Polyvinyl Chloride (CPVC) pipes for potable hot and cold water distribution supplies-specifications.
24	IS 15801	Polypropylene- Random Copolymer Pipes for hot and cold water supplies-Specifications

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
		A. Laying of C.I. Pipes and Specials				
20.1		Stringing out C.I. pipes and specials castings along trenches and laying the same in trenches to correct, alignment and gradients including cartage from divisional stores or nearest railway station to site of works and return of pieces of pipes to stores				
	20.1.1	80mm internal diameter pipe line laid complete	10 metres	107	-	107
	20.1.2	100 mm internal diameter pipe line laid complete	10 metres	150	-	150
	20.1.3	125 mm internal diameter pipe line laid complete	10 metres	129	-	129
	20.1.4	150 mm internal diameter pipe line laid complete	10 metres	139	-	139
	20.1.5	200 mm internal diameter pipe line laid complete	10 metres	172	-	172
	20.1.6	250 mm internal diameter pipe line laid complete	10 metres	321	-	321
	20.1.7	300 mm internal diameter pipe line laid complete	10 metres	350	-	350
	20.1.8	350 mm internal diameter pipe line laid complete	10 metres	469	-	469
	20.1.9	400 mm internal diameter pipe line laid complete	10 metres	553	-	553
	20.1.10	450 mm internal diameter pipe line laid complete	10 metres	629	-	629
	20.1.11	500 mm internal diameter pipe line laid complete	10 metres	777	-	777
	20.1.12	600 mm internal diameter pipe line laid complete	10 metres	998	-	998
20.2		Extra for fixing cast iron socketed or flanged pipes, values and special castings in vertical position for overhead reservoirs and stand pipes etc. including cost of all special scaffolding derricks, jim poles, tools and plants, ropes, guys etc., complete.				
	20.2.1	80mm internal diameter pipe line laid complete	metre	65	-	65
	20.2.2	100mm internal diameter pipe line laid complete	metre	101	-	101
	20.2.3	125 mm internal diameter pipe line laid complete	metre	130	-	130
	20.2.4	150 mm internal diameter pipe line laid complete	metre	164	-	164
	20.2.5	200 mm internal diameter pipe line laid complete	metre	274	-	274
	20.2.6	250 mm internal diameter pipe line laid complete	metre	370	-	370
	20.2.7	300 mm internal diameter pipe line laid complete	metre	484	-	484
	20.2.8	350 mm internal diameter pipe line laid complete	metre	597	-	597
	20.2.9	400 mm internal diameter pipe line laid complete	metre	802	-	802
	20.2.10	450 mm internal diameter pipe line laid complete	metre	972	-	972
	20.2.11	500 mm internal diameter pipe line laid complete	metre	1127	-	1127
	20.2.12	600 mm internal diameter pipe line laid complete	metre	1504	-	1504
		Notes: (i) For pipes larger than 600mm internal diameter, special rates shall be fixed.				
		(ii) The contractor shall be liable to make good all damage caused by breakage from the moment pipes and fittings are handed over to his charge.				
		(iii) All measurements shall be taken along the centre line and axis of the pipe line throughout its length and shall include the overall laying length of sluice values, etc. fixed there in.				
20.3		Cutting cast iron pipes and specials and chipping or filing the surface to a uni-form finish .				
	20.3.1	80mm internal diameter pipe line	per cut	32	8	40
	20.3.2	100 mm internal diameter pipe line	per cut	38	10	49
	20.3.3	125 mm internal diameter pipe line	per cut	58	10	68
	20.3.4	150 mm internal diameter pipe line	per cut	64	10	74
	20.3.5	200 mm internal diameter pipe line	per cut	72	13	85
	20.3.6	250 mm internal diameter pipe line	per cut	86	13	99
	20.3.7	300 mm internal diameter pipe line	per cut	108	16	124
	20.3.8	350 mm internal diameter pipe line	per cut	144	18	162
	20.3.9	400 mm internal diameter pipe line	per cut	168	18	186

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	20.3.10	450 mm internal diameter pipe line	per cut	192	21	213
	20.3.11	500 mm internal diameter pipe line	per cut	239	21	260
	20.3.12	600 mm internal diameter pipe line	per cut	263	31	294
20.4		Jointing cast iron socketed pipes, valves and specials with run lead caulked joints excluding cost of lead and yarn but including cost of labour, fuel and tools etc. Tested complete.				
	20.4.1	80 mm i/d pipe	per joint	72	13	85
	20.4.2	100 mm i/d pipe	per joint	90	16	106
	20.4.3	125 mm i/d pipe	per joint	108	20	128
	20.4.4	150 mm i/d pipe	per joint	108	23	131
	20.4.5	200 mm i/d pipe	per joint	132	30	162
	20.4.6	250 mm i/d pipe	per joint	168	38	205
	20.4.6	300 mm i/d pipe	per joint	143	46	188
	20.4.7	350 mm i/d pipe	per joint	204	56	259
	20.4.8	400 mm i/d pipe	per joint	263	64	327
	20.4.9	450 mm i/d pipe	per joint	287	78	365
	20.4.10	500 mm i/d pipe	per joint	311	95	406
	20.4.11	600 mm i/d pipe	per joint	407	124	532
20.5		Making flanged joints for cast iron pipes, valves or specials				
	20.5.1	80mm internal diameter of pipe, values or specials	each	48	-	48
	20.5.2	100 mm internal diameter of pipe, values or specials	each	53	-	53
	20.5.3	125 mm internal diameter of pipe, values or specials	each	60	-	60
	20.5.4	150 mm internal diameter of pipe, values or specials	each	80	-	80
	20.5.5	200 mm internal diameter of pipe, values or specials	each	107	-	107
	20.5.6	250 mm internal diameter of pipe, values or specials	each	192	-	192
	20.5.7	300 mm internal diameter of pipe, values or specials	each	240	-	240
	20.5.8	350 mm internal diameter of pipe, values or specials	each	320	-	320
	20.5.9	400 mm internal diameter of pipe, values or specials	each	384	-	384
	20.5.10	450 mm internal diameter of pipe, values or specials	each	480	-	480
	20.5.11	500 mm internal diameter of pipe, values or specials	each	577	-	577
	20.5.12	600 mm internal diameter of pipe, values or specials	each	641	-	641
		Notes: (i) The rubber insertion, 3mm thick required for making the joints will be issued in rectangular sheets or rolls at stock issue rates in force ex-divisional stores or F.O.R. nearest railway station.				
		(ii) All bolts, nuts and washers for flanged joints will be supplied without charge to the contractor ex-divisional stores or delivered F.O.R. nearest railway station. The contract at his own expenses and charges will take delivery of jointing materials i.e. bolts, nuts and washers and transport the same to the site of work.				
20.6		Jointing cast iron socketed pipes, valves and specials with rubber tyton joints fitted complete including cost of labour and tools etc., and tested complete.				
	20.6.1	Labour cost for 80 mm joints	each	81	-	81
	20.6.2	Labour cost for 100 mm joints	each	91	-	91
	20.6.3	Labour cost for 125 mm joints	each	104	-	104
	20.6.4	Labour cost for 150 mm joints	each	108	-	108
	20.6.5	Labour cost for 200 mm joints	each	112	-	112
	20.6.6	Labour cost for 250 mm joints	each	122	-	122
	20.6.7	Labour cost for 300 mm joints	each	146	-	146
	20.6.8	Labour cost for 350 mm joints	each	162	-	162
	20.6.9	Labour cost for 400 mm joints	each	195	-	195
	20.6.10	Labour cost for 450 mm joints	each	225	-	225

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	20.6.11	Labour cost for 500 mm joints	each	243	-	243
	20.6.12	Labour cost for 600 mm joints	each	324	-	324
	B. LAYING OF AC / PVC PIPES AND SPECIALS					
20.7	Stringing out A.C./P.V.C pipes and specials casting along trenches and laying the same in trenches, to correct alignment and gradients including cartage from divisional stores or nearest railway station to site of works and return of pieces of pipes to stores.					
	20.7.1	50mm internal diameter of pipe line laid complete	10 metres	79	-	79
	20.7.2	80 mm internal diameter of pipe line laid complete	10 metres	110	-	110
	20.7.3	100 mm internal diameter of pipe line laid complete	10 metres	167	-	167
	20.7.4	125 mm internal diameter of pipe line laid complete	10 metres	197	-	197
	20.7.5	150 mm internal diameter of pipe line laid complete	10 metres	245	-	245
	20.7.6	200 mm internal diameter of pipe line laid complete	10 metres	416	-	416
	20.7.8	250 mm internal diameter of pipe line laid complete	10 metres	664	-	664
	20.7.9	300 mm internal diameter of pipe line laid complete	10 metres	973	-	973
20.8	Jointing A.C./P.V.C. pipes and specials with cast iron detachable joints/split coupler P.V.C. joints fitted with bolts and nuts excluding cost of detachable joints/ split coupler P.V.C. joints rubber rings, bolts and nuts but including cost of labour and tools etc. and tested complete.					
	20.8.1	50 mm i/d pipe	each	42	-	42
	20.8.2	80 mm i/d pipe	each	53	-	53
	20.8.3	100 mm i/d pipe	each	66	-	66
	20.8.4	125 mm i/d pipe	each	89	-	89
	20.8.5	150 mm i/d pipe	each	110	-	110
	20.8.6	200 mm i/d pipe	each	136	-	136
	20.8.7	250 mm i/d pipe	each	164	-	164
	20.8.8	300 mm i/d pipe	each	193	-	193
20.9	Cutting A.C./P.V.C. pipes and specials and chipping or filing surface to a uniform finish.					
	20.9.1	50 mm i/d	each	12	-	12
	20.9.2	80 mm i/d	each	20	-	20
	20.9.3	100 mm i/d	each	24	-	24
	20.9.4	125 mm i/d	each	34	-	34
	20.9.5	150 mm i/d	each	37	-	37
	20.9.6	200 mm i/d	each	43	-	43
	20.9.7	250 mm i/d	each	50	-	50
	20.9.8	300 mm i/d	each	62	-	62
	C. FIXING OF C.I. VALVES HYDRANTS					
20.10	Extra for fixing sluice valves/flap valves socketed or flanged including cartage from stores or nearest Railway Station to site of works					
	20.10.1	80 mm i/d	each	68	2870	2938
	20.10.2	100 mm i/d	each	75	4145	4221
	20.10.3	150 mm i/d	each	103	6412	6515
	20.10.4	200 mm i/d	each	111	11242	11353
	20.10.5	250 mm i/d	each	148	17649	17796
	20.10.6	300 mm i/d	each	148	21480	21628
	20.10.7	350 mm i/d	each	148	34556	34704
	20.10.8	400 mm i/d	each	148	46803	46951
	20.10.9	450 mm i/d	each	155	55772	55927
	20.10.10	500 mm i/d	each	155	76247	76402
	20.10.11	600 mm i/d	each	155	108466	108621

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	Note: Joints for sluice values shall be paid separately as pet item no.20.4 and 20.5					
20.11	Providing & fixing cast iron double flanged swing check type reflux (non return) valves PN-1.6 marked with IS:5312 including nuts & bolts marked with IS:1363, rubber sheet marked with IS:638 etc., carriage loading, unloading, stacking, handling, re-handling etc. Complete in all respect to the satisfaction of Engineer-in-charge					
	20.11.1	80 mm i/d	each	66	2769	2835
	20.11.2	100 mm i/d	each	75	3762	3837
	20.11.3	150 mm i/d	each	104	6331	6435
	20.11.4	200 mm i/d	each	111	10325	10436
	20.11.5	250 mm i/d	each	148	15871	16018
	20.11.6	300 mm i/d	each	148	19269	19417
	20.11.7	350 mm i/d	each	148	39392	39540
	20.11.8	400 mm i/d	each	148	46590	46737
	20.11.9	450 mm i/d	each	157	56418	56575
	20.11.10	500 mm i/d	each	157	89409	89566
	20.11.11	600 mm i/d	each	157	117448	117605
	Note: Joints for sluice values shall be paid separately as pet item no.20.4 and 20.5					
20.12	Extra for fixing fire hydrants all sizes including cartage from Divisional Stores or nearest Railway Station to site of works		each	124	-	124
	Note: Joints for hydrants shall be paid separately as per item no.20.5					
20.13	Providing & fixing cast iron single air valves marked with IS:14845 including carriage, loading, uploading stacking, handling, re-handling etc. drilling, tapping, screwing etc. in valves connections complete in all respects to the satisfaction of Engineer-in-charge. (Rate is same for 40mm/50mm i/d pipes)					
	20.13.1	40 mm i/d	each	172	1670	1841
	20.13.2	50 mm i/d	each	172	1843	2015
20.14	Providing and fixing cast iron double air valves of size given below marked with IS: 14845 including carriage, loading, unloading stacking, handling, re-handling etc., drilling, tapping, screwing in valves connections complete in all respects to the satisfaction of Engineer-in- charge. (Rate is same for 65mm/80mm/100 i/d pipes)					
	20.14.1	65 mm i/d	each	173	1971	2144
	20.14.2	80 mm i/d	each	173	2222	2395
	20.14.3	100 mm i/d	each	173	2665	2838
20.15	Providing and fixing C.I. Kinetic air valves conforming to and marked with IS: 14845 including carriage, loading, unloading stacking, handling, re-handling etc., drilling, tapping, screwing in valves connections complete in all respects to the satisfaction of Engineer-in- Charge.					
	20.15.1	80 mm i/d	each	172	3046	3217
	20.15.2	100 mm i/d	each	172	3358	3530
	20.15.3	150 mm i/d	each	191	8382	8573
	20.15.4	200 mm i/d	each	191	15150	15341
20.16	Fixing cost iron sluice valve surface boxes/indicating plates including cartage from Divisional Stores or nearest Railway Station and embedding to correct levels in cement mortar 1:3		each	96	-	96
20.17	Fixing cast iron fire hydrants surface boxes including cartage from divisional stores or nearest railway station and embedding to correct levels in cement mortar 1:3		each	103	-	103
20.18	Fixing cast iron single air valves surface boxes including cartage from divisional stores or nearest railway station and embedding to correct levels in cement mortar 1:3		each	97	-	97

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
20.19	Fixing cast iron double air valves surface boxes including cartage from divisional stores or nearest railway station and embedding to correct levels in cement mortar 1:3		each	98	-	98
	Notes: (i) All surface boxes will be supplied without charge, ex-divisional store or F.O.R. nearest railway station.					
	(ii) Payment for lime, concrete, brick work, pitching etc., required in connection with the construction of brick work pits or chambers for sluice valves chambers and other works for water supply pipe lines where no and other works for water supply pipe lines where no composite rate exists will be made on the basis of actual measurements for each class of work at the rates laid down for appropriate classes of work in Schedule of Rates and no extra will be payable due to the limited quantities of the work or difficulties of construction or other causes.					
	D. LAYING OF G.I./ P.V.C./W.I. PIPES AND SPECIALS					
20.20	Labour for laying, jointing, fixing and testing G.I./P.V.C./W.I. pipelines and special tees, bends, sockets, elbow etc. inside building and testing etc. complete including cutting threading					
	20.20.1	Excluding cost of specials				
		20.20.1.1 15 mm internal diametre of pipeline	metre	48	-	48
		20.20.1.2 20 mm internal diametre of pipeline	metre	58	-	58
		20.20.1.3 25 mm internal diametre of pipeline	metre	64	-	64
		20.20.1.4 32 mm internal diametre of pipeline	metre	80	-	80
		20.20.1.5 40 mm internal diametre of pipeline	metre	84	-	84
		20.20.1.6 50 mm internal diametre of pipeline	metre	105	-	105
	20.20.2	Including cost of specials				
		20.20.2.1 15 mm internal diametre of pipeline	metre	106	-	106
		20.20.2.2 20 mm internal diametre of pipeline	metre	127	-	127
		20.20.2.3 25 mm internal diametre of pipeline	metre	141	-	141
		20.20.2.4 32 mm internal diametre of pipeline	metre	177	-	177
		20.20.2.5 40 mm internal diametre of pipeline	metre	186	-	186
		20.20.2.6 50 mm internal diametre of pipeline	metre	220	-	220
	Notes: (i) Holder bats, flanged joints, unions and making chases in walls will be paid for separately.					
	(ii) All G.I./P.V.C./ W.I. pipes and specials shall be obtained by indent upon the executive engineer public health concerned and direct purchases by the contractor shall not be permitted except in such special cases as shall be allowed in writing by the executive engineer.					
	(iii) All G.I./P.V.C./ W.I. pipes and specials bends, tees, etc., will be supplied ex-divisional stores or F.O.R. nearest Railway Station at the divisional stock issue rates in force when the specials are indented for and the rate includes the cost of cartage to the site of works including fixing, jointing and testing etc., complete.					
	(iv) Square elbow must not be used for any work but round elbows used instead.					
	(v) Short lengths of G.I. pipelines up to 9m in connection with construction of stand post and other such works will be paid at rates meant for inside building work.					
20.21	Labour for laying jointing, fixing and testing G.I./P.V.C./W.I. pipe lines and special tees, bends, sockets, elbows etc. in trenches in the ground cutting, threading and testing, etc. complete					
	20.21.1	15 mm internal diameter	metre	16	-	16
	20.21.2	20 mm internal diameter	metre	23	-	23
	20.21.3	25 mm internal diameter	metre	25	-	25
	20.21.4	32 mm internal diameter	metre	36	-	36

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	20.21.5	40 mm internal diameter	metre	41	-	41
	20.21.6	50 mm internal diameter	metre	45	-	45
	20.21.7	65 mm internal diameter	metre	45	-	45
	20.21.8	80 mm internal diameter	metre	49	-	49
	20.21.9	100 mm internal diameter	metre	57	-	57
20.22	Extra for fixing flanged joints on G.I. and W.I. pipelines including cost of jointing materials.					
	20.22.1	15 mm internal diametre	each	20	-	20
	20.22.2	20 mm internal diametre	each	22	-	22
	20.22.3	25 mm internal diametre	each	25	-	25
	20.22.4	32 mm internal diametre	each	28	-	28
	20.22.5	40 mm internal diametre	each	33	-	33
	20.22.6	50 mm internal diametre	each	40	-	40
	20.22.7	65 mm internal diametre	each	46	-	46
	20.22.8	80mm internal diameter	each	48	-	48
	20.22.9	100 mm internal diameter	each	53	-	53
	Notes: (i) The jointing material for the above will be supplied ex-divisional stores or F.O.R. nearest station at the stock issue rates in force when the material is indented for.					
	(ii) All bolts, nuts and washers will be supplied without charge to the contractor ex- divisional stores or F.O.R. nearest railway station and the rate includes the cost of the carriage to site of works.					
20.23	Extra for fixing and jointing union couplings in G.I. and W.I. pipelines.					
	20.23.1	15 mm internal diameter	each	9	-	9
	20.23.2	20 mm internal diameter	each	10	-	10
	20.23.3	25 mm internal diameter	each	13	-	13
	20.23.4	32 mm internal diameter	each	15	-	15
	20.23.5	40 mm internal diameter	each	17	-	17
	20.23.6	50 mm internal diameter	each	17	-	17
	20.23.7	65 mm internal diameter	each	21	-	21
	20.23.8	80 mm internal diameter	each	21	-	21
	20.23.9	100 mm internal diameter	each	23	-	23
	Notes: (i) These unions shall be fixed on branches at or the junctions with the main G.I. pipeline and also at intervals of about 30 metres on all pipelines laid in ground and at intervals of 18 to 24 m on pipelines laid on roofs and inside buildings.					
	(ii) The rates apply to couplings on straight lines, branches and also on bends.					
	(iii) The coup lings will be supplied without charge to the contractor ex-divisional stores or F.O.R. nearest railway station and the rate includes cost of cartage, fixing and testing etc., complete.					
	E. DRILLING AND TAPPING OF C.I. PIPES					
20.24	Drilling and tapping cast iron pipe lines of all diameters and screwing in ferrule and connections -					
	20.24.1	Ferrule size 10 mm	each	657	-	657
	20.24.2	Ferrule size 15 mm	each	668	-	668
	20.24.3	Ferrule size 20 mm	each	751	-	751
	20.24.4	Ferrule size 25 mm	each	799	-	799
	20.24.5	Ferrule size 32 mm	each	847	-	847
	20.24.6	Ferrule size 40 mm	each	942	-	942

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
		Note: Ferrule will be supplied without charges to the contractor, ex-divisional stores or F.O.R. nearest railway station. The fixing rate includes cartage to site of work and also cost of excavation up to the main and filling in and complete job and making good the surface after finishing the job. The rate is for complete job.				
		F. CUTTING HOLES IN WALLS / FLOORS / ROOFS				
20.25		Cutting holes up to 23 cm square through brick work in mud walls for pipes and making good including repointing, replastering and finishing according to existing finish where required.				
	20.25.1	11.43 cm thick wall	each	103	-	103
	20.25.2	22.86 cm thick wall	each	152	-	152
	20.25.3	34.29 cm thick wall	each	227	-	227
	20.25.4	45.72 cm thick wall	each	286	-	286
	20.25.5	57.15 cm thick wall	each	352	-	352
	20.25.6	68.58 cm thick wall	each	425	-	425
20.26		Cutting holes up to 23 cm through stone masonry or brick work in cement walls for pipes and making good including repointing, replastering and finishing according to existing finish where required.				
	20.26.1	11.43 cm thick wall	each	184	-	184
	20.26.2	22.86 cm thick wall	each	271	-	271
	20.26.3	34.29 cm thick wall	each	357	-	357
	20.26.4	45.72 cm thick wall	each	452	-	452
	20.26.5	57.15 cm thick wall	each	505	-	505
	20.26.6	68.58 cm thick wall	each	555	-	555
20.27		Cutting holes up to 23 cm square for pipes in flooring and roofs of brick tiles with lime concrete and making good including, repointing, replastering and colour or white washing where required.				
	20.27.1	75 mm thickness of floor	each	89	-	89
	20.27.2	115 mm thickness of floor	each	140	-	140
	20.27.3	150 mm thickness of floor	each	170	-	170
	20.27.4	190 mm thickness of floor	each	188	-	188
	20.27.5	225 mm thickness of floor	each	197	-	197
20.28		Cutting holes up to 23 cm square for pipes in floor and roofs of cement concrete reinforced concrete or reinforced brick work and making good including, repointing, replastering, replacing bitumen and colour or white washing where required.				
	20.28.1	75 mm thickness of roof or floor	each	95	-	95
	20.28.2	115 mm thickness of roof or floor	each	115	-	115
	20.28.3	150 mm thickness of roof or floor	each	162	-	162
	20.28.4	190 mm thickness of roof or floor	each	182	-	182
	20.28.5	225 mm thickness of roof or floor	each	201	-	201
20.29		Labour our fixing G.I. or W.I. pipe sleeve pieces in holes in walls, floors, and roofs rounds pipes including all cutting and wastage				
	20.29.1	15 mm internal diameter of sleeve pipe	metre	36	-	36
	20.29.2	20 mm internal diameter of sleeve pipe	metre	40	-	40
	20.29.3	25 mm internal diameter of sleeve pipe	metre	56	-	56
	20.29.4	32 mm internal diameter of sleeve pipe	metre	56	-	56
	20.29.5	40 mm internal diameter of sleeve pipe	metre	68	-	68
	20.29.6	50 mm internal diameter of sleeve pipe	metre	72	-	72
	20.29.7	65 mm internal diameter of sleeve pipe	metre	72	-	72
	20.29.8	80 mm internal diameter of sleeve pipe	metre	80	-	80
	20.29.9	100 mm internal diameter of sleeve pipe	metre	96	-	96

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
20.30	Fixing galvanised malleable iron holder bats hold fasts to pipe lines fixed on walls and ceilings including all cutting to walls and making good to original condition.					
	20.30.1	15 mm internal diameter of pipeline	each	34	-	34
	20.30.2	20 mm internal diameter of pipeline	each	34	-	34
	20.30.3	25 mm internal diameter of pipeline	each	43	-	43
	20.30.4	32 mm internal diameter of pipeline	each	43	-	43
	20.30.5	40 mm internal diameter of pipeline	each	49	-	49
	20.30.6	50 mm internal diameter of pipeline	each	49	-	49
	20.30.7	65 mm internal diameter of pipeline	each	57	-	57
	20.30.8	80 mm internal diameter of pipeline	each	57	-	57
	20.30.9	100 mm internal diameter of pipeline	each	68	-	68
	Notes: (i) Holder bats are generally required to be fixed at intervals of about 2.4 M on straight line.					
	(ii) The holder bats will be supplied free of cost to the contractor ex-divisional stores or nearest railway station. The rates include the cost of carriage and labour, etc., to site of works.					
	G. FIXING OF VALVES, COCKS, SHOWERS AND METERS ETC.					
20.31	Fixing and jointing gun metal peet valves (heavy pattern) with hand wheels, on G.I. pipelines laid in the ground or inside buildings, including cartage from divisional stores or nearest railway station to site of works.					
	20.31.1	15 mm internal diametre	each	29	-	29
	20.31.2	20 mm internal diametre	each	39	-	39
	20.31.3	25 mm internal diametre	each	42	-	42
	20.31.4	32 mm internal diametre	each	49	-	49
	20.31.5	40 mm internal diametre	each	57	-	57
	20.31.6	50 mm internal diametre	each	78	-	78
	20.31.7	65 mm internal diametre	each	97	-	97
	20.31.8	80 mm internal diametre	each	108	-	108
	20.31.9	100 mm internal diametre	each	114	-	114
	Note: Peet valves will be supplied free of cost to the contractor ex-divisional stores or nearest railway station.					
20.32	Fixing screw down stop cocks of gunmetal or hard brass on G.I. pipelines laid in the ground or inside buildings including cartage from divisional stores or nearest railway station to site of works.					
	20.32.1	15 mm internal diametre	each	28	-	28
	20.32.2	20 mm internal diametre	each	32	-	32
	20.32.3	25 mm internal diametre	each	36	-	36
	20.32.4	32 mm internal diametre	each	42	-	42
	20.32.5	40 mm internal diametre	each	44	-	44
	20.32.6	50 mm internal diametre	each	64	-	64
	Note: The stop cocks will be supplied free of cost to the contractor ex-divisional stores or nearest railway station.					
20.33	Fixing bib taps of gun-metal or hard brass on G.I. pipe lines including cartage from divisional stores or nearest railway station to site of works.					
	20.33.1	15 mm internal diametre	each	19	-	19
	20.33.2	20 mm internal diametre	each	20	-	20
	20.33.3	25 mm internal diametre	each	22	-	22
	20.33.4	32 mm internal diametre	each	24	-	24
	20.33.5	40 mm internal diametre	each	26	-	26
	20.33.6	50 mm internal diametre	each	37	-	37
20.34	Fixing ball values including cartage from divisional stores or nearest railway station to site of works					

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	20.34.1	15 mm internal diametre	each	49	-	49
	20.34.2	20 mm internal diametre	each	49	-	49
	20.34.3	25 mm internal diametre	each	73	-	73
	20.34.4	32 mm internal diametre	each	73	-	73
	20.34.5	40 mm internal diametre	each	85	-	85
	20.34.6	50 mm internal diametre	each	98	-	98
20.35	Fixing chromium plated brass shower rose including carriage from divisional stores or nearest railway station to site of works.					
	20.35.1	150 mm i/d shower rose with 15 mm or 20 mm inlet	each	17	-	17
	20.35.2	100 mm i/d shower rose with 15 mm or 20 mm inlet	each	17	-	17
20.36	Making connection with the existing G.I. branch main up to 40 mm size including cutting and threading pipe etc., complete excluding cost of tee and long screw, but including cartage of material to site.		each	361	-	361
20.37	Fixing water meter and stop cock in G.I. pipe line up to 25 mm size including cutting and threading pipe and making long screw etc. complete including cost of G.I. jam nut but excluding cost of water meter and stop cock		each	195	-	195
20.38	Fixing peet value and stop cock surface boxes (coat iron) including cartage from divisional stores or nearest railway station to site of works.		each	55	-	55
	Note: The surface boxes will be supplied free of cost to the contractor ex-divisional stores or nearest railway station.					
	H. DISMANTLING OF G.I. JOINTS PIPES VALVES AND SPECIALS					
20.39	Dismantling lead caulked joints of cast iron socketed pipes, valves and specials by heating the joints including the cost of labour, fuel and tools, etc. collecting the lead taken out from the joints and delivering the same to the divisional stores.					
	20.39.1	50 mm internal diametre of pipe, valves or specials	per joint	24	-	24
	20.39.2	65 mm internal diametre of pipe, valves or specials	per joint	24	-	24
	20.39.3	80 mm internal diametre of pipe, valves or specials	per joint	33	-	33
	20.39.4	100 mm internal diametre of pipe, valves or specials	per joint	37	-	37
	20.39.5	125 mm internal diametre of pipe, valves or specials	per joint	37	-	37
	20.39.6	150 mm internal diametre of pipe, valves or specials	per joint	55	-	55
	20.39.7	175 mm internal diametre of pipe, valves or specials	per joint	67	-	67
	20.39.8	200 mm internal diametre of pipe, valves or specials	per joint	79	-	79
	20.39.9	225 mm internal diametre of pipe, valves or specials	per joint	89	-	89
	20.39.10	250 mm internal diametre of pipe, valves or specials	per joint	103	-	103
	20.39.11	300 mm internal diametre of pipe, valves or specials	per joint	135	-	135
	20.39.12	350 mm internal diametre of pipe, valves or specials	per joint	154	-	154
	20.39.13	375 mm internal diametre of pipe, valves or specials	per joint	162	-	162
	20.39.14	400 mm internal diametre of pipe, valves or specials	per joint	172	-	172
	20.39.15	450 mm internal diametre of pipe, valves or specials	per joint	257	-	257
	20.39.16	500 mm internal diametre of pipe, valves or specials	per joint	289	-	289
	20.39.17	525 mm internal diametre of pipe, valves or specials	per joint	297	-	297
	20.39.18	550 mm internal diametre of pipe, valves or specials	per joint	351	-	351
	20.39.19	600 mm internal diametre of pipe, valves or specials	per joint	382	-	382
20.40	Dismantling flanged joints for cast-iron pipes, valves and specials including carriage of bolts, nuts, and washers to the divisional stores.					
	20.40.1	50 mm, 65 mm, 80 mm & 100 mm i/d of pipes, valves and specials	each	12	-	12
	20.40.2	125 mm, 150 mm, 175 mm & 200 mm i/d of pipes, valves and specials	each	25	-	25
	20.40.3	300 mm, 350 mm and 375 mm i/d of pipes, valves and specials	each	66	-	66
	20.40.4	400 mm and 450 mm i/d of pipes, valves and specials	each	75	-	75

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	20.40.5	500 mm and 525 mm i/d of pipes, valves and specials	each	82	-	82
	20.40.6	550 mm and 600 mm i/d of pipes, valves and specials	each	99	-	99
20.41		Taking out dismantled cast iron socketed or flanged pipes, valves and special etc. outside from the trenches and stacking at a nearest convenient place as required by the engineer-in-charge from where they can be loaded into carts or trucks-				
	20.41.1	50 mm internal diametre of pipe	10 metres of pipe line dismantled	59	-	59
	20.41.2	65 mm internal diametre of pipe	10 metres of pipe line dismantled	67	-	67
	20.41.3	80 mm internal diametre of pipe	10 metres of pipe line dismantled	81	-	81
	20.41.4	100 mm internal diametre of pipe	10 metres of pipe line dismantled	100	-	100
	20.41.5	125 mm internal diametre of pipe	10 metres of pipe line dismantled	101	-	101
	20.41.6	150 mm internal diametre of pipe	10 metres of pipe line dismantled	120	-	120
	20.41.7	175 mm internal diametre of pipe	10 metres of pipe line dismantled	140	-	140
	20.41.8	200 mm internal diametre of pipe	10 metres of pipe line dismantled	161	-	161
	20.41.9	225 mm internal diametre of pipe	10 metres of pipe line dismantled	186	-	186
	20.41.10	250 mm internal diametre of pipe	10 metres of pipe line dismantled	215	-	215
	20.41.11	300 mm internal diametre of pipe	10 metres of pipe line dismantled	242	-	242
	20.41.12	350 mm internal diametre of pipe	10 metres of pipe line dismantled	322	-	322
	20.41.13	375 mm internal diametre of pipe	10 metres of pipe line dismantled	377	-	377
	20.41.14	400 mm internal diametre of pipe	10 metres of pipe line dismantled	428	-	428
	20.41.15	450 mm internal diametre of pipe	10 metres of pipe line dismantled	481	-	481
	20.41.16	500 mm internal diametre of pipe	10 metres of pipe line dismantled	521	-	521
	20.41.17	525 mm internal diametre of pipe	10 metres of pipe line dismantled	542	-	542

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	20.41.18	550 mm internal diametre of pipe	10 metres of pipe line dismantled	621	-	621
	20.41.19	600 mm internal diametre of pipe	10 metres of pipe line dismantled	642	-	642
	Note: (i) The contractor shall be liable to make good all dam age caused by breakage while taking out the pipes from trenches.					
	(ii) All measurements shall be taken along the centre line of axis of the pipelines throughout its length and shall include the overall laying length of sluice valves and specials fixed therein.					
20.42	Dismantling sluice valves socketed or flanged including cartage from the site of works to the divisional store.					
	20.42.1	50 mm internal diametre of valve	each	49	-	49
	20.42.2	65 mm internal diametre of valve	each	50	-	50
	20.42.3	80 mm internal diametre of valve	each	50	-	50
	20.42.4	100 mm internal diametre of valve	each	51	-	51
	20.42.5	125 mm internal diametre of valve	each	64	-	64
	20.42.6	150 mm internal diametre of valve	each	65	-	65
	20.42.7	175 mm internal diametre of valve	each	67	-	67
	20.42.8	200 mm internal diametre of valve	each	69	-	69
	20.42.9	225 mm internal diametre of valve	each	57	-	57
	20.42.10	250 mm internal diametre of valve	each	73	-	73
	20.42.11	300 mm internal diametre of valve	each	77	-	77
	20.42.12	350 mm internal diametre of valve	each	84	-	84
	20.42.13	375 mm internal diametre of valve	each	97	-	97
	20.42.14	400 mm internal diametre of valve	each	102	-	102
	20.42.15	450 mm internal diametre of valve	each	111	-	111
	20.42.16	500 mm internal diametre of valve	each	136	-	136
	20.42.17	525 mm internal diametre of valve	each	142	-	142
	20.42.18	550 mm internal diametre of valve	each	165	-	165
	20.42.19	600 mm internal diametre of valve	each	182	-	182
20.43	Dismantling fire hydrants of all sizes including dismantling joint cartage from site of works to the divisional stores.		each	57	-	57
20.44	Dismantling single or double air valves all sizes including dismantling the joints and cartage from the size of works to the divisional store.		each	57	-	57
20.45	Dismantling cast iron surface boxes for sluice valves and fire hydrants including cartage from the site of works to the divisional stores.		each	56	-	56
20.46	Dismantling cast iron single air value surface boxes including cartage from the site of works to the divisional stores.		each	46	-	46
20.47	Dismantling cast iron double air value surface boxes including cartage from the site of works to the divisional stores.		each	149	-	149
	I. FIXING BELL MOUTHS					
20.48	Fixing bell mouths with or without puddle collars puddle collar pieces and plain, socketed or flanged pipes in bricks, cement concrete or reinforced cement concrete used for inlets outlets scour and overflow pipes of the overhead service reservoirs of the length of pipe or special embedded to correct alignment and levels including the cost of cutting hole if required, cement concrete filling around the pipes or specials and making good the joint water tight including repointing, replastering and colour or white-washing as required by the Engineer-in-charge.					
	20.48.1	Up to 300 mm internal diametre	each	463	-	463
	20.48.2	Exceeding 300 mm internal diametre but not exceeding 450 mm internal diametre	each	691	-	691

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	20.48.3	Exceeding 450 mm internal diametre but not exceeding 600 mm internal diametre	each	980	-	980
20.49	Bailing out water from the trenches for making new connections in fully charged pipe-lines including cleaning trimming and dressing the trenches to correct alignment and grade as required by the Engineer-in-charge.					
	Size of the main with which connection is to be made.					
	20.49.1	Up to 200 mm internal diametre	each	1063	-	1063
	20.49.2	Exceeding 200 mm internal diametre but not exceeding 300 mm internal diametre	each	1359	-	1359
	20.49.3	Exceeding 300 mm internal diametre but not exceeding 450 mm internal diametre	each	1654	-	1654
	20.49.4	Exceeding 450 mm internal diametre but not exceeding 600 mm internal diametre	each	2127	-	2127
	J. DISMANTLING GI PIPES AND SPECIALS					
20.50	Dismantling disjointing, removal and carriage to stores, G.I. pipelines, specials, valves and fittings.					
	20.50.1	15 mm internal diametre of the pipeline	per cut	12	-	12
	20.50.2	20 mm internal diametre of the pipeline	per cut	16	-	16
	20.50.3	25 mm internal diametre of the pipeline	per cut	21	-	21
	20.50.4	32 mm internal diametre of the pipeline	per cut	24	-	24
	20.50.5	40 mm internal diametre of the pipeline	per cut	32	-	32
	20.50.6	50 mm internal diametre of the pipeline	per cut	32	-	32
	20.50.7	65 mm internal diametre of the pipeline	per cut	36	-	36
	20.50.8	80 mm internal diametre of the pipeline	per cut	39	-	39
	20.50.9	100 mm internal diametre of the pipeline	per cut	43	-	43
	K. FIXTURES TO STRUCTURES					
20.51	Labour Rates including materials in erecting, fixing and jointing fixtures to filter beds, clear water tanks and sedimentation tanks etc.					
	20.51.1	150 mm C.I. pipe, bends, specials and heads complete for ventilating column built into the walls.	each	610	-	610
	20.51.2	Cast iron 'V' notch with base including embedding in 1:2 cement sand mortar setting both in 1:1 cement sand grouting levelling up and finishing complete.	each	1037	-	1037
	20.51.3	Fixing water level recorders or rate of flow indicators complete including grouting H.D. bolts and brackets guiders for wire, etc, in 1:1 cement sand mortar.	each	1665	-	1665
	20.51.4	Fitting in position equilibrium ball value at inlet chambers in cement sand mortar	each	751	-	751
	20.51.5	Fixing steel shutters frame complete on in- let side of sedimentation tank including painting 3 coats of bitumastic paint.	each	692	-	692
	20.51.6	Fixing floating arm in position complete with sluice value, long spindle hand wheel, brackets and guides complete in all respects.	each	1554	-	1554
	20.51.7	Fixing enamelled gauge in storage and sedimentation tank	each	794	-	794
	L. FILTER MEDIA					
20.52	providing and placing in horizontal layers filtering media screened washed and cleaned as described below -					
	20.52.1	Top Layer:				
		Fine sand screened, cleaned and washed and graded (effective size 0.2 to 0.4 mm with uniformity coefficient 2.0 to 3.0) from Ghaggar or other approved source	cum	1418	1059	2477
	20.52.2	Second layer				

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
		Coursed sand screened, cleaned and washed and graded from 3 mm to 6 mm (from Ghaggar or approved equivalent quarry)	cum	1418	1140	2558
	20.52.3	Third layer				
		Bajri (coursed) screened and washed graded from 20 mm to 25 mm (from Ghaggar or approved equivalent quarry)	cum	118	1258	1376
	20.52.4	Fourth layer				
		Bajri (coursed) screened and washed graded from 20 mm to 25 mm (from Ghaggar or approved equivalent quarry)	cum	118	852	970
	20.52.5	Bottom layer				
		Broken stone, screened, washed and graded from 50 mm to 75 mm (from Ghaggar or approved equivalent quarry)	cum	118	1181	1299
20.53		Providing and fixing rubber sheet 3mm thick of best quality for jointing flanged pipes, specials etc. including making of holes etc. complete in all respects to the satisfaction of Engineer-in- Charge.				
	20.53.1	for pipe size 80mm i/d	each	-	13	13
	20.53.2	for pipe size 100 mm i/d	each	-	15	15
	20.53.3	for pipe size 150mm i/d	each	-	24	24
	20.53.4	for pipe size 200mm i/d	each	-	31	31
	20.53.5	for pipe size 250mm i/d	each	-	41	41
	20.53.6	for pipe size 300mm i/d	each	-	51	51
	20.53.7	for pipe size 350mm i/d	each	-	65	65
	20.53.8	for pipe size 400mm i/d	each	-	78	78
	20.53.9	for pipe size 450mm i/d	each	-	95	95
	20.53.10	for pipe size 500mm i/d	each	-	113	113
	20.53.11	for pipe size 600mm i/d	each	-	151	151
20.54		Providing GI pipes class B marked with IS: 1239 in 3.05 m length, their threading and welding with flanges (Heavy Duty) on both sides, jointing with nuts and bolts ('W' make), rubber gaskets , lowering into Tube wells and testing including carriage, loading, unloading etc. complete in all respects to the satisfaction of Engineer-in- Charge.				
	20.54.1	50 mm i/d	each	316	912	1229
	20.54.2	63 mm i/d	each	316	1123	1439
	20.54.3	80 mm i/d	each	374	1471	1845
	20.54.4	100 mm i/d	each	378	2060	2438
20.55		Providing and screwing in brass/Gun Metal ferrules drilling and tapping A.C. /PVC pipe lines of all diameters and connections including cost of M.S. Clamp (Heavy) with welded socket/Saddle piece including carriage, loading, unloading etc. complete in all respects to the satisfaction of Engineer-in- Charge. (Excavation will be paid separately).				
	20.55.1	6mm i/d ferrule on 50mm i/d pipes	each	49	191	239
	20.55.2	6mm i/d ferrule on 80mm i/d pipes	each	49	230	278
	20.55.3	6mm i/d ferrule on 100mm i/d pipes	each	49	264	312
	20.55.4	10mm i/d ferrule on 80mm i/d pipes	each	49	217	266
	20.55.5	10mm i/d ferrule on 100mm i/d pipes	each	49	228	277
	20.55.6	10mm i/d ferrule on 150mm i/d pipes	each	49	301	350
20.56		Providing and screwing in brass/Gun Metal ferrules drilling and tapping Cast Iron /D.I. /G.I. pipe lines of all diameters and connections including carriage, loading, unloading etc. complete in all respects to the satisfaction of Engineer-in- Charge. (Excavation will be paid separately).				
	20.56.1	6mm i/d ferrule	each	49	138	187
	20.56.2	10mm i/d ferrule	each	49	126	174

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
20.57		Providing and packing asbestos gland packing of best quality in pumps and sluice valves etc. complete in all respects to the satisfaction of Engineer-in- Charge	per kg	176	359	534
20.58		Providing and fixing Cast Iron Detachable Joints class-15 marked with IS: 8794 for use with asbestos cement pressure pipes complete with 2 Nos. rubber rings marked with IS:5382 & IS:10292 and appropriate number of nut and bolts marked with IS:1363 including carriage, loading, unloading etc. complete in all respects to the satisfaction of the engineer-in-charge. (Excavation will be paid separately)				
	20.58.1	80mm i/d CID Joint	each	-	202	202
	20.58.2	100mm i/d CID Joint	each	-	251	251
	20.58.3	150mm i/d CID Joint	each	-	411	411
	20.58.4	200mm i/d CID Joint	each	-	644	644
	20.58.5	250mm i/d CID Joint	each	-	835	835
	20.58.6	300mm i/d CID Joint	each	-	1014	1014
20.59		Providing and fixing Cast Iron Detachable Joints class-25 marked with IS: 8794 for use with asbestos cement pressure pipes complete with 2 Nos. rubber rings marked with IS:5382 & IS:10292 and appropriate number of nut and bolts marked with IS:1363 including carriage, loading, unloading etc. complete in all respects to the satisfaction of the engineer-in-charge. (Excavation will be paid separately)				
	20.59.1	80mm i/d CID Joint	each	-	246	246
	20.59.2	100mm i/d CID Joint	each	-	308	308
	20.59.3	150mm i/d CID Joint	each	-	502	502
	20.59.4	200mm i/d CID Joint	each	-	710	710
	20.59.5	250mm i/d CID Joint	each	-	932	932
	20.59.6	300mm i/d CID Joint	each	-	1158	1158
20.60		Providing and fixing Unplasticised fabricated PVC, (Unplasticised polyvinyl chloride) couplers (4kg/cm2) on PVC pipes used for potable water supply IS-4985:1988 including cost of adhesive, carriage, loading, unloading etc. complete in all respects to the satisfaction of Engineer-in- Charge. (Excavation will be paid separately)				
	20.60.1	Size 90mm o/d	each	4	25	28
	20.60.2	Size 110mm o/d	each	5	35	39
	20.60.3	Size 160mm o/d	each	6	79	85
	20.60.4	Size 200mm o/d	each	9	200	209
20.61		Providing and fixing Ductile Iron Double seal manhole covers and frames of 610 mm x 610 mm with locking arrangement on clear water tanks including cost of setting in Cement concrete 1:2:4 to correct alignment and levels including carriage, loading, unloading etc. complete in all respects to the satisfaction of Engineer-in- Charge.	kg	3	61	64
20.62		Providing, lowering, laying, cutting (cut surface to be uniformly finished), jointing with rubber rings marked with IS : 5382 and testing of SPIGOT AND SOCKETTED RCC, NP2 MARKED WITH IS : 458-1988 and specials into trenches for all depths including carriage, loading, unloading, stacking, handling, re-handling etc. complete is all respects to the satisfaction to the Engineer - in -charge.				
	20.62.1	200 mm i/d	per metre	17	264	281
	20.62.2	250 mm i/d	per metre	19	297	316
	20.62.3	300 mm i/d	per metre	24	406	430
	20.62.4	350 mm i/d	per metre	28	502	531
	20.62.5	400 mm i/d	per metre	38	594	631
	20.62.6	450 mm i/d	per metre	40	685	726
	20.62.7	500 mm i/d	per metre	45	783	828
	20.62.8	600 mm i/d	per metre	56	1045	1102
	20.62.9	700 mm i/d	per metre	73	1439	1512

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	20.62.10	800 mm i/d	per metre	94	1668	1762
	20.62.11	900 mm i/d	per metre	117	1902	2019
	20.62.12	1000 mm i/d	per metre	143	2285	2428
	20.62.13	1200 mm i/d	per metre	187	2856	3043
	20.62.14	1400 mm i/d	per metre	211	3312	3523
	20.62.15	1600 mm i/d	per metre	233	3810	4043
20.63	Providing, lowering, laying in trenches, aligning, fixing in position and jointing Ductile Iron (DI) ISI marked K-9 grade S&S pipes as per 15:8329-2000 (amended up to date), with internal cement mortar lining for potable water with rubber ring (EPDM/SBR) joints as per IS: 5382-1985 (excluding special accessories) complete including all material, labour, hydraulic testing and commissioning as per Technical Specifications and as per direction of Engineer. Note: E/W to be measured and paid separately.					
	20.63.1	100 mm i/d	per metre	6	1054	1060
	20.63.2	150 mm i/d	per metre	9	1528	1537
	20.63.3	200 mm i/d	per metre	12	2076	2088
	20.63.4	250 mm i/d	per metre	23	2760	2783
	20.63.5	300 mm i/d	per metre	30	3413	3444
	20.63.6	350 mm i/d	per metre	40	4285	4325
	20.63.7	400 mm i/d	per metre	47	4998	5045
	20.63.8	450 mm i/d	per metre	55	6087	6142
	20.63.9	500 mm i/d	per metre	66	6971	7037
	20.63.10	600 mm i/d	per metre	86	9292	9378
	20.63.11	700 mm i/d	per metre	98	11803	11901
	20.63.12	750 mm i/d	per metre	99	13805	13904
	20.63.13	800 mm i/d	per metre	111	15044	15155
	20.63.14	900 mm i/d	per metre	163	18607	18770
	20.63.15	1000 mm i/d	per metre	174	22318	22492
	20.63.16	1100 mm i/d	per metre	195	27768	27963
	20.63.17	1200 mm i/d	per metre	226	30599	30825
20.64	Providing, lowering, laying in trenches, aligning, fixing in position and jointing Ductile Iron (DI) ISI marked K-7 grade S&S pipes as per IS:8329-2000 (amended up to date), with internal cement mortar lining for potable water with rubber ring (EPDM/SBR) joints as per IS: 5382-1985 (excluding special accessories) complete including all material, labour, hydraulic testing and commissioning as per Technical Specifications and as per direction of Engineer-in-Charge. Note: E/W to be measured and paid separately.					
	20.64.1	100 mm i/d	per metre	7	933	940
20.65	Extra for fixing K-9 D1 socketed or flanged pipe valves and specials casting in vertical positions for over head reservoirs and stand pipes etc. including cost of all special scaffolding derricks , jim poles, tools and plants, ropes, guyes complete.					
	20.65.1	100 mm i/d	per metre	56	-	56
	20.65.2	150 mm i/d	per metre	89	-	89
	20.65.3	200 mm i/d	per metre	132	-	132
	20.65.4	250 mm i/d	per metre	188	-	188
	20.65.5	300 mm i/d	per metre	221	-	221
	20.65.6	350 mm i/d	per metre	310	-	310
	20.65.7	400 mm i/d	per metre	352	-	352
	20.65.8	450 mm i/d	per metre	428	-	428
	20.65.9	500 mm i/d	per metre	489	-	489
	20.65.10	600 mm i/d	per metre	639	-	639
20.66	Cutting DI pipe and chipping or filling the surface to a uniform finish					

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	20.66.1	100 mm i/d	per cut	25	-	25
	20.66.2	150 mm i/d	per cut	31	-	31
	20.66.3	200 mm i/d	per cut	41	-	41
	20.66.4	250 mm i/d	per cut	52	-	52
	20.66.5	300 mm i/d	per cut	70	-	70
	20.66.6	350 mm i/d	per cut	87	-	87
	20.66.7	400 mm i/d	per cut	105	-	105
	20.66.8	450 mm i/d	per cut	141	-	141
	20.66.9	500 mm i/d	per cut	150	-	150
	20.66.10	600 mm i/d	per cut	170	-	170
	20.66.11	700 mm i/d	per cut	188	-	188
	20.66.12	750 mm i/d	per cut	230	-	230
	20.66.13	800 mm i/d	per cut	230	-	230
	20.66.14	900 mm i/d	per cut	254	-	254
	20.66.15	1000 mm i/d	per cut	254	-	254
	20.66.16	1100 mm i/d	per cut	254	-	254
	20.66.17	1200 mm i/d	per cut	270	-	270
20.67	Joining DI socketed pipes, valves and special with rubber tyton joints fitted complete including cost of labour and tools etc. and tested complete.					
	20.67.1	100 mm i/d	per joint	33	-	33
	20.67.2	150 mm i/d	per joint	34	-	34
	20.67.3	200 mm i/d	per joint	38	-	38
	20.67.4	250 mm i/d	per joint	42	-	42
	20.67.5	300 mm i/d	per joint	52	-	52
	20.67.6	350 mm i/d	per joint	58	-	58
	20.67.7	400 mm i/d	per joint	64	-	64
	20.67.8	450 mm i/d	per joint	78	-	78
	20.67.9	500 mm i/d	per joint	89	-	89
	20.67.10	600 mm i/d	per joint	106	-	106
	20.67.11	700 mm i/d	per joint	117	-	117
	20.67.12	750 mm i/d	per joint	139	-	139
	20.67.13	800 mm i/d	per joint	188	-	188
	20.67.14	900 mm i/d	per joint	249	-	249
	20.67.15	1000 mm i/d	per joint	320	-	320
	20.67.16	1100 mm i/d	per joint	375	-	375
	20.67.17	1200 mm i/d	per joint	447	-	447
20.68	Providing, lowering, laying in trenches, aligning, fixing in position and jointing at all level/depths Ductile Iron (DI) standard specials plain /flanged/ socketed confirming to IS9523-2000 with rubber ring (EPDM/SBR) joints such as tees, bends, tapers, caps etc. with in trenches in DI pipe line complete including all material, labour, testing and commissioning along with pipe line as per Technical Specifications and as per direction of Engineer.					
	20.68.1	Up to 300mm dia	per kg	-	-	72
	20.68.2	Above 300mm dia and up to 600mm dia	per kg	-	-	94
	20.68.3	Above 600mm dia and up to 1000mm dia	per kg	-	-	122
	20.68.4	Above 1000mm dia	per kg	-	-	136

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
20.69		Providing, lowering, laying in trenches, aligning, fixing in position and jointing at all level/depths cast iron (CI) standard specials plain /flanged/ socketed confirming to IS13382 with rubber ring, nut bolts and rubber sheet such as tees, bends, tapers, caps etc. complete including all material, labour, testing and commissioning along with pipe line as per Technical Specifications and as per direction of Engineer.				
	20.69.1	Up to 300mm dia	per kg	-	-	54
	20.69.2	Above 300mm dia and up to 600mm dia	per kg	-	-	63
	20.69.3	Above 600mm dia and up to 1000mm dia	per kg	-	-	82
	20.69.4	Above 1000mm dia	per kg	-	-	118
	BELL MOUTH					
20.70		Supplying & fixing of bell mouth as per specifications of IS Code 1538 of 1993 including cost of jointing materials, excavation laying jointing refilling , making adequate supports of masonry/ concrete for delivery and suction pipe from bell mouth in the under structures complete in all respect to satisfaction of Engineer-in-charge.				
	20.70.1	100 mm i/d	one unit	-	-	556
	20.70.2	150 mm i/d	one unit	-	-	927
	20.70.3	200 mm i/d	one unit	-	-	1421
	20.70.4	250 mm i/d	one unit	-	-	1916
	20.70.5	300 mm i/d	one unit	-	-	2781
	20.70.6	350 mm i/d	one unit	-	-	4182
	20.70.7	400 mm i/d	one unit	-	-	5768
	20.70.8	450 mm i/d	one unit	-	-	6706
	20.70.9	500 mm i/d	one unit	-	-	8652
	20.70.10	600 mm i/d	one unit	-	-	14493
	20.70.11	700 mm i/d	one unit	-	-	28182
	20.70.12	800 mm i/d	one unit	-	-	40327
	CEILING FAN/ EXHAUST FAN					
20.71		Supply, erection, testing of Ceiling fans IS marked (as per IS code 374) with suitable GI pipe complete in all respects complete as per directions of Engineer-in-charge				
	20.71.1	48" (1200mm)	each	-	-	2300
	20.71.2	56" (1400mm)	each	-	-	2644
20.72		Supplying, errection, testing of Exhaust fan (as per IS code 374) having a capacity of 45 cubic metre per minute complete with suitable G.I sheet ducting in structure confirming to latest IS specifications complete in all respect to satisfaction of Engineer-in-charge.	each	-	-	1499
	GANTRY					
20.73		Supply and fixing of Gantry with chain pulley block (tested for 1.5 times the rated capacity) with travelling trolley of appropriate lifting capacity as per IS code 3177:1999 with up to date amendments for handling of pumping sets capable of moving along the girders including cost of suitable sized RCC pillars to be provided in pump house complete in all respects as per directions of Engineer-in-charge				
	20.73.1	1 tonne capacity	tonne	-	-	62065
	20.73.2	1.5 tonne capacity	tonne	-	-	54361
	20.73.3	2 tonne capacity	tonne	-	-	57196
	20.73.4	2.5 tonne capacity	tonne	-	-	56145
	20.73.5	3 tonne capacity	tonne	-	-	66155
	"V" NOTCH					
20.74		Providing, laying , jointing and fixing of cast iron "V" notch, duly marked with beam including embedding in 1:2 cement and grouting levelling and finishing complete in respects	per kg	-	-	62
	FLOATING ARM					

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
20.75	Providing and fixing suitable floating arms with GI sheet (as per IS 277:2003) along with CI/DI swivel bend confirming to latest specifications complete in all respects					
	20.75.1	150 mm	one unit	-	-	28429
	20.75.2	200 mm	one unit	-	-	40048
	20.75.3	250 mm	one unit	-	-	60073
	20.75.4	300 mm	one unit	-	-	96104
	20.75.5	350 mm	one unit	-	-	156970
	20.75.6	400 mm	one unit	-	-	182191
	TRANSFORMERS					
20.76	Design, Supply & erection of transformer of standard make Required 25 KVA 11/0.433 KVA rating outdoor type 11 KVA V.C.B, panel, G.O. switch, H. Pole , H.T metering panel, APFC panel, battery charges, 11 KVA substation, entire cable network from G.O. switch to H.T metering equipment and from H.T metering to Transformer. From transformer to main to L.T, panel earthling, safety equipment, fenced enclosure for transformer, and any other contingent thereto complete in all respect as per approved make and directions of Engineer-in-charge as per respective capacity.					
	20.76.1	15 KVA	each	-	-	76478
	20.76.2	25 KVA	each	-	-	94721
	20.76.3	50 KVA	each	-	-	189702
	20.76.4	63 KVA	each	-	-	242549
	20.76.5	100 KVA	each	-	-	277087
	20.76.6	150 KVA	each	-	-	347151
	20.76.7	175 KVA	each	-	-	381689
	20.76.8	200 KVA	each	-	-	434510
	20.76.9	250 KVA	each	-	-	503587
	20.76.10	300 KVA	each	-	-	546760
	20.76.11	400 KVA	each	-	-	599554
	20.76.12	500 KVA	each	-	-	803669
	20.76.13	600 KVA	each	-	-	907285
	20.76.14	700 KVA	each	-	-	1055112
	20.76.15	800 KVA	each	-	-	1089651
	20.76.16	900 KVA	each	-	-	1193266
	20.76.17	1000 KVA	each	-	-	1227804
	20.76.18	1100 KVA	each	-	-	1418740
	20.76.19	1200 KVA	each	-	-	1496452
	FILTER BEDS WASHING					
20.77	Taking out filter media top layer and replacing the same after screened, washed & cleaned		cum	-	-	830
20.78	Providing and fixing bed plates complete in all respect		each	-	-	102
20.79	Taking out filter media 2nd layer and replacing the same after screened, washed & cleaned		cum	-	-	801
20.80	Taking out filter media 3rd layer and replacing the same after screened, washed & cleaned		cum	-	-	797
20.81	Taking out filter media 4th layer and replacing the same after screened, washed & cleaned		cum	-	-	797
20.82	Taking out filter media bottom and other layers and replacing the same after screened, washed & cleaned		cum	-	-	572
20.83	Taking out bed plates from filter beds and replacing same after washing.		each	-	-	23
	RUBBER MATTING					

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
20.84		Providing and fixing of insulated rubber matting suitable for 11 KV installation 1 M x 2 M x 12 mm thick (IS code 15652-40091) as per specification complete and as per directions of Engineer-in-charge	each	-	-	1532
		PVC WATER BAR				
20.85		Supplying and Fixing of PVC water bars for water stops flexible physical plastic for preventing leakage in concrete joints to avoid seepage (Fixo-stop) with ribs and central bulbs marked as per IS-12200 of 2001 along with bitumen filler complete in all respects.				
	20.85.1	150 mm wide X 4.65 mm thickness of wall	per metre	-	-	172
	20.85.2	150mm wide X 6.00 mm thickness of wall	per metre	-	-	229
	20.85.3	250 mm x 8-11 mm thickness of wall	per metre	-	-	401
	20.85.4	300 mm x 8 mm thickness of wall	per metre	-	-	561
		G.O. SWITCH				
20.86		Supply, erection, testing & commissioning of G.O. Switch two poles, with blade, pin 6 insulators operating handle with GI pipe 25 mm class B complete in all respects.	each	-	-	41225
		CHLORINATORS				
20.87		Supply & erection of "Wall Mounting Type, solenoid driven, motorized, electromagnetic diaphragm Dozing Metering pump working on three-phase 220/240 V 50 Hz electric supply with standard electronic controls, suitable for minimum dozing capacity 0 to 27 LPH at 10 bar back pressure" complete with necessary accessories, complete in all respects along with supply and erection of 1 No. Voltage Stabilizer with Dozing Pump along with 1 No. 300 litres capacity ISI marked HDPE storage tank of approved make as per directions of Engineer-in-charge.	each	-	-	21814
		CT METER				
20.88		Supply, erection, testing and commissioning of CT meter of standard make with cubical meter box as per HVPNL specifications including 3 phase electrical meter 100/5 of standard make approved by HVPNL including CT/PT of suitable rating complete in all respect as per directions of Engineer-in-charge	each	-	-	15581
		DG SETS				
20.89		Designing, Supply & erection of DG set of capacity given below with noise controlled devices acoustic of suitable rating, testing and commissioning of diesel generating set, radiator cooled, 3 phase, 4 wire, 50 cycles 415 +(-)1% volts AC alternator coupled directly through a set of flexible coupling on a common MS fabricated base frame with diesel engine complete with suitable size incoming cable from generator to change over/AMF panel, making 2nd incoming cable connection from transformer, outgoing cable connection from changeover/ standard panel, making second incoming cable connection from transformer, outgoing cable connection from changeover / STD panel to incomer of motor starter panel, fenced enclosure with platform for DG sets complete as per following detailed scope and specifications and directions of Engineer-in-charge. The rating should be at 1500 RPM. a) Diesel Engine b) Alternator c) Battery 24 V. d) Base Plate. e) suitable sq mm suitable core copper cable upto 40 metres. f) Tools, standard panel g) Metering set 415 VAC-1 set (Amp. meter, Volt Meter, ASS, VSS, Phase Indicator, control fuse, frequency meter, CT's) h) Metering set 60/5A/110V (Amp. Meter, Volt Meter) i) Overload protection for DC-1 No. j) Battery Charger 24V DC k)Copper bus bar of suitable size l) KWH meter 96 sqmm size m) Starting fuse button and key switch9on/off) n) Indicating lamps for low lubricated oil pressure, high coolant temperature, set running, load on, Dc control and other required accessories complete in all respects to the satisfaction of Engineer-in-charge				
	20.89.1	10 KVA	each	-	-	334803
	20.89.2	20 KVA	each	-	-	364667

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	20.89.3	25 KVA	each	-	-	402322
	20.89.4	50 KVA	each	-	-	585401
	20.89.5	62.5 KVA	each	-	-	608773
	20.89.6	100 KVA	each	-	-	872681
	20.89.7	125 KVA	each	-	-	896053
	20.89.8	160 KVA	each	-	-	1266108
	20.89.9	200 KVA	each	-	-	1505021
	20.89.10	250 KVA	each	-	-	1845213
	20.89.11	300 KVA	each	-	-	2313949
	20.89.12	360 KVA	each	-	-	2554161
	20.89.13	400 KVA	each	-	-	2880069
	20.89.14	500 KVA	each	-	-	3620179
	20.89.15	600 KVA	each	-	-	4582388
	20.89.16	700 KVA	each	-	-	6314507
	20.89.17	800 KVA	each	-	-	7083183
	20.89.18	900 KVA	each	-	-	8240092
	20.89.19	1000 KVA	each	-	-	8933459
	BOKKY TYPE SHELLO TUBWELL					
20.90	Drilling of 250mm dia of bore through bokky type instrument complete in all respect including charges for shifting of infrastructures as per IS Code 12818: 1992					
	20.90.1	0 to 50m BGL	metre	-	-	397
	20.90.2	51 to 75m BGL	metre	-	-	453
	20.90.3	76 to 100m BGL	metre	-	-	510
20.91	Providing and Lowering 225 mm outer dia UPVC pipe threaded (10kg/CM2) duly ISI marked IS Code 12818:1992 complete in all respect as per directions of Engineer-in-charge		metre	-	-	1416
20.92	Providing and lowering 225mm outer dia UPVC filter Jali (10 Kg/CM2) duly ISI marked IS Code 12818:1992 complete in all respect as per directions of Engineer-in-charge		metre	-	-	136
20.93	Providing and fixing 250 mm M.S. clamp as for suitable pipe with nut & bolt complete in all respect as per directions of Engineer-in-charge		each	-	-	1700
20.94	Providing and fixing UPVC cap for 225mm outer dia UPVC pipe (10kg/cm2) duly ISI marked IS Code 12818:1992 complete in all respect as per directions of Engineer-in-charge		each	-	-	793
20.95	Development of tube well with pump of suitable rating to that full satisfaction and as directed by the Engineer-in-charge		per hour	-	-	1360
	INSTALLATION OF SHALLOW/MEDIUM/DEEP TUBEWELLS AS PER IS 2800:1991					
20.96	Drilling of 609.60mm dia bore by hydraulic rotary drilling (reverse circulation method) percussion rig according to ISI specification No. 2800-1991 (Part-I) as amended up to date and modified to extent of the specification attached with this schedule of items of work in all kinds of soils and boulders up to 125 mm dia except rocky strata including the cost of all consumable stores, fuel, oil, soil stabilizing material and transportation of rig and other accessories to the site of proposed bore and back including cost of lowering of all size of casing pipe while boring & extracting the same against earth friction etc. complete to the satisfaction of the Engineer-in-charge.		per metre	1104	-	1104
	20.96.1	Drilling from 0 metre but up to 200 metre BGL	per metre	974	-	974
	20.96.2	Above 200 metre but up to 200 metre BGL	per metre	1104	-	1104
	20.96.3	Above 300 metre but up to 400 metre BGL	per metre	1428	-	1428
	20.96.4	Above 400 metre up to the depth required as per site requirement	per metre	1818	-	1818

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
20.97	Supplying, fixing and lowering reducing socket as per IS:226 as amended up to date 273.10mm outer dia, x 219.10mm outer dia with 8 threads per inch or 25.40mm to be made out of M.S. plate with internal threads, suitable for jointing 273.10mm outer dia pipe and outer dia pipe and 219.10mm outer dia ERW pipe	each	-	-	3246
20.98	Providing and fixing in position suitable bail plug hook of 219.10mm/273.10mm as per IS 226 as amended up to date, including the cost of M.S. Screwed sockets etc. complete in all respects to the entire satisfaction of the Engineer-in-charge of the work.	each	-	-	1298
20.99	Supplying and packing graded gravel in bore well of size as per ISI 4097, as amended up to date (Grade A) and specification attached with this schedule of item of work. The gravel should be free from dust, dirt or vegetable matters. Packing to be done from the housing pipe to the bottom of liner all around in the bore and will be placed after liner and housing pipes have been lowered and suitably clamped. Thickness and size of the gravel packing will be designed & directed by the Engineer-in-charge strictly as per relevant ISI.	cum	-	-	1558
20.100	Supplying and fixing well threaded M.S. cap for 273.10mm outer dia M.S. pipe as per ISI 226 as amended up to date to the satisfaction of the Engineer-in-charge.	each	-	-	649
20.101	Supplying as per IS 226 as amended up to date deodar wooden box made of 20mm thick wood size 60 cm x 75 cm x 30 cm with lid and locking arrangement etc for preserving the strata samples received from the bore as and when desired by the Engineer-in-charge.	each	-	-	649
20.102	Supplying and fixing 273.10mm M.S. clamp as per IS 226 as amended up to date for supplying the housing pipe supported on two girders not less than ISMB 100mm x 150mm, weight not less than 17.00 kg / m, cross section area not less than 21.67 sq. cm, flange thickness 7.00mm, web thickness 5.40mm, 2.00 m long (each) embedded in suitable foundation as approved by the Engineer-in-charge.	each	-	-	2597
20.103	Development of tube well according to clause 9.3 of IS: 2800-1991 (Part-I) as amended up to date and specifications attached and as directed by the Engineer-in-charge of the work including the cost of all consumable stores, fuel, oil, compressors, pumps and machinery etc. as required for the work.				
	20.103.1 Compressor 450cfm x 250 psi	per hour	-	-	6144
	20.103.2 Compressor 800cfm x 550 psi	per hour	-	-	7791
	20.103.3 Compressor 1100cfm x 350 psi	per hour	-	-	7141
20.104	Electric logging of tube well.	complete job	-	-	15581
20.105	Providing and fixing centralizer guides (centralizer) fitted to the well assembly except the housing pipe, at bottom and at a spacing of 12 m centre to centre, to keep the assembly in centre of the bore hole as per approved design and specifications with MS threaded socket, confirming to IS : 226 amended up to date.	each	-	-	130
	Electric Resistance welded (ERW) M.S. Pipes / ERW Cage type Vee wire wound screen / Stainless steel screen / galvanized screens duly ISI Marked				
20.106	Supply, testing and lowering (ERW) electric resistance welded M.S. pipes with MS threaded socket as per IS 4270 as amended up to date, duly ISI marked for housing pipe in 4 to 7 metres random length into bore well with 88.90mm of threaded ends (8 threads to an inch or 25.40 mm) manufactured out of 8mm thick MS plates with required numbers of MS socket 177.8mm with inside thread to match the pipe threads and made out of MS plate in to borehole in vertical position including cost of all tools and plants, complete in all respects to the satisfaction of Engineer-in-charge, including cost of all cutting, threading of pipe, welding, where required and all sockets. The pipe shall be painted with anti corrosive paint and covered tightly with polythene of following sizes:				
	20.106.1 200x6.4mm	metre	-	-	2658
	20.106.2 250x8.0mm	metre	-	-	3048

Item No.			Description	Unit	Labour Rate	Material Rate	Through Rate
20.107	Supply, testing and lowering of ISI marked all welded stainless steel screen (SS304) cage Type V-Wire Wound Screens in bore wells conforming to IS:8110 & compositions of material as per IS:1012, outer dia 221mm equivalent thickness required as per code, tensile load 14000 kg minimum and ring thickness as per IS code of following sizes:-						
	20.107.1	Stainless Steel Screens					
		20.107.1.1	200x8.0x0.50mm	metre	-	-	8811
		20.107.1.2	200x8.0x0.75mm	metre	-	-	8694
		20.107.1.3	200x6.3x0.50mm	metre	-	-	8115
		20.107.1.4	200x6.3x0.75mm	metre	-	-	8000
		20.107.1.5	250x7.3x0.50mm	metre	-	-	8927
		20.107.1.6	250x7.3x0.75mm	metre	-	-	8810
		20.107.1.7	250x8.2x0.50mm	metre	-	-	9390
		20.107.1.8	250x8.2x0.75mm	metre	-	-	9275
	20.107.2	Low carbon Galvanized Screens as per IS 280					
		20.107.2.1	200x7.0x0.50mm	metre	-	-	4521
		20.107.2.2	250x8.0x0.50mm	metre	-	-	5681
		20.107.2.3	250x8.0x0.75mm	metre	-	-	5448
		20.107.2.4	250x10.0x0.50mm	metre	-	-	6492
		20.107.2.5	250x10.0x0.75mm	metre	-	-	6377
20.108	Providing , lowering, laying, aligning, cutting (cut surface to be finished uniformly), jointing with coupling and EPDM rubber rings marked with IS: 5382 and testing, AC pressure water supply pipes (Class-15) manufactured with Mazza process as per IS 1592:2003 and specials into trenches for all levels/depths including carriage, loading/ unloading, stacking, handling, rehandling etc. complete in all respects to the satisfaction of the Engineer in charge (Rates are inclusive of couplers, EPDM rubber rings and specials but exclusive of excavation and refilling)						
	20.108.1	100mm i/d		per metre	6	294	300
	20.108.2	150mm i/d		per metre	10	539	550
	20.108.3	200mm i/d		per metre	16	910	926
	20.108.4	250mm i/d		per metre	19	1154	1174
	20.108.5	300mm i/d		per metre	27	1594	1622
	20.108.6	350mm i/d		per metre	36	1953	1990
	20.108.7	400mm i/d		per metre	45	2550	2595
	20.108.8	450mm i/d		per metre	57	2988	3045
	20.108.9	500mm i/d		per metre	68	3720	3788
	20.108.10	600mm i/d		per metre	93	5298	5392
	20.108.11	700mm i/d		per metre	114	6822	6937
	20.108.12	800mm i/d		per metre	145	8990	9135
	20.108.13	900mm i/d		per metre	179	11334	11513
	20.108.14	1000mm i/d		per metre	210	13975	14185
20.109	Labour for lowering ISI marked ERW Cage Type Vee Wire Wound Screens in bore wells as per IS: 8110-2000 complete in all respects including tools & plants, etc.						
	20.109.1	200x6.40mmx0.75mm/0.50mm i/d		per metre	130	-	130
	20.109.2	250x8.00mmx0.75mm/0.50mm i/d		per metre	156	-	156
	Labour for lowering of ISI marked Stainless steel Cage Type Vee Wire Wound Screens in bore welis as per IS: 8110 & Compositions of material complete in all respects including tools & plants, etc. of sizes given below:-						
20.110							
	20.110.1	200x8.0x0.50mm		per metre	130	-	130
	20.110.2	200x8.0x0.75mm		per metre	130	-	130
	20.110.3	200x8.0x1.0mm		per metre	130	-	130

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	20.110.4	200x6.3x0.50mm	per metre	130	-	130
	20.110.5	200x6.3x0.75mm	per metre	130	-	130
	20.110.6	250x7.3x0.50mm	per metre	156	-	156
	20.110.7	250x7.3x0.75mm	per metre	156	-	156
	20.110.8	250x8.2x0.50mm	per metre	156	-	156
	20.110.9	250x8.2.x0.75mm	per metre	156	-	156
20.111	Providing and fixing G.O. Switch only without other accessories complete in all respect.		each	9089	-	9089
20.112	Labour for lowering 273.10mm outer dia ERW steel pipes as per IS 4270 as amended upto date, duly ISI marked for housing pipe in 4 to 7 Meters random length into bore well with 88.90mm of threaded ends (8 threads to an inch or 25.40mm) manufactured out of 8.00mm thick M.S. plates with required number of M.S. socket 177.8mm with inside thread to match the pipe threads and made out of M.S. plate in to borehole in vertical position including cost of all tools and plants, complete in all respects to the satisfaction of the Engineer-in-charge, including cost of all cutting, threading of pipe, welding, where required and all sockets.		per metre	156	-	156
20.113	Labour for lowering 219.10mm outer dia ERW steel pipes as per IS 4270 as amended upto date, duly ISI marked for housing pipe in 4 to 7 Meters random length into bore well with 88.90mm of threaded ends (8 threads to an inch or 25.40mm) manufactured out of 6.40mm thick M.S. plates with required number of M.S. socket 177.80mm with inside thread to match the pipe threads and made out of M.S. plate in to borehole in vertical position including cost of all tools and plants, complete in all respects to the satisfaction of the Engineer-in-charge, including cost of all cutting, threading of pipe, welding, where required and all sockets.		per metre	130	-	130
20.114	Supplying erection, testing of fully automatic electric control panel board for T/Wells in Pump Chamber consisting of MS sheet of thickness 14 gauge duly painted box type floor mounted made of angle Frame containing 1 no. fully automatic air brake starter suitable for Motor of the following capacity, Min switch of suitable range with HRC fuse, 1 no. volt meter (0 to 500 volts), 1 No. Amp. Meter of 0 to 100 amp. 3 sets of indicating lamp capacitor of suitable capacity and 1 no. single phase preventers with the timer switch including wiring in panel board and suitable electric energy meter wiring in Electric Control Panel Board complete in all respect as per specification given in Schedule No. II, Including MCB, suitable, Capacitor, Wooden Box etc as per site requirement complete in fal respect. Make:- L&T, SIEMENS, BCH, SCHNEIDER.					
	20.114.1	10 HP Motor	each	12984	-	12984
	20.114.2	15 HP Motor	each	19477	-	19477
	20.114.3	20 HP Motor	each	25969	-	25969
	20.114.4	25 HP Motor	each	32461	-	32461
	20.114.5	30 HP Motor	each	38953	-	38953
	20.114.6	35 HP Motor	each	45445	-	45445
	20.114.7	40 HP Motor	each	51938	-	51938
	20.114.8	45 HP Motor	each	58430	-	58430
	20.114.9	50 HP Motor	each	64922	-	64922
20.115	Supplying, erection, testing and commissioning of Horizontal motor pumping set for clear water having head 20.00 m as per the indicated requirements of discharge in LPM and power capacity in BHP Make: KSB, CRI, Kirlosker, Crompton Greeve, Lubi)					
		Discharge Capacity (LPM) / **Power Capacity (BHP)**				
	20.115.1	400 / 3	each	-	-	95783
	20.115.2	450 / 3	each	-	-	95783
	20.115.3	500 / 5	each	-	-	95783

Item No.			Description	Unit	Labour Rate	Material Rate	Through Rate
	20.115.4	550	5	each	-	-	95783
	20.115.5	600	5	each	-	-	107049
	20.115.6	650	5	each	-	-	107049
	20.115.7	700	5	each	-	-	107049
	20.115.8	750	5	each	-	-	107049
	20.115.9	800	7.5	each	-	-	107049
	20.115.10	850	7.5	each	-	-	119720
	20.115.11	900	7.5	each	-	-	119720
	20.115.12	950	7.5	each	-	-	119720
	20.115.13	1000	7.5	each	-	-	119720
	20.115.14	1050	7.5	each	-	-	119720
	20.115.15	1100	10	each	-	-	119720
	20.115.16	1150	10	each	-	-	119720
	20.115.17	1200	10	each	-	-	125943
	20.115.18	1250	10	each	-	-	125943
	20.115.19	1300	10	each	-	-	125943
	20.115.20	1350	10	each	-	-	125943
	20.115.21	1400	10	each	-	-	125943
	20.115.22	1450	10	each	-	-	125943
	20.115.23	1500	12.5	each	-	-	148999
	20.115.24	1550	12.5	each	-	-	148999
	20.115.25	1600	12.5	each	-	-	148999
	20.115.26	1650	12.5	each	-	-	148999
	20.115.27	1700	12.5	each	-	-	148999
	20.115.28	1750	12.5	each	-	-	148999
	20.115.29	1800	15	each	-	-	148999
	20.115.30	1850	15	each	-	-	156348
	20.115.31	1900	15	each	-	-	156348
	20.115.32	1950	15	each	-	-	156348
	20.115.33	2000	15	each	-	-	156348
	20.115.34	2050	15	each	-	-	156348
	20.115.35	2100	15	each	-	-	156348
	20.115.36	2150	15	each	-	-	156348
	20.115.37	2200	17.5	each	-	-	184441
	20.115.38	2250	17.5	each	-	-	184441
	20.115.39	2300	17.5	each	-	-	184441
	20.115.40	2350	17.5	each	-	-	184441
	20.115.41	2400	17.5	each	-	-	184441
	20.115.42	2450	20	each	-	-	184441
20.116	Supplying, erection, testing and commissioning of Horizontal motor pumping set for clear water having head 22.50 m as per the indicated requirements of discharge in LPM and power capacity in BHP Make: KSB, CRI, Kirlosker, Crompton Greeve, Lubi)						
		Discharge Capacity (LPM)	Power Capacity (BHP)				
	20.116.1	400	3	each	-	-	95783
	20.116.2	450	3	each	-	-	95783
	20.116.3	500	5	each	-	-	107049
	20.116.4	550	5	each	-	-	107049
	20.116.5	600	5	each	-	-	107049

Item No.			Description	Unit	Labour Rate	Material Rate	Through Rate
	20.116.6	650	5	each	-	-	107049
	20.116.7	700	5	each	-	-	107049
	20.116.8	750	7.5	each	-	-	119720
	20.116.9	800	7.5	each	-	-	119720
	20.116.10	850	7.5	each	-	-	119720
	20.116.11	900	7.5	each	-	-	119720
	20.116.12	950	7.5	each	-	-	119720
	20.116.13	1000	10	each	-	-	125943
	20.116.14	1050	10	each	-	-	125943
	20.116.15	1100	10	each	-	-	125943
	20.116.16	1150	10	each	-	-	125943
	20.116.17	1200	10	each	-	-	125943
	20.116.18	1250	10	each	-	-	125943
	20.116.19	1300	10	each	-	-	125943
	20.116.20	1350	12.5	each	-	-	148999
	20.116.21	1400	12.5	each	-	-	148999
	20.116.22	1450	12.5	each	-	-	148999
	20.116.23	1500	12.5	each	-	-	148999
	20.116.24	1550	12.5	each	-	-	148999
	20.116.25	1600	12.5	each	-	-	148999
	20.116.26	1650	15	each	-	-	156348
	20.116.27	1700	15	each	-	-	156348
	20.116.28	1750	15	each	-	-	156348
	20.116.29	1800	15	each	-	-	156348
	20.116.30	1850	15	each	-	-	156348
	20.116.31	1900	15	each	-	-	156348
	20.116.32	1950	17.5	each	-	-	184441
	20.116.33	2000	17.5	each	-	-	184441
	20.116.34	2050	17.5	each	-	-	184441
	20.116.35	2100	17.5	each	-	-	184441
	20.116.36	2150	17.5	each	-	-	184441
	20.116.37	2200	20	each	-	-	212534
	20.116.38	2250	20	each	-	-	212534
	20.116.39	2300	20	each	-	-	212534
	20.116.40	2350	20	each	-	-	212534
	20.116.41	2400	20	each	-	-	212534
	20.116.42	2450	20	each	-	-	212534
	20.116.43	2500	20	each	-	-	212534
20.117	Supplying, erection, testing and commissioning of Horizontal motor pumping set for clear water having head 25.00 m as per the indicated requirements of discharge in LPM and power capacity in BHP Make: KSB, CRI, Kirlosker, Crompton Greeve, Lubi)						
		Discharge Capacity (LPM)	**Power Capacity (BHP)**				
	20.117.1	400	3	each	-	-	95783
	20.117.2	450	5	each	-	-	107049
	20.117.3	500	5	each	-	-	107049
	20.117.4	550	5	each	-	-	107049
	20.117.5	600	5	each	-	-	107049
	20.117.6	650	7.5	each	-	-	119720

Item No.			Description	Unit	Labour Rate	Material Rate	Through Rate
	20.117.7	700	7.5	each	-	-	119720
	20.117.8	750	7.5	each	-	-	119720
	20.117.9	800	7.5	each	-	-	119720
	20.117.10	850	7.5	each	-	-	119720
	20.117.11	900	10	each	-	-	125943
	20.117.12	950	10	each	-	-	125943
	20.117.13	1000	10	each	-	-	125943
	20.117.14	1050	10	each	-	-	125943
	20.117.15	1100	10	each	-	-	125943
	20.117.16	1150	10	each	-	-	125943
	20.117.17	1200	12.5	each	-	-	148999
	20.117.18	1250	12.5	each	-	-	148999
	20.117.19	1300	12.5	each	-	-	148999
	20.117.20	1350	12.5	each	-	-	148999
	20.117.21	1400	12.5	each	-	-	148999
	20.117.22	1450	15	each	-	-	156348
	20.117.23	1500	15	each	-	-	156348
	20.117.24	1550	15	each	-	-	156348
	20.117.25	1600	15	each	-	-	156348
	20.117.26	1650	15	each	-	-	156348
	20.117.27	1700	15	each	-	-	156348
	20.117.28	1750	17.5	each	-	-	184441
	20.117.29	1800	17.5	each	-	-	184441
	20.117.30	1850	17.5	each	-	-	184441
	20.117.31	1900	17.5	each	-	-	184441
	20.117.32	1950	17.5	each	-	-	184441
	20.117.33	2000	20	each	-	-	212534
	20.117.34	2050	20	each	-	-	212534
	20.117.35	2100	20	each	-	-	212534
	20.117.36	2150	20	each	-	-	212534
	20.117.37	2200	20	each	-	-	212534
	20.117.38	2250	20	each	-	-	212534
	20.117.39	2300	25	each	-	-	240627
	20.117.40	2350	25	each	-	-	240627
	20.117.41	2400	25	each	-	-	240627
	20.117.42	2450	25	each	-	-	240627
	20.117.43	2500	25	each	-	-	240627
	20.117.44	2550	25	each	-	-	240627
	20.117.45	2600	25	each	-	-	240627
	20.117.46	2650	25	each	-	-	240627
	20.117.47	2700	25	each	-	-	240627
	20.117.48	2750	25	each	-	-	240627
	20.117.49	2800	25	each	-	-	240627
20.118	Supplying, erection, testing and commissioning of Horizontal motor pumping set for clear water having head 27.50 m as per the indicated requirements of discharge in LPM and power capacity in BHP Make: KSB, CRI, Kirlosker, Crompton Greeve, Lubi)						
		Discharge Capacity (LPM)	**Power Capacity (BHP)**				
	20.118.1	400	5	each	-	-	107049

Item No.			Description	Unit	Labour Rate	Material Rate	Through Rate
	20.118.2	450	5	each	-	-	107049
	20.118.3	500	5	each	-	-	107049
	20.118.4	550	5	each	-	-	107049
	20.118.5	600	7.5	each	-	-	119720
	20.118.6	650	7.5	each	-	-	119720
	20.118.7	700	7.5	each	-	-	119720
	20.118.8	750	7.5	each	-	-	119720
	20.118.9	800	7.5	each	-	-	119720
	20.118.10	850	10	each	-	-	125943
	20.118.11	900	10	each	-	-	125943
	20.118.12	950	10	each	-	-	125943
	20.118.13	1000	10	each	-	-	125943
	20.118.14	1050	10	each	-	-	125943
	20.118.15	1100	10	each	-	-	125943
	20.118.16	1150	12.5	each	-	-	148999
	20.118.17	1200	12.5	each	-	-	148999
	20.118.18	1250	12.5	each	-	-	148999
	20.118.19	1300	12.5	each	-	-	148999
	20.118.20	1350	15	each	-	-	148999
	20.118.21	1400	15	each	-	-	148999
	20.118.22	1450	15	each	-	-	148999
	20.118.23	1500	15	each	-	-	148999
	20.118.24	1550	15	each	-	-	148999
	20.118.25	1600	15	each	-	-	148999
	20.118.26	1650	17.5	each	-	-	184441
	20.118.27	1700	17.5	each	-	-	184441
	20.118.28	1750	17.5	each	-	-	184441
	20.118.29	1800	17.5	each	-	-	184441
	20.118.30	1850	20	each	-	-	212534
	20.118.31	1900	20	each	-	-	212534
	20.118.32	1950	20	each	-	-	212534
	20.118.33	2000	20	each	-	-	212534
	20.118.34	2050	20	each	-	-	212534
	20.118.35	2100	20	each	-	-	212534
	20.118.36	2150	22.5	each	-	-	240627
	20.118.37	2200	22.5	each	-	-	240627
	20.118.38	2250	22.5	each	-	-	240627
	20.118.39	2300	25	each	-	-	268720
	20.118.40	2350	25	each	-	-	268720
	20.118.41	2400	25	each	-	-	268720
	20.118.42	2450	25	each	-	-	268720
	20.118.43	2500	25	each	-	-	268720
	20.118.44	2550	25	each	-	-	268720
20.119	Supplying, erection, testing and commissioning of Horizontal motor pumping set for clear water having head 30.00 m as per the indicated requirements of discharge in LPM and power capacity in BHP Make: KSB, CRI, Kirlosker, Crompton Greeve, Lubi)						
		Discharge Capacity (LPM)	Power Capacity (BHP)				
	20.119.1	400	5	each	-	-	107049

Item No.			Description	Unit	Labour Rate	Material Rate	Through Rate
	20.119.2	450	5	each	-	-	107049
	20.119.3	500	5	each	-	-	107049
	20.119.4	550	7.5	each	-	-	119720
	20.119.5	600	7.5	each	-	-	119720
	20.119.6	650	7.5	each	-	-	119720
	20.119.7	700	7.5	each	-	-	119720
	20.119.8	750	10	each	-	-	125943
	20.119.9	800	10	each	-	-	125943
	20.119.10	850	10	each	-	-	125943
	20.119.11	900	10	each	-	-	125943
	20.119.12	950	10	each	-	-	125943
	20.119.13	1000	12.5	each	-	-	148999
	20.119.14	1050	12.5	each	-	-	148999
	20.119.15	1100	12.5	each	-	-	148999
	20.119.16	1150	12.5	each	-	-	148999
	20.119.17	1200	15	each	-	-	156348
	20.119.18	1250	15	each	-	-	156348
	20.119.19	1300	15	each	-	-	156348
	20.119.20	1350	15	each	-	-	156348
	20.119.21	1400	15	each	-	-	156348
	20.119.22	1450	17.5	each	-	-	184441
	20.119.23	1500	17.5	each	-	-	184441
	20.119.24	1550	17.5	each	-	-	184441
	20.119.25	1600	17.5	each	-	-	184441
	20.119.26	1650	20	each	-	-	212534
	20.119.27	1700	20	each	-	-	212534
	20.119.28	1750	20	each	-	-	212534
	20.119.29	1800	20	each	-	-	212534
	20.119.30	1850	20	each	-	-	212534
	20.119.31	1900	25	each	-	-	268720
	20.119.32	1950	25	each	-	-	268720
	20.119.33	2000	25	each	-	-	268720
	20.119.34	2050	25	each	-	-	268720
	20.119.35	2100	25	each	-	-	268720
	20.119.36	2150	25	each	-	-	268720
	20.119.37	2200	25	each	-	-	268720
	20.119.38	2250	25	each	-	-	268720
	20.119.39	2300	25	each	-	-	268720
20.120	Supplying, erection, testing and commissioning of Horizontal motor pumping set for clear water having head 35.00 m as per the indicated requirements of discharge in LPM and power capacity in BHP Make: KSB, CRI, Kirlosker, Crompton Greeve, Lubi)						
		Discharge Capacity (LPM)	**Power Capacity (BHP)**				
	20.120.1	400	5	each	-	-	107049
	20.120.2	450	5	each	-	-	107049
	20.120.3	500	7.5	each	-	-	119720
	20.120.4	550	7.5	each	-	-	119720
	20.120.5	600	7.5	each	-	-	119720
	20.120.6	650	10	each	-	-	125943

Item No.			Description	Unit	Labour Rate	Material Rate	Through Rate
	20.120.7	700	10	each	-	-	125943
	20.120.8	750	10	each	-	-	125943
	20.120.9	800	10	each	-	-	125943
	20.120.10	850	12.5	each	-	-	148999
	20.120.11	900	12.5	each	-	-	148999
	20.120.12	950	12.5	each	-	-	148999
	20.120.13	1000	12.5	each	-	-	148999
	20.120.14	1050	15	each	-	-	156348
	20.120.15	1100	15	each	-	-	156348
	20.120.16	1150	15	each	-	-	156348
	20.120.17	1200	15	each	-	-	156348
	20.120.18	1250	17.5	each	-	-	184441
	20.120.19	1300	17.5	each	-	-	184441
	20.120.20	1350	17.5	each	-	-	184441
	20.120.21	1400	20	each	-	-	212534
	20.120.22	1450	20	each	-	-	212534
	20.120.23	1500	20	each	-	-	212534
	20.120.24	1550	20	each	-	-	212534
	20.120.25	1600	20	each	-	-	212534
	20.120.26	1650	25	each	-	-	268720
	20.120.27	1700	25	each	-	-	268720
	20.120.28	1750	25	each	-	-	268720
	20.120.29	1800	25	each	-	-	268720
	20.120.30	1850	25	each	-	-	268720
	20.120.31	1900	25	each	-	-	268720
	20.120.32	1950	25	each	-	-	268720
	20.120.33	2000	25	each	-	-	268720
	20.120.34	2050	27.5	each	-	-	296813
	20.120.35	2100	27.5	each	-	-	296813
	20.120.36	2150	27.5	each	-	-	296813
	20.120.37	2200	30	each	-	-	324906
	20.120.38	2250	30	each	-	-	324906
	20.120.39	2300	30	each	-	-	324906
	20.120.40	2350	30	each	-	-	324906
20.121	Supplying, erection, testing and commissioning of Horizontal motor pumping set for clear water having head 40.00 m as per the indicated requirements of discharge in LPM and power capacity in BHP Make: KSB, CRI, Kirlosker, Crompton Greeve, Lubi)						
		Discharge Capacity (LPM)	Power Capacity (BHP)				
	20.121.1	400	5	each	-	-	119720
	20.121.2	450	5	each	-	-	119720
	20.121.3	500	7.5	each	-	-	119720
	20.121.4	550	7.5	each	-	-	125943
	20.121.5	600	7.5	each	-	-	125943
	20.121.6	650	10	each	-	-	125943
	20.121.7	700	10	each	-	-	125943
	20.121.8	750	10	each	-	-	148999
	20.121.9	800	10	each	-	-	148999
	20.121.10	850	12.5	each	-	-	148999

Item No.			Description	Unit	Labour Rate	Material Rate	Through Rate
	20.121.11	900	12.5	each	-	-	156348
	20.121.12	950	12.5	each	-	-	156348
	20.121.13	1000	12.5	each	-	-	156348
	20.121.14	1050	15	each	-	-	156348
	20.121.15	1100	15	each	-	-	184441
	20.121.16	1150	15	each	-	-	184441
	20.121.17	1200	15	each	-	-	184441
	20.121.18	1250	17.5	each	-	-	212534
	20.121.19	1300	17.5	each	-	-	212534
	20.121.20	1350	17.5	each	-	-	212534
	20.121.21	1400	20	each	-	-	212534
	20.121.22	1450	20	each	-	-	268720
	20.121.23	1500	20	each	-	-	268720
	20.121.24	1550	20	each	-	-	268720
	20.121.25	1600	20	each	-	-	268720
	20.121.26	1650	25	each	-	-	268720
	20.121.27	1700	25	each	-	-	268720
	20.121.28	1750	25	each	-	-	268720
	20.121.29	1800	25	each	-	-	324906
	20.121.30	1850	25	each	-	-	324906
	20.121.31	1900	25	each	-	-	324906
	20.121.32	1950	25	each	-	-	324906
	20.121.33	2000	25	each	-	-	324906
	20.121.34	2050	27.5	each	-	-	324906
	20.121.35	2100	27.5	each	-	-	381092
	20.121.36	2150	27.5	each	-	-	381092
	20.121.37	2200	30	each	-	-	381092
	20.121.38	2250	30	each	-	-	381092
	20.121.39	2300	30	each	-	-	381092
	20.121.40	2350	30	each	-	-	381092
	20.121.41	2400	35	each	-	-	381092
20.122	Supplying, erection, testing and commissioning of Horizontal motor pumping set for clear water having head 45.00 m as per the indicated requirements of discharge in LPM and power capacity in BHP Make: KSB, CRI, Kirlosker, Crompton Greeve, Lubi)						
		Discharge Capacity (LPM)	Power Capacity (BHP)				
	20.122.1	400	7.5	each	-	-	119720
	20.122.2	450	7.5	each	-	-	119720
	20.122.3	500	10	each	-	-	125943
	20.122.4	550	10	each	-	-	125943
	20.122.5	600	10	each	-	-	125943
	20.122.6	650	10	each	-	-	125943
	20.122.7	700	12.5	each	-	-	148999
	20.122.8	750	12.5	each	-	-	148999
	20.122.9	800	15	each	-	-	156348
	20.122.10	850	15	each	-	-	156348
	20.122.11	900	15	each	-	-	156348
	20.122.12	950	15	each	-	-	156348
	20.122.13	1000	20	each	-	-	212534

Item No.			Description	Unit	Labour Rate	Material Rate	Through Rate
	20.122.14	1050	20	each	-	-	212534
	20.122.15	1100	20	each	-	-	212534
	20.122.16	1150	20	each	-	-	212534
	20.122.17	1200	20	each	-	-	212534
	20.122.18	1250	20	each	-	-	212534
	20.122.19	1300	25	each	-	-	268720
	20.122.20	1350	25	each	-	-	268720
	20.122.21	1400	25	each	-	-	268720
	20.122.22	1450	25	each	-	-	268720
	20.122.23	1500	25	each	-	-	268720
	20.122.24	1550	25	each	-	-	268720
	20.122.25	1600	30	each	-	-	324906
	20.122.26	1650	30	each	-	-	324906
	20.122.27	1700	30	each	-	-	324906
	20.122.28	1750	30	each	-	-	324906
	20.122.29	1800	30	each	-	-	324906
	20.122.30	1850	30	each	-	-	324906
	20.122.31	1900	35	each	-	-	381092
	20.122.32	1950	35	each	-	-	381092
	20.122.33	2000	35	each	-	-	381092
	20.122.34	2050	35	each	-	-	381092
	20.122.35	2100	35	each	-	-	381092
	20.122.36	2150	35	each	-	-	381092
	20.122.37	2200	40	each	-	-	437278
	20.122.38	2250	40	each	-	-	437278
	20.122.39	2300	40	each	-	-	437278
	20.122.40	2350	40	each	-	-	437278
	20.122.41	2400	40	each	-	-	437278
	20.122.42	2450	40	each	-	-	437278
20.123	Supplying, erection, testing and commissioning of Horizontal motor pumping set for clear water having head 50.00 m as per the indicated requirements of discharge in LPM and power capacity in BHP Make: KSB, CRI, Kirlosker, Crompton Greeve, Lubi)						
		Discharge Capacity (LPM)	**Power Capacity (BHP)**				
	20.123.1	400	7.5	each	-	-	119720
	20.123.2	450	10	each	-	-	125943
	20.123.3	500	10	each	-	-	125943
	20.123.4	550	10	each	-	-	125943
	20.123.5	600	12.5	each	-	-	148999
	20.123.6	650	12.5	each	-	-	148999
	20.123.7	700	12.5	each	-	-	148999
	20.123.8	750	15	each	-	-	156348
	20.123.9	800	15	each	-	-	156348
	20.123.10	850	15	each	-	-	156348
	20.123.11	900	17.5	each	-	-	184441
	20.123.12	950	17.5	each	-	-	184441
	20.123.13	1000	20	each	-	-	212534
	20.123.14	1050	20	each	-	-	212534
	20.123.15	1100	20	each	-	-	212534

Item No.			Description	Unit	Labour Rate	Material Rate	Through Rate
20.123.16	1150	25		each	-	-	268720
20.123.17	1200	25		each	-	-	268720
20.123.18	1250	25		each	-	-	268720
20.123.19	1300	25		each	-	-	268720
20.123.20	1350	25		each	-	-	268720
20.123.21	1400	25		each	-	-	268720
20.123.22	1450	30		each	-	-	324906
20.123.23	1500	30		each	-	-	324906
20.123.24	1550	30		each	-	-	324906
20.123.25	1600	30		each	-	-	324906
20.123.26	1650	30		each	-	-	324906
20.123.27	1700	35		each	-	-	381092
20.123.28	1750	35		each	-	-	381092
20.123.29	1800	35		each	-	-	381092
20.123.30	1850	35		each	-	-	381092
20.123.31	1900	35		each	-	-	381092
20.123.32	1950	40		each	-	-	437278
20.123.33	2000	40		each	-	-	437278
20.123.34	2050	40		each	-	-	437278
20.123.35	2100	40		each	-	-	437278
20.123.36	2150	40		each	-	-	437278
20.123.37	2200	40		each	-	-	437278
20.123.38	2250	45		each	-	-	465371
20.123.39	2300	45		each	-	-	465371
20.123.40	2350	45		each	-	-	465371
20.123.41	2400	45		each	-	-	465371
20.123.42	2450	45		each	-	-	465371

CHAPTER NO. 21

SEWERAGE and DRAINAGE

CHAPTER 21 - SEWERAGE AND DRAINAGE

NOTES:

1. Efforts have been made to describe the various items self-explanatory as much as possible.

2. Rates are derived assuming that all type of materials shall be arranged by the contractor. If any material is decided to be issued departmentally, suitable adjustment for difference of store issue rate and market rate may be made in the estimated rates.

3. The rates given for all the items are applicable to work executed in soils above sub-soil water level. Extra allowance has to be made for work under sub-soil water level.

4. The rates include the carriage up to site of work, handling of material with in a lead of 50 metres. Nothing is to be paid for rehandling of materials.

5. The rates include the cost of water, tools and plants, labour and materials.

6. The rates provided under this chapter include the wastage and breakages of various materials during construction.

7. The rate also cover the cost of all special scaffolding, derricks, jim poles, tools and plant , ropes, guys etc., and nothing extra will be admissible to the contractor for the difficulties involved in erecting the columns absolutely true and vertical.

8. Water charges for water to be arranged by contractor are included in the rates mentioned.

9. The joints between the stone-ware or cement concrete pipe connecting the manholes with the column will be paid for at the rates as a joint of stone ware or cement concrete pipes at the relevant rates given in this schedule and all extra cement concrete required to make this joint perfect and to the requirements of the Engineer-in-charge shall be allowed to the contractor as per cement concrete at the rates laid down for such items.

10. The rates for fixing manhole cover and frames, C.I. or malleable iron steps, errection of C.I. or R.C.C. vent shafts, lowering of S.W. and R.C.C. pipes etc., provided under his chamber include the carriage of the material within a radius of 5 km of the site of works (i.e. all labour rates including carriage of material upto 5 km lead).

11. The rates for manhole chamber construction are only for estimating purposes and non-payment will be made on these rates. The payment for these items will however be made according to the measurements of various quantities of works executed at site.

12. The rates provided under this chapter include the wastage and breakages of various materials during construction.

13. In case of constructing brick or concrete sewers the rates are for 1.5 meters depth of invert level from the ground level. Where depth is greater, additional rate is to be paid for in slabs of 4 metres additional depth or part thereof.

14. The pieces if any of the column shall be assembled and joined at ground level and then hoisted and erected unless specification approval of the Engineer- in-charge in writing permitting the contractor to do shall have been given.

15. Various items related to Brick masonry, Sanitary Installations, Plastering, Earthwork, Trenching, Painting, Flooring and Paving etc. are included in the respective chapters of these subheads which can be referred to for estimating as well as execution purpose.

CHAPTER 21 - SEWERAGE AND DRAINAGE

LIST OF BUREAU OF INDIAN STANDARD CODES

Sr. No.	B.I.S. No.	Subject
1	IS 458	Pre-cast Concrete Pipes (with and without reinforcement).
2	IS 651	Specification for Salt Glazed Stoneware Pipes and Fittings.
3	IS 783	Code of Practice for Laying Concrete Pipes
4	IS 1726	Specification for Cast Iron Manhole Covers and Frames
5	IS 1729	Cast Iron /Ductile Iron Drainage Pipes and Pipe Fittings Socket and Spigot Series for Over-ground Non-pressure Pipe Line.
6	IS 4127	Code of Practice for Laying of Glazed Stone Ware Pipes
7	IS 4885	Specifications for Sewer Bricks
8	IS 12592	Pre-cast Concrete Manhole Covers and Frames – Specifications

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
21.1	Clay puddle, weathered and tempered, laid and consolidated on the flat or on the slope to correct template and levels or thickness as shall be required by the Engineer-in-charge.	cum	103	216	319
	Note: Only weathered and tempered clay of quality to be approved by the Engineer-in-charge shall be allowed to be used. The rate includes the cost of all forms and shuttering required for the placing and supporting of the puddle and for filling in all cracks and scoured out holes or channels, etc. formed in puddle and finishing to an accurate smooth surface to the plate puddle and finishing to an accurate smooth surface to the plate.				
	A. Dismantling and Demolition				
21.2	Dismantling existing drains of different sizes cunnettes, section only including recovery of all useable materials, stacking the same near site of dismantled works and disposal of all rubbish off site of works.				
	21.2.1 House Connection drains	10 metres	234	-	234
	21.2.2 Type I Drain	10 metres	366	-	366
	21.2.3 Type II Drain	10 metres	744	-	744
	21.2.4 Type III Drain	10 metres	916	-	916
	21.2.5 Type IV Drain	10 metres	1056	-	1056
	Notes: (i) The disposal of all rubbish off site of work means the removal thereof to the place of disposal outside the town into ponds, and depression or other suitable places, levelling off the same and clearing of the site of structures dismantled, to the satisfaction of the Engineer-in-charge.				
	(ii) The dismantling of brick pitched drain shall be paid for at the rates given under Chapter No.8 (Demolition) on the class of work.				
	B. Brick flooring and Pitching				
	Reimbursements to drains and flooring in strips				
21.3	Tega 7.50 cm thick formed of first class bricks on end laid in cement sand mortar 1:5 and projecting to a maximum height of not more than 12.5 cm above top of drain along house sides of drains where required for protection of house walls.	10 metres	-	819	819
21.4	Tega 11.50 cm thick formed of first class bricks on end laid in cement sand mortar 1:5 as above.	10 metres	-	1154	1154
	The rates for items 21.3 and item 21.4 include for all excavation and roll for all bends, curve, cutting and wastage of bricks required. The external surface of the exposed joints must be struck flush as the work proceeds and left perfectly smooth.		-		
21.5	First class flat brick 7.50 cm thick laid in reimbursements in and on lime mortar on sides of drains and in other work where required over lime concrete or other foundations. All joints to be left completely filled and struck flush.	10 sqm	-	3394	3394
21.6	First class flat brick 7.50 cm thick laid in reimbursements in and on lime mortar on sides of drains and in other work where required over lime concrete or other foundations. All joints to be left completely filled and struck flush.	10 sqm	-	3306	3306
21.7	First class flat brick 7.50 cm thick laid in reimbursements in and on lime mortar on sides of drains and in other work where required over lime concrete or other foundations. All joints to be left completely filled and struck flush.	10 sqm	-	3600	3600
21.8	First class flat brick 7.50 cm thick laid in reimbursements in and on 1:4 cement sand mortar as above.	10 sqm	-	3846	3846
21.9	First class brick on edge 11.50 cm thick laid in reimbursements in and on lime mortar on sides of drains and in other work where required over lime concrete or other foundation, all joints to be left complete filled and struck flush.	10 sqm	-	5189	5189

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
21.10	First class brick on edge 11.50 cm thick laid in reimbursements in and on 1:6 cement sand mortar as above.	10 sqm	-	5054	5054
21.11	First class brick on edge 11.50 cm thick laid in reimbursements in and on 1:5 cement sand mortar as above.	10 sqm	-	5506	5506
21.12	First class brick on edge 11.50 cm thick laid in reimbursements in and on 1:4 cement sand mortar as above.	10 sqm	-	5349	5349
	NOTES: (i) The rates laid down for items 21.5 to 21.12 cover all reimbursements to drains and any strips ribs and edgings of narrow width en-closing areas to be paved with dry brick on edge or on flat. The rates also include all extra work involved in laying narrow strips 7.50 cm X 11.50 cm or 23 cm wide only along side the drains and for all curves, bends, slopes and changes of slopes and other works involving added labour or material also for all irregular areas and the cutting, fitting and wastage of bricks required for such work. No extra will be payable for any special difficult or complicated work required to be executed.				
	(ii) In all cases of brick on flat or brick on edge reimbursements of pitching in lime, or cement mortar, a layer of mortar not less than 6mm thick shall be placed underneath the bricks and the bricks shall be embedded therein. This is covered by the rate. All joints between the brick and along outer and inner sides of reimbursements shall be completely filled with mortar.				
	(iii) In the event of cement pointing being ordered in writing to be carried out for any flooring or pitching specified in item 21.3 to 21.12 the appropriate rate laid down for such work in this schedule shall be allowed as an extra otherwise the external surface of the exposed joints shall be struck flush as the work proceeds and left perfectly smooth.				
	(iv) All joints for items 21.3 to 21.12 inclusive shall be specially thin joints not exceeding 5 mm width.				
	(v) The rates laid down above for items 21.3 to 21.12 do not include the cost of the lime concrete brick ballast or other foundations under the flooring and pitching.				
	Flooring and Paving				
21.13	First class dry flat brick flooring or paving in ordinary bonded courses or in herring bone or other special courses or bond laid to template over rammed and dressed foundation and to correct longitudinal and cross slopes as shall be required by the Engineer-in-charge. All joints shall be thoroughly filled with dry sand grouting which shall be applied to a thickness of not than 20 mm over the surface of the flooring and brushed into the joints. All joints shall be fully filled with sand.	10 sqm	907	2434	3341
21.14	First class dry brick on edge flooring or paving in ordinary bounded courses or bound, laid as described in item no.21.13.	10 sqm	1097	3964	5060
21.15	First class flat brick paving or flooring laid over and in lime mortar in ordinary bonded courses or in herring bone or other special courses, to templates overdressed foundation and to correct longitudinal and cross slopes as shall be required by the engineer-charge. All joints shall be filled with mortar and struck flushed as the work proceeds.	10 sqm	-	3544	3544
21.16	First class flat brick paving flooring in cement sand mortar 1:6 laid as described in item no 21.15	10 sqm	-	3450	3450
21.17	First class flat brick paving or flooring laid over and in cement sand mortar 1:5 laid as described in item No. 21.15	10 sqm	-	3522	3522
21.18	First class brick on edge paying or flooring laid over and in lime mortar laid as described in item No. 21.15	10 sqm	-	4872	4872
21.19	First class brick on edge paying or flooring laid over and in Cement sand mortar 1:6 laid as described in item No. 21.15	10 sqm	-	4743	4743
21.20	First class brick on edge paying or flooring laid over and in Cement sand mortar 1:5 laid as described in item No. 21.15	10 sqm	-	4842	4842
21.21	First class brick on edge paying or flooring laid over and in Cement sand mortar 1:4 laid as described in item No. 21.15	10 sqm	-	4941	4941

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
21.22	Extra over and above the rates for item No 21.13 to 21.21 inclusive for pitching on the slope to sullage drains above cunnetes and to storm water channels etc. where required	10 sqm	-	140	140
	Notes: (i) The rates laid down for item Nos. 21.13 to 21.22 include the cost of herring bone and other special bonding and curved work, corners, curves, longitudinal and cross slopes, cambers cutting, shaping and wastage of bricks to fit irregular areas and other special works, all bricks shall be laid with best side exposed.				
	(ii) In cases of item Nos.21.13 to 21.14 the rates include for a thin layer of clay or mud plaster from 6mm to 10 mm thick laid to correct templates and levels underneath the bricks which should be carefully set into the mud plaster.				
	(iii) In case of items 21.15 to 21.22 the rats include the provision of homogenous layer of mortar not less than 6 mm thick under the whole of the flooring or paving into which the bricks shall be carefully set and embedded when laid.				
	(iv) The joints of the flooring and paving specified in items 21.15 to 21.22 shall be fine and the maximum width shall not exceed 5 mm. All bricks shall be laid with the best side exposed and the rates cover the cost of cutting and trimming the bricks where necessary in order to ensure good bond and specified fine thickness of joints.				
	(v) In the event of the Engineer-in-charge giving orders in writing for cement pointing to be applied to the exposed surface of any flooring or paving the appropriate rate for such work will be allowed as laid down in the schedule otherwise the external surface of the joints shall be struck flush as the work proceeds and left perfectly smooth.				
	(vi) The rates laid down for items 21.15 to 21.22 do not include the cost of the lime concrete brick ballast or other foundation under the flooring and pitching.				
	(vii) The rates for item No.21.22 includes for any special profiles or strips laid to these specification even though the width of such strips or profiles may be only 11.5 cm or 23 cm and no extra over and above the rates laid down will be paid for such work.				
21.23	Brick ballast, well or over burnt broken and screened through a 32mm x 32mm square mesh screen laid consolidated and rammed to a finished thickness of 50mm to template and levels to correct longitudinal slopes, cross slopes cambers, etc. under paving or flooring.	10 sqm	320	227	547
21.24	Brick ballast, well or over burnt broken and screened through a 32mm x 32mm square mesh screen laid consolidated and rammed to a finished thickness of 75mm as above.	10 sqm	820	-	820
21.25	Clay concrete, consisting of 100 parts by volume of well burnt or over burnt brick ballast screened through 32mm x 32mm square mesh screen mixed with 33 parts by volume of fine buddle clay, thoroughly mixed laid, consolidated and rammed to a finished thickness of 50mm to templates and levels and to a correct longitudinal slopes, cross slopes, cambers, etc., under paying or flooring as shall be required by the Engineer-in-charge.	10 sqm	291	227	518
21.26	Clay concrete as above but laid consolidated and rammed to a finished thickness of 75mm as above.	10 sqm	901	-	901
	C. FIXING INCLUDING CARRIAGE				
21.27	Fixing 560mm, 500mm and 450mm internal diameter circular or 455mm x 610mm clear inside opening rectangular cast iron manhole cover and frame including carriage from the stores of the engineer-in-charge to site of work loading, unloading including stacking and setting the same to correct lines and levels in 1:2 cement sand mortar over manhole etc.				
	21.27.1 Heavy duty Circular 560 mm or 500 mm i/d (weight as per I.S.I.)	each	406	-	406

Item No.			Description	Unit	Labour Rate	Material Rate	Through Rate
	21.27.2		Medium duty Circular 560 mm or 500 mm i/d (weight as per I.S.I.)	each	361	-	361
	21.27.3		Light duty rectangular, single seal pattern 1455mm x 610 mm clear inside opening or circular 500 mm or 450 mm dia (weight as per I.S.I)	each	198	-	198
21.28			Providing & fixing steel bar embedded plastic steps of size 263mm x 165mm of orange colour, confirming to specification in pump chambers, manholes etc., having minimum 3mm thick polypropylene polymer confirming to is:10910 encapsulated on 12mm dia ribbed steel bars per IS :1786. The rate include cost of setting the same to correct lines and levels duly embedded in 1:2:4 cement concrete including carriage, loading, uploading, stacking, handling, re-handling etc., complete in all respect to the satisfaction of Engineer-in-charge	each	143	191	334
21.29			Fixing or heavy cast iron automatic siphon with fittings including carriage from the stores of engineer-in-charge to site of works, loading and unloading fixing and setting the same to correct lines and levels in 1:2 cement sand mortar in automatic flushing tanks if required.				
	21.29.1		80 mm internal diametre siphon	each	603	-	603
	21.29.2		100 mm internal diametre siphon	each	723	-	723
21.30			Erection of cast iron ventilating columns 150mm, 250mm and 300mm internal dia. including bases, columns, caps, cowls or wire domes, etc, complete including carriage from the stores of the engineer-in- charge of works to site of works to site of works loading and unloading, fixing and jointing and setting the same in position in 1:2 cement sand mortar over the foundation blocks, in the works including the fixing and grouting of holding down bolts, nuts and grouting of holding down bolts, nuts and washers, the filling of the completed flanged joints with molten lead and finishing off to the requirements of the engineer-in-charge.				
	21.30.1		150 mm i/d columns				
		21.30.1.1	5.5 metres high and weighing 8.1 quintal	per column complete	5044	-	5044
		21.30.1.2	9.0 metres high and weighing 10.2 quintal	per column complete	5624	-	5624
		21.30.1.3	10.0 metres high and weighing 10.6 quintal	per column complete	6680	-	6680
		21.30.1.4	11.0 metres high and weighing 11.3 quintal	per column complete	7401	-	7401
		21.30.1.5	12.0 metres high and weighing 11.9 quintal	per column complete	7986	-	7986
	21.30.2		250 mm internal diameter columns				
		21.30.2.1	8 metres high and weighing 17.13 quintal	per column complete	10739	-	10739
		21.30.2.2	9 metres high and weighing 18.6 quintal	per column complete	11660	-	11660
		21.30.2.3	10 metres high and weighing 18.80 quintal	per column complete	11786	-	11786
		21.30.2.4	11 metres high and weighing 20.63 quintal	per column complete	12933	-	12933
		21.30.2.5	12 metres high and weighing 22.43 quintal	per column complete	14061	-	14061
	21.30.3		300 mm internal diametre column				
		21.30.3.1	8 metres high and weighing 19.80 quintal	per column complete	12413	-	12413
		21.30.3.2	10 metres high and weighing 21.80 quintal	per column complete	13667	-	13667

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
21.31	Erection of R.C.C. ventilating column having minimum 200 mm internal dia and a height of 11 meters above ground level, including caps, cowls or wire domes etc. complete including carriage from the stores of the engineer-in-charge of works to site of works, loading, unloading, fixing and setting the same in position and embedding in foundation block (to be paid separately) complete. **Notes: (i) The rates given above are based on the free supply by the department of columns and fittings include base, column pipes, caps, cowls or wire domes holding down bolts nuts and washers, jointing material comprising lead and bolts, nuts and washers and rubber insertion at the stores of the Engineer-in- charge but all steel strips or packing pieces required for jointing and erecting the columns true and vertical shall be provided by the contractor at his own expenses and cost thereof is included in the above rates.** **(ii) The rate also cover the cost of all special scaffolding, derricks, jim poles, tools and plant , ropes, guys etc., and nothing extra will be admissible to the contractor for the difficulties involved in erecting the columns absolutely true and vertical.** **(iii) The joints between the stone-ware or cement concrete pipe connecting the manholes with the column will be paid for at the rates as a joint of stone ware or cement concrete pipes at the relevant rates given in this schedule and all extra cement concrete required to make this joint perfect and to the requirements of the Engineer-in-charge shall be allowed to the contractor as per cement concrete at the rates laid down for such items.** **(iv) The pieces if any of the column shall be assembled and joined at ground level and then hoisted and erected unless specification approval of the Engineer- in-charge in writing permitting the contractor to do shall have been given.** **(v) The columns which have not been erected absolutely true, concentric and vertical shall to be accepted and the contractor shall rectify all defects arising from defective workmanship in joining, fixing and erection at his own costs and charge and nothing extra will be admissible to him for the removal of such defects.** **(vi) The contractor shall be entirely responsible for the safety and the custody of the material handed ever to him for erection and joining and shall not damage any column or its component parts while the same is under his charge or during assembly, erection etc., should however, any column or its component part or the joining material got damaged or stolen while the same are under his charge and until the columns after erection have been duly approved, passed and accepted by the Engineer-in-charge, the actual cost of such damage or loss shall be recovered from the contractor. The actual cost of various component parts of the columns and of the joining material to be issued to the contractor free of cost can be ascertained by the contractor from the Engineer-in-charge before tendering.** **(vii) The height of column as mentioned in item 21.30 above is exclusive of the height of base, cap and cowl or dome. The weight as**	per column complete	12421	-	12421
	D. PAINTING VENT SHAFTS				
21.32	Painting two coats excluding priming coat with ready mixed paint for metallic surfaces in all shades on new works-				
21.32.1	150 mm internal diametre vent shaft	metre	-	74	74
21.32.2	250 mm internal diametre vent shaft	metre	-	121	121
21.32.3	250 mm internal diametre vent shaft	metre	-	143	143
21.33	Painting one coat ready mixed paint for metallic surfaces in all shades on new works-				
21.33.1	150 mm internal diametre vent shaft	metre	-	32	32

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	21.33.2	250 mm internal diametre vent shaft	metre	-	52	52
	21.33.3	300 mm internal diametre vent shaft	metre	-	62	62
21.34	Painting two coats with anti-corrosive bitumastic paint on new work to give an even shade-					
	21.34.1	150 mm internal diametre vent shaft	metre	-	66	66
	21.34.2	250 mm internal diametre vent shaft	metre	-	107	107
	21.34.3	300 mm internal diametre vent shaft	metre	-	127	127
21.35	Painting one coat with anti-corrosive bitumastic paint on old work to give an even shade-					
	21.35.1	150 mm internal diametre vent shaft	metre	-	31	31
	21.35.2	250 mm internal diametre vent shaft	metre	-	51	51
	21.35.3	300 mm internal diametre vent shaft	metre	-	61	61
21.36	Finishing R.C.C. vent shafts minimum 200 mm internal diameter with exterior decorative cement based paints on new work two coats to give an even finish.		each	-	909	909
21.37	Finishing R.C. C. vent shafts as per item No 21.36 above with exterior decorative cement based paints on old work done so as to give an even shade.		each	-	778	778
	E. SALT GLAZED STONEWARE PIPE SEWERS AND DRAINS					
21.38	Lowering salt glazed stoneware pipes and specials into trenches for all depths and laying out the same to correct alignment gradient, level etc in trenches including all dressing and trimming of bed and sides of trenches, if required, trimming and cutting of concrete beds and joint holes, supporting the pipes and specials, in correct position in a suitable rigid manner while the same are being jointed and until the surrounding benching hunching and envelopes are completed. The sewer shall rest on the bed at every point throughout its length and to ensure this, it shall be grouted in without extra charge by the contractor with lime surkhi mortar, in the case of lime concrete beds and 1:3 cement sand mortar in the case of cement concrete beds including cartage from Divisional Store or nearest Railway station to site of work. The internal diameter of sewer being :-					
	21.38.1	100 mm internal diameter of sewer	10 metres of completed sewer	235	-	235
	21.38.2	150 mm internal diameter of sewer	10 metres of completed sewer	425	-	425
	21.38.3	175 mm internal diameter of sewer	10 metres of completed sewer	476	-	476
	21.38.4	200 mm internal diameter of sewer	10 metres of completed sewer	552	-	552
	21.38.5	225 mm internal diameter of sewer	10 metres of completed sewer	828	-	828
	21.38.6	250 mm internal diameter of sewer	10 metres of completed sewer	944	-	944

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	21.38.7	300 mm internal diameter of sewer	10 metres of completed sewer	1287	-	1287
	21.38.8	350 mm internal diameter of sewer	10 metres of completed sewer	1718	-	1718
	21.38.9	375 mm internal diameter of sewer	10 metres of completed sewer	2487	-	2487
	21.38.10	400 mm internal diameter of sewer	10 metres of completed sewer	2760	-	2760
	21.38.11	450 mm internal diameter of sewer	10 metres of completed sewer	3316	-	3316
		Notes: The rates include all bricks and supports for the sewer and also all sight and appliances to ensure that the sewer is maintained to perfect alignment and gradients throughout.				
21.39		Jointing and fixing salt glazed stoneware pipes and special in trenches using cement sand mortar 1:1 and best white Italian tarred hemp/yarn including finishing and trowel ling of each joint at an angle of 45 degrees with the longitudinal axis of the pipes, watering, keeping the joints covered and wetted till the same are cured, testing the sewer lines for leakages and making all leakages and defect good, complete as laid down in the contract specifications.				
	21.39.1	100 mm internal diametre of sewer	per Joint completed	35	10	45
	21.39.2	150 mm internal diametre of sewer	per Joint completed	48	16	64
	21.39.3	175 mm internal diametre of sewer	per Joint completed	55	18	73
	21.39.4	200 mm internal diametre of sewer	per Joint completed	63	21	84
	21.39.5	225 mm internal diametre of sewer	per Joint completed	71	24	95
	21.39.6	250 mm internal diametre of sewer	per Joint completed	93	29	122
	21.39.7	300 mm internal diametre of sewer	per Joint completed	114	34	148
	21.39.8	350 mm internal diametre of sewer	per Joint completed	124	38	162
	21.39.9	375 mm internal diametre of sewer	per Joint completed	133	40	174
	21.39.10	400 mm internal diametre of sewer	per Joint completed	143	43	186
	21.39.11	450 mm internal diametre of sewer	per Joint completed	157	47	204
		Notes: (i) The lime concrete in beds, benching and envelopes of all glazed stoneware pipe sewers will be paid for separately according to the measurements of the work carried out to the requirements of the Engineer-in-charge or as shown in the contract drawing, at the rates given in the Schedule of Rates, depending upon the description and specifications of the concrete. All brick ballast must be absolutely clean and free from rubbish dirt, clay etc.				

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
		(ii) If any cement concrete is ordered by the Engineer-in-charge to be placed in the beds, benching, haunchings of envelopes of any glazed stoneware pipe sewers, the same will be paid for at the rates given in the Schedule of Rates for the respective specifications and description of the concrete work carried out.				
		(iii) No extra over and above the rates of this Scheduled for lime concrete and cement concrete work in beds, benching, haunches and envelopes will be allowed by reasons of any difficulties or wastage in work or for rough shuttering or moulding.				
		(iv) In cases where caps on sockets of branches have to be removed in order to make the joints with the next pipes no extra shall be payable for cutting and re-moving the caps.				
21.40		Cutting glazed stoneware pipes and specials chipping and finishing the cut surface to a uniform finish and roughing the part of the pipes, if any entering the sockets of the adjacent pipes complete, to the satisfaction of the engineer-in-charge of the works.				
	21.40.1	100 mm internal diametre of pipes	per cut	15	-	15
	21.40.2	150 mm internal diametre of pipes	per cut	23	-	23
	21.40.3	175 mm internal diametre of pipes	per cut	27	-	27
	21.40.4	200 mm internal diametre of pipes	per cut	31	-	31
	21.40.5	225 mm internal diametre of pipes	per cut	35	-	35
	21.40.6	250 mm internal diametre of pipes	per cut	38	-	38
	21.40.7	300 mm internal diametre of pipes	per cut	46	-	46
	21.40.8	350 mm internal diametre of pipes	per cut	54	-	54
	21.40.9	375 mm internal diametre of pipes	per cut	58	-	58
	21.40.10	400 mm internal diametre of pipes	per cut	61	-	61
	21.40.11	450 mm internal diametre of pipes	per cut	69	-	69
21.41		Extra for laying and fixing drain chutes in pipe sewers including lowering, aligning, setting in brick work and concrete cutting away and making good complete.				
	21.41.1	100 mm internal diametre	per chute	41	-	41
	21.41.2	150 mm internal diametre	per chute	53	-	53
	21.41.3	175 mm internal diametre	per chute	63	-	63
	21.41.4	200 mm internal diametre	per chute	85	-	85
	21.41.5	225 mm internal diametre	per chute	97	-	97
21.42		Extra for laying oblique junction branches in stoneware pipe sewers including lowering, aligning, setting in correct position with correct slopes of branches and cutting and making a room for branches complete.				
	21.42.1	100 mm to 450 mm internal diameter of sewer and 100 mm internal diametre of branch	per branch complete	32	-	32
	21.42.2	150 mm to 450 mm internal diametre of sewer and 150 mm internal diametre of branch	per branch complete	42	-	42
	21.42.3	175 mm to 450 mm internal diametre of sewer and 175 mm internal diametre of branch	per branch complete	52	-	52
21.43		Extra over the rate laid down in this schedule for cement concrete work more making and finishing benching and complicated floor work in manholes, including formation of channels and bulldozing and smooth finishing the surface accurately to template.	per sqm benching and flooring surfaces measured horizontally	179	-	179

F. PLAN AND REINFORCED CONCRETE PIPES

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
21.44	Lowering plain and reinforced concrete pipes and specials into trenches for all depths and laying out the same to correct alignment gradients levels etc., including all dressing and trimming and cutting of concrete beds and joint holes, supporting the pipes and specials in correct position in a suitable rigid manner while the same are being jointed and until the surrounding benching haunches and envelope are completed. The pipes shall rest on the beds at all points throughout their lengths and to ensure this they shall be grouted in where necessary as described in item no.21.38 including carriage from the stores of the Engineer-in-charge and safe delivery thereof at site of works. This includes, loading, unloading, stacking at convenient points adjacent to the works ready for lowering as may be found most convenient in the interest of work. (For NPI or NP2 and NP3 or NP4 pipes)				
21.44.1	100 mm internal diametre of sewer (Class NP1 to NP2)	10 metres of completed sewer	129	-	129
21.44.2	150 mm internal diametre of sewer (Class NP1 to NP2)	10 metres of completed sewer	181	-	181
21.44.3	200 mm internal diametre of sewer (Class NP1 to NP2)	10 metres of completed sewer	231	-	231
21.44.4	225 mm internal diametre of sewer (Class NP1 to NP2)	10 metres of completed sewer	260	-	260
21.44.5	250 mm internal diametre of sewer (Class NP1 to NP2)	10 metres of completed sewer	303	-	303
21.44.6	300 mm internal diametre of sewer (Class NP1 to NP2)	10 metres of completed sewer	389	-	389
21.44.7	350 mm internal diametre of sewer				
	21.44.7.1 NP1 or NP2 Pipe	10 metres of completed sewer	306	-	306
	21.44.7.2 NP3 or NP4 Pipe	10 metres of completed sewer	848	-	848
21.44.8	400 mm internal diametre of sewer				
	21.44.8.1 NP1 or NP2 Pipe	10 metres of completed sewer	437	-	437
	21.44.8.2 NP3 or NP4 Pipe	10 metres of completed sewer	948	-	948
21.44.9	450 mm internal diametre of sewer				
	21.44.9.1 NP1 or NP2 Pipe	10 metres of completed sewer	479	-	479

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	21.44.9.2	NP3 or NP4 Pipe	10 metres of completed sewer	1048	-	1048
21.44.10		500 mm internal diametre of sewer				
	21.44.10.1	NP1 or NP2 Pipe	10 metres of completed sewer	520	-	520
	21.44.10.2	NP3 or NP4 Pipe	10 metres of completed sewer	1146	-	1146
21.44.11		600 mm internal diametre of sewer				
	21.44.11.1	NP1 or NP2 Pipe	10 metres of completed sewer	610	-	610
	21.44.11.2	NP3 or NP4 Pipe	10 metres of completed sewer	1448	-	1448
21.44.12		700 mm internal diametre of sewer				
	21.44.12.1	NP1 or NP2 Pipe	10 metres of completed sewer	824	-	824
	21.44.12.2	NP3 or NP4 Pipe	10 metres of completed sewer	1662	-	1662
21.44.13		800 mm internal diametre of sewer				
	21.44.13.1	NP1 or NP2 Pipe	10 metres of completed sewer	1067	-	1067
	21.44.13.2	NP3 or NP4 Pipe	10 metres of completed sewer	2133	-	2133
21.44.14		900 mm internal diametre of sewer				
	21.44.14.1	NP1 or NP2 Pipe	10 metres of completed sewer	1251	-	1251
	21.44.14.2	NP3 or NP4 Pipe	10 metres of completed sewer	2666	-	2666
21.44.15		1000 mm internal diametre of sewer				
	21.44.15.1	NP1 or NP2 Pipe	10 metres of completed sewer	1058	-	1058
	21.44.15.2	NP3 or NP4 Pipe	10 metres of completed sewer	1920	-	1920
21.44.16		1100 mm internal diametre of sewer				

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	21.44.16.1	NP1 or NP2 Pipe	10 metres of completed sewer	1282	-	1282
	21.44.16.2	NP3 or NP4 Pipe	10 metres of completed sewer	2448	-	2448
21.44.17	1200 mm internal diametre of sewer					
	21.44.17.1	NP1 or NP2 Pipe	10 metres of completed sewer	1506	-	1506
	21.44.17.2	NP3 or NP4 Pipe	10 metres of completed sewer	2648	-	2648
21.44.18	1400 mm internal diametre of sewer					
	21.44.18.1	NP1 or NP2 Pipe	10 metres of completed sewer	2041	-	2041
	21.44.18.2	NP3 or NP4 Pipe	10 metres of completed sewer	3620	-	3620
21.44.19	1600 mm internal diametre of sewer					
	21.44.19.1	NP1 or NP2 Pipe	10 metres of completed sewer	2482	-	2482
	21.44.19.2	NP3 or NP4 Pipe	10 metres of completed sewer	4261	-	4261
21.44.20	1800 mm internal diametre of sewer					
	21.44.20.1	NP1 or NP2 Pipe	10 metres of completed sewer	3141	-	3141
	21.44.20.2	NP3 or NP4 Pipe	10 metres of completed sewer	5118	-	5118

Notes: (i) The octroi and terminal taxes on the pipes and specials will not be payable by the contractor but the should be liable for all loses, breakages and other damages to the pipes and specials from the moment he takes delivery thereof and thereafter until the pipes and specials have been jointed and tested.

(ii) The rates include all bricks supports, sight-rails and appliances required to ensure that the alignment and gradient of the sewer is perfectly maintained throughout.

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
21.45		Jointing plain and reinforced concrete pipes and specials of all classes in trenches using collar joints jointed with 1:1 ½ cement sand mortar nearly dry heavily caulked into joints and with end dowels filled with 1:1½ cement sand mortar including facing trowelling and finishing the joints at an angle of 45 degrees with faces of collars keeping joints wet till curved testing the drain lines for leakage and making good all leakage and defects as laid down in the contract specifications complete with two spigot ends jointed to collar and internal diameter of sewer pipe or special being.				
	21.45.1	100 mm internal diametre sewer pipe	per collar joint	57	15	72
	21.45.2	150 mm internal diametre sewer pipe	per collar joint	76	20	96
	21.45.3	200 mm internal diametre sewer pipe	per collar joint	100	24	124
	21.45.4	225 mm internal diametre sewer pipe	per collar joint	133	27	160
	21.45.5	250 mm internal diametre sewer pipe	per collar joint	152	29	181
	21.45.6	300 mm internal diametre sewer pipe	per collar joint	172	44	216
	21.45.7	350 mm internal diametre sewer pipe	per collar joint	214	52	267
	21.45.8	400 mm internal diametre sewer pipe	per collar joint	253	58	311
	21.45.9	450 mm internal diametre sewer pipe	per collar joint	319	97	416
	21.45.10	500 mm internal diametre sewer pipe	per collar joint	381	106	486
	21.45.11	600 mm internal diametre sewer pipe	per collar joint	443	132	575
	21.45.12	700 mm internal diametre sewer pipe	per collar joint	499	150	649
	21.45.13	800 mm internal diametre sewer pipe	per collar joint	571	179	750
	21.45.14	900 mm internal diametre sewer pipe	per collar joint	638	212	850
	21.45.15	1000 mm internal diametre sewer pipe	per collar joint	704	248	952
	21.45.16	1100 mm internal diametre sewer pipe	per collar joint	781	287	1067
	21.45.17	1200 mm internal diametre sewer pipe	per collar joint	842	330	1172
	21.45.18	1400 mm internal diametre sewer pipe	per collar joint	914	428	1342
	21.45.19	1600 mm internal diametre sewer pipe	per collar joint	995	511	1506
	21.45.20	1800 mm internal diametre sewer pipe	per collar joint	1071	641	1712
		Notes: (i) If any socketed plain or reinforced cement concrete pipes or specials are jointed with 1 : 1 cement sand mortar and tarred yarn as described for salt glazed stoneware pipes and specials in item No.21.39 of this schedule, the jointing rates laid down for the sizes of pipes or specials given in item No.21.39 of this schedule shall be payable for such joints.				
		(ii) Notes (i), (ii), (iii) and (iv) following item No. 21.39 of this schedule shall also apply to all lines of drains with plain or reinforced concrete pipes and specials.				

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
21.46		Cutting plain and reinforced concrete pipes and specials of all classes chipping and finishing the cut surface to a uniform finish to the satisfaction of the Engineer-in-charge.				
	21.46.1	100 mm internal diametre pipe or special (NPI or NP 2 types on outer diametre basis)	per cut	23	-	23
	21.46.2	150 mm internal diametre pipe or special (NPI or NP 2 types on outer diametre basis)	per cut	31	-	31
	21.46.3	200 mm internal diametre pipe or special(NPI or NP 2 types on outer diametre basis)	per cut	38	-	38
	21.46.4	225 mm internal diametre pipe or special (NPI or NP 2 types on outer diametre basis)	per cut	42	-	42
	21.46.5	250 mm internal diametre pipe or special (NPI or NP 2 types on outer diametre basis)	per cut	46	-	46
	21.46.6	300 mm internal diametre pipe or special (NPI or NP 2 types on outer diametre basis)	per cut	55	-	55
	21.46.7	350 mm internal diametre pipe or special (NPI or NP 2 types on outer diametre basis)	per cut	70	-	70
	21.46.8	400 mm internal diametre pipe or special (NPI or NP 2 types on outer diametre basis)	per cut	77	-	77
	21.46.9	450 mm internal diametre pipe or special (NPI or NP 2 types on outer diametre basis)	per cut	85	-	85
	21.46.10	500 mm internal diametre pipe or special (NPI or NP 2 types on outer diametre basis)	per cut	93	-	93
	21.46.11	600 mm internal diametre pipe or special (NPI or NP 2 types on outer diametre basis)	per cut	110	-	110
	21.46.12	700 mm internal diametre pipe or special (NPI or NP 2 types on outer diametre basis)	per cut	126	-	126
	21.46.13	800 mm internal diametre pipe or special (NPI or NP 2 types on outer diametre basis)	per cut	143	-	143
	21.46.14	900 mm internal diametre pipe or special (NPI or NP 2 types on outer diametre basis)	per cut	160	-	160
	21.46.15	1000 mm internal diametre pipe or special (NPI or NP 2 types on outer diametre basis)	per cut	176	-	176
	21.46.16	1100 mm internal diametre pipe or special (NPI or NP 2 types on outer diametre basis)	per cut	195	-	195
	21.46.17	1200 mm internal diametre pipe or special (NPI or NP 2 types on outer diametre basis)	per cut	211	-	211
	21.46.18	1400 mm internal diametre pipe or special (NPI or NP 2 types on outer diametre basis)	per cut	246	-	246
	21.46.19	1600 mm internal diametre pipe or special (NPI or NP 2 types on outer diametre basis)	per cut	278	-	278
	21.46.20	1600 mm internal diametre pipe or special (NPI or NP 2 types on outer diametre basis)	per cut	311	-	311
		G. STONE WARE INTERCEPTING TRAPS, FLAP VALVES, ROAD GULLIES ETC.				
21.47		Fixing cast iron or stoneware intercepting traps to be supplied by the Engineer-in-charge and embedding the same in cement concrete to the requirements of the Engineer-in-charge in screening chambers including carriage from the stores of the Engineer-in-charge.				
	21.47.1	100 mm internal diameter	each	296	-	296
	21.47.2	150 mm internal diameter	each	326	-	326
	21.47.3	200 mm internal diameter	each	445	-	445
21.48		Fixing cast iron road gully grating and frame complete including carriage from the stores of the Engineer-in-charge of the works, loading, fixing and erecting the same in position to correct lines and levels in 1:2 cement sand mortar and painting of grating and frame with coal tar.	each	297	-	297

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
21.49	House outlet, connection including cutting and forming parnalas and making khurras at head of house connection size of each khura to be not less than 30 cm x 30 cm. The rate shall cover the cost of all works to the requirements of the Engineer-in-charge.	per connection	-	165	165
21.50	House outlet connections as described in item 21.49 above but with size of khura not less than 30 cm x 15 cm	per connection	-	122	122
21.51	House outlet connections as described in item no 21.49 above but with size of khurra not less then 23 cm x 15 cm size	per connection	-	100	100
21.52	Constructing standard drain, type house connection complete consisting of concrete drain moulded and laid over lime concrete foundation rendered and finished smooth with 6mm thick rendering concrete to be of 1:3:6 parts by volume of cement sand stone bajri and rendering to be 1:1 cement sand mortar.	metre	-	144	144
21.53	Constructing standard drain type I drain moulded and laid over lime concrete foundation rendered and finished smooth with 6 mm thick rendering concrete to be of 1 136 parts by volume of cement sand stone bajri and rendering to be 1:1 cement sand mortar	metre	-	179	179
21.54	Constructing standard drain type II drain complete consisting of cement concrete drain moulded and laid over lime concrete foundation rendered and finished smooth with 6 mm thick rendering concrete to be 1:3:6 Paris by volume of cement sand stone Bajri and rendering to be 1:1 cement and mortar.	metre	-	407	407
21.55	Constructing standard drain type II drain complete consisting of concrete drain moulded and laid concrete foundation, rendered and smooth with 6mm thick rendering concrete to be of I :3:6 parts by volume of cement sand stone bajri and rendering to be 1:1 cement sand mortar	metre	-	478	478
21.56	Constructing standard drain IV type drain complete consisting of concrete drain moulded and laid concrete foundation rendered and smooth with 6 mm thick rendering concrete to be of 1: 3: 6 by parts volume of cement sand stone bajri and rendering to be 1: 1 cement sand mortar.	metre	-	573	573

Notes: (i) The rates given above for the type drains include in all cases for the cost of the excavation for the drain below level of top of cunnette, the timbering, shoring dewatering and dressing of the excavation to correct template and levels, the removal and disposal of all surplus soil and refilling if any as described under the head Earth work, the cost of lime concrete in foundation of the drains and of all setting out apparatus required for the work. The rates also include the cost of all curves, bends , falls junctions inlets, outlets and all other special work in the drains and expansion joints. For drains where precast slabs are used , the rate includes for fixing and setting to correct level and templates in 1:2 cement mortar, the joint being finished perfectly smooth with the faces of the slabs.

(ii) All surface drains shall be finished perfectly smooth by rubbing with properly shaped steel finishing tools and the design of all tools and appliances moulds and templates and used on the construction of the drains shall be to the approval of the Engineer-in charge of the work.

(iii) All precast slabs shall be cured by immersion for 10 days under water before use and all cement concrete drains moulded in site shall be flooded with water up to the tops of the bull nose edging for 10 days after construction to ensure that all concrete is thoroughly seasoned.

(iv) The rates for items item 21.49, 21.50 and 21.51 house outlet connections include for all work from the plinth of the house up to the street drain where this is adjacent to the house wall, if the street drain is away from the wall the appropriate length of the house connection drain will be paid for. The rates also include for cutting Jharris in the house wall and reimbursement of the drains for forming parnalas where required and plastering the same.

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	H. Masonry Plugs					
21.57	Providing masonry plugs to ends of sewers of all types with 11.43 cm thick brick wall in cement sand mortar 1:7 with 12 mm thick cement plaster 1:6 (as required by the engineer-in-charge).					
	21.57.1	For Circular sewers having internal diameter :-				
	21.57.1.1	100 mm	each	-	5	5
	21.57.1.2	150 mm	each	-	10	10
	21.57.1.3	175 mm	each	-	15	15
	21.57.1.4	200 mm	each	-	20	20
	21.57.1.5	225 mm	each	-	21	21
	21.57.1.6	250 mm	each	-	26	26
	21.57.1.7	300 mm	each	-	41	41
	21.57.1.8	350 mm	each	-	56	56
	21.57.1.9	375 mm	each	-	57	57
	21.57.1.10	400 mm	each	-	72	72
	21.57.1.11	450 mm	each	-	92	92
	21.57.1.12	500 mm	each	-	104	104
	21.57.1.13	600 mm	each	-	154	154
	21.57.1.14	685 mm	each	-	204	204
	21.57.1.15	700 mm	each	-	207	207
	21.57.1.16	760 mm	each	-	255	255
	21.57.1.17	800 mm	each	-	303	303
	21.57.1.18	840 mm	each	-	307	307
	21.57.1.19	900 mm	each	-	357	357
	21.57.1.20	915 mm	each	-	404	404
	21.57.1.21	990 mm	each	-	457	457
	21.57.1.22	1000 mm	each	-	458	458
	21.57.1.23	1065 mm	each	-	509	509
	21.57.1.24	1100 mm	each	-	558	558
	21.57.1.25	1145 mm	each	-	611	611
	21.57.1.26	1200 mm	each	-	660	660
	21.57.1.27	1220 mm	each	-	663	663
	21.57.1.28	1295 mm	each	-	764	764
	21.57.1.29	1370 mm	each	-	861	861
	21.57.1.30	1400 mm	each	-	868	868
	21.57.1.31	1450 mm	each	-	966	966
	21.57.1.32	1525 mm	each	-	1066	1066
	21.57.1.33	1600 mm	each	-	1168	1168
	21.57.1.34	1680 mm	each	-	1273	1273
	21.57.1.35	1755 mm	each	-	1421	1421
	21.57.1.36	1800 mm	each	-	1475	1475
	21.57.1.37	1830 mm	each	-	1527	1527
	21.57.2	For Egg Shaped sewers having inside dimensions:				
	21.57.2.1	610 mm x 915 mm	each	-	252	252
	21.57.2.2	660 mm x 990 mm	each	-	258	258
	21.57.2.3	710 mmx1065 mm	each	-	308	308
	21.57.2.4	760 mmx1140 mm	each	-	358	358
	21.57.2.5	810 mmx1215 mm	each	-	409	409
	21.57.2.6	860 mm x 1290 mm	each	-	461	461
	21.57.2.7	910 mm x 1365 mm	each	-	556	556

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	21.57.2.8	970 mmx 1455 mm	each	-	610	610
	21.57.2.9	1020 mm x 1530 mm	each	-	662	662
	21.57.2.10	1070 mm x 1605mm	each	-	759	759
	21.57.2.11	1120mm x1680 mm	each	-	812	812
	21.57.2.12	1170mm x 1755mm	each	-	866	866
	I. BRICK SEWERS (EGG-SHAPED)					
21.58	Construction of standard new egg shaped type sewers as per standard drawings where the invert level of the sewer is up to 1.5 meters below ground level including dressing of beds and sides of trenches to exact profiles, grades and alignment, lime concrete or cement lime sand concrete in beds, sides and in haunches with 1:3 cement sand collar joint not less than 12 mm thick on sides, 1:1 ½:3 moulded cement concrete invert accurately finished with neat cement rendering face specially hand moulded first class radiated brick work laid in 1:3 cement sand mortar in the side and under arch rings of the sewers and specially hand moulded first class radiated brick work laid in 1:4 cement sand mortar in the outer arch rings of the sewer laid over 1:3 cement sand collar joint not less than 12 mm in thickness formed round the inner layer of brick work and with the entire inner surface of sewer rendered with a layer of neat cement not less than 12 mm thick of 1:2 cement sand plaster and finished with a floating coat of neat cement left absolutely smooth polished and correct to template finished with two coats of sodium silicate wherever required. The rates includes the cost of accurately planed and fitted centring and supports for all works as well as for all curves bends, falls & other special works and the cleaning out of the sewers throughout their lengths. sodium silicate shall be supplied free of cost at the stores of the Engineer-in-charge. The finished inside dimension of egg shaped sewer being.				
21.58.1	610 mmx 915 mm					
	21.58.1.1	Cost with lime concrete	per metre completed sewer	-	9134	9134
	21.58.1.2	Cost with cement lime sand concrete	per metre completed sewer	-	9275	9275
21.58.2	660mm x 990 mm					
	21.58.2.1	Cost with lime concrete	per metre completed sewer	-	9384	9384
	21.58.2.2	Cost with cement lime sand concrete	per metre completed sewer	-	9534	9534
21.58.3	710 mmx 1065 mm					
	21.58.3.1	Cost with lime concrete	per metre completed sewer	-	9656	9656
	21.58.3.2	Cost with cement lime sand concrete	per metre completed sewer	-	9812	9812
21.58.4	760 mm x 1140 mm					
	21.58.4.1	Cost with lime concrete	per metre completed sewer	-	9948	9948
	21.58.4.2	Cost with cement lime sand concrete	per metre completed sewer	-	10114	10114
21.58.5	810 mm x 1215 mm					
	21.58.5.1	Cost with lime concrete	per metre completed sewer	-	10245	10245

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	21.58.5.2	Cost with cement lime sand concrete	per metre completed sewer	-	10420	10420
21.58.6	860 mm x 1290 mm					
	21.58.6.1	Cost with lime concrete	per metre completed sewer	-	10609	10609
	21.58.6.2	Cost with cement lime sand concrete	per metre completed sewer	-	10795	10795
21.58.7	910 mm x 1365 mm					
	21.58.7.1	Cost with lime concrete	per metre completed sewer	-	10886	10886
	21.58.7.2	Cost with cement lime sand concrete	per metre completed sewer	-	11078	11078
21.58.8	970 mm x 1455 mm					
	21.58.8.1	Cost with lime concrete	per metre completed sewer	-	11140	11140
	21.58.8.2	Cost with cement lime sand concrete	per metre completed sewer	-	11342	11342
21.58.9	1020 mm x 1530 mm					
	21.58.9.1	Cost with lime concrete	per metre completed sewer	-	11461	11461
	21.58.9.2	Cost with cement lime sand concrete	per metre completed sewer	-	11674	11674
21.58.10	1070 mm x1605 mm					
	21.58.10.1	Cost with lime concrete	per metre completed sewer	-	11765	11765
	21.58.10.2	Cost with cement lime sand concrete	per metre completed sewer	-	11987	11987
21.58.11	1120 mm x 1680 mm					
	21.58.11.1	Cost with lime concrete	per metre completed sewer	-	12067	12067
	21.58.11.2	Cost with cement lime sand concrete	per metre completed sewer	-	12298	12298
21.58.12	1170 mm x 1755 mm					
	21.58.12.1	Cost with lime concrete	per metre completed sewer	-	12459	12459
	21.58.12.2	Cost with cement lime sand concrete	per metre completed sewer	-	12703	12703
21.59	Construction of standard new egg shaped type sewers as per standard drawings as described in item 21.58 above but with 1:2:9:24 cement lime sand concrete with stone ballast of 20mm gauge in beds, sides and haunches in place of lime concrete or cement lime sand concrete with brick ballast. The finished inside dimensions of egg shaped sewer being :-					

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	21.59.1	610 mm x 915 mm	per metre of completed sewer	-	9484	9484
	21.59.2	660 mm x 990 mm	per metre of completed sewer	-	9735	9735
	21.59.3	710 mm x 1065 mm	per metre of completed sewer	-	10045	10045
	21.59.4	760 mm x 1140 mm	per metre of completed sewer	-	10359	10359
	21.59.5	810 mm x 1215 mm	per metre of completed sewer	-	10679	10679
	21.59.6	860 mm x 1290 mm	per metre of completed sewer	-	11071	11071
	21.59.7	910 mm x 1365 mm	per metre of completed sewer	-	11364	11364
	21.59.8	970 mm x 1455 mm	per metre of completed sewer	-	11640	11640
	21.59.9	1020 mm x 1530 mm	per metre of completed sewer	-	11989	11989
	21.59.10	1070 mm x 1605 mm	per metre of completed sewer	-	12316	12316
	21.59.11	1120 mm x 1680 mm	per metre of completed sewer	-	12640	12640
	21.59.12	1170 mm x 1755 mm	per metre of completed sewer	-	13065	13065
21.60		Extra over and above the rates for item No. 21.58 and 21.59 above for every additional 4 metres depth or part thereof for depth of the invert level beyond 1.5 metres below ground level. The finished inside dimensions of egg shaped sewer being :-				
	21.60.1	610 mmx915 mm	per metre of completed sewer	-	60	60
	21.60.2	660 mm x 990 mm	per metre of completed sewer	-	62	62

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	21.60.3	710 mmx1065 mm	per metre of completed sewer	-	66	66
	21.60.4	760 mmx1140 mm	per metre of completed sewer	-	69	69
	21.60.5	810 mmx1215 mm	per metre of completed sewer	-	73	73
	21.60.6	860 mmx1290 mm	per metre of completed sewer	-	78	78
	21.60.7	910 mmx1365 mm	per metre of completed sewer	-	81	81
	21.60.8	970 mmx1455 mm	per metre of completed sewer	-	84	84
	21.60.9	1020 mmx1530 mm	per metre of completed sewer	-	88	88
	21.60.10	1070 mmx1605 mm	per metre of completed sewer	-	92	92
	21.60.11	1120 mmx1680 mm	per metre of completed sewer	-	95	95
	21.60.12	1170 mm x 1755mm	per metre of completed sewer	-	100	100
21.61		Construction of standard new-egg-shaped sewers as per standard drawing built up to 2/3rd height only (as constructed in manhole lengths) where the invert level of the sewer is up to 1.5 meters below G.L. including dressing of beds and sides of trenches to exact profiles, grades and alignments, lime concrete or cement lime sand concrete in beds and sides with 1:3 cement sand collar joint not less than 12 mm thick on side 1:1½:3 moulded cement concrete invert accurately finished with neat cement rendering face specially hand moulded first class radiated brick work laid in 1:3 cement sand mortar in the sides of the sewer with the entire inner surface of the sewer rendered with neat cement not less than 12 mm thick of 1:2 cement sand plaster and finished with a floating coat of neat cement left absolutely smooth polished and correct to template finished with two coats of sodium silicate wherever required. The rate includes the cost of accurately planed and fitted centring and moulds and supports for all works as well as for all curves bends falls and other special works and cleaning out of the sewer throughout their length. Sodium silicate shall be supplied free of cost at the stores of the Engineer-in-charge.				
	21.61.1	610 mmx915 mm				

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	21.61.1.1	Cost with lime concrete	per metre of completed sewer	-	2340	2340
	21.61.1.2	Cost with cement lime sand concrete	per metre of completed sewer	-	2456	2456
21.61.2	660 mm x 990 mm					
	21.61.2.1	Cost with lime concrete	per metre of completed sewer	-	2540	2540
	21.61.2.2	Cost with cement lime sand concrete	per metre of completed sewer	-	2663	2663
21.61.3	710 mm x 1065 mm					
	21.61.3.1	Cost with lime concrete	per metre of completed sewer	-	2683	2683
	21.61.3.2	Cost with cement lime sand concrete	per metre of completed sewer	-	2813	2813
21.61.4	760 mm x 1140 mm					
	21.61.4.1	Cost with lime concrete	per metre of completed sewer	-	2826	2826
	21.61.4.2	Cost with cement lime sand concrete	per metre of completed sewer	-	2963	2963
21.61.5	810 mm x 1215 mm					
	21.61.5.1	Cost with lime concrete	per metre of completed sewer	-	2974	2974
	21.61.5.2	Cost with cement lime sand concrete	per metre of completed sewer	-	3117	3117
21.61.6	860 mm x 1290 mm					
	21.61.6.1	Cost with lime concrete	per metre of completed sewer	-	3187	3187
	21.61.6.2	Cost with cement lime sand concrete	per metre of completed sewer	-	3339	3339
21.61.7	State 910 mm x 1365 mm					
	21.61.7.1	Cost with lime concrete	per metre of completed sewer	-	3331	3331

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	21.61.7.2	Cost with cement lime sand concrete	per metre of completed sewer	-	3489	3489
21.61.8	970 mm x 1455 mm					
	21.61.8.1	Cost with lime concrete	per metre of completed sewer	-	3474	3474
	21.61.8.2	Cost with cement lime sand concrete	per metre of completed sewer	-	3639	3639
21.61.9	1020 mm x 1530 mm					
	21.61.9.1	Cost with lime concrete	per metre of completed sewer	-	3641	3641
	21.61.9.2	Cost with cement lime sand concrete	per metre of completed sewer	-	3816	3816
21.61.10	1070 mm x 1605 mm					
	21.61.10.1	Cost with lime concrete	per metre of completed sewer	-	3837	3837
	21.61.10.2	Cost with cement lime sand concrete	per metre of completed sewer	-	4018	4018
21.61.11	1120 mm x 1680 mm					
	21.61.11.1	Cost with lime concrete	per metre of completed sewer	-	3984	3984
	21.61.11.2	Cost with cement lime sand concrete	per metre of completed sewer	-	4172	4172
21.61.12	1170 mm x 1755 mm					
	21.61.12.1	Cost with lime concrete	per metre of completed sewer	-	4152	4152
	21.61.12.2	Cost with cement lime sand concrete	per metre of completed sewer	-	4349	4349
21.62	Construction of standard new egg-shaped type sewer as per standard drawing built up to 2/3rd height only (as constructed in manhole lengths) as per described in item No. 29.61 above but with 1:2:9:24 cement lime sand concrete with stone ballast 20mm gauge in beds and sides in place of lime concrete or cement lime sand concrete with brick ballast. The finished inside dimensions of egg-shaped sewer being :-					
	21.62.1	610mm x 915mm	per metre of completed sewer	-	2629	2629

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	21.62.2	660mm x 990mm	per metre of completed sewer	-	2845	2845
	21.62.3	710mm x 1065mm	per metre of completed sewer	-	3005	3005
	21.62.4	760mm x 1140mm	per metre of completed sewer	-	3165	3165
	21.62.5	810mm x 1215mm	per metre of completed sewer	-	3330	3330
	21.62.6	860mm x 1290mm	per metre of completed sewer	-	3565	3565
	21.62.7	910mm x 1365mm	per metre of completed sewer	-	3725	3725
	21.62.8	970mm x 1455mm	per metre of completed sewer	-	3885	3885
	21.62.9	1020mm x 1530mm	per metre of completed sewer	-	4075	4075
	21.62.10	1070mm x 1605mm	per metre of completed sewer	-	4287	4287
	21.62.11	1120mm x 1680mm	per metre of completed sewer	-	4451	4451
	21.62.12	1170mm x 1755mm	per metre of completed sewer	-	4641	4641
21.63		Extra over and above the rate for item No. 21.61 and 21.62 for every additional 4 meters depth or part there of for depth of the invert level beyond 1.5 meters below ground level. The finished inside dimensions of egg-shaped sewer being :-				
	21.63.1	610mm x 915mm	per metre of completed sewer	-	28	28
	21.63.2	660mm x 990mm	per metre of completed sewer	-	31	31
	21.63.3	710mm x 1065mm	per metre of completed sewer	-	33	33

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	21.63.4	760mm x 1140mm	per metre of completed sewer	-	34	34
	21.63.5	810mm x 1215mm	per metre of completed sewer	-	36	36
	21.63.6	860mm x 1290mm	per metre of completed sewer	-	39	39
	21.63.7	910mm x 1365mm	per metre of completed sewer	-	40	40
	21.63.8	970mm x 1455mm	per metre of completed sewer	-	42	42
	21.63.9	1020mm x 1530mm	per metre of completed sewer	-	44	44
	21.63.10	1070mm x 1605mm	per metre of completed sewer	-	47	47
	21.63.11	1120mm x 1680mm	per metre of completed sewer	-	48	48
	21.63.12	1170mm x 1755mm	per metre of completed sewer	-	50	50

J. BRICK SEWERS

21.64 Construction of brick circular Non-pressure type sewers as per standard drawings where the invert level of the sewer is up to 1.5 metres be low ground level including dressing of beds and sides of trenches to exact profiles, grades and alignments, lime concrete or cement lime sand concrete in beds, sides and in haunches with 1:3 cement sand collar joint not less than 12 mm thick on sides 1:1.5:3 moulded cement concrete invert accurately finished with neat cement rendering face specially hand moulded 1st class radiated brick work laid on 1: 3 cement sand mortar in the inner arch rings of the sewer and specially hand moulded first class radiated brick work laid in 1: 4 cement sand mortar in the outer arch rings of sewers laid over arch 1: 3 cement sand collar joint not less than 12 mm in thickness formed round the inner arch layer of brick work and with the entire inner surface of the sewer rendered with neat cement not less than 12 mm in thickness of 1: 2 cement sand plaster and finished with a floating coat of neat cement left absolutely smooth polished and correct to templates finished with two coats of sodium silicate wherever required. The rates include the cost of accurately planed and fitted centring moulds and supports for all curves, bends falls and other special works and cleaning out of the sewer through out the lengths. Sodium silicate shall be supplied free of cost at the stores of the engineer-in-charge. The finished inside diameter of sewer being :-

21.64.1 760mm

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	21.64.1.1	Cost with lime concrete	per metre of completed sewer	-	4317	4317
	21.64.1.2	Cost with cement lime sand concrete	per metre of completed sewer	-	4422	4422
21.64.2	840mm					
	21.64.2.1	Cost with lime concrete	per metre of completed sewer	-	4685	4685
	21.64.2.2	Cost with cement lime sand concrete	per metre of completed sewer	-	4801	4801
21.64.3	915mm					
	21.64.3.1	Cost with lime concrete	per metre of completed sewer	-	5030	5030
	21.64.3.2	Cost with cement lime sand concrete	per metre of completed sewer	-	5160	5160
21.64.4	990mm					
	21.64.4.1	Cost with lime concrete	per metre of completed sewer	-	5664	5664
	21.64.4.2	Cost with cement lime sand concrete	per metre of completed sewer	-	5814	5814
21.64.5	1065mm					
	21.64.5.1	Cost with lime concrete	per metre of completed sewer	-	5897	5897
	21.64.5.2	Cost with cement lime sand concrete	per metre of completed sewer	-	6058	6058
21.64.6	1145mm					
	21.64.6.1	Cost with lime concrete	per metre of completed sewer	-	6411	6411
	21.64.6.2	Cost with cement lime sand concrete	per metre of completed sewer	-	6599	6599
21.64.7	1220mm					
	21.64.7.1	Cost with lime concrete	per metre of completed sewer	-	6846	6846

Item No.			Description	Unit	Labour Rate	Material Rate	Through Rate
		21.64.7.2	Cost with cement lime sand concrete	per metre of completed sewer	-	7052	7052
	21.64.8	1295mm					
		21.64.8.1	Cost with lime concrete	per metre of completed sewer	-	7205	7205
		21.64.8.2	Cost with cement lime sand concrete	per metre of completed sewer	-	7420	7420
	21.64.9	1370mm					
		21.64.9.1	Cost with lime concrete	per metre of completed sewer	-	8198	8198
		21.64.9.2	Cost with cement lime sand concrete	per metre of completed sewer	-	8489	8489
	21.64.10	1450mm					
		21.64.10.1	Cost with lime concrete	per metre of completed sewer	-	8726	8726
		21.64.10.2	Cost with cement lime sand concrete	per metre of completed sewer	-	9028	9028
	21.64.11	1525mm					
		21.64.11.1	Cost with lime concrete	per metre of completed sewer	-	8979	8979
		21.64.11.2	Cost with cement lime sand concrete	per metre of completed sewer	-	9295	9295
21.65	Construction of brick circular non pressure type sewer as per standard drawing as per described in item no. 21.64 above but with 1:2:9:24 cement lime sand concrete with stone ballast 20 mm gauge in beds sides and haunches in place of lime concrete or cement lime sand concrete with brick ballast.						
	The finished inside diameter of sewer being						
	21.65.1	760 mm		per metre of completed sewer	-	4578	4578
	21.65.2	840 mm		per metre of completed sewer	-	4974	4974
	21.65.3	915 mm		per metre of completed sewer	-	5352	5352

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	21.65.4	990 mm	per metre of completed sewer	-	6036	6036
	21.65.5	1065 mm	per metre of completed sewer	-	6297	6297
	21.65.6	1145 mm	per metre of completed sewer	-	6878	6878
	21.65.7	1220 mm	per metre of completed sewer	-	7358	7358
	21.65.8	1295 mm	per metre of completed sewer	-	7739	7739
	21.65.9	1370 mm	per metre of completed sewer	-	8921	8921
	21.65.10	1450 mm	per metre of completed sewer	-	9476	9476
	21.65.11	1525 mm	per metre of completed sewer	-	9763	9763
21.66	Extra over and above the rate for item no. 21.64 and 21.65 for every additional 4 metre depth or part thereof for depth of invert level beyond 1.5 metre below ground level. The finished inside diametre of sewer being:					
	21.66.1	760 mm	per metre length of completed sewer	-	56	56
	21.66.2	840 mm	per metre length of completed sewer	-	61	61
	21.66.3	915mm	per metre length of completed sewer	-	65	65
	21.66.4	990 mm	per metre length of completed sewer	-	72	72
	21.66.5	1065 mm	per metre length of completed sewer	-	76	76
	21.66.6	1145 mm	per metre length of completed sewer	-	83	83

Item No.			Description	Unit	Labour Rate	Material Rate	Through Rate
	21.66.7	1220 mm		per metre length of completed sewer	-	89	89
	21.66.8	1295 mm		per metre length of completed sewer	-	93	93
	21.66.9	1370 mm		per metre length of completed sewer	-	106	106
	21.66.10	1450 mm		per metre length of completed sewer	-	114	114
	21.66.11	1525 mm		per metre length of completed sewer	-	116	116
21.67	Construction of brick circular non-pressure type sewers as per standard drawings built up one half height only (as constructed in manhole lengths) where the invert level of the sewer is up to 1.5 meters below ground level including dressing of beds and sides of trenches to exact profiles, grades and alignment lime concrete or cement lime sand concrete in beds sides with 1:3 cement sand collar joint not less than 12 mm thick on sides 1:1-1/2:3 moulded cement concrete invert accurately finished with neat cement rendering face specially hand moulded 1st class radiated brick work laid in 1:3 cement sand mortar in the inner arch rings of sewers up to one half with the entire inner surface of the sewer rendered with neat cement not less than 12mm in thickness 1:2 cement sand plaster and finished with a floating coat of neat cement left absolutely smooth polished and correct to templates finished with two coats of sodium silicate where ever required. The rates include the cost of accurately planed and fitted centring mould and support for all works as well as for all curves, bends, falls and other special works and the cleaning out of the sewers throughout their lengths. Sodium silicate shall be supplied by the Engineer-in-charge. The finished inside dia-meter of sewer being-				
	21.67.1	760 mm					
		21.67.1.1	Cost with lime concrete	per metre of completed sewer	-	2047	2047
		21.67.1.2	Cost with cement lime sand concrete	per metre of completed sewer	-	2141	2141
	21.67.2	840 mm					
		21.67.2.1	Cost with lime concrete	per metre of completed sewer	-	2231	2231
		21.67.2.2	Cost with cement lime sand concrete	per metre of completed sewer	-	2336	2336
	21.67.3	915 mm					
		21.67.3.1	Cost with lime concrete	per metre of completed sewer	-	2471	2471

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	21.67.3.2	Cost with cement lime sand concrete	per metre of completed sewer	-	2588	2588
21.67.4	990 mm					
	21.67.4.1	Cost with lime concrete	per metre of completed sewer	-	2721	2721
	21.67.4.2	Cost with cement lime sand concrete	per metre of completed sewer	-	2855	2855
21.67.5	1065 mm					
	21.67.5.1	Cost with lime concrete	per metre of completed sewer	-	2869	2869
	21.67.5.2	Cost with cement lime sand concrete	per metre of completed sewer	-	3010	3010
21.67.6	1145 mm					
	21.67.6.1	Cost with lime concrete	per metre of completed sewer	-	3247	3247
	21.67.6.2	Cost with cement lime sand concrete	per metre of completed sewer	-	3415	3415
21.67.7	1120 mm					
	21.67.7.1	Cost with lime concrete	per metre of completed sewer	-	3480	3480
	21.67.7.2	Cost with cement lime sand concrete	per metre of completed sewer	-	3664	3664
21.67.8	1295 mm					
	21.67.8.1	Cost with lime concrete	per metre of completed sewer	-	3684	3684
	21.67.8.2	Cost with cement lime sand concrete	per metre of completed sewer	-	3874	3874
21.67.9	1370 mm					
	21.67.9.1	Cost with lime concrete	per metre of completed sewer	-	3879	3879
	21.67.9.2	Cost with cement lime sand concrete	per metre of completed sewer	-	4080	4080
21.67.10	1450 mm					

Item No.			Description	Unit	Labour Rate	Material Rate	Through Rate
		21.67.10.1	Cost with lime concrete	per metre of completed sewer	-	4037	4037
		21.67.10.2	Cost with cement lime sand concrete	per metre of completed sewer	-	4245	4245
	21.67.11	1525 mm					
		21.67.11.1	Cost with lime concrete	per metre of completed sewer	-	4261	4261
		21.67.11.2	Cost with cement lime sand concrete	per metre of completed sewer	-	4478	4478
21.68	Construction of brick circular non-pressure type sewers as per standard drawings built up one half height only (as constructed in manhole lengths) as per described in item no.21.67 above but with 1:2:9:24 cement lime sand concrete with stone ballast 20mm gauge in beds and sides in place of lime concrete or cement lime sand concrete with brick ballast. The finished inside diameter of sewer being.						
	21.68.1	760 mm		per metre of completed sewer	-	2280	2280
	21.68.2	840 mm		per metre of completed sewer	-	2492	2492
	21.68.3	915 mm		per metre of completed sewer	-	2760	2760
	21.68.4	990 mm		per metre of completed sewer	-	3055	3055
	21.68.5	1065 mm		per metre of completed sewer	-	3219	3219
	21.68.6	1145 mm		per metre of completed sewer	-	3664	3664
	21.68.7	1220 mm		per metre of completed sewer	-	3936	3936
	21.68.8	1295 mm		per metre of completed sewer	-	4157	4157
	21.68.9	1370 mm		per metre of completed sewer	-	4379	4379

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	21.68.10	1450 mm	per metre of completed sewer	-	4554	4554
	21.68.11	1525 mm	per metre of completed sewer	-	4801	4801
21.69	Extra over and above the rates for item No. 21.67 and 21.68 for every additional 4 metres depth or part thereof for depth of invert level beyond 1.5 metres below ground level. The finished inside diameter of sewer being :					
	21.69.1	760 mm	per metre	-	23	23
	21.69.2	840 mm	per metre	-	25	25
	21.69.3	915 mm	per metre	-	28	28
	21.69.4	990 mm	per metre	-	31	31
	21.69.5	1065 mm	per metre	-	33	33
	21.69.6	1145 mm	per metre	-	38	38
	21.69.7	1220 mm	per metre	-	41	41
	21.69.8	1295 mm	per metre	-	43	43
	21.69.9	1370 mm	per metre	-	45	45
	21.69.10	1450 mm	per metre	-	47	47
	21.69.11	1525 mm	per metre	-	50	50
	K. RCC cum Brick Circular Sewer					
21.70	Construction of R.C.C. cum brick circular (pressure type) sewer with full section without triangular portion concrete in bed as per standard drawings where the invert level of the sewer is 1.5 metres below ground level including dressing of beds and sides of trenches to exact profiles, grades and alignments, cement concrete 1:3:6 in beds and sides , R.C C. ring of cement concrete 1:2:4 , Specially hand moulded 1st class radiated brick work laid in 1:3 cement sand mortar in the inner and outer arch rings of the sewers and with the entire inner surface of the sewer rendered with neat cement not less than 12 mm in thickness of 1:2 cement sand plaster and finished with a floating coat of neat cement left absolutely smooth polished and correct to template finished with two coats of sodium silicate wherever required. The rates include the cost of accurately planed and fitted centring moulds and supports for all works as well as for all curves, bends, falls and other special work and cleaning out the sewer throughout their lengths. Sodium silicate and steel will be supplied free of cost at the stores of the Engineer-in-charge.					
	21.70.1	760 mm	per metre of completed sewer	-	5918	5918
	21.70.2	840 mm	per metre of completed sewer	-	6497	6497
	21.70.3	915 mm	per metre of completed sewer	-	7074	7074
	21.70.4	990 mm	per metre of completed sewer	-	7623	7623

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	21.70.5	1065 mm	per metre of completed sewer	-	8125	8125
	21.70.6	1145 mm	per metre of completed sewer	-	9205	9205
	21.70.7	1220 mm	per metre of completed sewer	-	9760	9760
	21.70.8	1295 mm	per metre of completed sewer	-	10647	10647
	21.70.9	1370 mm	per metre of completed sewer	-	11095	11095
	21.70.10	1450 mm	per metre of completed sewer	-	11632	11632
	21.70.11	1525 mm	per metre of completed sewer	-	12133	12133
21.71	Extra over and above the rates for item no.21.70 for every additional 4 metres depth or part there of for invert level beyond 1.5 metre below ground level					
	The finished inside diametre of sewer being					
	21.71.1	760 mm	per metre of completed sewer	-	56	56
	21.71.2	840 mm	per metre of completed sewer	-	61	61
	21.71.3	915 mm	per metre of completed sewer	-	67	67
	21.71.4	990 mm	per metre of completed sewer	-	72	72
	21.71.5	1065 mm	per metre of completed sewer	-	76	76
	21.71.6	1145 mm	per metre of completed sewer	-	86	86
	21.71.7	1220 mm	per metre of completed sewer	-	91	91

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	21.71.8	1295 mm	per metre of completed sewer	-	99	99
	21.71.9	1370 mm	per metre of completed sewer	-	102	102
	21.71.10	1450 mm	per metre of completed sewer	-	107	107
	21.71.11	1525 mm	per metre of completed sewer	-	112	112
21.72	Construction of R.C.C cum brick circular (pressure type) sewers with triangular portion concrete in bed as per standard drawings as described in item no.21.70 above. The finished inside diametre of sewer being:					
	21.72.1	760 mm	per metre of completed sewer	-	6530	6530
	21.72.2	840 mm	per metre of completed sewer	-	7238	7238
	21.72.3	915 mm	per metre of completed sewer	-	7847	7847
	21.72.4	990 mm	per metre of completed sewer	-	8493	8493
	21.72.5	1065 mm	per metre of completed sewer	-	9091	9091
	21.72.6	1145 mm	per metre of completed sewer	-	10397	10397
	21.72.7	1220 mm	per metre of completed sewer	-	11145	11145
	21.72.8	1295 mm	per metre of completed sewer	-	12096	12096
	21.72.9	1370 mm	per metre of completed sewer	-	12673	12673
	21.72.10	1450 mm	per metre of completed sewer	-	13308	13308

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	21.72.11	1525 mm	per metre of completed sewer	-	13937	13937
21.73	Extra over and above the rates for item No. 21.72 for every additional 4 metres depth or part thereof for depth of the invert level beyond 1.5 metres below ground level. The finished inside diametre of sewer being					
	21.73.1	760 mm	per metre of completed sewer	-	61	61
	21.73.2	840 mm	per metre of completed sewer	-	67	67
	21.73.3	915 mm	per metre of completed sewer	-	73	73
	21.73.4	990 mm	per metre of completed sewer	-	79	79
	21.73.5	1065 mm	per metre of completed sewer	-	84	84
	21.73.6	1145 mm	per metre of completed sewer	-	95	95
	21.73.7	1220 mm	per metre of completed sewer	-	102	102
	21.73.8	1295 mm	per metre of completed sewer	-	111	111
	21.73.9	1370 mm	per metre of completed sewer	-	115	115
	21.73.10	1450 mm	per metre of completed sewer	-	121	121
	21.73.11	1525 mm	per metre of completed sewer	-	127	127

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
21.74		Construction of R.C.C.-cum-brick circular (pressure type) sewer as per standard drawings where the invert level of the sewer is up to 1.5 metres below ground level built up to one half height only (as constructed in manholes lengths) without triangular portion concrete in bed including dressing of beds and sides of trenches to exact profiles, grade and alignments, cement concrete 1:3:6 in beds and sides, R.C.C. ring of cement concrete 1:2:4, specially hand moulded first class radiated brick work laid in 1:3 cement sand mortar in the inner arch ring of the sewer with the entire inner surface of the sewer rendered with neat cement not less than 12 mm in thickness of 1:2 cement sand plaster and finished with a floating coat of neat cement left absolutely smooth polished and correct to templates, finished with two coats of sodium silicate wherever required, The rates include the cost of accurately planed and fitted centring moulds and supports for all works and cleaning out the sewer throughout their lengths. sodium silicate and steel will be supplied free of cost at the stores of the Engineer-in-in charge. The finished inside diametre of sewer being:				
	21.74.1	760 mm	per metre of completed sewer	-	2185	2185
	21.74.2	840 mm	per metre of completed sewer	-	2435	2435
	21.74.3	915 mm	per metre of completed sewer	-	2600	2600
	21.74.4	990 mm	per metre of completed sewer	-	2766	2766
	21.74.5	1065 mm	per metre of completed sewer	-	3003	3003
	21.74.6	1145 mm	per metre of completed sewer	-	3309	3309
	21.74.7	1220 mm	per metre of completed sewer	-	3503	3503
	21.74.8	1295 mm	per metre of completed sewer	-	3745	3745
	21.74.9	1370 mm	per metre of completed sewer	-	3977	3977
	21.74.10	1450 mm	per metre of completed sewer	-	4176	4176
	21.74.11	1525 mm	per metre of completed sewer	-	4401	4401

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
21.75	Extra over and above the rates for item no.21.74 for every additional 4 metres depth or part there of for invert level beyond 1.5 metre below ground level. The finished inside diametre of sewer being:					
	21.75.1	760 mm	per metre of completed sewer	-	31	31
	21.75.2	840 mm	per metre of completed sewer	-	34	34
	21.75.3	915 mm	per metre of completed sewer	-	37	37
	21.75.4	990 mm	per metre of completed sewer	-	40	40
	21.75.5	1065 mm	per metre of completed sewer	-	43	43
	21.75.6	1145 mm	per metre of completed sewer	-	48	48
	21.75.7	1220 mm	per metre of completed sewer	-	51	51
	21.75.8	1295 mm	per metre of completed sewer	-	54	54
	21.75.9	1370 mm	per metre of completed sewer	-	57	57
	21.75.10	1450 mm	per metre of completed sewer	-	59	59
	21.75.11	1525 mm	per metre of completed sewer	-	61	61
21.76	Construction of RCC-cum-Brick circular (pressure type) sewers with triangular portion concrete in bed as per standard drawings as per described in item no. 21.74 above. The finished inside dia metre of sewer being:					
	21.76.1	760 mm	per metre of completed sewer	-	2797	2797
	21.76.2	840 mm	per metre of completed sewer	-	3176	3176

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	21.76.3	915 mm	per metre of completed sewer	-	3373	3373
	21.76.4	990 mm	per metre of completed sewer	-	3636	3636
	21.76.5	1065 mm	per metre of completed sewer	-	3970	3970
	21.76.6	1145 mm	per metre of completed sewer	-	4501	4501
	21.76.7	1220 mm	per metre of completed sewer	-	4888	4888
	21.76.8	1295 mm	per metre of completed sewer	-	5194	5194
	21.76.9	1370 mm	per metre of completed sewer	-	5555	5555
	21.76.10	1450 mm	per metre of completed sewer	-	5851	5851
	21.76.11	1525 mm	per metre of completed sewer	-	6204	6204
21.77	Extra over and above the rates for item no.21.76 above for every additional 4 metres depth or part thereof for depth of invert level beyond 1.5 metres below ground level. The finished inside diametre of sewer being:					
	21.77.1	760 mm	per metre of completed sewer	-	36	36
	21.77.2	840 mm	per metre of completed sewer	-	40	40
	21.77.3	915 mm	per metre of completed sewer	-	43	43
	21.77.4	990 mm	per metre of completed sewer	-	47	47
	21.77.5	1065 mm	per metre of completed sewer	-	51	51

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	21.77.6	1145 mm	per metre of completed sewer	-	58	58
	21.77.7	1220 mm	per metre of completed sewer	-	62	62
	21.77.8	1295 mm	per metre of completed sewer	-	66	66
	21.77.9	1370 mm	per metre of completed sewer	-	69	69
	21.77.10	1450 mm	per metre of completed sewer	-	73	73
	21.77.11	1525 mm	per metre of completed sewer	-	76	76
	L. CIRCULAR STORM WATER BRICK DRAINS					
21.78	Construction of brick circular storm water drains as per standard drawings where the invert level of the drain is up to 1.5 metres below ground level including dressing of beds and sides of trenches to exact profiles, grades and alignments lime concrete or cement lime sand concrete in beds and sides specially hand moulded first class radiated brick work laid in 1:4 cement sand mortar in the inner and outer arch rings of drain and with the entire inner surface of the drain rendered with neat cement not less than 12 mm in thickness of 1.2 cement sand plaster and finished with a floating coat of neat cement left absolutely smooth polished and correct to templates finished with two coats of sodium silicate wherever required. The rates include the cost of accurately planed and fitted centring moulds and supports for all works as well as for all curves, bends, falls and other special works and cleaning out of the storm water drain throughout their lengths. Sodium silicate will be supplied free of cost at the stores of the Engineer-in-charge. The finished inside diameter of storm water drain:					
	21.78.1	685 mm				
		21.78.1.1 Cost with lime concrete	per metre of completed drain	-	3254	3254
		21.78.1.2 Cost with cement lime sand concrete	per metre of completed drain	-	3317	3317
	21.78.2	760 mm				
		21.78.2.1 Cost with lime concrete	per metre of completed drain	-	3523	3523
		21.78.2.2 Cost with cement lime sand concrete	per metre of completed drain	-	3590	3590
	21.78.3	840 mm				

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	21.78.3.1	Cost with lime concrete	per metre of completed drain	-	3835	3835
	21.78.3.2	Cost with cement lime sand concrete	per metre of completed drain	-	3911	3911
21.78.4	915 mm					
	21.78.4.1	Cost with lime concrete	per metre of completed drain	-	4128	4128
	21.78.4.2	Cost with cement lime sand concrete	per metre of completed drain	-	4211	4211
21.78.5	990 mm					
	21.78.5.1	Cost with lime concrete	per metre of completed drain	-	4403	4403
	21.78.5.2	Cost with cement lime sand concrete	per metre of completed drain	-	4490	4490
21.78.6	1065 mm					
	21.78.6.1	Cost with lime concrete	per metre of completed drain	-	4678	4678
	21.78.6.2	Cost with cement lime sand concrete	per metre of completed drain	-	4770	4770
21.78.7	1145 mm					
	21.78.7.1	Cost with lime concrete	per metre of completed drain	-	4996	4996
	21.78.7.2	Cost with cement lime sand concrete	per metre of completed drain	-	5097	5097
21.78.8	1220 mm					
	21.78.8.1	Cost with lime concrete	per metre of completed drain	-	5275	5275
	21.78.8.2	Cost with cement lime sand concrete	per metre of completed drain	-	5380	5380
21.78.9	1295 mm					
	21.78.9.1	Cost with lime concrete	per metre of completed drain	-	5554	5554

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	21.78.9.2	Cost with cement lime sand concrete	per metre of completed drain	-	5664	5664
21.78.10	1370 mm					
	21.78.10.1	Cost with lime concrete	per metre of completed drain	-	5835	5835
	21.78.10.2	Cost with cement lime sand concrete	per metre of completed drain	-	5949	5949
21.78.11	1450 mm					
	21.78.11.1	Cost with lime concrete	per metre of completed drain	-	6165	6165
	21.78.11.2	Cost with cement lime sand concrete	per metre of completed drain	-	6283	6283
21.78.12	1525 mm					
	21.78.12.1	Cost with lime concrete	per metre of completed drain	-	6468	6468
	21.78.12.2	Cost with cement lime sand concrete	per metre of completed drain	-	6593	6593
21.78.13	1600 mm					
	21.78.13.1	Cost with lime concrete	per metre of completed drain	-	6752	6752
	21.78.13.2	Cost with cement lime sand concrete	per metre of completed drain	-	6881	6881
21.78.14	1680 mm					
	21.78.14.1	Cost with lime concrete	per metre of completed drain	-	7041	7041
	21.78.14.2	Cost with cement lime sand concrete	per metre of completed drain	-	7175	7175
21.78.15	1755 mm					
	21.78.15.1	Cost with lime concrete	per metre of completed drain	-	7368	7368
	21.78.15.2	Cost with cement lime sand concrete	per metre of completed drain	-	7511	7511
21.78.16	1830 mm					

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	21.78.16.1	Cost with lime concrete	per metre of completed drain	-	7655	7655
	21.78.16.2	Cost with cement lime sand concrete	per metre of completed drain	-	7803	7803
21.79	Construction of brick circular storm water drains as per standard drawings as described in item no. 21.78 above but with cement lime sand concrete 1:2:9:24 with stone ballast of 20 mm (as specified in item no. 10.18) gauge in beds and sides. The finished inside diametre of storm water drain being :-					
	21.79.1	685 mm	per metre of completed drain	-	3472	3472
	21.79.2	760 mm	per metre of completed drain	-	3757	3757
	21.79.3	840 mm	per metre of completed drain	-	4100	4100
	21.79.4	915 mm	per metre of completed drain	-	4416	4416
	21.79.5	990 mm	per metre of completed drain	-	4707	4707
	21.79.6	1065 mm	per metre of completed drain	-	4998	4998
	21.79.7	1145 mm	per metre of completed drain	-	5347	5347
	21.79.8	1220 mm	per metre of completed drain	-	5641	5641
	21.79.9	1295 mm	per metre of completed drain	-	5936	5936
	21.79.10	1370 mm	per metre of completed drain	-	6233	6233
	21.79.11	1450 mm	per metre of completed drain	-	6578	6578
	21.79.12	1525 mm	per metre of completed drain	-	6905	6905

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	21.79.13	1600 mm	per metre of completed drain	-	7204	7204
	21.79.14	1680 mm	per metre of completed drain	-	7509	7509
	21.79.15	1755 mm	per metre of completed drain	-	7867	7867
	21.79.16	1830 mm	per metre of completed drain	-	8170	8170
21.80	Extra over and above the rates for item No. 21.78 and 21.79 for every additional 4 metres depth or part thereof for depth of invert level beyond 1.5 metres below ground level. The finished inside diameter of storm water drain being:-					
	21.80.1	685 mm	per metre of completed drain	-	49	49
	21.80.2	760 mm	per metre of completed drain	-	53	53
	21.80.3	840 mm	per metre of completed drain	-	58	58
	21.80.4	915 mm	per metre of completed drain	-	62	62
	21.80.5	990 mm	per metre of completed drain	-	66	66
	21.80.6	1065 mm	per metre of completed drain	-	70	70
	21.80.7	1045 mm	per metre of completed drain	-	74	74
	21.80.8	1020 mm	per metre of completed drain	-	78	78
	21.80.9	1295 mm	per metre of completed drain	-	82	82
	21.80.10	1370 mm	per metre of completed drain	-	86	86

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	21.80.11	1450 mm	per metre of completed drain	-	91	91
	21.80.12	1525 mm	per metre of completed drain	-	95	95
	21.80.13	1600 mm	per metre of completed drain	-	99	99
	21.80.14	1680 mm	per metre of completed drain	-	103	103
	21.80.15	1755 mm	per metre of completed drain	-	108	108
	21.80.16	1830 mm	per metre of completed drain	-	112	112
21.81	Construction of brick circular storm water drains as per standard drawings, built up one half height only (as constructed in manhole lengths) where the invert level of the drain is up to 1.5 meters below ground level including dressing of beds and sides of trenches to exact profiles, grades and alignments, lime concrete or cement lime sand concrete in beds and sides with 1:4 cement sand mortar in the inner arch rings of the storm water drain and with the entire inner surface of the drain rendered with neat cement not less than 12 mm in thickness of 1:2 cement sand plaster and finished with a floating coat of neat cement left absolutely smooth polished and correct to templates finished with two coats of sodium silicate wherever required. The rates include the cost of accurately planed and fitted centring moulds and supports for all works as well as for all curves, bends, falls and other special works and cleaning of the storm water drains throughout their lengths. Sodium silicate will be supplied free of cost at the stores of the Engineer-in-charge. The finished inside diameter of storm water drain being :					
	21.81.1	685 mm				
		21.81.1.1 Cost with lime concrete	per metre of completed drain	-	1493	1493
		21.81.1.2 Cost with cement lime sand concrete	per metre of completed drain	-	1555	1555
	21.81.2	760 mm				
		21.81.2.1 Cost with lime concrete	per metre of completed drain	-	1603	1603
		21.81.2.2 Cost with cement lime sand concrete	per metre of completed drain	-	1671	1671
	21.81.3	840 mm				

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	21.81.3.1	Cost with lime concrete	per metre of completed drain	-	1800	1800
	21.81.3.2	Cost with cement lime sand concrete	per metre of completed drain	-	1876	1876
21.81.4	915 mm					
	21.81.4.1	Cost with lime concrete	per metre of completed drain	-	1932	1932
	21.81.4.2	Cost with cement lime sand concrete	per metre of completed drain	-	2015	2015
21.81.5	990 mm					
	21.81.5.1	Cost with lime concrete	per metre of completed drain	-	2045	2045
	21.81.5.2	Cost with cement lime sand concrete	per metre of completed drain	-	2133	2133
21.81.6	1065 mm					
	21.81.6.1	Cost with lime concrete	per metre of completed drain	-	2205	2205
	21.81.6.2	Cost with cement lime sand concrete	per metre of completed drain	-	2297	2297
21.81.7	1145 mm					
	21.81.7.1	Cost with lime concrete	per metre of completed drain	-	2358	2358
	21.81.7.2	Cost with cement lime sand concrete	per metre of completed drain	-	2459	2459
21.81.8	1220 mm					
	21.81.8.1	Cost with lime concrete	per metre of completed drain	-	2475	2475
	21.81.8.2	Cost with cement lime sand concrete	per metre of completed drain	-	2580	2580
21.81.9	1295 mm					
	21.81.9.1	Cost with lime concrete	per metre of completed drain	-	2637	2637

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	21.81.9.2	Cost with cement lime sand concrete	per metre of completed drain	-	2747	2747
21.81.10	1370 mm					
	21.81.10.1	Cost with lime concrete	per metre of completed drain	-	2753	2753
	21.81.10.2	Cost with cement lime sand concrete	per metre of completed drain	-	2867	2867
21.81.11	1450 mm					
	21.81.11.1	Cost with lime concrete	per metre of completed drain	-	2872	2872
	21.81.11.2	Cost with cement lime sand concrete	per metre of completed drain	-	2990	2990
21.81.12	1525 mm					
	21.81.12.1	Cost with lime concrete	per metre of completed drain	-	3056	3056
	21.81.12.2	Cost with cement lime sand concrete	per metre of completed drain	-	3181	3181
21.81.13	1600 mm					
	21.81.13.1	Cost with lime concrete	per metre of completed drain	-	3175	3175
	21.81.13.2	Cost with cement lime sand concrete	per metre of completed drain	-	3305	3305
21.81.14	1680 mm					
	21.81.14.1	Cost with lime concrete	per metre of completed drain	-	3342	3342
	21.81.14.2	Cost with cement lime sand concrete	per metre of completed drain	-	3476	3476
21.81.15	1755 mm					
	21.81.15.1	Cost with lime concrete	per metre of completed drain	-	3502	3502
	21.81.15.2	Cost with cement lime sand concrete	per metre of completed drain	-	3646	3646
21.81.16	1830 mm					

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	21.81.16.1	Cost with lime concrete	per metre of completed drain	-	3624	3624
	21.81.16.2	Cost with cement lime sand concrete	per metre of completed drain	-	3772	3772
21.82	Construction of brick circular storm water drains as per standard drawings built up to one half height only (as constructed in manhole length)as per described in item No. 21.81 above, but with cement lime sand concrete 1:2:9:24 with stone ballast of 20 mm gauge in beds and sides The finished inside diameter of storm water drain being :-					
	21.82.1	685 mm	per metre of completed drain	-	1711	1711
	21.82.2	760 mm	per metre of completed drain	-	1826	1826
	21.82.3	840 mm	per metre of completed drain	-	2032	2032
	21.82.4	915 mm	per metre of completed drain	-	2171	2171
	21.82.5	990 mm	per metre of completed drain	-	2288	2288
	21.82.6	1065 mm	per metre of completed drain	-	2452	2452
	21.82.7	1145 mm	per metre of completed drain	-	2614	2614
	21.82.8	1220 mm	per metre of completed drain	-	2736	2736
	21.82.9	1295 mm	per metre of completed drain	-	2902	2902
	21.82.10	1370 mm	per metre of completed drain	-	3022	3022
	21.82.11	1450 mm	per metre of completed drain	-	3146	3146
	21.82.12	1525 mm	per metre of completed drain	-	3336	3336

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	21.82.13	1600 mm	per metre of completed drain	-	3460	3460
	21.82.14	1680 mm	per metre of completed drain	-	3632	3632
	21.82.15	1755 mm	per metre of completed drain	-	3801	3801
	21.82.16	1830 mm	per metre of completed drain	-	3928	3928
21.83		Extra over and above the rates for item No. 21.81 and 21.82 for every additional 4 metres depth or part there of for depth of invert level beyond 1.5 metres below ground level. The finished inside dia meter of storm water drain being:				
	21.83.1	685 mm	per metre of completed drain	-	20	20
	21.83.2	760 mm	per metre of completed drain	-	22	22
	21.83.3	840 mm	per metre of completed drain	-	24	24
	21.83.4	915 mm	per metre of completed drain	-	26	26
	21.83.5	990 mm	per metre of completed drain	-	27	27
	21.83.6	1065 mm	per metre of completed drain	-	30	30
	21.83.7	1045 mm	per metre of completed drain	-	32	32
	21.83.8	1020 mm	per metre of completed drain	-	33	33
	21.83.9	1295 mm	per metre of completed drain	-	35	35
	21.83.10	1370 mm	per metre of completed drain	-	37	37

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
21.83.11	1450 mm	per metre of completed drain	-	38	38
21.83.12	1525 mm	per metre of completed drain	-	41	41
21.83.13	1600 mm	per metre of completed drain	-	42	42
21.83.14	1680 mm	per metre of completed drain	-	44	44
21.83.15	1755 mm	per metre of completed drain	-	46	46
21.83.16	1830 mm	per metre of completed drain	-	47	47

Notes: (i) For all types of sewers/drains described under item no.21.58,21.59,21.61,21.62,21.64,21.65,21.67,21.68,21.70, 21.72, 21.74, 21.76,21.78, 21.79, 21.81 and 21.82, the through rates laid down in these items shall be payable in all cases and not the individual rates for lime concrete, brick work and other separate components item of work as laid down in this Schedule.

(ii) In the case of manholes, junctions and junction chambers, flushing tanks and various works however payment will be made on the basis of detailed measurements of each separate item of work carried out under the heads lime concrete, plain concrete and concrete for reinforcement, brick work pointing and plastering etc. as laid down and described in this Schedule.

(iii) In the event of any extra or additional work being carried out under orders in writing of the Engineer-in-charge of the works in connection with any type of sewer the same shall be measured and paid for at the respective rates laid down in this Scheduled under the heads lime concrete plain concrete and concrete for re-inforcement, brick work pointing and plastering for the items of extra works actually carried out.

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
		(iv)In the event of Engineer-in-charge requiring the provision of the whole or any part of the foundation or envelope of any type of sewers to be constructed of cement concrete in place of lime concrete/ cement lime sand concrete a deduction shall be made according to the rates specified for lime concrete /cement lime sand concrete in beds and sides and in haunches and top arch rings etc. on account of the actual volume of lime concrete or cement lime sand concrete from the amount payable to the contractors and the contactor shall be entitled to payment for the cement concrete work actually carried out by him under the orders of the Engineer-in-charge at the relevant rates laid down in this Schedule of Rates depending on the Specifications and description of the said concrete work, No extra over and above the said rate laid down in this Schedule of Rates shall be allowed to the contractor due to difficulties of the works small dimensions, laying concrete in or under water, or on account of any troubles or difficulties whatsoever which may be encountered by him in the work and the contractor before tendering for the work shall make himself thoroughly acquainted with all local conditions and difficulties in respect thereof in his tender.				
		(v) Socketed joints made on branch pipes, junctions or blocks laid in connection with the brick burn sewers will be paid for at the rate laid down for jointing salt glazed stone ware pipes vide item No.21.39.				
		M. MASONRY CHAMBERS				
21.84		Constructing brick masonry inspection Chamber sizes as given below up to 0.60 metre average depth in cement mortar 1:5 lime concrete with 40 per cent lime mortar 2:3 in foundation cement concrete 1:2:4 benching 12mm thick cement plaster 1:2 with a floating coat of 1 mm thick of neat cement R.C.C. 1:2:4 slab 100 mm thick/cement concrete topping, 50mm thick with 455mmx455mm / 455mm x610mm inside light duty C.I. inspection chamber cover and frame weight as per I.S.I. specification painted with 3 coats of black bitumastic superior paint complete as per standard design.				
	21.84.1	Size 450 mm X450 mm inside (with 455 mm x 455 mm cover and frame light duty single seal weighing 20 kg with C.C. topping	each	-	3905	3905
	21.84.2	Size 450 mm X 600 mm inside (with 455 mm x 610 mm cover and frame single seal pattern I weighing 38 kg with C.C. topping)	each	-	5573	5573
	21.84.3	Size 600 mm X900 mm inside (with 455 mm x 455 mm cover and frame light duty single seal weighing 20 kg with R.C.C. slab)	each	-	6090	6090
		Note: Normally inspection chambers of 450 mm x 450mm and 450mm x 600 mm should be constructed. In very exceptional cases where connections cannot be accommodated in 450 mm X 600 mm size inspection chamber of 600 mm x 900 mm be adopted.				
21.85		Extra for every 0.30 metre depth of Inspection chamber				
	21.85.1	450 mm x 450 mm inside	per 0.30 metre depth	-	853	853
	21.85.2	450 mmx 600 mm inside	per 0.30 metre depth	-	948	948
	21.85.3	600 mm x 900 mm inside	per 0.30 metre depth	-	1274	1274

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
21.86	Constructing brick masonry ventilating chambers as per standard drawings including dressing of beds and sides of chamber to exact profiles 15 cm lime concrete 16:24100 (as per specified in item No. 10.6) in foundation, first class brick work laid in cement sand mortar 1:5, cement concrete 1:2:4 for reinforced concrete work in slab 12mm thick cement for plaster 1:2 rendered with a floating coat of neat cement 1mm thick over exposed brick tablet and inside walls, lime pointing 2:3 on outside complete and as required by the Engineer-in-charge		each	-	9296	9296
21.87	Constructing brick masonry road gully chambers as per standard drawings (as per sizes given below) including dressing of beds and sides of chambers to exact profiles, 15cm thick lime concrete 16:24:100 (as per specified in item No.10.6) in foundations 1st class brick work laid in cement sand mortar 1:5, 40 mm thick cement concrete 1:2:4 topping inside the chamber with a floating coat of 1.5mm thick neat cement laid in one operation to the topping, the entire inner surface of the chamber rendered with neat cement not less than 12mm in thickness of 1:2 cement sand plaster and finished with floating coat of neat cement 1 mm thick left absolutely smooth polished and correct to templates including labour for fixing the C.I. road gully grating and frame including painting with coal tar (as Specified in item No. Item 21.48) complete to the requirement of the Engineer in-charge					
	21.87.1	Single road gully chamber				
		21.87.1.1	Size: 610mm x 457mm x 800mm	each	-	3625	3625
		21.87.1.2	Size.-610 mmx457 mmx1105mm	each	-	4575	4575
	21.87.2	Double Road Gully Chamber				
		21.87.2.1	Size 1448mm x 457mm x 800mm	each	-	5978	5978
		21.87.2.2	Size: 1448mm x 457mm x 1105 mm	each	-	1552	1552
21.88	Reduction for every 7.5 cm depth of road gully chamber from the rate of item No. 29.87 above.					
	21.88.1	Single Road Gully Chamber		each	-	239	239
	21.88.2	Double road gully chamber		each	-	392	392
	N. MANHOLE CHAMBERS					
21.89	Construction of rectangular standard brick masonry manhole chambers to standard drawings on new. egg-shaped sewers up to the required depth in 1:5 cement sand mortar, lime concrete 40 percent lime mortar with 19-20 mm gauge brick ballast in haunches above the arch ring where the depth of cover in traffic streets is less than 1.5 metres, 12mm thick water tight 1:2 cement sand plaster with a floating coat of neat cement and finished with two coats of sodium silicate on interior surface where required, reinforced cement concrete slab 180mm thick fixing 560 mm internal diameter C.I. manhole frame and cover weight not less than 2.5 quintal painted with 3 coats of black bitumen paint, fixing galvanised malleable iron steps embedded in 1:2 cement sand mortar etc., complete. the rate also covers the cost of M.S. steel for R.C.C. slab labour for fixing and carriage of C.I. manhole frame and cover and malleable iron steps from the stores of the engineer-in-charge of the works to site of works. The rate further includes cost of accurately planned and fitted centring, supports for all works, as well as for all curves and specials work cleaning out their beds, etc. sodium silicate shall be supplied free of cost at the stores of Engineer-in-charge.					
	21.89.1	**On egg-shaped sewers of size 610mm X 915 mm to 860 mm X 1290 mm**				
		21.89.1.1	for 2.40 meters depth below ground level	each	-	-	11958
		21.89.1.2	for 2.70 meters depth below ground level	each	-	-	12899
		21.89.1.3	for 3.00 meters depth below ground level	each	-	-	13840
		21.89.1.4	for 3.40 meters depth below ground level	each	-	-	14781
		21.89.1.5	for 3.70 meters depth below ground level	each	-	-	15313
		21.89.1.6	for 4.00 meters depth below ground level	each	-	-	17466
		21.89.1.7	for 4.30 meters depth below ground level	each	-	-	18380
		21.89.1.8	for 4.60 meters depth below ground level	each	-	-	19210

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	21.89.1.9	for 4.90 meters depth below ground level	each	-	-	20151
	21.89.1.10	for 5.20 meters depth below ground level	each	-	-	21203
	21.89.1.11	for 5.50 meters depth below ground level	each	-	-	22033
	21.89.1.12	for 5.80 meters depth below ground level	each	-	-	22698
	21.89.1.13	for 6.10 meters depth below ground level	each	-	-	24026
21.89.2		**On egg-shaped sewers of size 910mm X 1365 mm to 970 mm x 1455 mm**				
	21.89.2.1	for 3.70 meters depth below ground level	each	-	-	29147
	21.89.2.2	for 4.00 meters depth below ground level	each	-	-	30337
	21.89.2.3	for 4.30 meters depth below ground level	each	-	-	31129
	21.89.2.4	for 4.60 meters depth below ground level	each	-	-	32220
	21.89.2.5	for 4.90 meters depth below ground level	each	-	-	33161
	21.89.2.6	for 5.20 meters depth below ground level	each	-	-	34379
	21.89.2.7	for 5.50 meters depth below ground level	each	-	-	35320
	21.89.2.8	for 5.80 meters depth below ground level	each	-	-	37590
	21.89.2.9	for 6.10 meters depth below ground level	each	-	-	39998
21.89.3		**On egg-shaped sewers of size 1020mm X 1530 mm or above.**				
	21.89.3.1	for 3.70 meters depth below ground level	each	-	-	30337
	21.89.3.2	for 4.00 meters depth below ground level	each	-	-	31417
	21.89.3.3	for 4.30 meters depth below ground level	each	-	-	32358
	21.89.3.4	for 4.60 meters depth below ground level	each	-	-	33438
	21.89.3.5	for 4.90 meters depth below ground level	each	-	-	34379
	21.89.3.6	for 5.20 meters depth below ground level	each	-	-	35431
	21.89.3.7	for 5.50 meters depth below ground level	each	-	-	36510
	21.89.3.8	for 5.80 meters depth below ground level	each	-	-	38531
	21.89.3.9	for 6.10 meters depth below ground level	each	-	-	41354
21.90		Construction of rectangular standard brick masonry manhole chambers to standard drawings on S.W. pipe sewers or other circular pipe sewers up to the required depth in 1.5 cement sand mortar, lime concrete in bed and sides of pipe sewer and cement concrete 1:2:4 in benching, 12 mm thick water tight 1:2 cement sand plaster with a floating coat of neat cement and finished with 2 coats of sodium silicate on interior surface where required, reinforced cement concrete slab 180mm thick fixing 560 mm internal diameter C.I. manhole cover and frame weight not less than 2.5 quintal painted with 3 coats of black bitumen paint, fixing galvanised malleable iron steps embedded in 1:2 cement sand mortar complete. the rate covers the cost of M.S. steel for R.C.C. slab labour for fixing and carriage of C.I. manhole frame and cover and malleable iron steps from the stores of the Engineer-in-charge of the works to the site of works. The rate also include the cost of accurately planned and fitted centring, supports for all works as well as for all curves and special work, cleaning out their beds etc. sodium silicate shall be supplied free of cost at the stores of the Engineer-in-charge.					
21.90.1		**On 100 mm internal diameter pipe sewer.**				
	21.90.1.1	for 1.20 meters depth below ground level	each	-	-	10463
	21.90.1.2	for 1.50 meters depth below ground level	each	-	-	12096
	21.90.1.3	for 1.80 meters depth below ground level	each	-	-	13702
21.90.2		**On 150 mm internal diameter pipe sewer.**				
	21.90.2.1	for 1.20 meters depth below ground level	each	-	-	11543
	21.90.2.2	for 1.50 meters depth below ground level	each	-	-	13286
	21.90.2.3	for 1.80 meters depth below ground level	each	-	-	14781
	21.90.2.4	for 2.10 meters depth below ground level	each	-	-	16525
	21.90.2.5	for 2.40 meters depth below ground level	each	-	-	18269

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
21.90.3	On 175 mm internal diameter pipe sewer.					
	21.90.3.1	for 1.80 meters depth below ground level	each	-	-	15169
	21.90.3.2	for 2.10 meters depth below ground level	each	-	-	16913
	21.90.3.3	for 2.40 meters depth below ground level	each	-	-	18795
	21.90.3.4	for 2.70 meters depth below ground level	each	-	-	20400
	21.90.3.5	for 3.00 meters depth below ground level	each	-	-	21092
21.90.4	On 200 mm internal diameter pipe sewer.					
	21.90.4.1	for 1.80 meters depth below ground level	each	-	-	15584
	21.90.4.2	for 2.10 meters depth below ground level	each	-	-	17328
	21.90.4.3	for 2.40 meters depth below ground level	each	-	-	18906
	21.90.4.4	for 2.70 meters depth below ground level	each	-	-	20400
	21.90.4.5	for 3.00 meters depth below ground level	each	-	-	21203
21.90.5	On 225 mm internal diameter pipe sewer.					
	21.90.5.1	for 1.80 meters depth below ground level	each	-	-	15833
	21.90.5.2	for 2.10 meters depth below ground level	each	-	-	17605
	21.90.5.3	for 2.40 meters depth below ground level	each	-	-	19348
	21.90.5.4	for 2.70 meters depth below ground level	each	-	-	20760
	21.90.5.5	for 3.00 meters depth below ground level	each	-	-	21341
	21.90.5.6	for 3.70 meters depth below ground level	each	-	-	26185
21.90.6	On 250 mm internal diameter pipe sewer.					
	21.90.6.1	for 2.40 meters depth below ground level	each	-	-	20013
	21.90.6.2	for 2.70 meters depth below ground level	each	-	-	21341
	21.90.6.3	for 3.00 meters depth below ground level	each	-	-	22144
	21.90.6.4	for 3.40 meters depth below ground level	each	-	-	24026
	21.90.6.5	for 3.70 meters depth below ground level	each	-	-	26324
21.90.7	On 300 mm internal diameter pipe sewer.					
	21.90.7.1	for 2.40 meters depth below ground level	each	-	-	20013
	21.90.7.2	for 2.70 meters depth below ground level	each	-	-	21895
	21.90.7.3	for 3.00 meters depth below ground level	each	-	-	22836
	21.90.7.4	for 3.40 meters depth below ground level	each	-	-	24303
	21.90.7.5	for 3.70 meters depth below ground level	each	-	-	25244
21.90.8	On 350 mm internal diameter pipe sewer.					
	21.90.8.1	for 2.40 meters depth below ground level	each	-	-	22559
	21.90.8.2	for 2.70 meters depth below ground level	each	-	-	24165
	21.90.8.3	for 3.00 meters depth below ground level	each	-	-	24829
	21.90.8.4	for 3.40 meters depth below ground level	each	-	-	26047
	21.90.8.5	for 3.70 meters depth below ground level	each	-	-	26850
21.90.9	On 375 mm internal diameter pipe sewer.					
	21.90.9.1	for 2.40 meters depth below ground level	each	-	-	22144
	21.90.9.2	for 2.70 meters depth below ground level	each	-	-	23777
	21.90.9.3	for 3.00 meters depth below ground level	each	-	-	24165
	21.90.9.4	for 3.40 meters depth below ground level	each	-	-	25244
	21.90.9.5	for 3.70 meters depth below ground level	each	-	-	26047
21.90.10	On 400 mm internal diameter pipe sewer.					
	21.90.10.1	for 2.40 meters depth below ground level	each	-	-	24165
	21.90.10.2	for 2.70 meters depth below ground level	each	-	-	25244
	21.90.10.3	for 3.00 meters depth below ground level	each	-	-	25909
	21.90.10.4	for 3.40 meters depth below ground level	each	-	-	26573
	21.90.10.5	for 3.70 meters depth below ground level	each	-	-	27403
21.90.11	On 450 mm internal diameter pipe sewer.					

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	21.90.11.1	for 2.40 meters depth below ground level	each	-	-	25632
	21.90.11.2	for 2.70 meters depth below ground level	each	-	-	26573
	21.90.11.3	for 3.00 meters depth below ground level	each	-	-	26850
	21.90.11.4	for 3.40 meters depth below ground level	each	-	-	27127
	21.90.11.5	for 3.70 meters depth below ground level	each	-	-	27929
21.91		Construction of circular standard brick-masonry manhole chambers to standard drawings on S.W. pipe sewers or other circular sewers up to the required depth in 1:5 cement sand mortar lime concrete in bed and sides of pipe-sewer and cement concrete 1:2:4 in benching 12 mm thick water tight 1:2 cement sand plaster with a floating coat of neat cement and finished with two coats of sodium silicate of interior surface where required fixing cover and frame weight not less than 2:5 quintal painted with 3 coats of black bitumen paint fixing galvanised malleable iron steps embedded in 1:2 cement sand mortar complete. The rate covers the cost of carriage of C.I. manhole, frame and cover and malleable iron steps from the stores of the engineer-in-charge of the works to site of works. the rate also includes the cost of accurately planed and fitted centring supports for all works as well as for all curves and special works cleaning out their beds etc. Sodium silicate will be supplied free of cost at the stores of the Engineer-in-charge.				
		For 1.80 metres depth below ground level				
	21.91.1	on 175 mm internal diameter pipe sewer	each	-	-	10740
	21.91.2	on 200 mm internal diameter pipe sewer	each	-	-	10878
	21.91.3	on 225 mm internal diameter pipe sewer	each	-	-	10878
	21.91.4	on 250 mm internal diameter pipe sewer	each	-	-	10961
	21.91.5	on 300 mm internal diameter pipe sewer	each	-	-	11072
	21.91.6	on 350 mm internal diameter pipe sewer	each	-	-	11072
	21.91.7	on 375 mm internal diameter pipe sewer	each	-	-	11681
	21.91.8	on 400 mm internal diameter pipe sewer	each	-	-	11626
	21.91.9	on 450 mm internal diameter pipe sewer	each	-	-	11819
21.92		Extra over and above on item no.21.91 for every additional per 0.30 metre depth of manhole up to 4 metres depth beyond 1.80 metres below ground level.	per 0.30 metre depth	-	-	1744
21.93		Providing and fixing SFRC MANHOLE COVERS AND FRAMES MARKED WITH IS: 12592 including setting the same to correct lines and levels in 1:3 cement sand mortar over manhole including carriage loading unloading stacking handling re-handling etc. complete in all respects to the satisfaction to the Engineer-in-charge.				
	21.93.1	Type:- Extra Heavy Duty Set (EHD-35) 560MM Clear Opening	each	147	1146	1293
	21.93.2	Type:- Extra Heavy Duty Set (EHD-20) 560MM Clear Opening	each	134	1051	1185
	21.93.3	Type:- Extra Heavy Duty Set (EHD-10) 560MM Clear Opening	each	74	790	864
21.94		Providing salt glazed stone ware pipes grade 'A' in standard length of 600 mm each pipe marked with IS: 651 and their lowering, cutting, jointing and testing as described in item No. 21.38, 21.39, item 21.40 including the cost of jointing materials as well as carriage, loading, unloading, stacking, handling, re-handling etc. complete in all respects to the satisfaction of Engineer-in-charge.				
	21.94.1	100mm i/d	per metre	-	-	135
	21.94.2	150mm i/d	per metre	-	-	210
	21.94.3	200mm i/d	per metre	-	-	267
	21.94.4	250mm i/d	per metre	-	-	408
	21.94.5	300mm i/d	per metre	-	-	592
	21.94.6	350mm i/d	per metre	-	-	1032
	21.94.7	400mm i/d	per metre	-	-	1509

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	21.94.8	450mm i/d	per metre	-	-	2002
	21.94.9	500mm i/d	per metre	-	-	3200
	21.94.10	600mm i/d	per metre	-	-	4457
21.95		Providing lowering cutting jointing and testing RCC pipe class NP3 as per IS-458-2003 with spigot & socketed joints manufactured with ISI marked sulphate resistance cement as per ISI 12330 with rubber rings ISI marked antiternmite as required at site in to trenches for all depths and laying out the same to correct alignment gradients and levels including dressing and trimming and cutting of concrete beds and side of trenches, if required jointing with rubber rings in trenches and jointing with 1:3/2 cement sand mortar and with end dowels filled with 1:3/2 cement sand mortar and finishing the joints at an angle of 45 degree with faces of spigot of socket joints cutting and finishing the cut surface to a uniform finish etc. as fully described in item No. 21.38, item 21.44, item 21.45, & item 21.46 including cartage loading and unloading complete in all respects. the internal diametric of the sewer being:				
	21.95.1	350 mm	per metre	54	1057	1110
	21.95.2	400 mm	per metre	56	1360	1416
	21.95.3	450 mm	per metre	61	1696	1757
	21.95.4	500 mm	per metre	66	1856	1922
	21.95.5	600 mm	per metre	85	2445	2529
	21.95.6	700 mm	per metre	103	3101	3204
	21.95.7	800 mm	per metre	133	3700	3833
	21.95.8	900 mm	per metre	160	3905	4065
	21.95.9	1000 mm	per metre	190	4840	5030
	21.95.10	1200 mm	per metre	249	5860	6109
	21.95.11	1400 mm	per metre	324	6270	6594
	21.95.12	1600 mm	per metre	385	9367	9752
	21.95.13	1800 mm	per metre	475	11638	12113
21.96		Providing, lowering, laying, aligning, fixing in position and jointing at all level/ depths ISI marked HDPE pipe of PE-80 grade and PN- 4 for sewer application as per IS 14333-1996 (amended up to date) in trenches in complete including cost of HDPE Specials, labour, sectional hydro testing (including the cost and conveyance of water to site for testing) and commissioning as per Technical Specifications and as per direction of Engineer. Note: E/w to be measured and paid separately. Rate includes cost of all specials like bends, tees required during laying of pipe line along required alignment.				
	21.96.1	200 mm Outside Dia	per metre	69	1625	1694
	21.96.2	225 mm Outside Dia	per metre	69	2054	2123
	21.96.3	250 mm Outside Dia.	per metre	69	2531	2600
	21.96.4	280 mm Outside Dia	per metre	69	3169	3238
	21.96.5	315 mm Outside Dia	per metre	69	3982	4051
	21.96.6	355 mm Outside Dia	per metre	69	5079	5148
	21.96.7	400 mm Outside Dia	per metre	69	6576	6644
	21.96.8	450 mm Outside Dia	per metre	69	8470	8538
	21.96.9	500 mm Outside Dia	per metre	114	10442	10557
	21.96.10	560 mm Outside Dia	per metre	114	13079	13193
	21.96.11	630 mm Outside Dia	per metre	114	16502	16617
	21.96.12	710 mm Outside Dia	per metre	114	21357	21471
	21.96.13	800 mm Outside Dia	per metre	114	27060	27175
	21.96.14	900 mm Outside Dia	per metre	114	34257	34372
	21.96.15	1000 mm Outside Dia	per metre	114	42301	42416

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
21.97		Providing, lowering, laying, aligning, fixing in position and jointing at all level/ depths ISi marked HDPE pipe of PE-100 grade and PN-6 for sewer. application as per IS 14333-1996 (amended up to date) in trenches in complete including cost of HDPE Specials, labour, sectional hydro testing (including the cost and conveyance of water to site for testing) and commissioning as per Technical Specifications and as per direction of Engineer. Note: E/w to be measured and paid separately. Rate includes cost of all specials like bends, tees required during laying of pipe line along required alignment.				
	21.97.1	200 mm Outside Dia	per metre	69	1920	1988
	21.97.2	225 mm Outside Dia	per metre	69	2421	2490
	21.97.3	250 mm Outside Dia.	per metre	69	2985	3054
	21.97.4	280 mm Outside Dia	per metre	69	3734	3802
	21.97.5	315 mm Outside Dia	per metre	69	4726	4795
	21.97.6	355 mm Outside Dia	per metre	69	5989	6057
	21.97.7	400 mm Outside Dia	per metre	69	7784	7853
	21.97.8	450 mm Outside Dia	per metre	69	9989	10058
	21.97.9	500 mm Outside Dia	per metre	114	12346	12460
	21.97.10	560 mm Outside Dia	per metre	114	15433	15547
	21.97.11	630 mm Outside Dia	per metre	114	19546	19660
	21.97.12	710 mm Outside Dia	per metre	114	25202	25316
	21.97.13	800 mm Outside Dia	per metre	114	31969	32084
	21.97.14	900 mm Outside Dia	per metre	114	35993	36107
	21.97.15	1000 mm Outside Dia	per metre	114	44470	44584
21.98		Providing, lowering, laying, aligning, fixing in position and jointing at all level/ depths ISI marked HDPE pipes of PE-100 grade and PN- 8 for sewer application as per IS 14333-1996 (amended up to date) in trenches in complete including cost of HDPE 'Specials, labour, sectional hydro testing (including the cost and conveyance of water to site for testing) and commissioning as per Technical Specifications and as per direction of Engineer. Note: E/w to be measured and paid separately. Rate includes cost of all specials like bends, tees required during laying of pipe line along required alignment.				
	21.98.1	200 mm Outside Dia	per metre	69	2450	2518
	21.98.2	225 mm Outside Dia	per metre	69	3092	3161
	21.98.3	250 mm Outside Dia.	per metre	69	3824	3892
	21.98.4	280 mm Outside Dia	per metre	69	4785	4853
	21.98.5	315 mm Outside Dia	per metre	69	6057	6126
	21.98.6	355 mm Outside Dia	per metre	69	7670	7739
	21.98.7	400 mm Outside Dia	per metre	69	9959	10028
	21.98.8	450 mm Outside Dia	per metre	69	12810	12879
	21.98.9	500 mm Outside Dia	per metre	114	15793	15907
	21.98.10	560 mm Outside Dia	per metre	114	19789	19903
	21.98.11	630 mm Outside Dia	per metre	114	25051	25165
	21.98.12	710 mm Outside Dia	per metre	114	32279	32394
21.99		Providing, lowering, laying, aligning, fixing in position and jointing at all level/ depths ISi marked HDPE pipes of PE-100 grade and PN-10 for sewer application as per IS 14333-1996 (amended up to date) in trenches in complete including cost of HDPE 'Specials, labour, sectional hydro testing (including the cost and conveyance of water to site for testing) and commissioning as per Technical Specifications and as per direction of Engineer. Note: E/w to be measured and paid separately. Rate includes cost of all specials like bends, tees required during laying of pipe line along required alignment.				

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	21.99.1	200 mm Outside Dia	per metre	69	2939	3008
	21.99.2	225 mm Outside Dia	per metre	69	3719	3788
	21.99.3	250 mm Outside Dia.	per metre	69	4591	4659
	21.99.4	280 mm Outside Dia	per metre	69	5722	5790
	21.99.5	315 mm Outside Dia	per metre	69	7277	7346
	21.99.6	355 mm Outside Dia	per metre	69	9231	9300
	21.99.7	400 mm Outside Dia	per metre	69	11958	12026
	21.99.8	450 mm Outside Dia	per metre	69	15395	15464
	21.99.9	500 mm Outside Dia	per metre	114	18985	19099
	21.99.10	560 mm Outside Dia	per metre	114	23819	23934
	21.99.11	630 mm Outside Dia	per metre	114	30097	30211
21.100	Making holes for HCL soil / Waste pipe by core cutting up to 200 mm thick slabs and sealing with Drip seal sealant complete in all respect.					
	21.100.1	40 mm dia pipe	each	-	260	260
	21.100.2	100 mm dia pipe	each	-	714	714
	21.100.3	125 mm dia pipe	each	-	909	909
	21.100.4	150 mm dia pipe	each	-	1039	1039
	21.100.5	175 mm dia pipe	each	-	1234	1234
21.101	Providing and fixing MS Angle 35 x 35 x 5 mm with 10 mm MS Threaded rods & Fastener & Fixture to Support the CI and PVC Pipe.		each	24	143	167
21.102	Providing , lowering, laying, aligning, cutting (cut surface to be finished uniformly), jointing with coupling and EPDM rubber rings marked with IS: 5382 and testing, AC pressure sewerage and drainage pipes manufactured with Mazza process as per IS 6908:1991 and specials into trenches for all levels/depths including carriage, loading/ unloading, stacking, handling, rehandling etc. complete in all respects to the satisfaction of the Engineer in charge (Rates are inclusive of couplers, EPDM rubber rings and specials but exclusive of excavation and refilling)					
	21.102.1	**Class I (Ultimate load capacity 60KN/sqm)**				
		21.102.1.1 100mm i/d	per metre	6	275	282
		21.102.1.2 150mm i/d	per metre	10	459	469
		21.102.1.3 200mm i/d	per metre	16	730	745
		21.102.1.4 250mm i/d	per metre	19	946	966
		21.102.1.5 300mm i/d	per metre	27	1207	1234
		21.102.1.6 350mm i/d	per metre	36	1524	1560
		21.102.1.7 400mm i/d	per metre	45	1887	1933
		21.102.1.8 450mm i/d	per metre	57	2218	2275
		21.102.1.9 500mm i/d	per metre	68	2804	2871
		21.102.1.10 600mm i/d	per metre	93	3895	3989
		21.102.1.11 700mm i/d	per metre	114	5722	5836
		21.102.1.12 800mm i/d	per metre	145	7983	8129
		21.102.1.13 900mm i/d	per metre	179	10580	10759
		21.102.1.14 1000mm i/d	per metre	210	12874	13085
	21.102.2	**Class II (Ultimate load capacity 90KN/sqm)**				
		21.102.2.1 100mm i/d	per metre	6	285	291
		21.102.2.2 150mm i/d	per metre	10	509	520
		21.102.2.3 200mm i/d	per metre	16	849	865
		21.102.2.4 250mm i/d	per metre	19	1081	1100
		21.102.2.5 300mm i/d	per metre	27	1519	1546
		21.102.2.6 350mm i/d	per metre	36	1868	1905
		21.102.2.7 400mm i/d	per metre	45	2415	2461
		21.102.2.8 450mm i/d	per metre	57	2819	2876

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	21.102.2.9	500mm i/d	per metre	68	3527	3594
	21.102.2.10	600mm i/d	per metre	93	5023	5117
	21.102.2.11	700mm i/d	per metre	114	6263	6378
	21.102.2.12	800mm i/d	per metre	145	8495	8640
	21.102.2.13	900mm i/d	per metre	179	10784	10963
	21.102.2.14	1000mm i/d	per metre	210	13480	13690
21.102.3		**Class III (Ultimate load capacity 120KN/sqm)**				
	21.102.3.1	100mm i/d	per metre	6	397	404
	21.102.3.2	150mm i/d	per metre	10	704	715
	21.102.3.3	200mm i/d	per metre	16	1203	1218
	21.102.3.4	250mm i/d	per metre	19	1543	1562
	21.102.3.5	300mm i/d	per metre	27	2146	2173
	21.102.3.6	350mm i/d	per metre	36	2716	2752
	21.102.3.7	400mm i/d	per metre	45	3549	3594
	21.102.3.8	450mm i/d	per metre	57	4198	4255
	21.102.3.9	500mm i/d	per metre	68	5166	5234
	21.102.3.10	600mm i/d	per metre	93	7287	7380
	21.102.3.11	700mm i/d	per metre	114	9628	9743
	21.102.3.12	800mm i/d	per metre	145	12902	13047
	21.102.3.13	900mm i/d	per metre	179	16880	17059
	21.102.3.14	1000mm i/d	per metre	210	20439	20650
21.103		**Job work for cleaning of sewer lines by bucket type sewer machine including cost of diesel/lubricants complete in all respects. Only sewer machines will be provided by the department for the following sizes of sewer:**				
	21.103.1	200 mm i/d	per metre	188	-	188
	21.103.2	250 mm i/d	per metre	208	-	208
	21.103.3	300 mm i/d	per metre	261	-	261
	21.103.4	350 mm i/d	per metre	292	-	292
	21.103.5	400 mm i/d	per metre	338	-	338
	21.103.6	450 mm i/d	per metre	441	-	441
	21.103.7	500 mm i/d	per metre	461	-	461
	21.103.8	600 mm i/d	per metre	545	-	545
	21.103.9	750 mm i/d	per metre	588	-	588
	21.103.10	900 mm i/d	per metre	632	-	632
	21.103.11	1050 mm i/d	per metre	750	-	750
	21.103.12	1300 mm i/d	per metre	810	-	810
	21.103.13	1800 mm i/d	per metre	975	-	975
21.104		Supplying, erection, testing and commissioning of Submersible motor pumping set non clog for sewerage having head 10.00 m as per the indicated requirements of discharge in LPM and power capacity in BHP Make: KSB, CRI, Kirlosker, Crompton Greeve, Lubi)				
		Discharge Capacity (LPM) / **Power Capacity (BHP)**				
	21.104.1	20 / 1	each	-	-	35318
	21.104.2	50 / 1	each	-	-	35318
	21.104.3	100 / 1	each	-	-	35318
	21.104.4	150 / 1	each	-	-	35318
	21.104.5	200 / 1	each	-	-	35318
	21.104.6	250 / 1	each	-	-	35318
	21.104.7	300 / 2	each	-	-	61286

Item No.			Description	Unit	Labour Rate	Material Rate	Through Rate
21.104.8	400	2		each	-	-	61286
21.104.9	450	2		each	-	-	61286
21.104.10	500	2		each	-	-	61286
21.104.11	600	2.5		each	-	-	61286
21.104.12	620	2.5		each	-	-	61286
21.104.13	650	2.5		each	-	-	61286
21.104.14	700	2.5		each	-	-	61286
21.104.15	750	3		each	-	-	66480
21.104.16	800	3		each	-	-	66480
21.104.17	900	3		each	-	-	66480
21.104.18	1000	5		each	-	-	71674
21.104.19	1100	5		each	-	-	71674
21.104.20	1200	5		each	-	-	71674
21.104.21	1250	5		each	-	-	71674
21.104.22	1300	5		each	-	-	71674
21.104.23	1400	5		each	-	-	71674
21.104.24	1500	7.5		each	-	-	92449
21.104.25	1600	7.5		each	-	-	92449
21.104.26	1700	7.5		each	-	-	92449
21.104.27	1800	7.5		each	-	-	92449
21.104.28	1900	7.5		each	-	-	92449
21.104.29	2000	7.5		each	-	-	92449
21.104.30	2100	7.5		each	-	-	92449
21.104.31	2200	10		each	-	-	101798
21.104.32	2300	10		each	-	-	101798
21.104.33	2400	10		each	-	-	101798
21.104.34	2500	10		each	-	-	101798
21.104.35	2600	10		each	-	-	101798
21.104.36	2700	10		each	-	-	101798
21.104.37	2800	10		each	-	-	101798
21.104.38	2900	10		each	-	-	101798
21.104.39	3000	12.5		each	-	-	120495
21.104.40	3100	12.5		each	-	-	120495
21.104.41	3200	12.5		each	-	-	120495
21.104.42	3300	12.5		each	-	-	120495
21.104.43	3400	12.5		each	-	-	120495
21.104.44	3500	15		each	-	-	184898
21.104.45	3600	15		each	-	-	184898
21.104.46	3700	15		each	-	-	184898
21.104.47	3800	15		each	-	-	184898
21.104.48	3900	15		each	-	-	184898
21.104.49	4000	15		each	-	-	184898
21.104.50	4100	15		each	-	-	184898
21.104.51	4200	17.5		each	-	-	213983
21.104.52	4300	17.5		each	-	-	213983
21.104.53	4400	17.5		each	-	-	213983
21.104.54	4500	17.5		each	-	-	213983
21.104.55	4600	17.5		each	-	-	213983
21.104.56	4700	17.5		each	-	-	213983
21.104.57	4800	17.5		each	-	-	213983

Item No.			Description	Unit	Labour Rate	Material Rate	Through Rate
21.104.58	4900	20		each	-	-	275269
21.104.59	5000	20		each	-	-	275269
21.104.60	5100	20		each	-	-	275269
21.104.61	5200	20		each	-	-	275269
21.104.62	5300	20		each	-	-	275269
21.104.63	5400	20		each	-	-	275269
21.104.64	5500	20		each	-	-	275269
21.104.65	5600	20		each	-	-	275269
21.104.66	5700	22.5		each	-	-	278385
21.104.67	5800	22.5		each	-	-	278385
21.104.68	5900	22.5		each	-	-	278385
21.104.69	6000	22.5		each	-	-	278385
21.104.70	6100	22.5		each	-	-	278385
21.104.71	6200	25		each	-	-	296044
21.104.72	6300	25		each	-	-	296044
21.104.73	6400	25		each	-	-	296044
21.104.74	6500	25		each	-	-	296044
21.104.75	6600	25		each	-	-	296044
21.104.76	6700	25		each	-	-	296044
21.104.77	6800	25		each	-	-	296044
21.104.78	6900	25		each	-	-	296044
21.104.79	7000	27.5		each	-	-	312664
21.104.80	7100	27.5		each	-	-	312664
21.104.81	7200	27.5		each	-	-	312664
21.104.82	7300	27.5		each	-	-	312664
21.104.83	7400	27.5		each	-	-	312664
21.104.84	7500	27.5		each	-	-	312664
21.104.85	7600	30		each	-	-	327207
21.104.86	7700	30		each	-	-	327207
21.104.87	7800	30		each	-	-	327207
21.104.88	7900	30		each	-	-	327207
21.104.89	8000	30		each	-	-	327207
21.104.90	8100	30		each	-	-	327207
21.104.91	8200	30		each	-	-	327207
21.104.92	8300	30		each	-	-	327207
21.104.93	8400	35		each	-	-	377067
21.104.94	8500	35		each	-	-	377067
21.104.95	8600	35		each	-	-	377067
21.104.96	8700	35		each	-	-	377067
21.104.97	8800	35		each	-	-	377067
21.104.98	8900	35		each	-	-	377067
21.104.99	9000	35		each	-	-	377067
21.104.100	9100	35		each	-	-	377067
21.104.101	9200	35		each	-	-	377067
21.104.102	9300	35		each	-	-	377067
21.104.103	9400	35		each	-	-	377067
21.104.104	9500	35		each	-	-	377067
21.104.105	9600	35		each	-	-	377067
21.104.106	9700	35		each	-	-	377067
21.104.107	9800	40		each	-	-	410307

Item No.			Description	Unit	Labour Rate	Material Rate	Through Rate
	21.104.108	9900	40	each	-	-	410307
	21.104.109	10000	40	each	-	-	410307
	21.104.110	10500	40	each	-	-	410307
	21.104.111	11000	40	each	-	-	410307
21.105	Supplying, erection, testing and commissioning of Submersible motor pumping set non clog for sewerage having head 12.00 m as per the indicated requirements of discharge in LPM and power capacity in BHP Make: KSB, CRI, Kirlosker, Crompton Greeve, Lubi)						
		Discharge Capacity (LPM)	Power Capacity (BHP)				
	21.105.1	20	1	each	-	-	35318
	21.105.2	50	1	each	-	-	35318
	21.105.3	100	1	each	-	-	35318
	21.105.4	150	1	each	-	-	35318
	21.105.5	200	1	each	-	-	35318
	21.105.6	250	1	each	-	-	35318
	21.105.7	300	2	each	-	-	61286
	21.105.8	400	2	each	-	-	61286
	21.105.9	450	2	each	-	-	61286
	21.105.10	500	2	each	-	-	61286
	21.105.11	600	2.5	each	-	-	61286
	21.105.12	620	2.5	each	-	-	61286
	21.105.13	650	2.5	each	-	-	61286
	21.105.14	700	5	each	-	-	71674
	21.105.15	750	5	each	-	-	71674
	21.105.16	800	5	each	-	-	71674
	21.105.17	900	5	each	-	-	71674
	21.105.18	1000	5	each	-	-	71674
	21.105.19	1100	5	each	-	-	71674
	21.105.20	1200	5	each	-	-	71674
	21.105.21	1250	7.5	each	-	-	92449
	21.105.22	1300	7.5	each	-	-	92449
	21.105.23	1400	7.5	each	-	-	92449
	21.105.24	1500	7.5	each	-	-	92449
	21.105.25	1600	7.5	each	-	-	92449
	21.105.26	1700	7.5	each	-	-	92449
	21.105.27	1800	10	each	-	-	101798
	21.105.28	1900	10	each	-	-	101798
	21.105.29	2000	10	each	-	-	101798
	21.105.30	2100	10	each	-	-	101798
	21.105.31	2200	10	each	-	-	101798
	21.105.32	2300	10	each	-	-	101798
	21.105.33	2400	10	each	-	-	101798
	21.105.34	2500	12.5	each	-	-	120495
	21.105.35	2600	12.5	each	-	-	120495
	21.105.36	2700	12.5	each	-	-	120495
	21.105.37	2800	12.5	each	-	-	120495
	21.105.38	2900	15	each	-	-	184898
	21.105.39	3000	15	each	-	-	184898
	21.105.40	3100	15	each	-	-	184898

Item No.			Description	Unit	Labour Rate	Material Rate	Through Rate
21.105.41	3200	15		each	-	-	184898
21.105.42	3300	15		each	-	-	184898
21.105.43	3400	15		each	-	-	184898
21.105.44	3500	17.5		each	-	-	213983
21.105.45	3600	17.5		each	-	-	213983
21.105.46	3700	17.5		each	-	-	213983
21.105.47	3800	17.5		each	-	-	213983
21.105.48	3900	17.5		each	-	-	213983
21.105.49	4000	17.5		each	-	-	213983
21.105.50	4100	20		each	-	-	275269
21.105.51	4200	20		each	-	-	275269
21.105.52	4300	20		each	-	-	275269
21.105.53	4400	20		each	-	-	275269
21.105.54	4500	20		each	-	-	275269
21.105.55	4600	20		each	-	-	275269
21.105.56	4700	20		each	-	-	275269
21.105.57	4800	22.5		each	-	-	278385
21.105.58	4900	22.5		each	-	-	278385
21.105.59	5000	22.5		each	-	-	278385
21.105.60	5100	22.5		each	-	-	278385
21.105.61	5200	25		each	-	-	296044
21.105.62	5300	25		each	-	-	296044
21.105.63	5400	25		each	-	-	296044
21.105.64	5500	25		each	-	-	296044
21.105.65	5600	25		each	-	-	296044
21.105.66	5700	25		each	-	-	296044
21.105.67	5800	25		each	-	-	296044
21.105.68	5900	27.5		each	-	-	312664
21.105.69	6000	27.5		each	-	-	312664
21.105.70	6100	27.5		each	-	-	312664
21.105.71	6200	27.5		each	-	-	312664
21.105.72	6300	30		each	-	-	327207
21.105.73	6400	30		each	-	-	327207
21.105.74	6500	30		each	-	-	327207
21.105.75	6600	30		each	-	-	327207
21.105.76	6700	30		each	-	-	327207
21.105.77	6800	30		each	-	-	327207
21.105.78	6900	30		each	-	-	327207
21.105.79	7000	35		each	-	-	377067
21.105.80	7100	35		each	-	-	377067
21.105.81	7200	35		each	-	-	377067
21.105.82	7300	35		each	-	-	377067
21.105.83	7400	35		each	-	-	377067
21.105.84	7500	35		each	-	-	377067
21.105.85	7600	35		each	-	-	377067
21.105.86	7700	35		each	-	-	377067
21.105.87	7800	35		each	-	-	377067
21.105.88	7900	35		each	-	-	377067
21.105.89	8000	35		each	-	-	377067
21.105.90	8100	40		each	-	-	410307

Item No.			Description	Unit	Labour Rate	Material Rate	Through Rate
	21.105.91	8200	40	each	-	-	410307
	21.105.92	8300	40	each	-	-	410307
	21.105.93	8400	40	each	-	-	410307
	21.105.94	8500	40	each	-	-	410307
	21.105.95	8600	40	each	-	-	410307
	21.105.96	8700	40	each	-	-	410307
	21.105.97	8800	40	each	-	-	410307
	21.105.98	8900	40	each	-	-	410307
	21.105.99	9000	40	each	-	-	410307
	21.105.100	9100	40	each	-	-	410307
	21.105.101	9200	40	each	-	-	410307
21.106	Supplying, erection, testing and commissioning of Submersible motor pumping set non clog for sewerage having head 15.00 m as per the indicated requirements of discharge in LPM and power capacity in BHP Make: KSB, CRI, Kirlosker, Crompton Greeve, Lubi)						
		Discharge Capacity (LPM)	Power Capacity (BHP)				
	21.106.1	20	1	each	-	-	35318
	21.106.2	50	1	each	-	-	35318
	21.106.3	100	1	each	-	-	35318
	21.106.4	150	1	each	-	-	35318
	21.106.5	200	1	each	-	-	35318
	21.106.6	250	1	each	-	-	35318
	21.106.7	300	2	each	-	-	61286
	21.106.8	400	2.5	each	-	-	61286
	21.106.9	450	2.5	each	-	-	61286
	21.106.10	500	3	each	-	-	66480
	21.106.11	600	5	each	-	-	71674
	21.106.12	620	5	each	-	-	71674
	21.106.13	650	5	each	-	-	71674
	21.106.14	700	5	each	-	-	71674
	21.106.15	750	5	each	-	-	71674
	21.106.16	800	5	each	-	-	71674
	21.106.17	900	5	each	-	-	71674
	21.106.18	1000	5	each	-	-	71674
	21.106.19	1100	7.5	each	-	-	92449
	21.106.20	1200	7.5	each	-	-	92449
	21.106.21	1250	7.5	each	-	-	92449
	21.106.22	1300	7.5	each	-	-	92449
	21.106.23	1400	7.5	each	-	-	92449
	21.106.24	1500	10	each	-	-	101798
	21.106.25	1600	10	each	-	-	101798
	21.106.26	1700	10	each	-	-	101798
	21.106.27	1800	10	each	-	-	101798
	21.106.28	1900	10	each	-	-	101798
	21.106.29	2000	12.5	each	-	-	120495
	21.106.30	2100	12.5	each	-	-	120495
	21.106.31	2200	12.5	each	-	-	120495
	21.106.32	2300	12.5	each	-	-	120495
	21.106.33	2400	15	each	-	-	184898

Item No.			Description	Unit	Labour Rate	Material Rate	Through Rate
21.106.34	2500	15		each	-	-	184898
21.106.35	2600	15		each	-	-	184898
21.106.36	2700	15		each	-	-	184898
21.106.37	2800	15		each	-	-	184898
21.106.38	2900	17.5		each	-	-	213983
21.106.39	3000	17.5		each	-	-	213983
21.106.40	3100	17.5		each	-	-	213983
21.106.41	3200	17.5		each	-	-	213983
21.106.42	3300	20		each	-	-	275789
21.106.43	3400	20		each	-	-	275789
21.106.44	3500	20		each	-	-	275789
21.106.45	3600	20		each	-	-	275789
21.106.46	3700	20		each	-	-	275789
21.106.47	3800	22.5		each	-	-	278385
21.106.48	3900	22.5		each	-	-	278385
21.106.49	4000	22.5		each	-	-	278385
21.106.50	4100	22.5		each	-	-	278385
21.106.51	4200	25		each	-	-	296044
21.106.52	4300	25		each	-	-	296044
21.106.53	4400	25		each	-	-	296044
21.106.54	4500	25		each	-	-	296044
21.106.55	4600	25		each	-	-	296044
21.106.56	4700	27.5		each	-	-	312664
21.106.57	4800	27.5		each	-	-	312664
21.106.58	4900	27.5		each	-	-	312664
21.106.59	5000	27.5		each	-	-	312664
21.106.60	5100	30		each	-	-	327207
21.106.61	5200	30		each	-	-	327207
21.106.62	5300	30		each	-	-	327207
21.106.63	5400	30		each	-	-	327207
21.106.64	5500	30		each	-	-	327207
21.106.65	5600	35		each	-	-	377067
21.106.66	5700	35		each	-	-	377067
21.106.67	5800	35		each	-	-	377067
21.106.68	5900	35		each	-	-	377067
21.106.69	6000	35		each	-	-	377067
21.106.70	6100	35		each	-	-	377067
21.106.71	6200	35		each	-	-	377067
21.106.72	6300	35		each	-	-	377067
21.106.73	6400	35		each	-	-	377067
21.106.74	6500	40		each	-	-	410307
21.106.75	6600	40		each	-	-	410307
21.106.76	6700	40		each	-	-	410307
21.106.77	6800	40		each	-	-	410307
21.106.78	6900	40		each	-	-	410307
21.106.79	7000	40		each	-	-	410307
21.106.80	7100	40		each	-	-	410307
21.106.81	7200	40		each	-	-	410307
21.106.82	7300	40		each	-	-	410307

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
21.107	Supplying, erection, testing and commissioning of Submersible motor pumping set non clog for sewerage having head 18.00 m as per the indicated requirements of discharge in LPM and power capacity in BHP Make: KSB, CRI, Kirlosker, Crompton Greeve, Lubi)				
	Discharge Capacity (LPM) / **Power Capacity (BHP)**				
21.107.1	20 / 1	each	-	-	35318
21.107.2	50 / 1	each	-	-	35318
21.107.3	100 / 1	each	-	-	35318
21.107.4	150 / 1	each	-	-	35318
21.107.5	200 / 2	each	-	-	61286
21.107.6	250 / 2	each	-	-	61286
21.107.7	300 / 2	each	-	-	61286
21.107.8	400 / 3	each	-	-	66480
21.107.9	450 / 3	each	-	-	66480
21.107.10	500 / 3	each	-	-	66480
21.107.11	600 / 5	each	-	-	71674
21.107.12	620 / 5	each	-	-	71674
21.107.13	650 / 5	each	-	-	71674
21.107.14	700 / 5	each	-	-	71674
21.107.15	750 / 5	each	-	-	71674
21.107.16	800 / 5	each	-	-	71674
21.107.17	900 / 7.5	each	-	-	92449
21.107.18	1000 / 7.5	each	-	-	92449
21.107.19	1100 / 7.5	each	-	-	92449
21.107.20	1200 / 10	each	-	-	101798
21.107.21	1250 / 10	each	-	-	101798
21.107.22	1300 / 10	each	-	-	101798
21.107.23	1400 / 10	each	-	-	101798
21.107.24	1500 / 10	each	-	-	101798
21.107.25	1600 / 12.5	each	-	-	120495
21.107.26	1700 / 12.5	each	-	-	120495
21.107.27	1800 / 12.5	each	-	-	120495
21.107.28	1900 / 12.5	each	-	-	120495
21.107.29	2000 / 15	each	-	-	184898
21.107.30	2100 / 15	each	-	-	184898
21.107.31	2200 / 15	each	-	-	184898
21.107.32	2300 / 15	each	-	-	184898
21.107.33	2400 / 17.5	each	-	-	213983
21.107.34	2500 / 17.5	each	-	-	213983
21.107.35	2600 / 17.5	each	-	-	213983
21.107.36	2700 / 20	each	-	-	275269
21.107.37	2800 / 20	each	-	-	275269
21.107.38	2900 / 20	each	-	-	275269
21.107.39	3000 / 20	each	-	-	275269
21.107.40	3100 / 20	each	-	-	275269
21.107.41	3200 / 22.5	each	-	-	278385
21.107.42	3300 / 22.5	each	-	-	278385
21.107.43	3400 / 22.5	each	-	-	278385
21.107.44	3500 / 25	each	-	-	296044

Item No.			Description	Unit	Labour Rate	Material Rate	Through Rate
	21.107.45	3600	25	each	-	-	296044
	21.107.46	3700	25	each	-	-	296044
	21.107.47	3800	25	each	-	-	296044
	21.107.48	3900	27.5	each	-	-	312664
	21.107.49	4000	27.5	each	-	-	312664
	21.107.50	4100	27.5	each	-	-	312664
	21.107.51	4200	30	each	-	-	327207
	21.107.52	4300	30	each	-	-	327207
	21.107.53	4400	30	each	-	-	327207
	21.107.54	4500	30	each	-	-	327207
	21.107.55	4600	30	each	-	-	327207
	21.107.56	4700	35	each	-	-	377067
	21.107.57	4800	35	each	-	-	377067
	21.107.58	4900	35	each	-	-	377067
	21.107.59	5000	35	each	-	-	377067
	21.107.60	5100	35	each	-	-	377067
	21.107.61	5200	35	each	-	-	377067
	21.107.62	5300	35	each	-	-	377067
	21.107.63	5400	40	each	-	-	410307
	21.107.64	5500	40	each	-	-	410307
	21.107.65	5600	40	each	-	-	410307
	21.107.66	5700	40	each	-	-	410307
	21.107.67	5800	40	each	-	-	410307
	21.107.68	5900	40	each	-	-	410307
	21.107.69	6000	40	each	-	-	410307
	21.107.70	6100	40	each	-	-	410307
21.108	Supplying, erection, testing and commissioning of Submersible motor pumping set non clog for sewerage having head 20.00 m as per the indicated requirements of discharge in LPM and power capacity in BHP Make: KSB, CRI, Kirlosker, Crompton Greeve, Lubi)						
		Discharge Capacity (LPM)	**Power Capacity (BHP)**				
	21.108.1	20	1	each	-	-	35318
	21.108.2	50	1	each	-	-	35318
	21.108.3	100	1	each	-	-	35318
	21.108.4	150	1	each	-	-	35318
	21.108.5	200	2	each	-	-	61286
	21.108.6	250	2	each	-	-	61286
	21.108.7	300	2.5	each	-	-	61286
	21.108.8	400	3	each	-	-	66480
	21.108.9	450	3	each	-	-	66480
	21.108.10	500	5	each	-	-	71674
	21.108.11	600	5	each	-	-	71674
	21.108.12	620	5	each	-	-	71674
	21.108.13	650	5	each	-	-	71674
	21.108.14	700	5	each	-	-	71674
	21.108.15	750	7.5	each	-	-	92449
	21.108.16	800	7.5	each	-	-	92449
	21.108.17	900	7.5	each	-	-	92449
	21.108.18	1000	7.5	each	-	-	92449

Item No.			Description	Unit	Labour Rate	Material Rate	Through Rate
21.108.19	1100	10		each	-	-	101798
21.108.20	1200	10		each	-	-	101798
21.108.21	1250	10		each	-	-	101798
21.108.22	1300	10		each	-	-	101798
21.108.23	1400	10		each	-	-	101798
21.108.24	1500	12.5		each	-	-	120495
21.108.25	1600	12.5		each	-	-	120495
21.108.26	1700	12.5		each	-	-	120495
21.108.27	1800	15		each	-	-	184898
21.108.28	1900	15		each	-	-	184898
21.108.29	2000	15		each	-	-	184898
21.108.30	2100	15		each	-	-	184898
21.108.31	2200	17.5		each	-	-	213983
21.108.32	2300	17.5		each	-	-	213983
21.108.33	2400	17.5		each	-	-	213983
21.108.34	2500	20		each	-	-	275269
21.108.35	2600	20		each	-	-	275269
21.108.36	2700	20		each	-	-	275269
21.108.37	2800	20		each	-	-	275269
21.108.38	2900	22.5		each	-	-	278385
21.108.39	3000	22.5		each	-	-	278385
21.108.40	3100	22.5		each	-	-	278385
21.108.41	3200	25		each	-	-	296044
21.108.42	3300	25		each	-	-	296044
21.108.43	3400	25		each	-	-	296044
21.108.44	3500	25		each	-	-	296044
21.108.45	3600	27.5		each	-	-	312664
21.108.46	3700	27.5		each	-	-	312664
21.108.47	3800	30		each	-	-	327207
21.108.48	3900	30		each	-	-	327207
21.108.49	4000	30		each	-	-	327207
21.108.50	4100	30		each	-	-	327207
21.108.51	4200	35		each	-	-	377067
21.108.52	4300	35		each	-	-	377067
21.108.53	4400	35		each	-	-	377067
21.108.54	4500	35		each	-	-	377067
21.108.55	4600	35		each	-	-	377067
21.108.56	4700	35		each	-	-	377067
21.108.57	4800	35		each	-	-	377067
21.108.58	4900	40		each	-	-	410307
21.108.59	5000	40		each	-	-	410307
21.108.60	5100	40		each	-	-	410307
21.108.61	5200	40		each	-	-	410307
21.108.62	5300	40		each	-	-	410307
21.108.63	5400	40		each	-	-	410307
21.108.64	5500	40		each	-	-	410307

21.109 Supplying, erection, testing and commissioning of Submersible motor pumping set non clog for sewerage having head 25.00 m as per the indicated requirements of discharge in LPM and power capacity in BHP Make: KSB, CRI, Kirlosker, Crompton Greeve, Lubi)

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
	Discharge Capacity (LPM)	Power Capacity (BHP)				
21.109.1	20	1	each	-	-	35318
21.109.2	50	1	each	-	-	35318
21.109.3	100	1	each	-	-	35318
21.109.4	150	2	each	-	-	61286
21.109.5	200	2	each	-	-	61286
21.109.6	250	2.5	each	-	-	61286
21.109.7	300	3	each	-	-	66480
21.109.8	400	5	each	-	-	71674
21.109.9	450	5	each	-	-	71674
21.109.10	500	5	each	-	-	71674
21.109.11	600	5	each	-	-	71674
21.109.12	620	5	each	-	-	71674
21.109.13	650	7.5	each	-	-	92449
21.109.14	700	7.5	each	-	-	92449
21.109.15	750	7.5	each	-	-	92449
21.109.16	800	7.5	each	-	-	92449
21.109.17	900	10	each	-	-	101798
21.109.18	1000	10	each	-	-	101798
21.109.19	1100	10	each	-	-	101798
21.109.20	1200	12.5	each	-	-	120495
21.109.21	1250	12.5	each	-	-	120495
21.109.22	1300	12.5	each	-	-	120495
21.109.23	1400	12.5	each	-	-	120495
21.109.24	1500	15	each	-	-	184898
21.109.25	1600	15	each	-	-	184898
21.109.26	1700	15	each	-	-	184898
21.109.27	1800	17.5	each	-	-	213983
21.109.28	1900	17.5	each	-	-	213983
21.109.29	2000	20	each	-	-	275269
21.109.30	2100	20	each	-	-	275269
21.109.31	2200	20	each	-	-	275269
21.109.32	2300	22.5	each	-	-	343307
21.109.33	2400	22.5	each	-	-	343307
21.109.34	2500	25	each	-	-	296044
21.109.35	2600	25	each	-	-	296044
21.109.36	2700	25	each	-	-	296044
21.109.37	2800	25	each	-	-	296044
21.109.38	2900	30	each	-	-	327207
21.109.39	3000	30	each	-	-	327207
21.109.40	3100	30	each	-	-	327207
21.109.41	3200	30	each	-	-	327207
21.109.42	3300	30	each	-	-	327207
21.109.43	3400	35	each	-	-	377067
21.109.44	3500	35	each	-	-	377067
21.109.45	3600	35	each	-	-	377067
21.109.46	3700	35	each	-	-	377067
21.109.47	3800	35	each	-	-	377067

Item No.			Description	Unit	Labour Rate	Material Rate	Through Rate
	21.109.48	3900	40	each	-	-	410307
	21.109.49	4000	40	each	-	-	410307
	21.109.50	4100	40	each	-	-	410307
	21.109.51	4200	40	each	-	-	410307
	21.109.52	4300	40	each	-	-	410307
	21.109.53	4400	40	each	-	-	410307
21.110	Supplying, erection, testing and commissioning of Submersible motor pumping set non clog for sewerage having head 30.00 m as per the indicated requirements of discharge in LPM and power capacity in BHP Make: KSB, CRI, Kirlosker, Crompton Greeve, Lubi)						
		Discharge Capacity (LPM)	Power Capacity (BHP)				
	21.110.1	20	1	each	-	-	35318
	21.110.2	50	1	each	-	-	35318
	21.110.3	100	1	each	-	-	35318
	21.110.4	150	2	each	-	-	61286
	21.110.5	200	2.5	each	-	-	61286
	21.110.6	250	3	each	-	-	66480
	21.110.7	300	5	each	-	-	71674
	21.110.8	400	5	each	-	-	71674
	21.110.9	450	5	each	-	-	71674
	21.110.10	500	5	each	-	-	71674
	21.110.11	600	7.5	each	-	-	92449
	21.110.12	620	7.5	each	-	-	92449
	21.110.13	650	7.5	each	-	-	92449
	21.110.14	700	7.5	each	-	-	92449
	21.110.15	750	10	each	-	-	101798
	21.110.16	800	10	each	-	-	101798
	21.110.17	900	10	each	-	-	101798
	21.110.18	1000	12.5	each	-	-	120495
	21.110.19	1100	12.5	each	-	-	120495
	21.110.20	1200	15	each	-	-	184898
	21.110.21	1250	15	each	-	-	184898
	21.110.22	1300	15	each	-	-	184898
	21.110.23	1400	15	each	-	-	184898
	21.110.24	1500	17.5	each	-	-	213983
	21.110.25	1600	17.5	each	-	-	213983
	21.110.26	1700	20	each	-	-	275269
	21.110.27	1800	20	each	-	-	275269
	21.110.28	1900	22.5	each	-	-	278385
	21.110.29	2000	22.5	each	-	-	278385
	21.110.30	2100	25	each	-	-	296044
	21.110.31	2200	25	each	-	-	296044
	21.110.32	2300	25	each	-	-	296044
	21.110.33	2400	27.5	each	-	-	312664
	21.110.34	2500	27.5	each	-	-	312664
	21.110.35	2600	30	each	-	-	327207
	21.110.36	2700	30	each	-	-	327207
	21.110.37	2800	35	each	-	-	377067
	21.110.38	2900	35	each	-	-	377067

Item No.			Description	Unit	Labour Rate	Material Rate	Through Rate
21.110.39	3000	35		each	-	-	377067
21.110.40	3100	35		each	-	-	377067
21.110.41	3200	35		each	-	-	377067
21.110.42	3300	40		each	-	-	410307
21.110.43	3400	40		each	-	-	410307
21.110.44	3500	40		each	-	-	410307
21.110.45	3600	40		each	-	-	410307

CHAPTER NO. 22

SANITARY INSTALLATIONS

CHAPTER 22.0 - SANITARY INSTALLATIONS

NOTES:

1. All sanitary and plumbing work shall be carried out through licensed plumbers.

2. All vitreous sanitary appliances (Vitreous Chinaware) shall conform to IS 2556 (Part-I) general requirements.

3. Flushing Cisterns: The flushing cisterns shall be automatic or manually operated high level or low level as specified, for water closets and urinals. A high level cistern is intended to operate with minimum height of 125 cm and a low level cistern with a maximum height of 30 cm between the top of the pan and the underside of the cistern. A cistern shall be considered mosquito proof only if there is no clearance anywhere which would permit a 1.6 mm wire to pass through in the permanent position of the cistern i.e. in the flushing position or filling position.

4. Pillar Taps: Pillar taps shall be chromium plated brass and shall conform to IS 1795. The nominal sizes of the pillar tap shall be 15 mm or 20 mm.

5. Sand Cast Iron or Centrifugally Cast (Spun) Iron Pipes and Fittings: Sand cast iron spigot and socket soil, waste and ventilating pipes, fittings and accessories shall conform to IS 1729. Centrifugally cast (Spun) iron spigot and socket soil, waste and ventilating pipes, fittings and accessories shall conform to IS 3989. The sand cast iron pipes shall be 1.5/1.8/2.0 metre in length including socket ends, cast iron (Spun) pipes shall be 1.5/1.75/2.0/2.5/3.0 metre in length excluding socket ends, unless shorter lengths are either specified or required at junctions etc. The pipe and fittings shall be supplied without ears, unless specified or directed otherwise.

6. Sand Cast Iron Floor Trap or Nahani Trap : Sand cast Iron Floor trap or Nahani trap shall be 'P' or 'S' type with minimum 50 mm seal. The traps shall be of self cleansing design and shall conform to IS 1729.

7. Plastic Seat and Covers for Water Closet: The seat and cover shall be of thermosetting or thermoplastic conforming to IS 2548 as specified. The hinging device shall be bronze or brass with nickel chromium plating confirming to IS 1068.

8. Sinks: Laboratory sinks and Kitchen sinks shall be of white glazed fire clay confirming to IS 771 The kitchen sink shall be of one piece construction with or without rim but without overflow. Stainless steel kitchen sink shall be of sizes as specified and shall be conforming to IS 13983.

9. Urinals: Bowl Type Urinals, Half Stall Urinals, Squatting Plate Urinal shall be of white vitreous chinaware conforming to IS 2556-(Part 6) and shall of one piece construction. Each urinal shall have an integral flushing rim of suitable type and inlet or supply horn for connecting the flush pipe. The flushing rim and inlet shall be of the self draining type.

10. Wash Basins: Wash basins shall be of white vitreous chinaware conforming to IS 2556 (Part-I) and IS 2556 (Part-4). Wash basins either of flat back or angle back as specified shall be of one piece construction, including a combined overflow. All internal angles shall be designed so as to facilitate cleaning.

11. Waste Fittings for Wash Basins and Sinks: The waste fittings shall be of nickel chromium plated brass, with thickness of plating not less than service grade 2 of IS 4827 which is capable of receiving polish and will not easily scale off.

12. Water Closets

12.1 Squatting Pans (Indian Type W.C.): Squatting pans shall be of white vitreous chinaware conforming to IS 2556 Part-I for General Requirements and relevant IS codes for each pattern shall be as described below:

12.1.1. Long pattern-conforming to IS 2556 (Part-3).

12.1.2 Orissa pattern-conforming to IS 2556 (Part-3).

12.1.3 Integrated type conforming to IS 2556 (Part-14).

12.2 Wash Down Type (European Type W.C.): Water closets shall be of white vitreous chinaware conforming to IS 2556 (Part-1) and 2556 (Part-2), as specified and shall be of "Wash down type.

13. All exposed G.I., C.I. or lead pipes and fittings shall be painted with approved quality of paint and shade as specified.

14. All soil pipes shall be carried up above the roof and shall have sand cast iron terminal guard.

15. The ventilating pipe or shaft shall be carried to a height of at least 60 cms above the outer covering of the roof of the building. The pipes above the parapet shall be secured to the wall by means of M.S. stay and clamps.

16. The connections between the main pipe and branch pipes shall be made by using branches and bends with access doors for cleaning. The waste from lavatories, kitchen, basins, sinks, baths and other floor traps shall be separately connected to respective waste stack of upper floors.

17. Testing: All sand cast iron/cast iron (Spun) pipes and fittings including joint shall be tested by smoke test to the satisfaction of the Engineer-in-Charge and left in working order after completion.

CHAPTER 22.0 - SANITARY INSTALLATIONS

LIST OF BUREAU OF INDIAN STANDARDS (BIS) CODES

Sr. No.	B.I.S. No.	Subject
1	IS 771 (Pt.1)	Specification for glazed fire clay sanitary appliances: Part 1: General requirements.
2	IS 771 (Pt.-2)	Specification for glazed fire clay sanitary appliances: Part 2: Specific requirements of kitchen and laboratory sink.
3	IS 772	Specific action for general requirements for enameled cast iron sanitary appliances.
4	IS 774	Flushing cisterns for water closets and urinals (Other than plastic
5	IS 1703	Water fittings- copper alloy float valves (horizontal plunger type) - Specification.
6	IS 1729	Cast iron /Ductile Iron Drainage Pipes and pipe fittings for Over ground non-pressure pipe line Socket and Spigot Series.
7	IS 1795	Specification for pillar taps for water supply purposes.
8	IS 2326	Specification for Automatic Flushing Cisterns for Urinals (Other than plastic cisterns)
9	IS 2548 (Part-1)	Plastic seats and covers for water closets Part 1: Thermo set seats and
10	IS 2548 (Part-2)	Plastic seats and covers for water closets Part 2: Thermoplastic seats and covers.- Specifications
11	IS 2556	Vitreous sanitary appliances (vitreous chinaware) –Specifications
12	IS 2556 (Part-1)	Part-1: General requirements.
13	IS 2556 (Part-2)	Part-2: Specific requirements of wash-down water closets.
14	IS 2556 (Part-3)	Part-3: Specific squatting pans.
15	IS 2556 (Part-4)	Part-4: Specific requirements of wash basins.
16	IS 2556 (Part-5)	Part-5: Specific requirements of laboratory sinks.
17	IS 2556 (Part-6)	Part-6: Specific requirements of Urinals & Partition plates
18	IS 2556 (Part-7)	Part-7: Specific requirements of accessories for sanitary appliances
19	IS 2556 (Part -14)	Part-14: Specific requirements of integrated squatting pans.
20	IS 2556 (Part -15)	Part-15: Specific requirements of universal water closets.
21	IS 2963	Specification for Copper alloy waste fittings for wash basins and sinks.
22	IS 3076	Specification for low density polyethylene pipes for potable water supplies.
23	IS 3989	Specification for centrifugally cast (spun) iron spigot and socket soil, waste and ventilating pipes fittings and accessories.
24	IS 4827	Specification for electroplated coating of nickel and chromium on copper and copper alloys.
25	IS 4984	Specification for high density polyethylene pipes for potable water
26	IS 4985	Unplasticised P.V.C. pipes for potable water supply – Specifications.
27	IS 7231	Plastic flushing cisterns for water closets and urinals – Specifications.
28	IS 13983	Stainless steel sinks for domestic purposes –Specifications.

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
	WASH BASINS, KITCHEN SINKS AND HARDWARES					
22.1	Providing and fixing wash basin with C.I. brackets, 15 mm C.P. brass pillar taps, 32 mm C.P. brass waste of standard pattern, including painting of fittings and brackets, cutting and making good the walls wherever require:					
	22.1.1	White vitreous chinaware Wash basin size 630x450 mm with a pair of 15 mm C.P. brass pillar taps	each	513	1757	2270
	22.1.2	White vitreous chinaware Wash basin size 630x450 mm with a single 15 mm C.P. brass pillar tap	each	492	1488	1980
	22.1.3	White vitreous chinaware Wash basin size 550x400 mm with a pair of 15 mm C.P. brass pillar taps	each	513	1523	2036
	22.1.4	White vitreous chinaware Flat back wash basin size 550x 400 mm with single 15 mm C.P. brass pillar tap	each	492	1254	1746
	22.1.5	White vitreous chinaware Angle back wash basin size 600 x 480 mm with single 15mm C.P. brass pillar tap	each	492	1488	1980
	22.1.6	White vitreous chinaware Angle back wash basin size 400 x 400 mm with single 15 mm C.P. brass pillar tap	each	492	1098	1590
	22.1.7	White vitreous chinaware Flat back wash basin size 450x 300 mm with single 15mm C.P. brass pillar tap	each	492	926	1417
	22.1.8	White vitreous chinaware Surgeon type wash basin of size 660x460 mm with a pair of 15 mm C.P. brass pillar taps with elbow including operated levers	each	513	2693	3206
	22.1.9	White vitreous chinaware Surgeon type wash basin of size 660x460 mm with single 15 mm C.P. brass pillar taps with elbow operated levers ISI Marked	each	492	2135	2626
	22.1.10	Stainless Steel AISI-304(18/8) Round basin 405x355 mm with single 15 mm C.P. brass pillar tap	each	492	2494	2986
	22.1.11	Stainless Steel AISI-304(18/8) Wash basin 530x345 mm with single 15 mm C.P. brass pillar tap	each	492	3144	3635
22.2	Providing and fixing wash basin with C.I. brackets, 15 mm dia CP Brass single hole basin mixer of approved quality and make, including painting of fittings and brackets, cutting and making good the walls wherever required:-					
	22.2.1	White vitreous chinaware Wash basin size 550x400 mm with a 15 mm CP Brass single hole basin mixer	each	506	3063	3569
22.3	Providing and fixing white vitreous chinaware wash basin including making all connections but excluding the cost of fittings :					
	22.3.1	Flat back wash basin of size 630x450 mm	each	47	949	996
	22.3.2	Flat back wash basin of size 550x400 mm	each	47	715	762
	22.3.3	Angle back wash basin of size 600x480 mm	each	47	949	996
	22.3.4	Angle back wash basin of size 400x400 mm	each	47	560	606
	22.3.5	Flat back wash basin of size 450x300 mm	each	47	410	457
	22.3.6	Surgeon type wash basin of size 660x460 mm	each	47	1306	1353
22.4	Providing and fixing wash basin with C.I. brackets, 15 mm PTMT pillar cock, 32 mm PTMT waste coupling of standard pattern, including painting of fittings and brackets, cutting and making good the walls wherever required. White vitreous chinaware Flat back wash basin size 550x400 mm with single 15 mm PTMT pillar cock.		each	513	1088	1601
22.5	Providing and fixing white vitreous chinaware pedestal for wash basin completely recessed at the back for the reception of pipes and fittings.		each	34	1202	1236
22.6	Providing and fixing white vitreous chinaware laboratory sink with C.I. brackets, C.P. brass chain with rubber plug, 40 mm C.P brass waste and 40mm C.P. brass trap with necessary C.P. brass unions complete, including painting of fittings and brackets, cutting and making good the wall wherever required :					
	22.6.1	Size 450x300x150 mm	each	436	2946	3382

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
	22.6.2 Size 600x450x200 mm		each	436	4245	4681
22.7	Providing and fixing white vitreous chinaware laboratory sink including making all connections excluding cost of fittings :					
	22.7.1 Size 450x300x150 mm		each	34	1957	1991
	22.7.2 Size 600x450x200 mm		each	34	3255	3289
22.8	Providing and fixing 15 mm C.P. brass Laboratory cock swan neck of best quality (to the approval of Engineer-in-charge).					
	22.8.1 One way		each	46	1298	1344
	22.8.2 Two way		each	46	2727	2772
	22.8.3 Three way		0.00	46	3246	3292
22.9	Providing and fixing kitchen sink with C.I. brackets, C.P. brass chain with rubber plug, 40 mm C.P. brass waste complete, including painting the fittings and brackets, cutting and making good the walls wherever required:					
	22.9.1 White glazed fire clay kitchen sink of size 600x450x 250 mm		each	436	2015	2451
22.10	Providing and fixing Stainless Steel A ISI 304 (18/8) kitchen sink as per IS:13983 with C.I. brackets and stainless steel plug 40 mm, including painting of fittings and brackets, cutting and making good the walls wherever required :					
	22.10.1 Kitchen sink with drain board					
		22.10.1.1 510x1040 mm bowl depth 250 mm	each	658	3507	4165
		22.10.1.2 510x1040 mm bowl depth 225 mm	each	658	4182	4840
		22.10.1.3 510x1040 mm bowl depth 200 mm	each	658	3923	4581
		22.10.1.4 510x1040 mm bowl depth 178 mm	each	658	3533	4191
	22.10.2 Kitchen sink without drain board					
		22.10.2.1 610x510 mm bowl depth 200 mm	each	436	2498	2934
		22.10.2.2 610x460 mm bowl depth 200 mm	each	436	1719	2155
		22.10.2.3 470x420 mm bowl depth 178 mm	each	436	1524	1960
22.11	Providing and fixing draining board with C.I. brackets including painting of brackets, cutting and making good the walls wherever required :					
	22.11.1 White glazed fire clay draining board of size 600x450x 25 mm		each	182	837	1020
22.12	Providing and fixing CP Brass Single lever telephonic wall mixer of quality & make as approved by Engineer in charge.					
	22.12.1 15 mm nominal dia		each	29	5843	5872
22.13	Providing and fixing kitchen sink including making all connections excluding cost of fittings.					
	22.13.1 White glazed fire clay sink of size 600x450x250 mm		each	34	1675	1709
22.14	Providing and fixing P.V.C. waste pipe for sink or wash basin including P.V.C. waste fittings complete.					
	22.14.1 Semi rigid pipe					
		22.14.1.1 32 mm dia	each	18	32	51
		22.14.1.2 40 mm dia	each	18	43	61
	22.14.2 Flexible pipe					
		22.14.2.1 32 mm dia	each	18	45	64
		22.14.2.2 40 mm dia	each	18	45	64
22.15	Providing and fixing CP Brass 32mm size Bottle Trap of approved quality & make and as per the direction of Engineer-in-charge.		each	18	805	823
22.16	Providing and fixing 40mm i/d G.I. waste pipe embedded in walls up to floor level including cost of union and plumber joint		each	483	470	953
22.17	Providing and fixing 40mm i/d chromium plated trap with chromium plated pipe to wall with walflange completed for use with sinks					
	22.17.1 With Bottle Trap (Indian make)		each	54	805	859
	22.17.2 With C.P. Brass 'P" or 'S' Trap		each	54	390	444

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
22.18	Providing and fixing in position brass oxidized gas taps (to the approval of the Engineer-in-charge) complete in all respects.					
	22.18.1	One way	each	27	352	379
	22.18.2	Two way	each	27	521	548
	22.18.3	Three way	each	27	703	730
	22.18.4	Four way	each	27	885	911
22.19	Providing and fixing 100 mm sand cast Iron grating for gully trap.		each	4	32	36
22.20	Providing and fixing in position C.I. plain Nahani Trap conforming to I.S.I. specifications and of self cleaning design with C.P. brass hinged grating with frame complete					
	22.20.1	50 mm i/d outlet plain Nahani trap	each	536	670	1206
	22.20.2	With 75 mm internal diameter outlet	each	536	774	1310
22.21	Providing and fixing in portion best Indian make vitreous chinaware drinking fountain consisting of: 15 mm self-closing non-concussive inlet valves with regulating device waste coupling with flush grating bottle trap with 32 min seal inlet coupling nut screwed and including cutting and making good the walls and floors etc. with 32 mm GI waste pipe up to floor level.					
	22.21.1	White	each	760	10739	11500
	22.21.2	Single Colour	each	760	12038	12798
	22.21.3	Mixed Colour	each	760	13985	14746
	WCs, URINALS AND URINAL PARTITIONS					
22.22	Providing and fixing water closet squatting pan (Indian type W.C. pan) with 100 mm sand cast Iron P or S trap, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever) conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required:					
	22.22.1	White vitreous chinaware Orissa pattern W.C. pan of size 580x440 mm with integral type foot rests	each	1144	2767	3911
	22.22.2	Stainless Steel AISI-304(18/8) Orissa pattern W.C. pan of size 585x480 mm with flush pipe and integrated type foot rests	each	1144	7052	8196
22.23	Providing and fixing white vitreous chinaware pedestal type water closet (European type W.C. pan) with seat and lid, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever), conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required :					
	22.23.1	W.C. pan with ISI marked white solid plastic seat and lid	each	1144	2611	3755
	22.23.2	W.C. pan with ISI marked black solid plastic seat and lid	each	1144	2494	3638
22.24	Providing and fixing white vitreous chinaware pedestal type water closet (European type) with seat and lid, 10 litre low level white vitreous chinaware flushing cistern & C.P. flush bend with fittings & C.I. brackets, 40 mm flush bend, overflow arrangement with specials of standard make and mosquito proof coupling of approved municipal design complete, including painting of fittings and brackets, cutting and making good the walls and floors wherever required :					
	22.24.1	W.C. pan with ISI marked white solid plastic seat and lid	each	1319	3593	4912
	22.24.2	W.C. pan with ISI marked black solid plastic seat and lid	each	1319	3476	4795
22.25	Providing and fixing white vitreous chinaware flat back or wall corner type lipped front urinal basin of 430x260x350 mm and 340x410x265 mm sizes respectively with flushing cistern with standard flush pipe and C.P. brass spreaders with brass unions and G.I clamps complete, including painting of fittings and brackets, cutting and making good the walls and floors wherever required :					
	22.25.1	One urinal basin with 5 litre white P.V.C. automatic flushing cistern	each	1307	1878	3185
	22.25.2	One urinal basin with manually operated 5 litres PVC cistern and manually operated stop cock/ angle valve	each	1307	1879	3186

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
	22.25.3	Range of two urinal basins with 5 litre white P.V.C. automatic flushing cistern	each	2097	2910	5007
	22.25.4	Range of three urinal basins with 10litre white P.V.C. automatic flushing cistern	each	2875	3971	6845
	22.25.5	Range of four urinal basins with 10 litre white P.V.C. automatic flushing cistern	each	4194	5129	9323
22.26	Providing and fixing white vitreous chinaware flat back half stall urinal of size 580x380x350 mm with white PVC flushing cistern, with fittings, standard size C.P. brass flush pipe, spreaders with unions and clamps (all in C.P. brass) with waste fitting as per IS : 2556, C.I. trap with outlet grating and other couplings in C.P. brass, including painting of fittings and cutting and making good the walls and floors wherever required :					
	22.26.1	Single half stall urinal with 5 litre P.V.C. automatic flushing cistern	each	2989	2310	5299
	22.26.2	Single half stall urinal with manually operated5 litre P.V.C. flushing cistern and manually operated stop cock/ angle valve	each	2989	2402	5391
	22.26.3	Range of two half stall urinals with 5 litre P.V.C. automatic flushing cistern	each	4422	3729	8152
	22.26.4	Range of three half stall urinals with 10 litre P.V.C. automatic flushing cistern	each	5200	5166	10367
	22.26.5	Range of four half stall urinals with 10 litre P.V.C. automatic flushing cistern	each	5978	6439	12417
22.27	Providing and fixing one piece construction white vitreous chinaware squatting plate with an integral longitudinal flushing pipe, white P.V.C. flushing cistern, with fittings, standard size G.I. / PVC flush pipe for back and front flush with standard spreader pipes with fittings, G.I clamps and C.P. brass coupling complete, including painting of fittings and cutting and making good the walls and floors etc. wherever required :					
	22.27.1	Single squatting plate with 5 litre P.V.C. automatic flushing cistern	each	2009	2290	4300
	22.27.2	Single squatting plate with manually operated 5 litre P.V.C. flushing cistern and stop cock / angle valve	each	2009	2292	4301
	22.27.3	Range of two squatting plates with 5 litre P.V.C. automatic flushing cistern	each	2760	3784	6544
	22.27.4	Range of three squatting plates with 10 litre P.V.C. automatic flushing cistern	each	3538	5299	8837
	22.27.5	Range of four squatting plates with 10 litre P.V.C. automatic flushing cistern	each	4049	6830	10879
22.28	Providing and fixing white vitreous chinaware water closet squatting pan (Indian type) :					
	22.28.1	Long pattern W.C. pan of size 580 mm	each	416	608	1023
	22.28.2	Orissa pattern W.C. pan of size 580x440 mm	each	416	1581	1997
22.29	Extra for using coloured W.C. pan instead of white W.C. pan :					
	22.29.1	Orissa pattern W.C. pan 580x440 mm	each	-	714	714
22.30	Providing and fixing white vitreous chinaware pedestal type (European type/ wash down type) water closet pan.		each	416	1322	1737
22.31	Extra for using coloured pedestal type W.C pan (European type) with low level cistern of same colour instead of white vitreous chinaware W.C pan and cistern.		each	-	110	110
22.32	Providing and fixing vitreous chinaware dual purpose closet suitable for use as squatting pan or European type water closet (Anglo Indian W.C pan) with seat & lid fixed with C.P. brass hinges and rubber buffers, 10 litre low level flushing cistern with fitting and brackets, 40 mm flush bend, 20 mm over flow pipe, with specials of standard make and mosquito proof coupling of approved municipal design complete, including painting of fittings and brackets, cutting and making good the walls and floors wherever required:					

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
	22.32.1	White vitreous chinaware dual purpose WC pan with white solid plastic seat and lid with white vitreous chinaware flushing cistern and C.P. flush bend.	each	1319	5970	7289
22.33	Providing and fixing white vitreous chinaware extended wall mounting water closet of size 780x370x690 mm of approved shape including providing & fixing white vitreous chinaware cistern / PVC cistern (with brass fitting) into the wall with dual flush fitting, of flushing capacity 3 litre/ 6 litre (adjustable to 4 litre/ 8 litres), including seat cover, and cistern fittings, nuts, bolts and gasket etc complete.		each	1319	10785	12104
22.34	Providing and fixing floor mounted, white vitreous chinaware single piece, double traps syphonic water closet of approved brand/make, shape, size and pattern including integrated white vitreous chinaware cistern of capacity 10 litres with dual flushing system, including all fittings and fixtures with seat cover, cistern fittings, nuts, bolts and gasket etc including making connection with the existing P/S trap, complete in all respect as per directions of Engineer-in-Charge.		each	1319	12343	13662
22.35	Providing and fixing G.I. inlet connection for flush pipe connecting with W.C. pan.		each	12	78	90
22.36	Providing and fixing solid plastic seat with lid for pedestal type W.C. pan complete :					
	22.36.1	White solid plastic seat with lid	each	12	519	531
	22.36.2	Black solid plastic seat with lid	each	12	403	414
	22.36.3	Coloured (other than black & white) solid plastic seat with lid	each	12	506	518
22.37	Providing and fixing a pair of white vitreous chinaware foot rests of standard pattern for squatting pan water closet :					
	22.37.1	250x130x30 mm	each	36	136	172
	22.37.2	250x125x25 mm	each	36	136	172
22.38	Providing and fixing 8 mm dia C.P. / S.S. Jet with flexible tube up to 1 metre long with S.S. triangular plate to European type W.C. of quality and make as approved by Engineer - in - charge.		each	10	260	270
22.39	Providing and fixing P.V.C. low level flushing cistern with manually controlled device (handle lever) conforming to IS : 7231, with all fittings and fixtures complete.					
	22.39.1	10 litre capacity - White	each	91	750	841
	22.39.2	10 litre capacity - coloured	each	91	720	811
22.40	Providing and fixing controlled flush, low level cistern made of vitreous chinaware with all fittings complete.					
	22.40.1	10 litre (full flush) capacity-white	each	362	921	1283
	22.40.2	10 litre (full flush) capacity-coloured	each	362	1505	1867
22.41	Providing and fixing in position 25 mm diameter mosquito proof coupling of approved municipal design.		each	1	39	40
22.42	Providing and fixing toilet paper holder :					
	22.42.1	C.P. brass	each	85	351	436
	22.42.2	vitreous chinaware	each	85	198	284
22.43	Providing and fixing in position best Indian make (as approved by the Engineer-in-charge) Bidet suite consisting of bidet suite in vitreous china ware 380 mm high and best chromium plated brass bidet fitting four holes basin mixer with pop-waste etc. complete in all respects including cutting and making good the walls and floors & painting of fittings etc.					
	22.43.1	White	each	760	29864	30624
	22.43.2	Single Colour	each	760	31812	32572
	22.43.3	Mixed Colour	each	760	43498	44258
22.44	Providing and fixing 32 mm diameter GI. extension pipe for Indian type Water Closet suite complete with accessories(as approved by the Engineer -in-charge)		each	97	902	999

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
22.45	Providing & fixing white vitreous chinaware water less urinal of size 600 x 330 x 315 mm having antibacterial /germs free ceramic surface, fixed with cartridge having debris catcher and hygiene seal.	each	362	15511	15873
22.46	Providing and fixing white vitreous chinaware battery based infrared sensor operated urinal of approx. size 610 x 390 x 370 mm having pre & post flushing with water (250 ml & 500 ml consumption), having water inlet from back side, including fixing to wall with suitable brackets all as per manufacturers specification and direction of Engineer-in-charge.	each	362	5851	6213
22.47	Providing and fixing white vitreous chinaware flat back or wall corner type lipped front urinal basin of 430x260x350 mm or 340x410x265 mm sizes respectively.	each	275	605	880
22.48	Providing and fixing white vitreous chinaware squatting plate urinal with integral rim longitudinal flush pipe.	each	778	1388	2166
22.49	Providing and fixing in position best Indian make vitreous chinaware channel of size 600mmx150mm including laying and fixing in cement concrete 1:2:4 complete as required by the Engineer-in-charge.				
22.49.1	White	each	107	1454	1561
22.49.2	Single Colour	each	107	1844	1951
22.50	Providing and fixing partitions for different type of urinals.				
22.50.1	Vitreous Chinaware Partition plate.				
22.50.1.1	Small size 680mm x 330 mm				
22.50.1.1.1	White	each	259	800	1059
22.50.1.1.2	Single Colour	each	259	930	1189
22.50.1.1.3	Mixed Colour	each	259	995	1254
22.50.1.2	Large size 835mm x 355 mm				
22.50.1.2.1	White	each	259	1060	1319
22.50.1.2.2	Single Colour	each	259	1189	1449
22.50.1.2.3	Mixed Colour	each	259	1319	1579
	SEWERAGE DISPOSAL SYSTEMS				
22.51	Providing and fixing soil, waste and vent pipes :				
22.51.1	100 mm dia				
22.51.1.1	Sand cast iron S&S pipe as per IS: 1729	metre	30	898	928
22.51.1.2	Centrifugally cast (spun) iron socket & spigot (S&S) pipe as per IS: 3989	metre	31	977	1008
22.51.1.3	Hub less centrifugally cast (spun) iron pipes epoxy coated inside & outside IS:15905	metre	29	943	972
22.51.2	75 mm diameter :				
22.51.2.1	Sand cast iron S&S pipe as per IS: 1729	metre	25	828	853
22.51.2.2	Centrifugally cast (spun) iron socketed pipe as per IS: 3989	metre	26	892	918
22.51.2.3	Hub less centrifugally cast (spun) iron pipes epoxy coated inside & outside IS:15905	metre	24	768	792
22.52	Providing and filling the joints with spun yarn, cement slurry and cement mortar 1:2 (1 cement : 2 fine sand) in S.C.I./ C.I. Pipes :				
22.52.1	75 mm dia pipe	each	51	1	52
22.52.2	100 mm dia pipe	each	60	2	61
22.53	Providing and fixing M.S. holder-bat clamps of approved design to Sand Cast iron/cast iron (spun) pipe embedded in and including cement concrete blocks 10x10x10 cm of 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), including cost of cutting holes and making good the walls etc. :				
22.53.1	For 100 mm dia pipe	each	119	43	162
22.53.2	For 75 mm dia pipe	each	119	39	158

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
22.54	Providing and fixing M.S. holder bat clamp of approved design to sand cast iron/ cast iron (spun) pipes comprising of M.S. flat brackets made of 50x5 mm flat of specified shape, projecting 75 mm outside the wall surface and fixed on wall with 4Nos., 6mm dia expansion hold fasteners, including drilling necessary holes in brick wall/ CC/ RCC surface and the cost of bolts etc. The pipes shall be fixed to the already fixed brackets with the help of 30 mm x1.6 mm galvanised M.S. flats of specified shape and of total length 420 mm and shall be fixed with M.S. nuts, bolts, & washers of size 25x6 mm, one bolts on each side of the pipe.					
	22.54.1	Total bracket length 580 mm of approved shape and design (for single 100 mm dia pipe)	each	48	151	199
	22.54.2	Total bracket length 810 mm of approved shape and design (for two 100 mm dia pipes)	each	55	193	248
	22.54.3	Total bracket length 1040 mm of approved shape and design (for three 100 mm dia pipes)	each	60	235	296
22.55	Providing and fixing bend of required degree with access door, insertion rubber washer 3 mm thick, bolts and nuts complete.					
	22.55.1	100 mm dia				
		22.55.1.1 Sand cast iron S&S as per IS - 1729	each	12	413	425
		22.55.1.2 Sand cast iron S&S as per IS - 3989	each	12	413	425
		22.55.1.3 Hub less centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	each	12	497	509
	22.55.2	75 mm dia				
		22.55.2.1 Sand cast iron S&S as per IS - 1729	each	9	332	341
		22.55.2.2 Sand cast iron S&S as per IS- 3989	each	9	345	354
		22.55.2.3 Hub less centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	each	9	397	406
22.56	Providing and fixing plain bend of required degree.					
	22.56.1	100 mm dia				
		22.56.1.1 Sand cast iron S&S as per IS - 1729	each	12	335	347
		22.56.1.2 Sand cast iron S&S as per IS : 3989	each	12	344	356
		22.56.1.3 Hub less centrifugally cast (spun) iron pipes epoxy coated inside & outside IS:15905	each	12	299	310
	22.56.2	75 mm dia				
		22.56.2.1 Sand cast iron S&S as per IS -1729	each	9	273	282
		22.56.2.2 Sand cast iron S&S as per IS - 3989	each	9	253	262
		22.56.2.3 Hub less centrifugally cast (spun) iron pipes epoxy coated inside & outside IS:15905	each	9	208	217
22.57	Providing and fixing heel rest sanitary bend					
	22.57.1	100 mm dia				
		22.57.1.1 Sand cast iron S&S as per IS - 1729	each	12	451	462
		22.57.1.2 Sand cast iron S&S as per IS - 3989	each	12	384	396
	22.57.2	75 mm dia				
		22.57.2.1 Sand cast iron S&S as per IS - 1729	each	9	356	365
		22.57.2.2 Sand cast iron S&S as per IS - 3989	each	9	325	334
22.58	Providing and fixing double equal junction of required degree with access door, insertion rubber washer 3 mm thick, bolts and nuts complete :					
	22.58.1	100x100x100x100 mm				
		22.58.1.1 Sand cast iron S&S as per IS - 1729	each	12	952	963
		22.58.1.2 Sand cast iron S&S as per IS - 3989	each	12	822	834
	22.58.2	75x75x75x75 mm				
		22.58.2.1 Sand cast iron S&S as per IS - 1729	each	9	670	679
		22.58.2.2 Sand cast iron S&S as per IS - 3989	each	9	644	653

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
22.59	Providing and fixing double equal plain junction of required degree.					
22.59.1	100x100x100x100 mm					
22.59.1.1	Sand cast iron S&S as per IS - 1729		each	12	766	778
22.59.1.2	Sand cast iron S&S as per IS - 3989		each	12	805	817
22.59.1.3	Hub less centrifugally cast (spun) iron pipes epoxy coated inside & outside IS:15905		each	12	662	674
22.59.2	75x75x75x75 mm					
22.59.2.1	Sand cast iron S&S as per IS - 1729		each	9	496	505
22.59.2.2	Sand cast iron S&S as per IS - 3989		each	9	600	609
22.59.2.3	Hub less centrifugally cast (spun) iron pipes epoxy coated inside & outside IS:15905		each	9	357	366
22.60	Providing and fixing single equal plain junction of required degree with access door, insertion rubber washer 3 mm thick, bolts and nuts complete.					
22.60.1	100x100x100 mm					
22.60.1.1	Sand cast iron S&S as per IS - 1729		each	12	549	561
22.60.1.2	Sand cast iron S&S as per IS - 3989		each	12	666	678
22.60.2	75x75x75 mm					
22.60.2.1	Sand cast iron S&S as per IS - 1729		each	9	436	445
22.60.2.2	Sand cast iron S&S as per IS - 3989		each	9	505	514
22.61	Providing and fixing single equal plain junction of required degree :					
22.61.1	100x100x100 mm					
22.61.1.1	Sand cast iron S&S as per IS - 1729		each	12	467	479
22.61.1.2	Sand cast iron S&S as per IS - 3989		each	12	613	625
22.61.1.3	Hub less centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905		each	12	519	531
22.61.2	75x75x75 mm					
22.61.2.1	Sand cast iron S&S as per IS - 1729		each	9	361	370
22.61.2.2	Sand cast iron S&S as per IS - 3989		each	9	428	438
22.61.2.3	Hub less centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905		each	9	279	288
22.62	Providing and fixing double unequal junction of required degree with access door, insertion rubber washer 3 mm thick, bolts and nuts complete:					
22.62.1	100x100x75x75 mm					
22.62.1.1	Sand cast iron S&S as per IS - 1729		each	12	932	944
22.62.1.2	Sand cast iron S&S as per IS - 3989		each	12	1127	1139
22.63	Providing and fixing double unequal plain junction of required degree :					
22.63.1	100x100x75x75 mm					
22.63.1.1	Sand cast iron S&S as per IS - 1729		each	12	799	810
22.63.1.2	Sand cast iron S&S as per IS - 3989		each	12	1039	1050
22.63.1.3	Hub less centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905		each	12	519	531
22.64	Providing and fixing single unequal junction of required degree with access door, insertion rubber washer 3 mm thick, bolts and nuts complete :					
22.64.1	100x100x75 mm					
22.64.1.1	Sand cast iron S&S as per IS - 1729		each	12	738	749
22.64.1.2	Sand cast iron S&S as per IS - 3989		each	12	854	866
22.65	Providing and fixing single unequal plain junction of required degree :					
22.65.1	100x100x75 mm					
22.65.1.1	Sand cast iron S&S as per IS - 1729		each	12	641	653
22.65.1.2	Sand cast iron S&S as per IS - 3989		each	12	740	752

Item No.	Description			Unit	Labour Rate	Material Rate	Through Rate
		22.65.1.3	Hub less centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	each	12	487	499
22.66	Providing and fixing double equal plain invert branch of required degree:						
	22.66.1	100x100x100x100 mm					
		22.66.1.1	Sand cast iron S&S as per IS - 1729	each	12	714	726
		22.66.1.2	Sand cast iron S&S as per IS 3989	each	12	688	700
		22.66.1.3	Hub less centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	each	12	812	823
	22.66.2	75x75x75x75 mm					
		22.66.2.1	Sand cast iron S&S as per IS - 1729	each	9	532	541
		22.66.2.2	Sand cast iron S&S as per IS - 3989	each	9	552	561
22.67	Providing and fixing single equal plain invert branch of required degree :						
	22.67.1	100x100x100 mm					
		22.67.1.1	Sand cast iron S&S as per iron 1729	each	12	532	544
		22.67.1.2	Sand cast iron S&S as per IS - 3989	each	12	552	564
		22.67.1.3	Hub less centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	each	12	506	518
	22.67.2	75x75x75 mm					
		22.67.2.1	Sand cast iron S&S as per IS - 1729	each	24	416	440
		22.67.2.2	Sand cast iron S&S as per IS - 3989	each	9	419	428
		22.67.2.3	Hub less centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	each	9	338	347
22.68	Providing and fixing double unequal invert branch of required degree :						
	22.68.1	100x100x75x75 mm					
		22.68.1.1	Sand cast iron S&S as per IS - 1729	each	12	740	752
		22.68.1.2	Sand cast iron S&S as per IS - 3989	each	12	941	953
22.69	Providing and fixing single unequal plain invert branch of required degree :						
	22.69.1	100x100x75 mm					
		22.69.1.1	Sand cast iron S&S as per IS - 1729	each	12	643	654
		22.69.1.2	Sand cast iron S&S as per IS - 3989	each	12	708	719
		22.69.1.3	Hub less centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	each	12	558	570
22.70	Providing and fixing sand cast iron S&S off sets as per IS: 1729						
	22.70.1	76 mm off sets					
		22.70.1.1	With 75 mm dia pipe	each	9	283	292
		22.70.1.2	With 100 mm dia pipe	each	9	471	480
	22.70.2	114 mm off sets					
		22.70.2.1	With 75 mm dia pipe	each	12	390	401
		22.70.2.2	With 100 mm dia pipe	each	12	497	509
	22.70.3	152 mm off sets					
		22.70.3.1	With 75 mm dia pipe	each	16	465	480
		22.70.3.2	With 100 mm dia pipe	each	16	591	606
22.71	Providing and fixing Hub less centrifugally cast iron offsets epoxy coated inside & outside as per IS:15905						
	22.71.1	65 mm offsets					
		22.71.1.1	With 100 mm dia pipe	each	9	467	477
		22.71.1.2	With 75 mm dia pipe	each	9	383	392
22.72	Providing and fixing sand cast iron S&S off sets as per IS: 3989 :						
	22.72.1	75 mm off sets					
		22.72.1.1	With 75 mm dia pipe	each	9	292	301

Item No.	Description			Unit	Labour Rate	Material Rate	Through Rate
	22.72.2	150 mm off sets					
		22.72.2.1	With 75 mm dia pipe	each	13	370	383
		22.72.2.2	With 100 mm dia pipe	each	13	506	519
22.73	Providing and fixing Hub less centrifugally cast iron offsets epoxy coated inside & outside as per IS:15905						
	22.73.1	130 mm offsets					
		22.73.1.1	With 100 mm dia	each	12	571	583
		22.73.1.2	With 75 mm dia	each	9	403	412
22.74	Providing and fixing door piece, insertion rubber washer 3mm thick, bolts & nuts complete :						
	22.74.1	100 mm					
		22.74.1.1	Sand cast iron S&S as per IS - 1729	each	12	640	652
		22.74.1.2	Sand cast iron S&S as per IS - 3989	each	12	543	554
	22.74.2	75 mm					
		22.74.2.1	Sand cast iron S&S as per IS - 1729	each	9	388	397
		22.74.2.2	Sand cast iron S&S as per IS - 3989	each	9	404	413
22.75	Providing and fixing terminal guard :						
	22.75.1	100 mm					
		22.75.1.1	Sand cast iron S&S as per IS - 1729	each	12	310	322
		22.75.1.2	Sand cast iron S&S as per IS - 3989	each	12	343	354
		22.75.1.3	Hub less centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	each	12	351	362
	22.75.2	75 mm					
		22.75.2.1	Sand cast iron S&S as per IS - 1729	each	9	248	257
		22.75.2.2	Sand cast iron S&S as per IS - 3989	each	9	273	282
22.76	Providing and fixing collar :						
	22.76.1	100 mm					
		22.76.1.1	Sand cast iron S&S as per IS - 1729	each	12	319	331
		22.76.1.2	Sand cast iron S&S as per IS - 3989	each	12	362	374
	22.76.2	75 mm					
		22.76.2.1	Sand cast iron S&S as per IS - 1729	each	9	230	239
		22.76.2.2	Sand cast iron S&S as per IS - 3989	each	9	221	230
22.77	Providing and fixing shielded coupling for Hub less centrifugally cast iron pipe						
	22.77.1	100 mm dia					
		22.77.1.1	SS 304 grade coupling with EPDM rubber gasket	each	12	357	369
	22.77.2	75 mm dia					
		22.77.2.1	SS 304 grade coupling with EPDM rubber gasket	each	9	325	334
22.78	Providing lead caulked joints to sand cast iron/centrifugally cast (spun) iron pipes and fittings of diameter :						
	22.78.1	100 mm		each	86	186	272
	22.78.2	75 mm		each	69	165	234
	22.78.3	50 mm		each	55	140	195
22.79	Providing and fixing M.S. stays and clamps for sand cast iron/ centrifugally cast (spun) iron pipes of diameter :						
	22.79.1	100 mm		each	12	88	99
	22.79.2	75 mm		each	9	48	57
	22.79.3	50 mm		each	8	45	53

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
22.80	Providing and fixing trap of self cleansing design with screwed down or hinged grating with or without vent arm complete, including cost of cutting and making good the walls and floors :					
	22.80.1 100 mm inlet and 100 mm outlet					
	22.80.1.1	Sand cast iron S&S as per IS: 3989	each	416	599	1014
	22.80.1.2	Sand Cast Iron S&S as per IS: 1729	each	416	366	782
	22.80.1.3	Hub less centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	each	12	701	713
	22.80.2 100 mm inlet and 75 mm outlet					
	22.80.2.1	Sand cast iron S&S as per IS - 3989	each	534	664	1197
	22.80.2.2	Sand Cast Iron S&S as per IS- 1729	each	416	297	713
	22.80.2.3	Hub less centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	each	12	500	512
22.81	Cutting chases in brick masonry walls for following diameter sand cast iron/centrifugally cast (spun) iron pipes and making good the same with cement concrete 1:3:6 (1 cement : 3 coarse sand :6 graded stone aggregate 12.5 mm nominal size), including necessary plaster and pointing in cement mortar 1:4 (1 cement : 4 coarse sand) :					
	22.81.1	100 mm dia	metre	163	69	232
	22.81.2	75 mm dia	metre	118	48	165
	22.81.3	50 mm dia	metre	80	28	109
22.82	Cutting holes up to 30x30 cm in walls including making good the same:					
	22.82.1	With common burnt clay non-modular bricks	each	67	84	151
22.83	Cutting holes up to 15x15 cm in R.C.C. floors and roofs for passing drain pipe etc. and repairing the hole after insertion of drain pipe etc. with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), including finishing complete so as to make it leak proof.		each	147	6	154
22.84	Making hole up to 20x20 cm and embedding pipes up to 150 mm diameter in masonry and filling with cement concrete 1:3:6 (1 cement : 3 coarse sand: 6 graded stone aggregate 20 mm nominal size) including disposal of malba.		metre	17	56	73
	C.P.V.C. PIPES					
22.85	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge.					
	Internal work - Exposed on wall					
	22.85.1	15 mm nominal outer dia Pipes	metre	70	76	147
	22.85.2	20 mm nominal outer dia Pipes	metre	78	125	203
	22.85.3	25 mm nominal outer dia Pipes	metre	78	183	261
	22.85.4	32 mm nominal outer dia Pipes	metre	86	262	348
	22.85.5	40 mm nominal outer dia Pipes	metre	109	372	481
	22.85.6	50 mm nominal outer dia Pipes	metre	109	617	726
22.86	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge.					
	Concealed work, including cutting chases and making good the walls etc.					
	22.86.1	15 mm nominal outer dia Pipes	metre	118	112	230
	22.86.2	20 mm nominal outer dia Pipes	metre	118	178	296

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
	22.86.3	25 mm nominal outer dia Pipes	metre	118	256	373
	22.86.4	32 mm nominal outer dia Pipes	metre	118	362	480
22.87	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings This includes jointing of pipes & fittings with one step CPVC solvent cement, trenching, refilling & testing of joints complete as per direction of Engineer in Charge.					
	External work					
	22.87.1	15 mm nominal outer dia Pipes	metre	39	76	115
	22.87.2	20 mm nominal outer dia Pipes	metre	39	125	164
	22.87.3	25 mm nominal outer dia Pipes	metre	43	182	225
	22.87.4	32 mm nominal outer dia Pipes	metre	43	262	305
	22.87.5	40 mm nominal outer dia Pipes	metre	47	371	418
	22.87.6	50 mm nominal outer dia Pipes	metre	47	616	663
	22.87.7	62.50 mm nominal inner dia Pipes	metre	59	1317	1376
	22.87.8	75 mm nominal inner dia Pipes	metre	59	1713	1772
	22.87.9	100 mm nominal inner dia Pipes	metre	79	2448	2526
	22.87.10	150 mm nominal inner dia Pipes	metre	121	5148	5270
	GI PIPES					
22.88	Providing and fixing G.I. pipes complete with G.I. fittings and clamps, i/c cutting and making good the walls etc.					
	Internal work - Exposed on wall					
	22.88.1	15 mm dia nominal bore	metre	63	128	191
	22.88.2	20 mm dia nominal bore	metre	70	168	239
	22.88.3	25 mm dia nominal bore	metre	78	240	318
	22.88.4	32 mm dia nominal bore	metre	86	308	393
	22.88.5	40 mm dia nominal bore	metre	109	358	467
	22.88.6	50 mm dia nominal bore	metre	132	443	575
22.89	Providing and fixing G.I. Pipes complete with G.I. fittings and clamps, i/c making good the walls etc. concealed pipe, including painting with anti corrosive bitumastic paint, cutting chases and making good the wall :					
	22.89.1	15 mm dia nominal bore	metre	120	138	258
	22.89.2	20 mm dia nominal bore	metre	120	179	299
22.90	Making chases up to 7.5x7.5 cm in walls including making good and finishing with matching surface after housing G.I. pipe etc.		metre	55	10	65
22.91	Providing and fixing G.I. pipes complete with G.I. fittings including trenching up to 0.30m to 1.00m depth and refilling etc.					
	External work					
	22.91.1	15 mm dia nominal bore	metre	54	113	168
	22.91.2	20 mm dia nominal bore	metre	54	149	203
	22.91.3	25 mm dia nominal bore	metre	59	213	271
	22.91.4	32 mm dia nominal bore	metre	59	272	331
	22.91.5	40 mm dia nominal bore	metre	62	316	379
	22.91.6	50 mm dia nominal bore	metre	62	393	455
	22.91.7	65 mm dia nominal bore	metre	59	505	564
	22.91.8	80 mm dia nominal bore	metre	59	631	690
22.92	Making connection of G.I. distribution branch with G.I. main of following sizes by providing and fixing tee, including cutting and threading the pipe etc. complete :					
	22.92.1	25 to 40 mm nominal bore	each	239	89	328
	22.92.2	50 to 80 mm nominal bore	each	326	624	950

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
22.93	Providing and filling sand envelope of grading zone IV or coarser grade,100mm all-round the G.I. pipes in external work :					
	22.93.1	15 mm diameter pipe	metre	3	62	66
	22.93.2	20 mm diameter pipe	metre	4	63	67
	22.93.3	25 mm diameter pipe	metre	4	65	69
	22.93.4	32 mm diameter pipe	metre	4	67	70
	22.93.5	40 mm diameter pipe	metre	4	67	71
	22.93.6	50 mm diameter pipe	metre	4	70	74
	22.93.7	65 mm diameter pipe	metre	6	110	117
	22.93.8	80 mm diameter pipe	metre	6	114	120
	22.93.9	100 mm diameter pipe	metre	7	121	127
	22.93.10	150 mm diameter pipe	metre	10	180	190
22.94	Providing and fixing G.I. Union in G.I. pipe including cutting and threading the pipe and making long screws etc. complete (New work) :					
	22.94.1	15 mm nominal bore	each	80	60	139
	22.94.2	20 mm nominal bore	each	80	95	174
	22.94.3	25 mm nominal bore	each	80	157	237
	22.94.4	32 mm nominal bore	each	80	209	289
	22.94.5	40 mm nominal bore	each	80	280	360
	22.94.6	50 mm nominal bore	each	109	339	448
	22.94.7	65 mm nominal bore	each	109	715	824
	22.94.8	80 mm nominal bore	each	109	780	889
22.95	Fixing water meter and stop cock in G.I. pipe line including cutting and threading the pipe and making long screws etc. complete (cost of water meter and stop cock to be paid separately).		each	239	24	263
	BRASS FITTINGS					
22.96	Providing and fixing brass bib cock of approved quality :					
	22.96.1	15 mm nominal bore	each	8	273	280
	22.96.2	20 mm nominal bore	each	8	292	300
22.97	Providing and fixing brass stop cock of approved quality :					
	22.97.1	15 mm nominal bore	each	6	273	279
	22.97.2	20 mm nominal bore	each	8	292	300
22.98	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end) :					
	22.98.1	25 mm nominal bore	each	9	454	464
	22.98.2	20 mm nominal bore	each	8	422	430
	22.98.3	32 mm nominal bore.	each	10	532	543
	22.98.4	40 mm nominal bore	each	12	623	635
	22.98.5	50 mm nominal bore	each	13	805	818
	22.98.6	65 mm nominal bore	each	14	1402	1417
	22.98.7	80 mm nominal bore	each	16	2103	2119
22.99	Providing and fixing gun metal non- return valve of approved quality (screwed end) :					
	22.99.1	25 mm nominal bore				
		22.99.1.1 Horizontal	each	12	428	440
		22.99.1.2 Vertical	each	12	454	466
	22.99.2	32 mm nominal bore				
		22.99.2.1 Horizontal	each	13	584	597
		22.99.2.2 Vertical	each	13	649	662
	22.99.3	40 mm nominal bore				

Item No.	Description			Unit	Labour Rate	Material Rate	Through Rate
	22.99.3.1	Horizontal		each	14	727	741
	22.99.3.2	Vertical		each	14	909	923
	22.99.4	50 mm nominal bore					
	22.99.4.1	Horizontal		each	16	1065	1080
	22.99.4.2	Vertical		each	16	1169	1184
22.100	Providing and fixing brass ferrule with C.I. mouth cover including boring and tapping the main :						
	22.100.1	15 mm nominal bore		each	34	182	216
	22.100.2	20 mm nominal bore		each	42	208	249
	22.100.3	25 mm nominal bore		each	47	286	332
22.101	Providing and fixing Unplasticised PVC connection pipe with brass unions :						
	22.101.1	30 cm length					
	22.101.1.1	15 mm nominal bore		each	10	39	49
	22.101.1.2	20 mm nominal bore		each	10	45	56
	22.101.2	45 cm length					
	22.101.2.1	15 mm nominal bore		each	12	45	57
	22.101.2.2	20 mm nominal bore		each	12	62	74
22.102	Providing and fixing C.P. brass shower rose with 15 or 20 mm inlet :						
	22.102.1	100 mm diameter		each	5	130	135
	22.102.2	150 mm diameter		each	6	162	169
22.103	Providing and fixing ball valve (brass) of approved quality, High or low pressure, with plastic floats complete :						
	22.103.1	15 mm nominal bore		each	18	273	291
	22.103.2	20 mm nominal bore		each	23	305	329
	22.103.3	25 mm nominal bore		each	29	299	327
	C.P. BRASS FITTINGS						
22.104	Providing and fixing C.P. brass bib cock of approved quality conforming to IS:8931 :						
	22.104.1	15 mm nominal bore		each	10	377	387
22.105	Providing and fixing C.P. brass long nose bib cock of approved quality conforming to IS standards and weighing not less than 810 gms.						
	22.105.1	15 mm nominal bore		each	14	558	573
22.106	Providing and fixing C.P. brass long body bib cock of approved quality conforming to IS standards and weighing not less than 690 gms.						
	22.106.1	15 mm nominal bore		each	12	500	512
22.107	Providing and fixing C.P. brass stop cock (concealed) of standard design and of approved make conforming to IS:8931.						
	22.107.1	15 mm nominal bore		each	10	558	569
22.108	Providing and fixing C.P. brass angle valve for basin mixer and geyser points of approved quality conforming to IS:8931						
	22.108.1	15mm nominal bore		each	10	487	497
22.109	Providing and fixing C.P. Brass extension nipple (size 15mmx50mm) of approved make and quality as per direction of Engineer-in-charge.			each	3	52	55
22.110	Providing & fixing chrome plated brass battery based infrared sensor operated pillar cock, having foam flow technology.						
	22.110.1	15 mm nominal bore		each	6	7531	7537
	PTMT FITTINGS						
22.111	Providing and fixing PTMT bib cock of approved quality and colour.						
	22.111.1	15mm nominal bore, 86 mm long, weighing not less than 88 gms		each	7	92	99

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
	22.111.2	15 mm nominal bore, 122mm long, weighing not less than 99 gms	each	7	136	143
	22.111.3	15 mm nominal bore, 165 mm long, weighing not less than 110 gms	each	7	151	158
	22.111.4	15 mm nominal bore, 90 mm long, weighing not less than 93 gms	each	7	201	208
22.112	Providing and fixing PTMT stop cock of approved quality and colour.					
	22.112.1	15 mm nominal bore, 86 mm long, weighing not less than 88 gms	each	7	92	99
	22.112.2	20 mm nominal bore, 89 mm long, weighing not less than 88 gms	each	7	126	133
	22.112.3	Concealed stop cock, 15 mm nominal bore, 108 mm long, weighing not less than 108 gms	each	7	173	180
22.113	Providing and fixing PTMT pillar cock of approved quality and colour.					
	22.113.1	15 mm nominal bore, 107 mm long, weighing not less than 110 gms	each	8	162	170
	22.113.2	15 mm nominal bore, 125 mm long foam flow, weighing not less than 120 gms	each	8	179	187
22.114	Providing and fixing PTMT, push cock of approved quality and colour.					
	22.114.1	15 mm nominal bore, 98 mm long, weighing not less than 75 gms	each	7	81	88
	22.114.2	15 mm nominal bore, 80 mm long, weighing not less than 46 gms	each	7	74	81
22.115	Providing and fixing PTMT Waste Coupling for wash basin and sink, of approved quality and colour.					
	22.115.1	Waste coupling 31 mm dia of 79 mm length and 62mm breadth weighing not less than 45 gms	each	18	44	62
	22.115.2	Waste coupling 38 mm dia of 83 mm length and 77mm breadth, weighing not less than 60 gms	each	18	62	81
22.116	Providing and fixing PTMT Bottle Trap for Wash basin and sink.					
	22.116.1	Bottle trap 31mm single piece moulded with height of 270 mm, effective length of tail pipe 260 mm from the centre of the waste coupling, 77 mm breadth with 25 mm minimum water seal, weighing not less than 260 gms	each	18	273	291
	22.116.2	Bottle trap 38 mm single piece moulded with height of 270 mm, effective length of tail pipe 260 mm from the centre of the waste coupling, 77 mm breadth with 25 mm minimum water seal, weighing not less than 263 gms	each	18	286	304
22.117	Providing and fixing PTMT liquid soap container 109 mm wide, 125 mm high and 112 mm distance from wall of standard shape with bracket of the same materials with snap fittings of approved quality and colour, weighing not less than 105 gms.		each	6	136	142
22.118	Providing and fixing PTMT towel ring trapezoidal shape 215 mm long, 200 mm wide with minimum distances of 37 mm from wall face with concealed fittings arrangement of approved quality and colour, weighing not less than 88 gms.		each	18	169	187
22.119	Providing and fixing PTMT towel rail complete with brackets fixed to wooden cleats with CP brass screws with concealed fittings arrangement of approved quality and colour.					
	22.119.1	450 mm long towel rail with total length of 495 mm, 78 mm wide and effective height of 88 mm, weighing not less than 170 gms	each	121	244	364
	22.119.2	600 mm long towel rail with total length of 645 mm, width 78 mm and effective height of 88 mm, weighing not less than 190 gms.	each	121	283	403
22.120	Providing and fixing PTMT shelf 440 mm long, 124 mm width and 36 mm height of approved quality and colour, weighing not less than 300 gms.		each	121	328	449

Item No.	Description			Unit	Labour Rate	Material Rate	Through Rate
22.121	Providing and fixing PTMT 15 mm Urinal spreader size 95x69x100 mm with 1/2" BSP thread and shapes, weighing not less than 60 gms.			each	6	99	105
22.122	Providing and fixing PTMT urinal cock of approved quality and colour.						
	22.122.1	15 mm nominal bore, 80 mm long, 42 mm high and 30mm wide with BSP female threads weighing not less than 48 gms		each	6	138	145
22.123	Providing and fixing PTMT grating of approved quality and colour.						
	22.123.1	Circular type					
		22.123.1.1	100 mm nominal dia	each	4	26	30
		22.123.1.2	125 mm nominal dia with 25 mm waste hole	each	4	39	43
	22.123.2	Rectangular type with openable circular lid					
		22.123.2.1	150 mm nominal size square 100 mm diameter of the inner hinged round grating	each	4	153	157
22.124	Providing and fixing PTMT Ball cock of approved quality, colour and make complete with Epoxy coated aluminium rod with L.P./ H.P.H.D. plastic ball.						
	22.124.1	15 mm nominal bore, 105 mm long, weighing not less than 138 gms		each	18	130	148
	22.124.2	20 mm nominal bore, 120 mm long, weighing not less than 198 gms		each	23	175	199
	22.124.3	25 mm nominal bore, 152mm long, weighing not less than 440 gms		each	29	377	405
	22.124.4	40 mm nominal bore, 206mm long, weighing not less than 690 gms		each	29	623	652
	22.124.5	50 mm nominal bore, 242mm long, weighing not less than 1240 gms		each	29	1130	1158
22.125	Providing and fixing PTMT angle stop cock 15 mm nominal bore, weighing not less than 85 gms			each	7	130	137
22.126	Providing and fixing PTMT swivelling shower, 15 mm nominal bore, weighing not less than 40 gms			each	5	91	96
22.127	Providing and fixing PTMT soap Dish Holder having length of 138mm, breadth 102mm, height of 75mm with concealed fitting arrangements, weighing not less than 106 gms.			each	5	109	114
22.128	Providing and fixing Unplasticised P.V.C. connection pipe with PTMT Nuts, collar and bush of approved quality and colour.						
	22.128.1	15 mm nominal bore with 30cm length		each	10	60	71
	22.128.2	15 mm nominal bore with 45 cm length		each	12	74	86
22.129	Providing and fixing PTMT extension nipple for water tank pipe, fittings of approved quality and colour.						
	22.129.1	15 mm nominal bore, weighing not less than 32 gms		each	3	39	42
	22.129.2	20 mm nominal bore, weighing not less than 40 gms		each	3	70	73
	22.129.3	25mm nominal bore, weighing not less than 62 gms		each	3	101	105
	STAINLESS STEEL PIPES & FITTINGS						
22.130	Providing and fixing Stainless Steel pipe and fitting of grade AISI 304 as per JIS standard 3448 complete with press type fitting (fitting shall be paid for separately) i/c fixing of the pipe with clamps at 1.00 m spacing including cutting and making good the walls including testing of joints complete as per						
	Internal work - Exposed on wall						
	22.130.1	15.88 mm outer dia pipe		metre	63	192	254
	22.130.2	22.22 mm outer dia Pipe		metre	63	313	376
	22.130.3	28.58 mm outer dia Pipe		metre	63	398	461
	22.130.4	34.00 mm outer dia Pipe		metre	63	560	623
	22.130.5	42.70 mm outer dia Pipe		metre	63	727	790
	22.130.6	48.60 mm outer dia Pipe		metre	63	812	875

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
22.131	Providing and fixing Stainless Steel pipe and fitting of grade AISI 304 as per JIS standard 3448 complete with press type fitting (fitting shall be paid for separately) i/c fixing of the pipe with clamps at 1.00m spacing and also including cutting of chases and making good the walls including testing of				
	Internal work - Concealed Pipe				
22.131.1	15.88 mm outer dia .Pipes.	metre	118	201	319
22.131.2	22.22 mm Outer dia pipes	metre	118	323	441
22.132	Providing and fixing required Stainless Steel Fitting of press fit design of grade AISI 304 conforming to JWWA G116 standard with V-profile or M-profile and with O-ring sealing gasket of EPDM material of required dia as per direction of Engineer-in-charge.				
	Coupling/Socket				
22.132.1	For 15.88 mm outer dia pipe	each	-	77	77
22.132.2	For 22.22 mm outer dia pipe	each	-	100	100
22.132.3	For 28.58 mm outer dia pipe	each	-	141	141
22.132.4	For 34.00 mm outer dia pipe	each	-	313	313
22.132.5	For 42.70 mm outer dia pipe	each	-	453	453
22.132.6	For 48.60 mm outer dia pipe	each	-	567	567
22.133	Providing and fixing required Stainless Steel Fitting of press fit design of grade AISI 304 conforming to JWWA G116 standard with V-profile or M-profile and with O-ring sealing gasket of EPDM material of providing and fixing required Stainless Steel Fitting of press fit design of grade AISI 304 conforming to JWWA G116 standard with V-profile or M-profile and with O-ring sealing gasket of EPDM material of required dia as per direction of Engineer-in-charge.				
	Reducer				
22.133.1	For 22.22 mm x 15.88 mm outer dia pipe	each	-	116	116
22.133.2	For 28.58 mm x 15.88 mm outer dia pipe	each	-	156	156
22.133.3	For 28.58 mm x 22.22 mm outer dia pipe	each	-	158	158
22.133.4	For 34.00 mm x 15.88 mm outer dia pipe	each	-	377	377
22.133.5	For 34.00 mm x 22.22 mm outer dia pipe	each	-	377	377
22.133.6	For 34.00 mm x 28.58 mm outer dia pipe	each	-	377	377
22.133.7	For 42.70 mm x 15.88 mm outer dia pipe	each	-	433	433
22.133.8	For 42.70 mm x 22.22 mm outer dia pipe	each	-	443	443
22.133.9	For 42.70 mm x 28.58 mm outer dia pipe	each	-	507	507
22.133.10	For 42.70 mm x 34.00 mm outer dia pipe	each	-	537	537
22.133.11	For 48.60 mm x 15.88 mm outer dia pipe	each	-	537	537
22.133.12	For 48.60 mm x 22.22 mm outer dia pipe	each	-	537	537
22.133.13	For 48.60 mm x 28.58 mm outer dia pipe	each	-	670	670
22.133.14	For 48.60 mm x 34.00 mm outer dia pipe	each	-	670	670
22.133.15	For 48.60 mm x 42.70 mm outer dia pipe	each	-	672	672
22.134	Providing and fixing required Stainless Steel Fitting of press fit design of grade AISI 304 conforming to JWWA G116 standard with V-profile or M-profile and with O-ring sealing gasket of EPDM material of required dia as per direction of Engineer-in-charge.				
	Slip Coupling/ Socket				
22.134.1	For 15.88 mm outer dia pipe	each	-	157	157
22.134.2	For 22.22 mm outer dia pipe	each	-	256	256
22.134.3	For 28.58 mm outer dia pipe	each	-	331	331
22.134.4	For 34.00 mm outer dia pipe	each	-	477	477
22.134.5	For 42.70 mm outer dia pipe	each	-	670	670
22.134.6	For 48.60 mm outer dia pipe	each	-	819	819

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
22.135	Providing and fixing required Stainless Steel Fitting of press fit design of grade AISI 304 conforming to JWWA G116 standard with V-profile or M-profile and with O-ring sealing gasket of EPDM material of required dia as per direction of Engineer-in-charge.				
	Elbow 90°				
22.135.1	For 15.88mm outer dia pipe	each	-	84	84
22.135.2	For 22.22 mm outer dia pipe	each	-	147	147
22.135.3	For 28.58 mm outer dia pipe	each	-	276	276
22.135.4	For 34.00 mm outer dia pipe	each	-	551	551
22.135.5	For 42.70 mm outer dia pipe	each	-	849	849
22.135.6	For 48.60 mm outer dia pipe	each	-	1028	1028
22.136	Providing and fixing required Stainless Steel Fitting of press fit design of grade AISI 304 conforming to JWWA G116 standard with V-profile or M-profile and with O-ring sealing gasket of EPDM material of required dia as per direction of Engineer-in-charge.				
	Reducing Elbow 90°				
22.136.1	For22.22 mm x 15.88 mm outer dia pipe	each	-	187	187
22.136.2	For 28.58 mm x 15.88 mm outer dia pipe	each	-	255	255
22.136.3	For 28.58 mm x 22.22 mm outer dia pipe	each	-	266	266
22.136.4	For 34.00 mm x 22.22 mm outer dia pipe	each	-	564	564
22.136.5	For 34.00 mm x 28.58 mm outer dia pipe	each	-	564	564
22.136.6	For 42.70 mm x 34.00 mm outer dia pipe	each	-	822	822
22.137	Providing and fixing required Stainless Steel Fitting of press fit design of grade AISI 304 conforming to JWWA G116 standard with V-profile or M-profile and with O-ring sealing gasket of EPDM material of required dia as per direction of Engineer-in-charge.				
	Equal Tee				
22.137.1	For 15.88 mm outer dia pipe	each	-	166	166
22.137.2	For 22.22 mm outer dia pipe	each	-	251	251
22.137.3	For 28.58 mm outer dia pipe	each	-	391	391
22.137.4	For 34.00 mm outer dia pipe	each	-	859	859
22.137.5	For 42.70 mm outer dia pipe	each	-	1177	1177
22.137.6	For 48.60 mm outer dia pipe	each	-	1402	1402
22.138	Providing and fixing required Stainless Steel Fitting of press fit design of grade AISI 304 conforming to JWWA G116 standard with V-profile or M-profile and with O-ring sealing gasket of EPDM material of required dia as per direction of Engineer-in-charge.				
	Reducing Tee				
22.138.1	For 22.22 mm x 15.88 mm outer dia pipe	each	-	225	225
22.138.2	For 28.58 mm x 15.88 mm outer dia pipe	each	-	298	298
22.138.3	For 28.58 mm x 22.22 mm outer dia pipe	each	-	302	302
22.138.4	For 34.00 mm x 15.88 mm outer dia pipe	each	-	715	715
22.138.5	For 34.00 mm x 22.22 mm outer dia pipe	each	-	742	742
22.138.6	For 34.00 mm x 28.58 mm outer dia pipe	each	-	758	758
22.138.7	For 42.70 mm x 15.88 mm outer dia pipe	each	-	955	955
22.138.8	For 42.70 mm x 22.22 mm outer dia pipe	each	-	969	969
22.138.9	For 42.70 mm x 28.58 mm outer dia pipe	each	-	998	998
22.138.10	For 42.70 mm x 34.00 mm outer dia pipe	each	-	1053	1053
22.138.11	For 48.60 mm x 15.88 mm outer dia pipe	each	-	1152	1152
22.138.12	For 48.60 mm x 22.22 mm outer dia pipe	each	-	1083	1083
22.138.13	For 48.60 mm x 28.58 mm outer dia pipe	each	-	1103	1103

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
	22.138.14 For 48.60 mm x 34.00 mm outer dia pipe	each	-	1236	1236
	22.138.15 For 48.60 mm x 42.70 mm outer dia pipe	each	-	1268	1268
22.139	Providing and fixing required Stainless Steel Fitting of press fit design of grade AISI 304 conforming to JWWA G116 standard with V-profile or M-profile and with O-ring sealing gasket of EPDM material of required dia as per direction of Engineer-in-charge.				
	Male Thread Tee				
	22.139.1 For 15.88 mm outer dia x 15 mm nominal dia threaded	each	-	355	355
	22.139.2 For 22.22 mm outer dia x 15 mm nominal dia threaded	each	-	433	433
	22.139.3 For 22.22 mm outer dia x 20 mm nominal dia threaded	each	-	458	458
	22.139.4 For 28.58 mm outer dia x 15 mm nominal dia threaded	each	-	497	497
	22.139.5 For 28.58 mm outer dia x 20 mm nominal dia threaded	each	-	645	645
	22.139.6 For 28.58 mm outer dia x 25 mm nominal dia threaded	each	-	645	645
	22.139.7 For 34.00 mm outer dia x 15 mm nominal dia threaded	each	-	853	853
	22.139.8 For 34.00 mm outer dia x 20 mm nominal dia threaded	each	-	877	877
	22.139.9 For 34.00 mm outer dia x 25 mm nominal dia threaded	each	-	954	954
	22.139.10 For 34.00 mm outer dia x 32 mm nominal dia threaded	each	-	1054	1054
	22.139.11 For 42.70 mm outer dia x 15 mm nominal dia threaded	each	-	1097	1097
	22.139.12 For 42.70 mm outer dia x 20 mm nominal dia threaded	each	-	1114	1114
	22.139.13 For 42.70 mm outer dia x 25 mm nominal dia threaded	each	-	1174	1174
	22.139.14 For 42.70 mm outer dia x 32 mm nominal dia threaded	each	-	1286	1286
	22.139.15 For 42.70 mm outer dia x 40 mm nominal dia threaded	each	-	1540	1540
	22.139.16 For 48.60 mm outer dia x 15 mm nominal dia threaded	each	-	1181	1181
	22.139.17 For 48.60 mm outer dia x 20 mm nominal dia threaded	each	-	1205	1205
	22.139.18 For 48.60 mm outer dia x 25 mm nominal dia threaded	each	-	1312	1312
	22.139.19 For 48.60 mm outer dia x 32 mm nominal dia threaded	each	-	1523	1523
	22.139.20 For 48.60 mm outer dia x 40 mm nominal dia threaded	each	-	1948	1948
	22.139.21 For 48.60 mm outer dia x 50 mm nominal dia threaded	each	-	2153	2153
22.140	Providing and fixing required Stainless Steel Fitting of press fit design of grade AISI 304 conforming to JWWA G116 standard with V-profile or M-profile and with O-ring sealing gasket of EPDM material of required dia as per direction of Engineer-in-charge.				
	Female Thread Tee				
	22.140.1 For 15.88 mm outer dia x15 mm nominal dia threaded	each	-	311	311
	22.140.2 For 22.22 mm outer dia x 15 mm nominal dia threaded	each	-	358	358
	22.140.3 For 22.22 mm outer dia x 20 mm nominal dia threaded	each	-	386	386
	22.140.4 For 28.58 mm outer dia x 15 mm nominal dia threaded	each	-	519	519
	22.140.5 For 28.58 mm outer dia x 20 mm nominal dia threaded	each	-	519	519
	22.140.6 For 28.58 mm outer dia x 25 mm nominal dia threaded	each	-	648	648
	22.140.7 For 34.00 mm outer dia x 15 mm nominal dia threaded	each	-	781	781
	22.140.8 For 34.00 mm outer dia x 20 mm nominal dia threaded	each	-	781	781
	22.140.9 For 34.00 mm outer dia x 25 mm nominal dia threaded	each	-	935	935
	22.140.10 For 34.00 mm outer dia x 32 mm nominal dia threaded	each	-	1105	1105
	22.140.11 For 42.70 mm outer dia x 15 mm nominal dia threaded	each	-	1105	1105
	22.140.12 For 42.70 mm outer dia x 20 mm nominal dia threaded	each	-	1116	1116
	22.140.13 For 42.70 mm outer dia x 25 mm nominal dia threaded	each	-	1228	1228
	22.140.14 For 42.70 mm outer dia x 32 mm nominal dia threaded	each	-	1253	1253
	22.140.15 For 42.70 mm outer dia x 40 mm nominal dia threaded	each	-	1420	1420
	22.140.16 For 48.60 mm outer dia x 15 mm nominal dia threaded	each	-	1326	1326
	22.140.17 For 48.60 mm outer dia x 20 mm nominal dia threaded	each	-	1338	1338

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
	22.140.18	For 48.60 mm outer dia x 25 mm nominal dia threaded	each	-	1370	1370
	22.140.19	For 48.60 mm outer dia x 32 mm nominal dia threaded	each	-	1487	1487
	22.140.20	For 48.60 mm outer dia x 40 mm nominal dia threaded	each	-	1547	1547
	22.140.21	For 48.60 mm outer dia x 50 mm nominal dia threaded	each	-	1918	1918
22.141	Providing and fixing required Stainless Steel Fitting of press fit design of grade AISI 304 conforming to JWWA G116 standard with V-profile or M-profile and with O-ring sealing gasket of EPDM material of required dia as per direction of Engineer-in-charge.					
	Female Thread Connector/ Adapter					
	22.141.1	For 15.88 mm outer dia x 15 mm nominal dia threaded	each	-	221	221
	22.141.2	For 22.22 mm outer dia x 15 monomial dia threaded	each	-	244	244
	22.141.3	For 22.22 mm outer dia x 20 mm nominal dia threaded	each	-	281	281
	22.141.4	For 28.58 mm outer dia x 15 mm nominal dia threaded	each	-	433	433
	22.141.5	For 28.58 mm outer dia x 20 mm nominal dia threaded	each	-	433	433
	22.141.6	For 28.58 mm outer dia x 25 mm nominal dia threaded	each	-	433	433
	22.141.7	For 34.00 mm outer dia x 25 mm nominal dia threaded	each	-	717	717
	22.141.8	For 34.00 mm outer dia x 32 mm nominal dia threaded	each	-	769	769
	22.141.9	For 42.70 mm outer dia x 32 mm nominal dia threaded	each	-	1080	1080
	22.141.10	For 42.70 mm outer dia x 40 mm nominal dia threaded	each	-	1117	1117
	22.141.11	For 48.60 mm outer dia x 40 mm nominal dia threaded	each	-	1410	1410
	22.141.12	For 48.60 mm outer dia x 50 mm nominal dia threaded	each	-	1410	1410
22.142	Providing and fixing required Stainless Steel Fitting of press fit design of grade AISI 304 conforming to JWWA G116 standard with V-profile or M-profile and with O-ring sealing gasket of EPDM material of required dia as per direction of Engineer-in-charge.					
	Male Thread Connector/ Adapter					
	22.142.1	For 15.88 mm outer dia x 15 mm nominal dia threaded	each	-	209	209
	22.142.2	For 22.22 mm outer dia x 15 mm nominal dia threaded	each	-	224	224
	22.142.3	For 22.22 mm outer dia x 20 mm nominal dia threaded	each	-	249	249
	22.142.4	For 28.58 mm outer dia x 20 mm nominal dia threaded	each	-	382	382
	22.142.5	For 28.58 mm outer dia x 25 mm nominal dia threaded	each	-	385	385
	22.142.6	For 34.00 mm outer dia x 25 mm nominal dia threaded	each	-	849	849
	22.142.7	For 34.00 mm outer dia x 32 mm nominal dia threaded	each	-	849	849
	22.142.8	For 42.70 mm outer dia x 32 mm nominal dia threaded	each	-	1040	1040
	22.142.9	For 42.70 mm outer dia x 40 mm nominal dia threaded	each	-	1056	1056
	22.142.10	For 48.60 mm outer dia x 40 mm nominal dia threaded	each	-	1519	1519
	22.142.11	For 48.60 mm outer dia x 50 mm nominal dia threaded	each	-	1530	1530
22.143	Providing and fixing required Stainless Steel Fitting of press fit design of grade AISI 304 conforming to JWWA G116 standard with V-profile or M-profile and with O-ring sealing gasket of EPDM material of required dia as per direction of Engineer-in-charge.					
	Valve Connector					
	22.143.1	For 15.88 mm outer dia x 15 mm nominal dia threaded	each	-	265	265
	22.143.2	For 22.22 mm outer dia x 15 mm nominal dia threaded	each	-	304	304
	22.143.3	For 22.22 mm outer dia x 20 mm nominal dia threaded	each	-	330	330
	22.143.4	For 28.58 mm outer dia x 25 mm nominal dia threaded	each	-	603	603
	22.143.5	For 34.00 mm outer dia x 32 mm nominal dia threaded	each	-	820	820
	22.143.6	For 42.70 mm outer dia x 40 mm nominal dia threaded	each	-	1085	1085
	22.143.7	For 48.60 mm outer dia x 50 mm nominal dia threaded	each	-	1576	1576

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
22.144	Providing and fixing required Stainless Steel Fitting of press fit design of grade AISI 304 conforming to JWWA G116 standard with V-profile or M-profile and with O-ring sealing gasket of EPDM material of required dia as per direction of Engineer-in-charge.					
	Female Threaded Elbow 90°					
	22.144.1	For 15.88 mm outer dia x 15 mm nominal dia threaded	each	-	313	313
	22.144.2	For 22.22 mm outer dia x 15 mm nominal dia threaded	each	-	368	368
	22.144.3	For 22.22 mm outer dia x 20 mm nominal dia threaded	each	-	494	494
	22.144.4	For 25.58 mm outer dia x 25 mm nominal dia threaded	each	-	523	523
	22.144.5	For 34.00 mm outer dia x 32 mm nominal dia threaded	each	-	952	952
	22.144.6	For 42.70 mm outer dia x 32 mm nominal dia threaded	each	-	1308	1308
	22.144.7	For 42.70 mm outer dia x 40 mm nominal dia threaded	each	-	1308	1308
	22.144.8	For 48.60 mm outer dia x 40 mm nominal dia threaded	each	-	1839	1839
	22.144.9	For 48.60 mm outer dia x 50 mm nominal dia threaded	each	-	1839	1839
22.145	Providing and fixing required Stainless Steel Fitting of press fit design of grade AISI 304 conforming to JWWA G116 standard with V-profile or M-profile and with O-ring sealing gasket of EPDM material of required dia as per direction of Engineer-in-charge.					
	Male Threaded Elbow 90°					
	22.145.1	For 15.88 mm outer dia x 15 mm nominal dia threaded	each	-	273	273
	22.145.2	For 22.22 mm outer dia x 15 mm nominal dia threaded	each	-	327	327
	22.145.3	For 22.22 mm outer dia x 20 mm nominal dia threaded	each	-	360	360
	22.145.4	For 28.58 mm outer dia x 25 mm nominal dia threaded	each	-	554	554
	22.145.5	For 34.00 mm outer dia x 25 mm nominal dia threaded	each	-	1003	1003
	22.145.6	For 34.00 mm outer dia x 32 mm nominal dia threaded	each	-	373	373
	22.145.7	For 42.70 mm outer dia x 32 mm nominal dia threaded	each	-	621	621
	22.145.8	For 42.70 mm outer dia x 40 mm nominal dia threaded	each	-	621	621
	22.145.9	For 48.60 mm outer dia x 40 mm nominal dia threaded	each	-	887	887
	22.145.10	For 48.60 mm outer dia x 50 mm nominal dia threaded	each	-	887	887
22.146	Providing and fixing required Stainless Steel Fitting of press fit design of grade AISI 304 conforming to JWWA G116 standard with V-profile or M-profile and with O-ring sealing gasket of EPDM material of required dia as per direction of Engineer-in-charge.					
	Cap					
	22.146.1	For 15.88 mm outer dia pipe	each	-	58	58
	22.146.2	For 22.22 mm outer dia pipe	each	-	83	83
	22.146.3	For 28.58 mm outer dia pipe	each	-	109	109
	22.146.4	For 34.00 mm outer dia pipe	each	-	212	212
	22.146.5	For 42.70 mm outer dia pipe	each	-	306	306
	22.146.6	For 48.60 mm outer dia pipe	each	-	388	388
22.147	Providing and fixing required Stainless Steel Fitting of press fit design of grade AISI 304 conforming to JWWA G116 standard with V-profile or M-profile and with O-ring sealing gasket of EPDM material of required dia as per direction of Engineer-in-charge.					
	Pipe Bridge					
	22.147.1	For 15.88 mm outer dia pipe	each	-	278	278
	22.147.2	For 22.22 mm outer dia pipe	each	-	352	352
	22.147.3	For 28.58 mm outer dia pipe	each	-	528	528
	CI/DUCTILE IRON PIPES AND SPECIALS					
22.148	Laying in position centrifugally cast (spun) iron S&S or flanged pipes (excluding cost of pipe).		quintal	96	-	96

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
22.149	Laying in position S&S or flanged C.I. special such as tees, bends, collars, tapers and caps etc.(excluding cost of specials).	quintal	195	-	195
22.150	Providing and laying S&S C.I. standard specials such as tees, bends, collars, tapers, caps etc. (Heavy class):				
	22.150.1 Up to 300 mm dia	quintal	195	4687	4882
22.151	Providing and laying flanged C.I. standard specials such as tees, bends, collars, tapers, caps etc., suitable for flanged jointing as per IS : 1538 :				
	22.151.1 Up to 300 mm dia	quintal	195	7154	7349
22.152	Providing and laying S&S centrifugally cast (spun) iron pipes (Class LA) conforming to IS - 1536 :				
	22.152.1 100 mm dia pipe	metre	19	894	913
	22.152.2 125 mm dia pipe	metre	25	1113	1138
	22.152.3 150 mm dia pipe	metre	31	1341	1372
	22.152.4 200 mm dia pipe	metre	45	2283	2328
	22.152.5 250 mm dia pipe	metre	61	2980	3041
	22.152.6 300 mm dia pipe	metre	78	4022	4100
22.153	Providing lead caulked joints to spun iron or C.I. pipes and specials, including testing of joints but excluding the cost of pig lead :				
	22.153.1 100 mm diameter pipe	each	143	33	176
	22.153.2 125 mm diameter pipe	each	215	43	259
	22.153.3 150 mm diameter pipe	each	215	49	264
	22.153.4 200 mm diameter pipe	each	287	63	350
	22.153.5 250 mm diameter pipe	each	358	79	437
	22.153.6 300 mm diameter pipe	each	430	97	527
22.154	Supplying pig lead at site of work.	quintal	-	16893	16893
22.155	Providing flanged joints to double flanged C.I./ D.I. pipes and specials, including testing of joints :				
	22.155.1 80 mm diameter pipe	each	33	78	111
	22.155.2 100 mm diameter pipe	each	48	138	186
	22.155.3 125 mm diameter pipe	each	48	151	199
	22.155.4 150 mm diameter pipe	each	55	182	237
	22.155.5 200 mm diameter pipe	each	55	209	264
	22.155.6 250 mm diameter pipe	each	69	302	371
	22.155.7 300 mm diameter pipe	each	69	308	377
22.156	Labour for cutting C.I. pipe with steel saw.				
	22.156.1 80 mm diameter C.I. pipe	each	45	-	45
	22.156.2 100 mm diameter C.I. pipe	each	61	-	61
	22.156.3 125 mm diameter C.I. pipe	each	84	-	84
	22.156.4 150 mm diameter C.I. pipe	each	113	-	113
	22.156.5 200 mm diameter C.I. pipe	each	151	-	151
	22.156.6 250 mm diameter C.I. pipe	each	188	-	188
	22.156.7 300 mm diameter C.I. pipe	each	225	-	225
22.157	Providing and laying S&S C.I. Standard specials such as tees, bends, collars tapers and caps etc, suitable for flanged jointing as per IS : 1538 :				
	22.157.1 Up to 300 mm dia	quintal	195	5404	5599
	22.157.2 Above 300 mm dia	quintal	195	8591	8787
22.158	Providing push-on-joints to Centrifugally (Spun) Cast Iron Pipes or Ductile Iron Pipes including testing of joints and the cost of rubber gasket :				
	22.158.1 100 mm dia pipes	each	24	30	54
	22.158.2 150 mm dia pipes	each	43	38	81

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
	22.158.3 200 mm dia pipes		each	57	65	122
	22.158.4 250 mm dia pipes		each	72	77	148
	22.158.5 300 mm dia pipes		each	86	114	200
22.159	Providing and laying Double Flanged (screwed / welded) Centrifugally (Spun) Cast Iron, Class B (IS : 1536) :					
	22.159.1 100 mm dia C.I. Double Flanged Pipe		metre	26	1364	1390
	22.159.2 150 mm dia C.I. Double Flanged Pipe		metre	42	2132	2174
	22.159.3 200 mm dia C.I. Double Flanged Pipe		metre	61	3371	3432
	22.159.4 250 mm dia C.I. Double Flanged Pipe		metre	82	4068	4150
	22.159.5 300 mm dia C.I. Double Flanged Pipe		metre	105	5198	5304
22.160	Providing and laying S&S Centrifugally Cast (Spun) / Ductile Iron Pipes conforming to IS : 8329 :					
	22.160.1 100 mm dia Ductile Iron Class K-7 pipes		metre	15	1055	1070
	22.160.2 150 mm dia Ductile Iron Class K-7 pipes		metre	22	1189	1211
	22.160.3 200 mm dia Ductile Iron Class K-7 pipes		metre	29	1463	1492
	22.160.4 250 mm dia Ductile Iron Class K-7 pipes		metre	38	1882	1920
	22.160.5 300 mm dia Ductile Iron Class K-7 pipes		metre	46	2352	2399
22.161	Providing and laying Double Flanged (Screwed/ Welded) Centrifugally (Spun) Ductile Iron Pipes of Class K - 9 conforming to IS : 8329 :					
	22.161.1 100 mm dia Ductile Iron Double Flanged		metre	21	1146	1167
	22.161.2 150 mm dia Ductile Iron Double Flanged		metre	31	1719	1750
	22.161.3 200 mm dia Ductile Iron Double Flanged		metre	42	2247	2289
	22.161.4 250 mm dia Ductile Iron Double Flanged		metre	57	3076	3133
	22.161.5 300 mm dia Ductile Iron Double Flanged		metre	73	3952	4025
	C.I. SLUICE VALVES/ FIRE HYDRANTS & FIXTURES					
22.162	Providing and fixing C.I. sluice valves (with cap) complete with bolts, nuts, rubber insertions etc. (the tail pieces if required will be paid separately) :					
	22.162.1 100 mm diameter					
		22.162.1.1 Class I	each	182	5466	5648
		22.162.1.2 Class II	each	205	3088	3293
	22.162.2 125 mm diameter					
		22.162.2.1 Class I	each	205	5879	6085
		22.162.2.2 Class II	each	229	3635	3863
	22.162.3 150 mm diameter					
		22.162.3.1 Class I	each	251	8394	8645
		22.162.3.2 Class II	each	279	4530	4809
	22.162.4 200 mm diameter					
		22.162.4.1 Class I	each	347	13218	13565
		22.162.4.2 Class II	each	404	9683	10087
	22.162.5 250 mm diameter					
		22.162.5.1 Class I	each	490	20694	21183
		22.162.5.2 Class II	each	587	15695	16282
	22.162.6 300 mm diameter					
		22.162.6.1 Class I	each	612	25071	25683
		22.162.6.2 Class II	each	731	19560	20291
	STONE WARE PIPES AND FITTINGS					
22.163	Providing, laying and jointing glazed stoneware pipes class SP-1 with stiff mixture of cement mortar in the proportion of 1:1 (1 cement : 1 fine sand) including testing of joints etc. complete :					
	22.163.1 100 mm diameter		metre	69	192	262

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
	22.163.2	150 mm diameter	metre	96	303	400
	22.163.3	200 mm diameter	metre	111	393	504
	22.163.4	250 mm diameter	metre	140	602	742
	22.163.5	300 mm diameter	metre	154	864	1018
22.164	Providing and laying cement concrete 1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size) all-round S.W. pipes including bed concrete as per standard design :					
	22.164.1	100 mm diameter S.W. pipe	metre	79	285	363
	22.164.2	150 mm diameter S.W. pipe	metre	96	348	444
	22.164.3	200 mm diameter S.W. pipe	metre	112	406	518
	22.164.4	250 mm diameter S.W. pipe	metre	130	469	599
22.165	Providing and laying cement concrete 1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size) up to haunches of S.W. pipes including bed concrete as per standard design :					
	22.165.1	100 mm diameter S.W. pipe	metre	37	135	173
	22.165.2	150 mm diameter S.W. pipe	metre	61	219	280
	22.165.3	200 mm diameter S.W. pipe	metre	71	258	329
	22.165.4	250 mm diameter S.W. pipe	metre	83	300	383
	22.165.5	300 mm diameter S.W. pipe	metre	96	346	442
22.166	Providing and fixing square-mouth S.W. gully trap class SP-1 complete with C.I. grating brick masonry chamber with water tight C.I. cover with frame of 300 x300 mm size (inside) the weight of cover to be not less than 4.50 kg and frame to be not less than 2.70 kg as per standard design:					
	22.166.1	100x100 mm size P type				
		22.166.1.1 With common burnt clay non-modular bricks of class designation 7.5	each	128	1504	1632
		22.166.1.2 With Sewer bricks conforming to IS : 4885	each	134	1506	1640
	22.166.2	150 x 100 mm size P type				
		22.166.2.1 With common burnt clay non-modular bricks of class designation 7.5	each	123	1543	1667
		22.166.2.2 With sewer bricks conforming to IS : 4885	each	130	1545	1674
	22.166.3	180x150 mm size P type				
		22.166.3.1 With common burnt clay non-modular bricks of class designation 7.5	each	115	1670	1784
		22.166.3.2 With Sewer bricks conforming to IS : 4885	each	121	1671	1792
22.167	Providing and fixing S.W. intercepting trap in manholes with stiff mixture of cement mortar 1:1 (1 cement : 1 fine sand) including testing of joints etc. complete :					
	22.167.1	100 mm dia	each	42	257	298
	22.167.2	150 mm dia	each	60	340	400
22.168	Providing and laying non-pressure NP2 class (light duty) R.C.C. pipes with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement : 2 fine sand) including testing of joints etc. complete :					
	22.168.1	100 mm dia. R.C.C. pipe	metre	55	230	285
	22.168.2	150 mm dia. R.C.C. pipe	metre	66	251	318
	22.168.3	250 mm dia. R.C.C. pipe	metre	102	416	518
	22.168.4	300 mm dia. R.C.C. pipe	metre	99	554	653
	22.168.5	450 mm dia. R.C.C. pipe	metre	128	952	1080
22.169	Providing and laying Non Pressure NP-3 class (Medium duty) R.C.C. pipes including collars/spigot jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement : 2 fine sand) including testing of joints etc.					
	22.169.1	450 mm dia RCC pipes.	metre	107	2153	2260

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
	22.169.2 600 mm dia RCC pipes.	metre	103	3123	3226
	22.169.3 900 mm dia RCC pipes.	metre	154	4983	5136
22.170	Providing and laying Non Pressure NP-4 class (Heavy duty) R.C.C. pipes including collars/spigot jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement : 2 fine sand) including testing of joints etc.				
	22.170.1 450 mm dia RCC pipes.	metre	107	2294	2402
	22.170.2 600 mm dia RCC pipes.	metre	103	3064	3167
	22.170.3 900 mm dia RCC pipes.	metre	154	5933	6087
	SOAK PITS				
22.171	Making soak pit 2.5 m diameter 3.0 metre deep with 45 x 45 cm dry brick honey comb shaft with bricks and S.W. drain pipe 100 mm diameter, 1.8m long complete as per standard design.				
	22.171.1 With common burnt clay non-modular bricks of class designation 7.5	each	3800	8991	12791
22.172	Constructing soak pit 1.20x1.20x1.20 m filled with brickbats including S.W. drain pipe 100 mm diameter and 1.20 m long complete as per standard design.	each	328	1225	1553
	MASONRY CHAMBERS				
22.173	Constructing masonry Chamber 30x30x50 cm inside, in brick work in cement mortar 1:4 (1 cement :4 coarse sand) for stop cock, with C. I. surface box 100x100 x75 mm (inside) with hinged cover fixed in cement concrete slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), i/c necessary excavation, foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12mm thick, finished with a floating coat of neat cement complete as per standard design :				
	22.173.1 With common burnt clay non-modular bricks of class designation 7.5	each	127	738	865
22.174	Constructing masonry Chamber 60x60x75 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve, with C.I. surface box 100mm top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) , i/c necessary excavation, foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick, finished with a floating coat of neat cement complete as per standard design :				
	22.174.1 With common burnt clay non-modular bricks of class designation 7.5	each	1313	4417	5730
22.175	Constructing masonry Chamber 90x90x100 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve, with C.I. surface box 100 mm top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), i/c necessary excavation, foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick, finished with a floating coat of neat cement complete as per standard design :				
	22.175.1 With common burnt clay non-modular bricks of class designation 7.5	each	2299	7452	9751

Item No.	Description			Unit	Labour Rate	Material Rate	Through Rate
22.176	Constructing masonry Chamber 120x120x100 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve, with C.I. surface box 100 mm top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) , i/c necessary excavation, foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick, finished with a floating coat of neat cement complete as per standard design :						
	22.176.1	With common burnt clay non-modular bricks of class designation 7.5		each	3324	10101	13425
22.177	Constructing masonry Chamber 60x60x75 cm, inside in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for fire hydrants, with C.I. surface box 350x350 mm top and 165 mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) , i/c necessary excavation, foundation concrete 1:5:10 (1 cement : 5 fine sand:10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick, finished with a floating coat of neat cement complete as per standard design :						
	22.177.1	With common burnt clay non-modular bricks of class designation 7.5		each	1196	4136	5332
22.178	Constructing masonry Chamber 60x45x50 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for water meter complete with C.I. double flap surface box 400x200x200 mm (inside) with locking arrangement and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) , i/c necessary excavation, foundation concrete 1:5:10 (1 cement : 5 fine sand:10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick, finished with a floating coat of neat cement complete as per standard design :						
	22.178.1	With common burnt clay non-modular bricks of class designation 7.5		each	1279	4013	5292
22.179	Constructing brick masonry chamber for underground C.I. inspection chamber and bends with bricks in cement mortar 1:4 (1 cement : 4 coarse sand) C.I. cover with frame (light duty) 455x610 mm internal dimensions, total weight of cover with frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg), R.C.C. top slab with 1:1.5:3 mix (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size), foundation concrete 1:5:10 fine sand : 10 graded stone aggregate 40 mm nominal size), inside plastering 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand), finished smooth with a floating coat of neat cement on walls and bed concrete etc. complete as per standard design:						
	22.179.1	Inside dimensions 455x610 mm and 45 cm deep for single pipe line :					
		22.179.1.1	With common burnt clay non-modular bricks of class designation 7.5	each	769	3480	4249
	22.179.2	Inside dimensions 500x700 mm and 45 cm deep for pipe line with one or two inlets :					
		22.179.2.1	With common burnt clay non-modular bricks of class designation 7.5	each	842	4052	4894
	22.179.3	Inside dimensions 600x 850 mm and 45 cm deep for pipe line with three or more inlets :					
		22.179.3.1	With common burnt clay non-modular bricks of class designation 7.5	each	998	4583	5581
22.180	Extra for depth beyond 45 cm of brick masonry chamber :						
	22.180.1	For 455x610 mm size					
		22.180.1.1	With common burnt clay non-modular bricks of class designation 7.5	metre	434	2753	3187

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
	22.180.2 For 500x700 mm size					
	22.180.2.1	With common burnt clay non-modular bricks of class designation 7.5	metre	477	2995	3472
	22.180.3 For 600x850 mm size					
	22.180.3.1	With common burnt clay non-modular bricks of class designation 7.5	metre	560	3477	4037
	LOFT AND TERRACE WATER TANKS					
22.181	Providing and placing on terrace (at all floor levels) polyethylene water storage tank, IS : 12701 marked, with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank.		litre	-	7	8
22.182	Providing and fixing rectangular high density polyethylene water storage loft tank with cover, conforming to ISI : 12701, colour of opaque white or as approved by Engineer-in-charge. The rate includes making necessary holes for inlet, outlet & over flow pipes. The base support i/c fittings & fixtures for tank shall be paid separately.		litre	-	7	8
22.183	Labour only for fixing in position mild steel storage tanks (to be supplied by the Engineer-in-charge-Ex-Store) including hoisting etc. and carriage from store to site of work complete with providing and fixing and 15 mm or 20 mm internal diameter flanges for inlet and outlet. 25 mm for overflow and 40 mm for scour pipe including 25 mm brass perforated mosquito proof cap for overflow and plug for scour pipe and labour for making pipe connections and small masonry supports on the top of the roof where these tanks are to be fixed complete in all respects including cutting and making good the walls and floors etc.					
	22.183.1 Tank made out of 3.00 mm thick plates :					
	22.183.1.1	Up to 275 litres capacity	each	747	857	1604
	22.183.1.2	More than 275 litres capacity	each	747	883	1630
	22.183.2 Tank made out of 3.00 mm thick plates with 40 mm x 40 mm angle iron frame : -					
	22.183.2.1	Up to 680 litres capacity	each	760	909	1668
	22.183.2.2	Greater than 680 litres up to 910 litres capacity	each	773	935	1707
	22.183.2.3	More than 910 litres capacity	each	786	948	1733
22.184	Labour only for fixing in position pressed steel storage tanks capacity as given below (to be supplied by the Department Ex-Stores in unassembled condition) including carriage from stores to site of work, hoisting and placing the tanks in position assembling, making inlet, outlet scour and overflow connections including providing and fixing in position brass perforated cap for overflow and plug for scour pipe and small masonry supports on the roof where these tanks are to be fixed complete in all respects including cutting and making good the walls and floors etc.					
	22.184.1	1800 Litres capacity	each	1311	467	1779
	22.184.2	3600 Litres capacity	each	2150	483	2633
	22.184.3	5400 Litres capacity	each	2867	540	3407
	22.184.4	7200 Litres capacity	each	3828	597	4425
	AIR VALVE & WATER METER (BULK TYPE)					
22.185	Providing and fixing C.I. double acting air valve of approved quality with bolts, nuts, rubber insertions etc. complete (The tail pieces, tapers etc if required will be paid separately) :					
	22.185.1	50 mm dia	each	37	4904	4941
	22.185.2	80 mm dia	each	37	5956	5993
	22.185.3	100 mm dia	each	52	7676	7728
22.186	Providing and fixing enclosed type water meter (bulk type) conforming to IS : 2373 and tested by Municipal Board complete with bolts, nuts, rubber insertions etc. (The tail pieces if required will be paid separately) :					
	22.186.1	80 mm dia nominal bore	each	100	2932	3033

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
	22.186.2	100 mm dia nominal bore	each	141	4497	4638
	22.186.3	150 mm dia nominal bore	each	167	6722	6888
	22.186.4	200 mm dia nominal bore	each	201	7281	7482
22.187	Providing and fixing C.I. dirt box strainer for bulk type water meter with nuts, bolts, rubber insertions etc. complete conforming to IS : 2373 :					
	22.187.1	80 mm dia	each	100	3660	3760
	22.187.2	100 mm dia	each	141	5974	6114
	22.187.3	150 mm dia	each	167	7591	7758
	22.187.4	200 mm dia	each	201	10670	10871
	DISINFECTION OF PIPES					
22.188	Disinfecting C.I. water mains by flushing with water containing bleaching powder @ 0.5 gms per litre of water and cleaning the same with fresh water, operation to be repeated three times including getting the sample of water from the disinfected main tested in the municipal laboratory.					
	22.188.1	80 mm diameter C.I. pipe	100	478	17	496
	22.188.2	100 mm diameter C.I. pipe	100	638	26	664
	22.188.3	125 mm diameter C.I. pipe	100	803	39	842
	22.188.4	150 mm diameter C.I. pipe	100	965	58	1022
	22.188.5	200 mm diameter C.I. pipe	100	1285	101	1385
	22.188.6	250 mm diameter C.I. pipe	100	1607	159	1766
	22.188.7	300 mm diameter C.I. pipe	100	1771	227	1998
22.189	Extra for every operation of disinfecting the C.I. main by flushing with water containing bleaching powder @ 0.5 gms per litre of water and cleaning the same with fresh water, including getting the samples of water tested in the municipal laboratory :					
	22.189.1	80 mm diameter C.I. pipe	100	173	6	180
	22.189.2	100 mm diameter C.I. pipe	100	217	9	225
	22.189.3	125 mm diameter C.I. pipe	100	268	13	281
	22.189.4	150 mm diameter C.I. pipe	100	313	19	332
	22.189.5	200 mm diameter C.I. pipe	100	504	34	538
	22.189.6	250 mm diameter C.I. pipe	100	562	54	616
	22.189.7	300 mm diameter C.I. pipe	100	612	75	687
	BRICK MASONRY MANHOLES					
22.190	Constructing brick masonry manhole in cement mortar 1:4 (1 cement : 4 coarse sand) with R.C.C. top slab with 1:1.5:3 mix (1 cement : 1.5 coarse sand (zone-III) : 3 graded stone aggregate 20 mm nominal size), foundation concrete 1:4:8 mix (1 cement : 4 coarse sand (Zone-III) : 8 graded stone aggregate 40 mm nominal size), inside plastering 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with floating coat of neat cement and making channels in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement complete as per standard design :					
	22.190.1	Inside size 90x80 cm and 45 cm deep including C.I. cover with frame (light duty) 455x610 mm internal dimensions, total weight of cover and frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg) :				
		22.190.1.1 With common burnt clay non-modular bricks of class designation 7.5	each	1324	6044	7368
		22.190.1.2 With Sewer bricks conforming to IS : 4885	each	1341	6048	7388
	22.190.2	Inside size 120x90 cm and 90 cm deep including C.I. cover with frame (medium duty) 500 mm internal diameter, total weight of cover and frame to be not less than 116 kg (weight of cover 58 kg and weight of frame 58 kg) :				

Item No.	Description			Unit	Labour Rate	Material Rate	Through Rate
		22.190.2.1	With common burnt clay non-modular bricks of class designation 7.5	each	2211	14097	16308
		22.190.2.2	With Sewer bricks conforming to IS : 4885	each	2255	14108	16364
	22.190.3	Inside size 120x90 cm and 90 cm deep including C.I. cover with frame (heavy duty) 560 mm internal diameter, total weight of cover and frame to be not less than 208 kg (weight of cover 108 kg and weight of frame 100 kg) :					
		22.190.3.1	With common burnt clay non-modular bricks of class designation 7.5	each	2232	19777	22009
		22.190.3.2	With Sewer bricks conforming to IS : 4885	each	2270	19787	22057
22.191	Extra for depth for manholes :						
	22.191.1	Size 90x80 cm					
		22.191.1.1	With common burnt clay non-modular bricks of class designation 7.5	metre	639	3922	4561
		22.191.1.2	With Sewer bricks conforming to IS : 4885	metre	686	3934	4620
	22.191.2	Size 120x90 cm					
		22.191.2.1	With common burnt clay non-modular bricks of class designation 7.5	metre	771	4686	5456
		22.191.2.2	With Sewer bricks conforming to IS : 4885	metre	827	4700	5527
22.192	Constructing brick masonry circular type manhole 0.91 m internal dia at bottom and 0.56m dia at top in cement mortar 1:4 (1 cement : 4 coarse sand), inside cement plaster 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement, foundation concrete 1:3:6 mix (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size), and making necessary channel in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement, all complete as per standard design :						
	22.192.1	0.91 m deep with S.F.R.C. cover and frame (heavy duty, HD-20 grade designation) 560 mm internal diameter conforming to I.S. 12592, total weight of cover and frame to be not less than 182 kg., fixed in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) including centering, shuttering all complete. (Excavation, foot rests and 12mm thick cement plaster at the external surface shall be paid for separately) :					
		22.192.1.1	With common burnt clay non-modular bricks of class designation 7.5	each	1055	5512	6567
		22.192.1.2	With Sewer bricks conforming to IS : 4885	each	1081	5520	6601
22.193	Extra depth for circular type manhole 0.91m internal dia (at bottom) beyond 0.91 m to 1.67 m						
	22.193.1	With common burnt clay non-modular bricks of class designation 7.5		metre	559	3342	3900
	22.193.2	With Sewer bricks conforming IS : 4885		metre	599	3352	3950
22.194	Constructing brick masonry circular manhole 1.22 m internal dia at bottom and 0.56 m dia at top in cement mortar 1:4 (1 cement :4 coarse sand) inside cement plaster 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement foundation concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size) and making necessary channel in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement, all complete as per standard design :						

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
	22.194.1 1.68 m deep with SFRC Cover and frame (heavy duty HD-20 grade designation) 560 mm internal diameter conforming to I.S. 12592, total weight of cover and frame to be not less than 182 kg. fixed in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) including centering, shuttering all complete. (Excavation, foot rests and 12 mm thick cement plaster at the external surface shall be paid for separately) :					
		22.194.1.1 With common burnt clay non-modular bricks of class designation 7.5	each	2102	10345	12447
		22.194.1.2 With Sewer bricks conforming IS : 4885	each	2165	10362	12527
22.195	Extra depth for circular type manhole 1.22 m internal dia (at bottom) beyond 1.68 m to 2.29 m :					
	22.195.1 With common burnt clay non-modular bricks of class designation 7.5		metre	728	4323	5051
	22.195.2 With Sewer bricks conforming IS : 4885		metre	780	4335	5116
22.196	Constructing brick masonry circular manhole 1.52 m internal dia at bottom and 0.56 m dia at top in cement mortar 1:4 (1 cement : 4 coarse sand) inside cement plaster 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement, foundation concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size) and making necessary channel in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement, all complete as per standard design :					
	22.196.1 2.30 m deep with SFRC Cover and frame (heavy duty HD- 20 grade designation) 560 mm internal diameter conforming to I.S. 12592, total weight of cover and frame to be not less than 182 kg. fixed in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) including centering, shuttering all complete. (Excavation, foot rests and 12 mm thick cement plaster at the external surface shall be paid for separately) :					
		22.196.1.1 With common burnt clay non-modular bricks of class designation 7.5	each	4241	22711	26952
		22.196.1.2 With Sewer bricks conforming IS : 4885	each	4420	22758	27178
22.197	Extra depth for circular type manhole 1.52 m internal dia (at bottom) beyond 2.30 m :					
	22.197.1 With common burnt clay non-modular bricks of class designation 7.5		metre	1503	10723	12226
	22.197.2 With Sewer bricks conforming IS : 4885		metre	1637	10757	12394
22.198	Providing M.S. foot rests including fixing in manholes with 20x20x10 cm cement concrete blocks 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) as per standard design :					
	22.198.1 With 20x20 mm square bar		each	108	164	272
	22.198.2 With 20 mm diameter round bar		each	108	124	232
22.199	Replacement of M.S. foot rests in manholes including dismantling concrete blocks and fixing with 20x20x10 cm cement concrete blocks 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size):					
	22.199.1 With 20x20 mm square bar		each	154	164	318
	22.199.2 With 20 mm diameter round bar		each	154	124	278
22.200	Supplying and fixing C.I. cover without frame for manholes :					
	22.200.1 455x610 mm rectangular C.I. cover (light duty) the weight of the cover to be not less than 23 kg		each	28	1188	1216
	22.200.2 500 mm diameter C.I. cover (medium duty) the weight of the cover to be not less than 58 kg		each	28	2998	3026

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
	22.200.3 560 mm diameter C.I. cover (heavy duty) the weight of the cover to be not less than 108 kg		each	28	6505	6534
22.201	Providing and fixing in position pre-cast R.C.C. manhole cover and frame of required shape and approved quality					
	22.201.1 L D- 2.5					
	22.201.1.1	Rectangular shape 600x450 mm internal dimensions	each	42	942	985
	22.201.1.2	Square shape 450 mm internal dimensions	each	35	794	829
	22.201.1.3	Circular shape 450 mm internal diameter	each	35	794	829
	22.201.2 M D - 10					
	22.201.2.1	Square shape 450 mm internal dimension	each	45	936	981
	22.201.2.2	Circular shape 500 mm internal diameter	each	37	794	832
	22.201.3 H D - 20					
	22.201.3.1	Circular shape 560 mm internal diameter	each	41	1183	1224
	22.201.4 EHD - 35					
	22.201.4.1	Circular shape 560 mm internal dia	each	23	1534	1557
22.202	Supplying and fixing C.I. cover 300x300 mm without frame for gully trap (standard pattern) the weight of cover to be not less than 4.5 kg		each	7	622	629
22.203	Providing sand cast iron drop connection externally for 60 cm drop from branch sewer line to main sewer manhole including inspection and cleaning eye with chain and lid, sand cast iron drop pipe and bend encased all-round with cement concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) with all centering and shuttering required, cutting holes in walls and making good with brick work in cement mortar 1:4 (1 cement : 4 coarse sand) plastered with cement mortar 1:3 (1 cement : 3 coarse sand) on inside of the manhole wall, lead caulked joints between sand cast iron pipes and fittings, stiff cement mortar 1:1 (1 cement : 1 fine sand) joints between sand cast iron tee and S.W. pipe, making required channels complete as per standard design and specifications :					
	22.203.1 100 mm dia sand cast iron drop connection		each	2415	2987	5402
	22.203.2 150 mm dia sand cast iron drop connection		each	3151	3231	6382
22.204	Extra for depths beyond 60 cm of sand cast iron drop connection complete:					
	22.204.1 For 100 mm dia sand cast iron drop connection		metre	464	1227	1691
	22.204.2 For 150 mm dia sand cast iron drop connection		metre	536	1756	2292
	STORM WATER DRAINAGE					
22.205	Constructing brick masonry road gully chamber 50x45x60 cm with bricks in cement mortar 1:4 (1 cement : 4 coarse sand) including 500x450 mm pre-cast R.C.C. horizontal grating with frame complete as per standard design :					
	22.205.1 With common burnt clay non-modular bricks of class designation 7.5		each	503	2655	3158
22.206	Constructing brick masonry road gully chamber 45x45x77.5 cm with bricks in cement mortar 1:4 (1 cement : 4 coarse sand) with precast R.C.C. vertical grating complete as per standard design :					
	22.206.1 With common burnt clay non-modular bricks of class designation 7.5		each	761	2914	3675
22.207	Constructing brick masonry road gully chamber 110x50x77.5 cm with bricks in cement mortar 1:4 (1 cement : 4 coarse sand) including 500x450 mm precast R.C.C. horizontal grating with frame and vertical grating complete as per standard design :					
	22.207.1 With common burnt clay non-modular bricks of class designation 7.5		each	1082	5032	6114
	BATHROOM ACCESSORIES					

Item No.	Description			Unit	Labour Rate	Material Rate	Through Rate
22.208	Providing and fixing in position best Indian make white or coloured fibre glass bath tubs of sizes given below complete with outer side wall of plain design with legs essco mixer no. 518 with each tub including waste plug chain and overflow of best Indian make complete in all respects consisting of :-						
	22.208.1	Size 1800mm x 750 mm		each	1230	6356	7586
	22.208.2	Size 1650 mmx750 mm		each	1230	6226	7456
	22.208.3	Size 1650 mm X 700 mm		each	1230	6096	7326
	22.208.4	Size 1575 mm x 750 mm		each	1230	5966	7197
	22.208.5	Size 1500 mm x 750 mm		each	1230	5836	7067
	22.208.6	Size 1450 mm x 700 mm		each	1230	5707	6937
22.209	Providing and fixing 600x450 mm bevelled edge mirror of superior glass (of approved quality) complete with 6 mm thick hard board ground fixed to wooden cleats with C.P. brass screws and washers complete.			each	279	631	910
22.210	Providing and fixing mirror of superior glass (of approved quality) and of required shape and size with plastic moulded frame of approved make and shade with 6 mm thick hard board backing :						
	22.210.1	Circular shape 450 mm dia		each	234	666	900
	22.210.2	Rectangular shape 453x357 mm		each	234	548	782
	22.210.3	Oval shape 450x350 mm (outer dimensions)		each	234	611	845
	22.210.4	Rectangular shape 1500x450 mm		each	234	1194	1428
22.211	Providing and fixing 600x120x5 mm glass shelf with edges round off, supported on anodised aluminium angle frame with C.P. brass brackets and guard rail complete fixed with 40 mm long screws, rawl plugs etc., complete.			each	177	408	586
22.212	Providing and fixing in position best Indian make coat and hat hooks fixed into wall with C.P. brass screws and rawl plugs etc. complete including cutting and making good the walls etc.						
	22.212.1	C.P Brass					
		22.212.1.1	One Way	per set	20	79	99
		22.212.1.2	Two Way	per set	20	105	125
		22.212.1.3	Three Way	per set	20	131	151
	22.212.2	Aluminium coat and hat hooks					
		22.212.2.1	One way	per set	20	98	118
		22.212.2.2	Two Way	per set	20	131	151
		22.212.2.3	Three Way	per set	20	163	183
22.213	Providing and fixing in position best Indian make C.P. brass Tooth Brush cum Tooth Paste Holder fixed in with rawl plugs with C.P. brass screws complete including cutting and making good the walls etc.						
	22.213.1	Tooth Brush-cum-Tooth Paste holder		per set	12	236	249
	22.213.2	Toothbrush Holder		per set	12	158	171
22.214	Providing and fixing in position best Indian make C.P. brass Tumbler cum Tooth Brash holder fixed in with rawl plugs with C.P. brass screws and complete including cutting and making good the walls etc.			per set	12	327	339
22.215	Providing and fixing in position best Indian make vitreous chinaware brass Tumbler cum Tooth Brash holder fixed in with rawl plugs with C.P. brass screws and complete including cutting and making good the walls etc.						
	22.215.1	vitreous chinaware (White)		per set	12	132	145
	22.215.2	Vitreous Chinaware (Single Colour)		per set	12	197	210

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
22.216	Providing and fixing in position best Indian make (to the approval of the engineer-in-charge) storage type automatic electric water heater, pressure/non-pressure type thermostatically controlled, suitable for operation on 230 volts, 50 cycles single phase vertical wall mounting fitted with-draw able and adjustable type AC, thermostat. Thermostat knob to be readily accessible through the opening of suitable cover for and adjustment of temperature in the installed position of heater and the thermostat should be withdrawn without having to drain the water, electric heating element made out of copper tube (heating element should be easily removed and replaced in the installed position of heater) A neon indicator 1 AMP, inner container made out of copper tinned both from inside and outside, outer container made out of mild steel sheet finished in gleaming white stove enamel paint, insulated between the inner and outer with fibre glass wool with 1 metre length of suitable capacity 3 core flexible cord with plug and non return valve plastic/lead connections or pressure release valve (where required). Complete including fixing and testing for a week (as required by Engineer-in-charge.				
22.216.1	25 Litres capacity	each	743	8313	9055
22.216.2	30 Litres capacity	each	743	9611	10354
22.216.3	35 Litres capacity	each	743	10909	11652
22.216.4	40 Litres capacity	each	743	12208	12951
22.216.5	50 Litres capacity	each	743	13506	14249
22.216.6	70 Litres capacity	each	743	15454	16197
22.216.7	80 Litres capacity	each	743	16752	17495
22.216.8	90 Litres capacity	each	743	18051	18794
22.216.9	100 Litres capacity	each	743	19999	20741
22.216.10	140 Litres capacity	each	743	22595	23338
22.217	Providing and fixing in position concealed cistern including flushing plate of approved make (to the approval of the Engineer-in-charge) complete in all respect.	each	1030	6947	7976
	HDPE pipes for Drainage				
22.218	Providing and Supplying of class SN 8 structured wall Polyethylene Piping system (Pipe with online/ offline coupler and elastomeric sealing ring) with non smooth external annular corrugated and smooth internal surface (double wall) for non-pressure underground sewerage and drainage application as confirm to IS 16098 (part II):2013 including transportation, frieght charges, inspection charges, loading, unloading, complete as specified and directed by Engineer In-Charge.				
22.218.1	250 mm Internal Diameter	metre	-	-	495
22.218.2	300 mm Internal Diameter	metre	-	-	785
22.218.3	400 mm Internal Diameter	metre	-	-	1381
22.218.4	500 mm Internal Diameter	metre	-	-	1992
22.219	Lowering, Laying and jointing of class SN 8 structured wall (External Annular Corrugated and Smooth Internal Surface Polyethylene Piping and fitting with the help of coupler(online/ offline) attached with one end of pipes, sliding over the elastomeric sealing rubber ring placed on the specified valley of the corrugation at the spigot end, lowering the same into the trench, laying on the lower bedding (constructed at bottom of trenches) at prescribed gradient, depth and alignment, testing the water tightness of the joints, ensuring the continuity tests of specified pipe segment etc. complete as per drawing, specification and detailed engineering, including cartage of pipes and fitting etc. as per direction of Engineer-in-charge.				
22.219.1	1250 mm Internal Diameter	metre	-	-	99
22.219.2	300 mm Internal Diameter	metre	-	-	146
22.219.3	400 mm Internal Diameter	metre	-	-	190
22.219.4	500 mm Internal Diameter	metre	-	-	250

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
22.220	Providing HDPE Pipe of material grade PE-80, PN-4 as confirm to IS:14333.1996 (amended upto date) suitable for butt fusion jointing					
	22.220.1	280 mm outer diameter	metre	-	-	1457
	22.220.2	315 mm outer diameter	metre	-	-	1833
	22.220.3	355 mm outer diameter	metre	-	-	2400
	22.220.4	400 mm outer diameter	metre	-	-	3104
	22.220.5	450 mm outer diameter	metre	-	-	3929
	22.220.6	500 mm outer diameter	metre	-	-	4836
	22.220.7	560 mm outer diameter	metre	-	-	6586
	22.220.8	630 mm outer diameter	metre	-	-	8301
	22.220.9	710 mm outer diameter	metre	-	-	10555
22.221	Providing and fixing in position vitreous chinaware white lavatory suites of approved make (to the approval of Engineer-in-charge) including Rack Bolt Screw Pair 115mm long without CP fittings complete in all respect.					
	22.221.1	Size 450mmx300mm	each	490	1132	1622
	22.221.2	Size 550 mm x 400 mm x 815 mm	each	490	1384	1874
	22.221.3	Size 630 mm x 450 mm x 830 mm	each	490	3013	3503
	22.221.4	Size 500 mm x 400 mm x 820 mm	each	490	1225	1715
	22.221.5	Size 560mm x 430mm x 820 mm	each	490	1689	2179
	22.221.6	Size 560mm x 410mm (above counter oval)	each	490	2152	2642
	22.221.7	Size 49 cm dia (above counter round)	each	490	2583	3073
	22.221.8	Size 630mm x 500mm (above counter oval)	each	490	3973	4463
	22.221.9	Size 560mm x 450mm (Under counter oval)	each	490	2152	2642
	22.221.10	size 44cm dia (under counter round)	each	490	2251	2742
	22.221.11	Table Top (size 49 x 40 x 15 cm)	each	490	7880	8370
	22.221.12	Table Top round (size 40.5 x 40.5 x 14 cm)	each	490	6688	7178
	22.221.13	Table Top square (size 39 x 39 x 15 cm)	each	490	7019	7509
	22.221.14	Size 460mm x 330mm x 805 mm	each	490	1258	1748
22.222	Providing and fixing in position singel socket SWR UPVC soil waste or antisyphonage pipes as per IS 13592 of E.D.C manufacture or of any other reputed firm including cutting, jointing, wastage, but excluding cost of jointing.					
	22.222.1	**Single Socket Type A**				
		22.222.1.1 160mm o/d SWR UPVC pipe lines laid complete	metre	97	403	500
		22.222.1.2 110mm o/d SWR UPVC pipe lines laid complete	metre	97	181	278
		22.222.1.3 90mm o/d SWR UPVC pipe lines laid complete	metre	97	139	236
		22.222.1.4 75mm o/d SWR UPVC pipe lines laid complete	metre	97	104	201
	22.222.2	**Single Socket Type B**				
		22.222.2.1 160mm o/d SWR UPVC pipe lines laid complete	metre	97	501	598
		22.222.2.2 110mm o/d SWR UPVC pipe lines laid complete	metre	97	264	361
		22.222.2.3 90mm o/d SWR UPVC pipe lines laid complete	metre	97	209	306
		22.222.2.4 75mm o/d SWR UPVC pipe lines laid complete	metre	97	174	271

CHAPTER NO. 23

ELECTRICAL INSTALLATIONS

CHAPTER NO. 23 ELECTRICAL INSTALLATIONS

NOTES:

1. Electrical wiring and fittings to be carried out in all building in accordance with Haryana PWD Specifications:-

2. Unless specified to the contrary, the labour rates for various items of Electrical Installation include handling of materials within 100 metres. Through rates include all rehandling of materials, at the site of work, and no payment is due to contractor on this account.

3. Unless specified to the contrary, the labour rates include the cost of water, tools and plants, labour and materials for scaffolding and centring and shuttering.

4. The through rates of all the items includes the cost of Supply, Errection, Testing and Commissioning

5. Scope of work under each item requires to complete the job in all respects and up to the entire satisfaction of the Engineer-in-Charge.

6. In this chapter items have been broadly categorised as follows:

6.1 Copper Wiring in MS CONDUIT (surface/recess)

6.2 Copper Wiring with MODULAR SWITCHES in MS CONDUIT (surface/recess)

6.3 Copper Wiring in PVC CONDUIT (surface/recess)

6.4 Copper Wiring with MODULAR SWITCHES in PVC CONDUIT (surface/recess)

6.5 Copper Wiring in existing PVC/MS Conduit pipe Surface/Recessed for Electrical Points

6.6 MS Conduit pipe only (surface or in Recessed) for electrical points

6.7 PVC Conduit pipe only (surface or in Recessed) for electrical points

6.8 Fittings and Accessories

6.9 Erection , Carriage and Repairing of Fans and Luminaries

6.10 MCCB, Distribution Boards MCB's RCCB's Change over etc.

6.11 Miscellaneous

6.12 MS Stand, Bus Bar Chamber and PANELS

6 13 Dismantling

7. Obsolete items in earlier edition of HSR 1988 (Chapter 31) have been deleted

8. Items still being used from earlier edition of HSR have been retained after slightly modifying the nomenclature to suit present day need

9. New items have been added to meet present day requirements

10. For point wiring purpose, earlier classification of Short, Medium, long has been done away with to eliminate intentional or unintentional errors and contractual disputes.

11. Classification of building as Group A, Group B & Group C for point wiring will be as under: -

Group A : This group will include point wiring of all Type1, Type 2, Type 3 & Type 4 Residential houses, hostels, all type of housing buildings/ societies, all type of other buildings having administrative approval up to 2 Crore.

Group B: This group will includes all type of educational institutions such as ITI's, Polytechnics, Govt. engineering colleges and other graduation Govt. colleges, SCERT building, Sainik Board, PHC, CHC, SHC, up to 50 bedded hospitals, Bus stand, EVM/VVPAT warehouses, SDO civil complex's, sub Divisional level Judicial courts, Laboratories, Libraries, Training & research institutes.

Group C: This group will includes all type of hospitals having capacity more than 50 beds, Rest Houses, District level administrative buildings such as Mini Secretariat, District level judicial court complex, Excise & Taxation building, labour courts Medical college, State level university & District Jail.

This system has neither any ambiguity in measurement nor requires physical tape measurement

12. Nowadays due to Architectural requirement and LED fittings, many a times individual switches of luminaries is not provided and one switch controls many fittings. To be just in measurement in such cases, loop point wiring without switch for Group A, GROUP B, GROUP C – has also been provided

13. As cost of capital items like luminaries, vary significantly on continuous basis , only fixing of such items has been kept in the HSR.

CHAPTER 23.0 - ELECTRICAL INSTALLATIONS

Item No.		Description	Unit	Through Rate
23.1	**COPPER WIRING IN MS CONDUIT (SURFACE/RECESS)**			
	23.1.1	Wiring for Light/Fan/call bell point in 1.5 sqmm FRLS PVC insulated copper conductor cable in 1.6 mm thick MS conduit pipe.		
		23.1.1.1 Group A	each	654
		23.1.1.2 Group B	each	769
		23.1.1.3 Group C	each	980
	23.1.2	Wiring for Twin control light point with 2 nos , 2-ways, 5 amp. switch in 1.5 sqmm FRLS PVC insulated copper conductor cable in 1.6 mm thick MS conduit pipe.		
		23.1.2.1 Group A	each	858
		23.1.2.2 Group B	each	981
		23.1.2.3 Group C	each	1103
	23.1.3	Wiring for Light/Fan/call bell point in 1.5 sqmm FRLS PVC insulated copper conductor cable in 1.6 mm thick MS conduit pipe, without separate control switch		
		23.1.3.1 Group A	each	336
		23.1.3.2 Group B	each	453
		23.1.3.3 Group C	each	560
	23.1.4	Wiring in MS conduit system for 3-pin 5amp. Plug point by using 2 no 1.5 sqmm FRLS copper wire and 1 no 1.5 Sqmm FRLS copper wire , including providing 1 no 5/6 Amp 3/5 pin socket and 1 no 5/6 Amp switch required MS Box etc complete as required		
		23.1.4.1 Group A	each	971
		23.1.4.2 Group B	each	1199
		23.1.4.3 Group C	each	1430
	23.1.5	Wiring in MS conduit system for 3-pin 15amp. Plug point by using 2 no 4 sqmm FRLS copper wire and 1 no 4 Sqmm FRLS copper wire for earthling , including providing 1 no 15/16 Amp 3/6 pin socket and 1 no 15/16 Amp switch required MS Box etc complete as required		
		23.1.5.1 Group A	each	1305
		23.1.5.2 Group B	each	1580
		23.1.5.3 Group C	each	1857
	23.1.6	Wiring main ,sub mains and Circuit wiring in two single core for phase and neutral wire and one single core for earth wire PVC insulated Copper conductor cable 1100 Volts grade in MS Conduit etc as required.		
		23.1.6.1 1 run of Size 1.50 Sqmm(1/1.40mm)	metre	154
		23.1.6.2 1 run of Size 2.50 Sqmm(1.1.80mm)	metre	182
		23.1.6.3 1 run of Size 4 Sqmm(1/2.24mm)	metre	217
		23.1.6.4 1 run of Size 6 Sqmm(1/2.80mm)	metre	266
		23.1.6.5 1 run of Size 10 Sqmm(1/3.50 mm)	metre	460
		23.1.6.6 2 run of Size 1.50 Sqmm(1/1.40mm)	metre	207
		23.1.6.7 2 run of Size 2.50 Sqmm(1.1.80mm)	metre	282
		23.1.6.8 2 run of Size 4 Sqmm(1/2.24mm)	metre	356
		23.1.6.9 3 run of Size 1.50 Sqmm(1/1.40mm)	metre	278
		23.1.6.10 3 run of Size 2.50 Sqmm(1.1.80mm)	metre	371
23.2	**COPPER WIRING WITH MODULAR SWITCHES IN MS CONDUITS**			
	23.2.1	Wiring for Light/Fan/call bell point with modular type switch/socket and GI box, Modular type face plate etc in 1.5 sqmm FRLS PVC insulated copper conductor cable in 1.6 mm thick MS conduit pipe.		
		23.2.1.1 Group A	each	722
		23.2.1.2 Group B	each	836
		23.2.1.3 Group C	each	1047

Item No.		Description	Unit	Through Rate
	23.2.2	Wiring for Twin control light point with 2 nos , 2-ways, 5 amp. Modular switch GI box and modular face plate in 1.5 sqmm FRLS PVC insulated copper conductor cable in 1.6 mm thick MS conduit pipe.		
	23.2.2.1	Group A	each	1067
	23.2.2.2	Group B	each	1189
	23.2.2.3	Group C	each	1312
	23.2.3	Wiring for Light/Fan/call bell point in 1.5 sqmm FRLS PVC insulated copper conductor cable in 1.6 mm thick MS conduit pipe, without separate control switch , Modular type Switch/sockets wiring		
	23.2.3.1	Group A	each	336
	23.2.3.2	Group B	each	453
	23.2.3.3	Group C	each	560
	23.2.4	Wiring in MS conduit system for 3-pin 5amp. Plug point by using 2 no 1.5 sqmm FRLS copper wire and 1 no 1.5 Sqmm FRLS copper wire , including providing 1 no 5/6 Amp 3/5 pin Modular type socket and 1 no 5/6 Amp Modular type switch required GI Box ,modular face plate etc complete as required		
	23.2.4.1	Group A	each	1091
	23.2.4.2	Group B	each	1320
	23.2.4.3	Group C	each	1550
	23.2.5	Wiring in MS conduit system for 3-pin 15amp. Plug point by using 2 no 4 sqmm FRLS copper wire and 1 no 4 Sqmm FRLS copper wire for earthling , including providing 1 no 15/16 Amp 3/6 pin Modular socket and 1 no 15/16 Amp Modular switch required GI Box , modular face plate etc complete as required		
	23.2.5.1	Group A	each	1398
	23.2.5.2	Group B	each	1673
	23.2.5.3	Group C	each	1950
23.3	**COPPER WIRING IN PVC CONDUIT (SURFACE/RECESS)**			
	23.3.1	Wiring for Light/Fan/call bell point in 1.5 sqmm FRLS PVC insulated copper conductor cable in 1.6 mm thick PVC conduit pipe.		
	23.3.1.1	Group A	each	515
	23.3.1.2	Group B	each	573
	23.3.1.3	Group C	each	728
	23.3.2	Wiring for Twin control light point with 2 nos , 2-ways, 5 amp. switch in 1.5 sqmm FRLS PVC insulated copper conductor cable in 1.6 mm thick PVC conduit pipe.		
	23.3.2.1	Group A	each	1187
	23.3.2.2	Group B	each	1253
	23.3.2.3	Group C	each	1319
	23.3.3	Wiring for Light/Fan/call bell point in 1.5 sqmm FRLS PVC insulated copper conductor cable in 1.6 mm thick PVC conduit pipe, without separate control switch		
	23.3.3.1	Group A	each	252
	23.3.3.2	Group B	each	313
	23.3.3.3	Group C	each	365
	23.3.4	Wiring in PVC conduit system for 3-pin 5amp. Plug point by using 2 no 1.5 sqmm FRLS copper wire and 1 no 1.5 Sqmm FRLS copper wire , including providing 1 no 5/6 Amp 3/5 pin socket and 1 no 5/6 Amp switch required MS Box etc complete as required		
	23.3.4.1	Group A	each	691
	23.3.4.2	Group B	each	808
	23.3.4.3	Group C	each	927
	23.3.5	Wiring in PVC conduit system for 3-pin 15amp. Plug point by using 2 no 4 sqmm FRLS copper wire and 1 no 4 Sqmm FRLS copper wire for earthling , including providing 1 no 15/16 Amp 3/6 pin socket and 1 no 15/16 Amp switch required MS Box etc complete as required		

Item No.		Description	Unit	Through Rate
	23.3.5.1	Group A	each	1026
	23.3.5.2	Group B	each	1189
	23.3.5.3	Group C	each	1354
23.3.6		Wiring main and sub mains in two single core for phase and neutral wire and one single core for earth wire PVC insulated Copper conductor cable 1100 Volts grade in PVC Conduit etc as required.		
	23.3.6.1	1 run of Size 1.50 Sqmm(1/1.40mm)	metre	98
	23.3.6.2	1 run of Size 2.50 Sqmm(1.1.80mm)	metre	126
	23.3.6.3	1 run of Size 4 Sqmm(1/2.24mm)	metre	161
	23.3.6.4	1 run of Size 6 Sqmm(1/2.80mm)	metre	193
	23.3.6.5	1 run of Size 10 Sqmm(1/3.50 mm)	metre	387
	23.3.6.6	2 run of Size 1.50 Sqmm(1/1.40mm)	metre	151
	23.3.6.7	2 run of Size 2.50 Sqmm(1.1.80mm)	metre	216
	23.3.6.8	2 run of Size 4 Sqmm(1/2.24mm)	metre	290
	23.3.6.9	3 run of Size 1.50 Sqmm(1/1.40mm)	metre	212
	23.3.6.10	3 run of Size 2.50 Sqmm(1.1.80mm)	metre	304
23.4	**COPPER WIRING WITH MODULAR SWITCHES IN PVC CONDUIT**			
23.4.1		Wiring for Light/Fan/call bell point with modular type switch/socket and GI box, Modular type face plate etc in 1.5 sqmm FRLS PVC insulated copper conductor cable in 1.6 mm thick PVC conduit pipe.		
	23.4.1.1	Group A	each	582
	23.4.1.2	Group B	each	641
	23.4.1.3	Group C	each	795
23.4.2		Wiring for Twin control light point with 2 nos , 2-ways, 5 amp. Modular switch GI box and modular face plate in 1.5 sqmm FRLS PVC insulated copper conductor cable in 1.6 mm thick PVC conduit pipe.		
	23.4.2.1	Group A	each	900
	23.4.2.2	Group B	each	966
	23.4.2.3	Group C	each	1032
23.4.3		Wiring for Light/Fan/call bell point in 1.5 sqmm FRLS PVC insulated copper conductor cable in 1.6 mm thick PVC conduit pipe, without separate control switch		
	23.4.3.1	Group A	each	252
	23.4.3.2	Group B	each	313
	23.4.3.3	Group C	each	365
23.4.4		Wiring in PVC conduit system for 3-pin 5amp. Plug point by using 2 no 1.5 sqmm FRLS copper wire and 1 no 1.5 Sqmm FRLS copper wire , including providing 1 no 5/6 Amp 3/5 pin Modular type socket and 1 no 5/6 Amp Modular type switch required GI Box ,modular face plate etc complete as required		
	23.4.4.1	Group A	each	812
	23.4.4.2	Group B	each	929
	23.4.4.3	Group C	each	1047
23.4.5		Wiring in PVC conduit system for 3-pin 15amp. Plug point by using 2 no 4 sqmm FRLS copper wire and 1 no 4 Sqmm FRLS copper wire for earthling , including providing 1 no 15/16 Amp 3/6 pin Modular socket and 1 no 15/16 Amp Modular switch required GI Box , modular face plate etc complete as required		
	23.4.5.1	Group A	each	1119
	23.4.5.2	Group B	each	1282
	23.4.5.3	Group C	each	1447
23.5	**COPPER WIRING IN EXISTING PVC/MS CONDUIT PIPE SURFACE/RECESSED**			

Item No.		Description	Unit	Through Rate
	23.5.1	Wiring only in 1.5 sqmm PVC insulated copper conductor cable for LIGHT/FAN/Call bell point in existing conduit pipe and MS boxes including cost of Bakelite cover for MS box, switch, wall socket, ceiling rose/connector etc.		
	23.5.1.1	Group A	each	289
	23.5.1.2	Group B	each	327
	23.5.1.3	Group C	each	413
	23.5.2	Wiring only in existing conduit and MS box for Twin control light point with 2 nos , 2-ways, 5 amp. switch in 1.5 sqmm FRLS PVC insulated copper conductor cable .		
	23.5.2.1	Group A	each	877
	23.5.2.2	Group B	each	922
	23.5.2.3	Group C	each	967
	23.5.3	Wiring only in existing conduit and MS Box for Light/Fan/call bell point in 1.5 sqmm FRLS PVC insulated copper conductor cable , without separate		
	23.5.3.1	Group A	each	159
	23.5.3.2	Group B	each	198
	23.5.3.3	Group C	each	228
	23.5.4	Wiring in existing conduit and MS box for 3-pin 5amp. Plug point by using 2 no 1.5 sqmm FRLS copper wire and 1 no 1.5 Sqmm FRLS copper wire , including providing 1 no 5/6 Amp 3/5 pin socket and 1 no 5/6 Amp switch etc complete as required		
	23.5.4.1	Group A	each	351
	23.5.4.2	Group B	each	450
	23.5.4.3	Group C	each	550
	23.5.5	Wiring in existing conduit system for 3-pin 15amp. Plug point by using 2 no 4 sqmm FRLS copper wire and 1 no 4 Sqmm FRLS copper wire for earthling , including providing 1 no 15/16 Amp 3/6 pin socket and 1 no 15/16 Amp switch etc complete as required		
	23.5.5.1	Group A	each	663
	23.5.5.2	Group B	each	774
	23.5.5.3	Group C	each	897
	23.5.6	Wiring main and sub mains in two single core for phase and neutral wire and one single core for earth wire PVC insulated Copper conductor cable 1100 Volts grade in existing MS/PVC Conduit etc as required.		
	23.5.6.1	1 run of Size 1.50 Sqmm(1/1.40mm)	metre	59
	23.5.6.2	1 run of Size 2.50 Sqmm(1.1.80mm)	metre	87
	23.5.6.3	1 run of Size 4 Sqmm(1/2.24mm)	metre	122
	23.5.6.4	1 run of Size 6 Sqmm(1/2.80mm)	metre	155
	23.5.6.5	1 run of Size 10 Sqmm(1/3.50 mm)	metre	347
	23.5.6.6	2 run of Size 1.50 Sqmm(1/1.40mm)	metre	129
	23.5.6.7	2 run of Size 2.50 Sqmm(1.1.80mm)	metre	188
	23.5.6.8	2 run of Size 4 Sqmm(1/2.24mm)	metre	262
	23.5.6.9	3 run of Size 1.50 Sqmm(1/1.40mm)	metre	184
	23.5.6.10	3 run of Size 2.50 Sqmm(1.1.80mm)	metre	276
23.6	**MS CONDUIT PIPE ONLY (SURFACE OR RECESSED) FOR ELECTRICAL POINTS**			
	23.6.1.1	MS CONDUIT and MS/GI BOX only for LIGHT/FAN/Call bell point wiring		
	23.6.1.1	Group A	each	374
	23.6.1.2	Group B	each	451
	23.6.1.3	Group C	each	528
	23.6.2	MS CONDUIT and MS/GI BOX only for Twin Control light point with 2 way 5amp single pole switch.		
	23.6.2.1	Group A	each	486
	23.6.2.2	Group B	each	563
	23.6.2.3	Group C	each	640
	23.6.3	MS CONDUIT only for Light point without control,		

Item No.		Description	Unit	Through Rate
	23.6.3.1	Group A	each	269
	23.6.3.2	Group B	each	348
	23.6.3.3	Group C	each	425
23.6.4		MS CONDUIT and MS/GI BOX only for 3 pin 5 amp. plug point		
	23.6.4.1	Group A	each	581
	23.6.4.2	Group B	each	735
	23.6.4.3	Group C	each	889
23.6.5		MS CONDUIT and MS/GI BOX only for 3 pin 15 amp. plug point		
	23.6.5.1	Group A	each	589
	23.6.5.2	Group B	each	743
	23.6.5.3	Group C	each	897
23.6.6		Supply and erection of MS conduit pipe 1.6 mm thick , ISI marked surface/recessed in slab/wall/ceiling etc. including cost of MS bends, inspection box and all other material required to complete the job in all respect up to the entire satisfaction of Engineer-in-Charge of work.		
	23.6.6.1	MS Pipe of 20 mm dia.	metre	103
	23.6.6.2	MS pipe of 25 mm dia.	metre	119
	23.6.6.3	MS Pipe of 32 mm dia.	metre	160
	23.6.6.4	MS pipe of 40 mm dia.	metre	250
23.7		**PVC CONDUIT PIPE ONLY (SURFACE OR RECESSED) FOR ELECTRICAL**		
23.7.1		PVC CONDUIT and MS/GI BOX only for LIGHT/FAN/Call bell point wiring		
	23.7.1.1	Group A	each	142
	23.7.1.2	Group B	each	163
	23.7.1.3	Group C	each	184
23.7.2		PVC CONDUIT and MS/GI BOX only for Twin Control light point with 2 way 5amp single pole switch.		
	23.7.2.1	Group A	each	178
	23.7.2.2	Group B	each	199
	23.7.2.3	Group C	each	220
23.7.3		PVC CONDUIT only for Light point without control,		
	23.7.3.1	Group A	each	82
	23.7.3.2	Group B	each	103
	23.7.3.3	Group C	each	124
23.7.4		PVC CONDUIT and MS/GI BOX only for 3 pin 5 amp. plug point		
	23.7.4.1	Group A	each	209
	23.7.4.2	Group B	each	251
	23.7.4.3	Group C	each	293
23.7.5		PVC CONDUIT and MS/GI BOX only for 3 pin 15 amp. plug point		
	23.7.5.1	Group A	each	217
	23.7.5.2	Group B	each	259
	23.7.5.3	Group C	each	302
23.7.6		Supply and erection of PVC CONDUIT ISI marked (Medium) recessed in wall/ceiling etc. including the cost of PVC bends, inspection boxes, iron hooks and cement concrete etc. complete in all respect up to the entire satisfaction of Engineer-in-Charge of work.		
	23.7.6.1	PVC pipe of 20 mm dia.	metre	29
	23.7.6.2	PVC pipe of 25 mm dia.	metre	36
	23.7.6.3	PVC pipe of 32 mm dia.	metre	50
	23.7.6.4	PVC pipe of 40 mm dia.	metre	64

Note: The rates worked out for items 23.1 to 23.7 and their sub-items are by considering recessed conduit wiring. These rates may be reduced by 15% wherever surface conduiting wiring is required to be done as per directions of Engineer-in-Charge.

23.8 FITTING AND ACCESSORIES

Item No.		Description	Unit	Through Rate
23.8.1	Providing and fixing Piano type accessories of approved make in existing box and Bakelite sheet including fixing and making necessary connections, complete in all respect.			
	23.8.1.1	Switch 5 amp. on existing sheet.	each	18
	23.8.1.2	Wall socket 5 amp on existing sheet.	each	32
	23.8.1.3	15 amp. switch on existing sheet.	each	68
	23.8.1.4	6 pin 15 multi socket on existing sheet	each	88
	23.8.1.5	Ceiling rose flush/surface type	each	20
	23.8.1.6	Call bell 220/230 volts musical type	each	101
	23.8.1.7	Electric buzzer 220/230 volts A.C. Bakelite with double coil.	each	55
	23.8.1.8	Bell push with 4 metres 2-core, 0.50 sqmm (16/0.20 mm) PVC flexible wire.	each	30
	23.8.1.9	Bell push	each	20
	23.8.1.10	Bed switch with 4 metres 2 core, 0.50 sqmm (16/0.20mm) PVC flexible wire.	each	38
	23.8.1.11	Bed switch	each	28
	23.8.1.12	Bakelite angle/straight button holder large size.	each	51
	23.8.1.13	Socket size rotary step type Electronic regulator for A.C. ceiling fan	each	210
	23.8.1.14	telephone socket	each	31
23.8.2	Supply and Fixing Bakelite sheet on existing MS/GI/wooden/PVC box etc including fixing with brass screws and washers.			
	23.8.2.1	5 mm thick	100sqcm	17
	23.8.2.2	3 mm thick	100sqcm	13
23.8.3	Supply and erection of suitable MS/GI Box covered with 5 mm thick Bakelite sheet as below			0
	23.8.3.1	75 mm x 75 mm x 60 mm deep M.S. box	each	77
	23.8.3.2	100 mm x 100 mm x 60 mm deep M.S. box	each	98
	23.8.3.3	180 mm X 100 mm X 60 mm deep M.S. Box	each	125
	23.8.3.4	200 mm X 150 mm X 60 mm deep metal box	each	177
	23.8.3.5	200 mm X 150 mm X 60 mm deep metal box	each	260
23.8.4	Supply and erection of 10.5 cm dia M.S.Fan box including 8 mm dia 30 cm long M.S. Road made into suitable suspension hook and erected in R.C.C. slab for the erection of fan complete with all labour and material required to complete the job.		each	106
23.8.5	Supply and erection 5-30 A single phase A.C. energy metre , LCD display and optical port , with rag bolts on wall/existing pedestal including the cost of rag bolts required to complete the job in all respect with necessary connections and bonding to earth.		each	1920
23.8.6	Supply and erection 10-60 A single phase A.C. energy metre , LCD display and optical port , with RFID or similar remote reading features with rag bolts on wall/existing pedestal including the cost of rag bolts required to complete the job in all respect with necessary connections and bonding to earth.		each	4353
23.8.7	Supply and erection 5-30 A Three phase A.C. energy metre , LCD display and optical port , with rag bolts on wall/existing pedestal including the cost of rag bolts required to complete the job in all respect with necessary connections and bonding to earth.		each	2007
23.8.8	Supply and erection 10-60 A Three phase A.C. energy metre , LCD display and optical port , with rag bolts on wall/existing pedestal including the cost of rag bolts required to complete the job in all respect with necessary connections and bonding to earth.		each	2206

Item No.		Description	Unit	Through Rate
	23.8.9	Supply and erection direct reading LCD Display Digital Ammetre/Voltmetre (without CT or PT) on wall/existing penal complete in all respect with necessary connections	each	1113
	23.8.10	Providing and fixing GI concealed sheet metal boxes with inner and outer face plate including concealing the box in wall and fixing in position with inner plate and face plate with all labour and material required for the job complete in all respects.		
		23.8.10.1 1 & 2 Modules including combined plate for Telephone and data	each	104
		23.8.10.2 3 Modules	each	142
		23.8.10.3 4 Modules	each	157
		23.8.10.4 6 Modules	each	208
		23.8.10.5 8 Modules	each	261
		23.8.10.6 12 Modules	each	316
	23.8.11	Providing and fixing modular type accessories of approved make in existing box including fixing and making necessary connections, complete in all respect.		
		23.8.11.1 5 amp 1 way switch	each	46
		23.8.11.2 5 amp 2 way switch	each	83
		23.8.11.3 15 amp 1 way switch	each	92
		23.8.11.4 5 amp Socket	each	92
		23.8.11.5 15 amp 6 pin Socket	each	139
		23.8.11.6 Bell Push	each	86
		23.8.11.7 step type Fan Regulator 2 modules 300 watt	each	288
		23.8.11.8 Telephone Socket outlet modular type	each	84
		23.8.11.9 T.V. Socket outlet modular type	each	84
		23.8.11.10 Blanking plate	each	20
		23.8.11.11 RJ 45 Computer DATA socket outlet for CAT 6 or CAT6e cable Modular type	each	340
		23.8.11.12 USB Charger, 1000mA, 5V, 1 Module (For Non residential use only)	each	340
		23.8.11.13 32A D.P. Main Switch With Key Ring Tag 2 Module (For Guest room or similar use only)	each	367
	23.8.12	Supply and Fixing 3 mm thick Bakelite sheet cover on existing MS/PVC junction box/tee etc including fixing with brass screws and washers.	each	9
	23.8.13	Supplying,installation,testing and commissioning of Passive Infrared(PIR) based occupancy sensor , non regulating programmable type, suitable for connected load up to 10Amp , for mounting height up to 2.8 metre and for 5 m diameter coverage area along with necessary fixing arrangements i/c programming at site etc. complete as required.	each	4128
	23.8.14	Supplying,installation,testing and commissioning of Passive Infrared(PIR) based occupancy sensor with automatic day light dimming feature , programmable type, suitable for connected load up to 10Amp , for mounting height up to 2.8 metre and for 5 m diameter coverage area along with necessary fixing arrangements i/c programming at site etc. complete as required.	each	6195
23.9		Erection of exhaust fan in existing opening ,complete with necessary earthling of fan including carriage from PWD store to the site of work.	each	122
23.10		Erection of cabin fan complete with necessary earthling including carriage from PWD store to the site of work.	each	62
23.11		Making suitable hole in the wall suitable for exhaust fan up to 450 mm sweep including finishing the same and fixing of Stainless steel wire mesh 2 mm thick having about 50 meshes per inch at exhaust side complete as required	each	427

Item No.	Description	Unit	Through Rate
23.12	Providing and fixing outdoor duty Ply of 12 mm thick frame suitable for exhaust fan up to 450 mm sweep etc complete as required	each	287
23.13	Supply, erection and fixing of 12 mm thick ply wood board having a circular /rectangular hole etc as required including the cost of making hole, nuts and bolts, painting and other petty material with all labour etc. complete in all respect up to the entire satisfaction of Engineer-in-charge of the work.	sqft	141
23.14	Replacement of rubber reel and Locking Split/safety Pin .	each	102
23.15	Replacement of ball bearing of a ceiling fan including greasing, re-assembling and testing etc.	each	95
23.16	Replacement of a bush bearing of any fan including turning, oiling, re-assembling & testing etc.	each	95
23.17	Replacement of a fan condenser complete with connections and testing etc.		
23.17.1	2 to 3.5 mfd.	each	56
23.17.2	4 to 6 mfd	each	61
23.17.3	7 to 8 mfd	each	65
23.18	Painting of ceiling fan complete with blades and suspension rod etc.		
23.18.1	With hand painting using enamelled paint.	each	74
23.18.2	With spray painting using enamelled paint..	each	87
23.19	Painting of pole with brackets etc with 2 coats of enamelled paint or other approved paint.		
23.19.1	3 metre and above ,Up to the height of 5 metres.	each	74
23.19.2	Above 5 metres but up to the height of 8 metres	each	114
23.19.3	Above 8 metres	each	195
23.20	Fixing of LED Tube light/ 2*2 ft square panel fitting directly on wall /ceiling or false ceiling including making connections etc as required	each	75
23.21	Fixing of LED Down lighter 7 to 28 Watt on ceiling or in false ceiling , including cutting/making hole in ceiling including making connections etc as required	each	54
23.22	**MCCB ,DISTRIBUTION BOARDS, MCB's, RCCB's, CHANGE OVER etc.**		
23.22.1	Supply and erection of Modular case circuit breaker single pole/4 pole on existing wall/pedestal/Panel including bounding to earth and making necessary connections required to complete the job in all respect up to the entire satisfaction of the Engineer-in-charge of the work.		
23.22.1.1	Double pole MCCB 16 to 63 Amp, 25 Ka	each	1626
23.22.1.2	Double pole MCCB 100 to 125 Amp, 25 Ka	each	2458
23.22.1.3	TRIPLE POLE MCCB 16 to 100 Amp, 25 KA	each	5190
23.22.1.4	TRIPLE POLE MCCB 125 to 160 Amp, 25 KA	each	5878
23.22.1.5	TRIPLE POLE MCCB 200 to 250 Amp, 25 KA	each	9605
23.22.1.6	TRIPLE POLE MCCB 300 Amp, 25 KA	each	10403
23.22.1.7	TRIPLE POLE MCCB 400 Amp, 50 KA	each	18248
23.22.1.8	TRIPLE POLE MCCB 600 to 800 Amp, 50 KA	each	36339
23.22.1.9	4 pole MCCB 6 amp to 100 amp , 25 KA	each	6865
23.22.1.10	4 pole MCCB 125 to 160 amp, 25 KA	each	7497
23.22.1.11	4 pole MCCB 200 to 250 amp, 25 KA	each	12104
23.22.1.12	4 pole MCCB 300 to 400 amp , 50 KA	each	22788
23.22.1.13	4 pole MCCB 600 to 800 Amp , 50 KA	each	44883
23.22.2	MCCB Enclosure made of Sheet Steel suitable for mounting MCCB of following ratings		
23.22.2.1	MCCB up to 125 A FP	each	2032
23.22.2.2	MCCB up to 250 A FP	each	4515
23.22.2.3	MCCB above 250 A and up to 630 A FP	each	6819

Item No.		Description	Unit	Through Rate
23.22.3		Supply and erection of sheet steel enclosures 1pole/2 pole/4 pole on wall/on existing pedestal complete as required.		
	23.22.3.1	SP enclosure suitable for single pole MCB	each	399
	23.22.3.2	S.P.N. or DP enclosure suitable for DP MCB	each	399
	23.22.3.3	TPN enclosure suitable for TP , TPN or FP MCB	each	464
23.22.4		Supply and erection of double door sheet steel enclosure distribution board suitable for MCBS and ELCBS etc. recessed in wall including bonding to earth with all labour and material required to complete the job in all respect up to the entire satisfaction of the Engineer-in-Charge of the work.		
	23.22.4.1	SPN DB Double Door 4 way (2 incoming and 2 outgoing)	each	1312
	23.22.4.2	SPN DB Double Door 8 way (2 incoming and 6 outgoing)	each	1574
	23.22.4.3	SPN DB Double Door 12 way (2 incoming and 10 outgoing)	each	1910
	23.22.4.4	SPN DB Double Door 16 way (2 incoming and 14 outgoing)	each	2329
	23.22.4.5	TPN DB Horizontal type Double Door 4 way (8 incoming and 3phase*4 outgoing)	each	3031
	23.22.4.6	TPN DB Horizontal type Double Door 6 way (8 incoming 3phase*6 outgoing)	each	3669
	23.22.4.7	TPN DB Horizontal type Double Door 8 way (8 incoming 3phase*8 outgoing)	each	4432
	23.22.4.8	TPN DB Horizontal type Double Door 12 way (8 incoming 3phase*12 outgoing)	each	6445
	23.22.4.9	Vertical TPN DB Double Door 4 way (8 incoming and 3phase*4 outgoing)	each	6817
	23.22.4.10	Vertical TPN DB Double Door 6 way (8 incoming 3phase*6 outgoing)	each	8089
	23.22.4.11	Vertical TPN DB Double Door 8 way (8 incoming 3phase*8 outgoing)	each	9051
	23.22.4.12	Vertical TPN DB Double Door 12 way (8 incoming 3phase*12 outgoing)	each	12113
23.22.5		Supply and erection of miniature circuit Breaker 240/415 V in the existing distribution board including making necessary connections:-		
	23.22.5.1	6 amp. to 32 amp Single Pole	each	162
	23.22.5.2	40 amp to 63 amp. Single Pole	each	345
	23.22.5.3	6 amp. to 32 amp Double POLE	each	477
	23.22.5.4	40 amp to 63 amp. Double pole	each	758
	23.22.5.5	6 amp. to 32 amp MCB's TRIPLE POLE	each	764
	23.22.5.6	40 amp to 63 amp. MCB's TRIPLE POLE	each	1162
	23.22.5.7	6 amp. to 32 amp MCB's FOUR POLE	each	1019
	23.22.5.8	40 amp to 63 amp. MCB's FOUR POLE	each	1446
23.22.6		Supply and erection double pole/Four pole Residual (RCCB/ELCB) on 240/415V, 5Hz. AC supply installed in existing sheet steel enclosures including making necessary connections and bonding to earth with all labour and material required to complete the job in all respect up to the entire satisfaction of the Engineer-in-Charge of the work.		
	23.22.6.1	DP RCCB 30ma sensitivity , 25 A	each	1655
	23.22.6.2	DP RCCB 30ma sensitivity , 40 A	each	1870
	23.22.6.3	DP RCCB 30ma sensitivity , 63 A	each	2324
	23.22.6.4	TP RCCB 30ma sensitivity , 25 A	each	2184
	23.22.6.5	FP RCCB 30ma sensitivity , 40 A	each	2193
	23.22.6.6	FP RCCB 30ma sensitivity , 63 A	each	2513
23.22.7		Supply and erection of blanking sheet in existing distribution board.	each	9

Item No.		Description	Unit	Through Rate
	23.22.8	SITC Four pole ON LOAD Manual change over switch in SS enclosure of following Ratings		
		23.22.8.1 63 amp 415 volts	each	7109
		23.22.8.2 100 amp 415 volts	each	9038
		23.22.8.3 200 amp 415 volts	each	16751
		23.22.8.4 300 amp 415 volts	each	24225
		23.22.8.5 400 amp 415 volts	each	35124
23.23	**MISCELLANEOUS**			
	23.23.1	Supply and fixing Galvanised Iron flexible pipe complete with socket nipples and check nuts etc. at both ends (Up to length of one metre):-		
		23.23.1.1 Size 15 mm dia	metre	43
		23.23.1.2 Size 20 mm dia	metre	47
		23.23.1.3 Size 25 mm dia	metre	66
	23.23.2	Supply of GI pipe (B-Class) for suspension rod of ceiling fan including threading if required.		
		23.23.2.1 15 mm dia	metre	151
		23.23.2.2 20 mm dia	metre	189
	23.23.3	Supply and erection of girder clamp for ceiling fan including painting (up to 15 cm section)		
		23.23.3.1 Girder clip complete for girder up to 100 mm deep	each	36
		23.23.3.2 Girder clip complete for girder up to 300 mm deep	each	62
	23.23.4	Providing and fixing fan hook made from 8 mm dia MS rod 75 cm long of required shape and size	each	81
	23.23.5	Supply and erection of U- PVC Trunking/Channel of following size including cost of fixing on wall, floor and ceiling etc. with required material complete the job in all respect up to entire satisfaction of the Engineer-in-charge of work.		
		23.23.5.1 25x12 mm	metre	24
		23.23.5.2 38x12 mm	metre	28
		23.23.5.3 38x25 mm	metre	52
		23.23.5.4 50x50 mm	metre	85
	23.23.6	Supply and erection of MS cable tray , duly pained as required including erection of the same on wall or ceiling with necessary fixture and other material required to complete the job in all respect up to the entire satisfaction of Engineer-in Charge of the work.		
		23.23.6.1 MS perforated cable tray painted with powder coating 100 X 50 X 2 mm	metre	259
		23.23.6.2 MS perforated cable tray painted with powder coating 200 X 50 X 2 mm	metre	393
		23.23.6.3 MS perforated cable tray painted with powder coating 375 X 50 X 2 mm	metre	445
		23.23.6.4 MS perforated cable tray painted with powder coating 600 X 50 X 2 mm	metre	531
	23.23.7	Supply and erection of cable tray cover made of 1.25 mm thick GI sheet as required including erection of the same on existing cable tray with necessary fixture and other material required to complete the job in all respect up to the entire satisfaction of Engineer-in Charge of the work.		
		23.23.7.1 GI cable tray Cover , suitable for cable tray of 100 X 50 X 2 mm	metre	227
		23.23.7.2 GI cable tray Cover , suitable for cable tray of 200 X 50 X 2 mm	metre	381
		23.23.7.3 GI cable tray Cover , suitable for cable tray of 375 X 50 X 2 mm	metre	659

Item No.		Description	Unit	Through Rate
	23.23.7.4	GI cable tray Cover , suitable for cable tray of 600 X 50 X 2 mm	metre	1103
23.23.8		Supply and laying of multicore telephone cable conductor size 0.51 mm bright annealed copper conductor PVC insulated and sealed in existing pipe/channel and making necessary connection complete in all respect up to the entire satisfaction of the Engineer-in charge of the work.		
	23.23.8.1	2 pair telephone wire	metre	8
	23.23.8.2	4 pair telephone wire	metre	16
23.23.9		Supplying and drawing of 1 no UTP 4 pair CAT 6 LAN Cable in the existing surface/recess MS/PVC conduit as required	metre	35
23.23.10		Supplying and drawing of 1 no UTP 4 pair CAT 6a LAN Cable in the existing surface/recess MS/PVC conduit as required	metre	49
23.24	**MS STAND, BUS BAR CHAMBER AND PANELS**			
23.24.1		Supply and erection of M.S. angle iron frame duly welded for housing M.S. sheet & main switches etc. on it, fixed on wall by means of suitable size of rag bolts with cement concrete, duly painted with three coats of approved paint including one coat of red oxide.	kg	94
23.24.2		Erection of Cubical type Electrical Panels/ Feeder Pillars including necessary mounting Frame made of suitable size I section of required size on existing foundation/platform etc as required		
	23.24.2.1	Panels/Feeder Pillars having incomers up to Four pole 200 A , Base Mounting frame made of ISMC 100*50*5 mm	each	2800
	23.24.2.2	Panels/Feeder Pillars having incomers of more than 200 A and up to Four pole 400 A , Base Mounting frame made of ISMC 150*75*5.7 mm	each	7089
	23.24.2.3	Panels/Feeder Pillars having incomers of more than 400 A and up to Four pole 800 A , Base Mounting frame made of ISMC 150*75*5.7 mm	each	8274
	23.24.2.4	Panels/Feeder Pillars having incomers of more than 800 A and up to Four pole 1600 A , Base Mounting frame made of ISMC 200*75*6.2 mm	each	20406
	23.24.2.5	Panels/Feeder Pillars having incomers of more than 1600 A and up to Four pole 4000 A , Base Mounting frame made of ISMC 200*75*6.2 mm	each	23534
23.24.3		Supply and erection of metal clad bus bar chamber made from 1.6 mm thick M.S. sheet and fixing with rag bolts on wall or on existing pedestal/angle iron frame including bonding, detachable top and bottom including painting and necessary connection etc. (Aluminium bars).		
	23.24.3.1	100 amp 2 bars of 40 cm each (cross section 25 mm x6 mm) chamber over all size 45 cm x 20 cm x 18cm	each	1636
	23.24.3.2	100 amp 4 bars of 55 cm each (cross section 25 mm x6 mm) chamber over all size 60 cm x 45 cm x 18cm	each	3473
	23.24.3.3	100 amp 4 bars of 100 cm each (cross section 25 mm x 6 mm) chamber over all size 1.10 m x 45 cm x 18cm	each	5769
	23.24.3.4	200 amp 2 bars of 40 cm each (cross section 38 mm x 6 mm) chamber over all size 45 cm x 20 cm x 18cm	each	2050
	23.24.3.5	200 amp 4 bars of 55 cm each (cross section 38 mm x 6 mm) chamber over all size 60 cm x 45 cm x 18cm	each	4611
	23.24.3.6	200 amp 4 bars of 100 cm each (cross section 38 mm x 6mm) chamber over all size 1.10 m x 45 cm x 18cm	each	7838
	23.24.3.7	300 amp 2 bars of 55 cm each (cross section 51 mm x 6 mm) chamber over all size 60 cm x 25 cm x 23 cm	each	2464
	23.24.3.8	300 amp 4 bars of 55 cm each (cross section 51 mm x6 mm) chamber over all size 60 cm x 55 cm x 23 cm	each	5748

Item No.			Description	Unit	Through Rate
		23.24.3.9	300 amp 4 bars of 100 cm each (cross section 51 mm x 6 mm) chamber over all size 1.10 m x 55 cm x 23 cm	each	9907
		23.24.3.10	400 amp 4 bars of 55 cm each (cross section 63 mm x 6 mm) chamber over all size 60 cm x 55 cm x 23 cm	each	7511
		23.24.3.11	400 amp 4 bars of 100 cm each (cross section 63 mm x6 mm) chamber over all size 1.10 m x 55 cm x 23 cm	each	12280
		23.24.3.12	600 amp 4 bars of 55 cm each (cross section 102 mm x 6 mm) chamber over all size 60 cm x 70 cm x 38 cm.	each	11675
		23.24.3.13	600 amp 4 bars of 100 cm each (cross section 102 mm x 6 mm) chamber over all size 1.10 m x 70 cm x 38 cm.	each	20211
		23.24.3.14	800 amp 4 bars of 55 cm each (cross section 127 mm x 6 mm) chamber over all size 60 cm x 70 cm x 38 cm.	each	13863
		23.24.3.15	800 amp 4 bars of 100 cm each (cross section 127 mm x 6 mm) chamber over all size 1.10 m x 70 cm x 38 cm.	each	24189
	23.24.4		Supply, installation, testing and commissioning of load bank with digital meter module cost of digital Amp. / volt meter with selector switch wiring (but EXLUDING COST of incoming and outgoing MCCB's) etc.suitable for operation of 240/415 volts A.C. Supply with both side cable allay, inter connection and fixing the same in existing MS pedestal/wall complete with all labour and material required for the same up to the entire satisfaction of Engineer-in-Charge of work.		
		23.24.4.1	Load Bank 4 way 250 amp.	each	48341
		23.24.4.2	Load Bank 8 way 250 amp.	each	58375
		23.24.4.3	Load Bank 4 way 400 amp.	each	54274
		23.24.4.4	Load Bank 8 way 400 amp.	each	63405
23.25	**DISMANTLING**				
	23.25.1		Dismantling old wiring points (surface wiring system) including necessary repairs to wall etc.		
		23.25.1.1	Light, fan or call bell Point including circuit/sub main wiring	each	23
		23.25.1.2	Wall socket point including circuit/submain wiring	each	23
	23.25.2		Dismantling old wiring points (Recess wiring or partly recess partly surface system , recess Conduit and box not to be dismantled) including necessary repairs to wall etc.		
		23.25.2.1	Light, fan or call bell Point including circuit/sub main wiring	each	14
		23.25.2.2	Wall socket point including circuit/submain wiring	each	14
23.26	**SAFETY ITEMS**				0
	23.26.1		Supply and erection of Medium Voltage caution notice plate of size 200*150 mm in three languages.	each	85
	23.26.2		Supply and erection of High Tension Voltage caution notice plate of size 250*200 mm in three languages.	each	104
	23.26.3		Supply and erection of shock restoration chart in glass frame.	each	293
	23.26.4		Supply & Erection of mild steel bucket stand suitable for 6 Nos. fire buckets,(but without bucket) including the cost of welding and painting of complete stand will one coat of red oxide and 2 coats of approved paint of red colour with all labour and material required to complete the job in all respect up to the entire Satisfaction engineer in charge of the work (size 6'x4' made of GI pipe 32mm dia).	set	3067

Item No.	Description	Unit	Through Rate
23.27	Supply and erection of Godrej Almirah typeM.S. pedestal made of 50 mm x 50 mm x 6 mm angle iron frame with 3.00 mm thick M.S. sheet covering including shutters with suitable hinges and locking arrangement with Godrej type handle including round bars . The top covering should have downward overhang of 75 mm on all sides of pedestal , having two sets of water proof ventilation holes of suitable size on the sides , at top and bottom , each set containing four Nos. holes to discharge the heat produced by the current . The shutters fixed with rubber gasket of superior quality and of suitable size to make it water proof . The pedestal duly painted both inside and outside with two coats of approved paint and primary coat and its legs are embeded upto the entire depth in 1:2:4 cement concrete block , projected 75 mm all around the pedestal and and 200 mm above the ground level including the cost of all labour and material required to complete the job in all respect upto the entire satisfaction of the Engineer-in-charge of the work:-		
23.27.1	M.S. pedestal of size 600 mm wide , 750 mm high ,300 mm deep and bottom totally open , duly embeded in 1:2:4 cement concrete block of size 750 mm x 450 mm x 200 mm above ground level , having a base of size 900 mm x 600 mm x 250 mm below ground level.	each	5436
23.27.2	M.S. pedestal of size 750 mm wide , 900 mm high , 300 mm deep and bottom totally open , duly embeded in cement concrete block of size 900 mm x 450 mm x 200 mm above ground level , having a base of size 1050 mm x 600 mm x 250 mm below ground level .	each	7113
23.27.3	M.S. pedestal of size 750 mm wide , 1200 mm high ,300 mm deep and bottom totally open , duly embeded in cement concrete block of size 900 mm x 450 mm x 200 mm above ground level , having a base of size 1050 mm x 600 mm x 250 mm below ground level .	each	8699
23.27.4	M.S. pedestal of size 900 mm wide , 1500 mm high , 450 mm deep and bottom totally open , duly embeded in cement concrete block of size 1050 mm x 600 mm x 200 mm above ground level ,having a base of size 1200 mm x 750 mm x 250 mm below ground level .	each	11338
23.27.5	M.S. pedestal of size 1200 mm wide ,1500 mm high ,450 mm deep and bottom totally open , duly embeded in cement concrete block of size 1350 mm x 600 mm x 200 mm above ground level , having a base of size 1500 mm x 750 mm x 250 mm below ground level .	each	13838
23.27.6	M.S. pedestal of size 1500 mm wide , 1800 mm high ,450 mm deep and bottom totally open , duly embeded in cement concrete block of size 1650 mm x 600 mm x 200 mm above ground level , having a base of size 1800 mm x 750 mm x 250 mm below ground level .	each	18219

CHAPTER NO. 24

CABLE LAYING
and
STREET LIGHTING

CHAPTER NO. 24.0 - CABLE LAYING AND STREET LIGHTING

NOTES:

1. Electrical wiring and fittings to be carried out in all building in accordance with Haryana PWD Specifications:-

2. Unless specified to the contrary, the labour rates for various items of Electrical Installation include handling of materials within 100 metres. Through rates include all rehandling of materials, at the site of work, and no payment is due to contractor on this account.

3. Unless specified to the contrary, the labour rates include the cost of water, tools and plants, labour and materials for scaffolding and centring and shuttering.

4. The through rates of all the items includes the cost of Supply, Errection, Testing and Commissioning

5. Scope of work under each item requires to complete the job in all respects and up to the entire satisfaction of the Engineer-in-Charge.

6. In this chapter items have been broadly categorised as follows:

6.1 Earthing and Lightning Arrestor

6.2 Under Ground MV Cables

6.3 HT Cable

6.4 Street Light

6.5 Miscellaneous Items

6.6 Dismantling

6.7 Civil items

7. New Items for External work has been introduced.

8. Obsolete items of external works in HSR 1988 have been deleted.

9. Items still being used from earlier HSR have been retained after slightly modifying the nomenclature to suit present day need.

10. Copper items used in exposed external work have been omitted as these are prone to theft. Technically also we can get the same results using GI items, by increasing size slightly, which is quite cost effective and less prone to theft.

11. New items have been added to meet present requirements.

12. Items which could not be classified in any specific broad category have been included under the subhead Miscellaneous.

13. Commonly used Civil Items being used in external electrical works have been incorporated for ready reference, for ease of estimation by electrical engineers.

14. As cost of capital items like luminaries, LT cables, Electrical Panels vary significantly on continuous basis, only fixing of such items has been kept in the HSR

CHAPTER 24.0 - CABLE LAYING AND STREET LIGHTING

Item No.		Description	Unit	Through Rate
24.1	**EARTHING AND LIGHTENING ARRESTOR**			
	24.1.1	Earthing with GL earth pipe 4.5 m long and 40 mm dia with masonry enclosures on the top etc. (but without charcoal or coke and salt) as required.	each	3047
	24.1.2	Extra for using salt and char coal/coke for pipe earth electrode as required.	each	730
	24.1.3	Earthing with G.I. earth plate 600 mmx 600 mm x 6 mm thick including accessories and providing masonry enclosures with cover plate having locking arrangement and watering pipe etc. (but without charcoal or coke and salt) complete as required.	each	3772
	24.1.4	Earthing with tinned copper earth plate 600mmx600mmx3mm thick including accessories and providing masonry enclosures with cover plate having locking arrangement and watering pipe etc. (but without charcoal or coke and salt) etc. complete as required.	each	9267
	24.1.5	Extra for charcoal or coke and salt for G.I. plate or copper plate earth electrode.	each	897
	24.1.6	Supplying and laying 25mm x 3mm G.I. strip at 0.5 metre below ground as strip earth electrode including soldering etc. as required.	metre	53
	24.1.7	Supplying and laying 25mm x 3 mm G.I. strip in 40 mm dia,GI pipe as/from earth electrode including soldering etc. as required.	metre	403
	24.1.8	Providing and fixing 25 mm x 3mm G.I. strip on surface or in recess for connections etc. as required with all labour and material.	metre	108
	24.1.9	Providing and fixing 25 mm x5 mm copper strip in 40 mm dia G.I. pipe from earth electrode as required.	metre	818
	24.1.10	Providing and fixing 25 mm x 5mm copper strip on surface or in recess for connections etc. as required with all labour and material.	metre	818
	24.1.11	Providing and laying earth connections from earth electrode with 4.00 mm dia G.I. wire in 15 mm dia G.I. pipe from earth electrode as required.	metre	212
	24.1.12	Supplying and laying 6 S.W.G G.I. wire at 0.50 m below ground level from earth electrode including thimbles, soldering etc. as required.	metre	142
	24.1.13	Providing and fixing 4.00 mm dia G1. Wire on surface or in recess for loop earthing as required.	metre	24
	24.1.14	Supply and erection of 20mm x 3 mm thick GI, tape fixed with suitable G.I. staples of same size.	metre	69
	24.1.15	Erection only of lightning conductor GI. tape including supply of suitable GI. staples of same size.	metre	32
	24.1.16	Supply and erection of 25mm dia 1.5 metre long lightning GI. tube rod tapered into a point at the top with 16cm x 16cm x 3mm thick G.I. base plate and necessary nuts and bolts with washers.	each	1006
	24.1.17	Providing and fixing testing joints made of 20mm x 3mm thick G.I. strips 125 mm long with 4 nos. G.I. bolts and nuts with washers complete.	each	82
24.2	**LT CABLE**			
	24.2.1	Supply & erection of LT phase separator on LT line complete in all respect up to entire satisfaction of the Engineer-in-charge of the work.	set	11
	24.2.2	Laying of underground cable 0.75 metre below ground level covered with sand and bricks including excavation and refilling of trenches.:-		
		24.2.2.1 2.5 Sq mm to 10 Sq mm 2 to 4 Core	metre	175
		24.2.2.2 16 Sq mm to 35 sqmm 2 to 4 Core	metre	180
		24.2.2.3 50 Sq mm to 150 sqmm 2 to 4 Core	metre	192
		24.2.2.4 185 sqmm to 240 sqmm 3 to 3½ Core	metre	199
		24.2.2.5 300 sqmm to 400 sqmm 3 to 3½ Core	metre	208
		Note: additional cable in same trench : 50% of Main cable cost		
	24.2.3	Laying of underground cable 0.75 metre below ground level covered without sand and bricks including excavation and refilling of trenches.:-		

Item No.		Description	Unit	Through Rate
	24.2.3.1	2.5 Sq mm to 10 Sq mm 2 to 4 Core	metre	50
	24.2.3.2	16 Sq mm to 35 sqmm 2 to 4 Core	metre	54
	24.2.3.3	50 Sq mm to 150 sqmm 2 to 4 Core	metre	64
	24.2.3.4	185 sqmm to 240 sqmm 3 to 3½ Core	metre	73
	24.2.2.5	300 sqmm to 400 sqmm 3 to 3½ Core	metre	83
	Note: additional cable in same trench : 50% of Main cable cost			
24.2.4	Laying of underground cable in pipe /existing open/closed trench etc as			
	24.2.4.1	2.5 Sq mm to 10 Sq mm 2 to 4 Core	metre	10
	24.2.4.2	16 Sq mm to 35 sqmm 2 to 4 Core	metre	14
	24.2.4.3	50 Sq mm to 150 sqmm 2 to 4 Core	metre	24
	24.2.4.4	185 sqmm to 240 sqmm 3 to 3½ Core	metre	28
	24.2.4.5	300 sqmm to 400 sqmm 3 to 3½ Core	metre	33
24.2.5	Laying and fixing of cable on surface/ cable tray etc as required:-			
	24.2.5.1	2.5 Sq mm to 10 Sq mm 2 to 4 Core	metre	13
	24.2.5.2	16 Sq mm to 35 sqmm 2 to 4 Core	metre	23
	24.2.5.3	50 Sq mm to 150 sqmm 2 to 4 Core	metre	35
	24.2.5.4	185 sqmm to 240 sqmm 3 to 3½ Core	metre	44
	24.2.5.5	300 sqmm to 400 sqmm 3 to 3½ Core	metre	53
24.2.6	Supply and erection of copper lugs including crimping etc. entire satisfaction of Engineer-in- Charge of the work.			
	24.2.6.1	1.5 sqmm	each	4
	24.2.6.2	2.5 sqmm	each	4
	24.2.6.3	4 sqmm	each	6
	24.2.6.4	6 sqmm	each	9
	24.2.6.5	10 sqmm	each	10
	24.2.6.6	16 sqmm	each	15
24.2.7	Supply and erection of suitable compression type brass cable glands for underground Cable :-			
	24.2.7.1	Up to 6 Sq mm cable 2 to 4 Core	set	36
	24.2.7.2	10 sqmm to 16 sqmm Cable 2 to 4 Core	set	50
	24.2.7.3	25 sqmm to 50 sqmm Cable 2 to 4 Core	set	86
	24.2.7.4	70 sqmm to 95 sqmm Cable 3 to 3½ Core	set	116
	24.2.7.5	120 sqmm to 185 sqmm Cable 3 to 32 Core	set	149
	24.2.7.6	240 sqmm to Cable 3 to 32 Core	set	185
	24.2.7.7	300 sqmm to 400 sqmm Cable 3 to 3½ Core	set	254
24.2.8	Supply and erection of aluminium lugs heavy duty including crimping etc. up to the entire satisfaction of the Engineer-in-charge of the work.			
	24.2.8.1	1.5 sqmm to 2.5 sqmm	each	3
	24.2.8.2	4 sqmm to 6 sqmm	each	5
	24.2.8.3	10 sqmm	each	7
	24.2.8.4	16 sqmm	each	9
	24.2.8.5	25 sqmm	each	11
	24.2.8.6	35 sqmm	each	12
	24.2.8.7	50 sqmm	each	17
	24.2.8.8	70 sqmm	each	22
	24.2.8.9	95 sqmm	each	26
	24.2.8.10	120 sqmm	each	36
	24.2.8.11	150 sqmm	each	45
	24.2.8.12	185 sqmm	each	55
	24.2.8.13	240 sqmm	each	79
	24.2.8.14	300 sqmm	each	102
	24.2.8.15	400 sqmm	each	140
24.2.9	Supply and erection of straight through joint (cable jointing kit) 1.1 KV grade complete with required quantity of resin, hardener, plastic mould G.P. Putty, adhesive, earth continuity, connections and fixing the same in position complete with joint etc. - Straight through Joint.			

Item No.			Description	Unit	Through Rate
		24.2.9.1	For 1.5 to 6 sqmm Cable 2 Core	set	507
		24.2.9.2	For 1.5 to 6 sqmm Cable 3 to 4 Core	set	837
		24.2.9.3	For 10 to 16 sqmm Cable 2 Core	set	1292
		24.2.9.4	For 10 to 16 sqmm Cable 3 to 4 Core	set	1455
		24.2.9.5	For 25 sqmm to 50 sqmm Cable 3 to 4 Core	set	2682
		24.2.9.6	For 70 sqmm to 150 sqmm Cable 3 to 4 Core	set	4101
		24.2.9.7	For 185 sqmm Cable 300 sqmm cable 3 to 4 Core	set	7547
		24.2.9.8	For 400 sqmm Cable 3 to 4 core	set	7972
	24.2.10		Supply and erection of cable route marker made of 50 cm long 10 mm dia M.S. Rod welded/riveted at the top with 10 cm dia 3 mm thick MS plate inscribed with 'cable' word on it, having a cross arm 30 cm long of the same dia welded at the bottom, in exiting trench 45 cm below ground level.	each	269
24.3	HT CABLE				
	24.3.1		Laying and erection of XLPE (E)II kv HT aluminium conductor armoured cable 1 metre below ground level with sand & bricks with all labour and material including digging and refilling of trench as required		
		24.3.1.1	up to 120 sqmm 3 core XLPE Cable	metre	201
		24.3.1.2	above 120 and up to 300 sqmm 3 core XLPE Cable	metre	205
	24.3.2		Laying and erection of XLPE II or 33 kv HT aluminium conductor armoured cable ISI mark laid on surface/pipe/cable tray with all labour and material as required		
		24.3.2.1	up to 120 sqmm 3 core XLPE Cable	metre	87
		24.3.2.2	above 120 and up to 300 sqmm 3 core XLPE Cable	metre	94
	24.3.3		Supplying and making indoor cable end termination with heat shrinkable jointing kit complete with all accessories including lugs suitable for following size of 3 core, XLPE aluminium conductor cable of 11 KV grade as required :		
		24.3.3.1	70 to 120 sqmm	set	8006
		24.3.3.2	150 to 185 sqmm	set	9783
		24.3.3.3	240 to 400 sqmm	set	11512
	24.3.4		Supplying and making outdoor cable end termination with heat shrinkable jointing kit complete with all accessories including lugs suitable for following size of 3 core, XLPE aluminium conductor cable of 11 KV grade as required :		
		24.3.4.1	70 to 120 sqmm	set	12896
		24.3.4.2	150 to 185 sqmm	set	14781
		24.3.4.3	240 to 400 sqmm	set	19637
	24.3.5		Supplying and making straight through cable jointing with heat shrinkable jointing kit complete with all accessories including ferrules suitable for following size of 3 core, XLPE aluminium conductor cable of 11 KV grade as required :		
		24.3.5.1	70 to 95 sqmm	set	28873
		24.3.5.2	120 to 150 sqmm	set	30488
		24.3.5.3	185 to 240 sqmm	set	38582
		24.3.5.4	300 to 400 sqmm	set	42972
	24.3.6		Supplying and making indoor cable end termination with heat shrinkable jointing kit complete with all accessories including lugs suitable for following size of 3 core, XLPE aluminium conductor cable of 33 KV grade as required :		
		24.3.6.1	70 to 95 sqmm	set	10498
		24.3.6.2	120 to 185 sqmm	set	15850
		24.3.6.3	240 to 400 sqmm	set	17980
	24.3.7		Supplying and making outdoor cable end termination with heat shrinkable jointing kit complete with all accessories including lugs suitable for following size of 3 core, XLPE aluminium conductor cable of 33 KV grade as required :		
		24.3.7.1	70 to 95 sqmm	set	16959

Item No.			Description	Unit	Through Rate
		24.3.7.2	120 to 185 sqmm	set	21977
		24.3.7.3	240 to 400 sqmm	set	29073
	24.3.8		Supplying and making straight through cable jointing with heat shrinkable jointing kit complete with all accessories including ferrules suitable for following size of 3 core, XLPE aluminium conductor cable of 33 KV grade as required :		
		24.3.8.1	95 to 150 sqmm	set	37641
		24.3.8.2	185 to 300 sqmm	set	53431
24.4	**STREET LIGHT**				
	24.4.1		3 metres long 50 mm dia pole duly embedded 0.6 m below ground level.		
		24.4.1.1	3 metres long 50 mm dia pole duly embedded 0.6 m below	each	2140
		24.4.1.2	4.5metres long 50 mm dia pole duly embedded 0.75 m below	each	2878
		24.4.1.3	6 metres long 65 mm dia pole duly embedded 1 m below	each	4212
	24.4.2		Supply and erection of GI bracket made of 32 mm dia medium class GI pipe, having 15 deg angle from horizontal, suitable for fixing on top of Street Light pole		
		24.4.2.1	60 cm long	each	464
		24.4.2.2	90 cm long, with 20 cm high suitable size pole cap	each	544
		24.4.2.3	120 cm long, with 30 cm high suitable size pole cap	each	686
		24.4.2.4	150 cm long, with 30 cm high suitable size pole cap	each	767
	24.4.3		Supply and erection of 32mm dia metre 1.5 m long bracket (B-class) making an angle of 10° to 15° with horizontal plane for mounting street light fitting fixing of GI. bracket on wall with 2 nos. 32 mm x 3 mm thick M.S. clamps including cost of cutting, welding of G.I. pipe complete with cement sand mixture, bolts and nuts etc. including necessary connections.	each	573
	24.4.4		Erection of street light fitting on the pole including the cost of petty material required (irrespective of height/length of bracket)		
		24.4.4.1	At Pole up to the height of 4.5 metres	each	96
		24.4.4.2	At Pole above 4.5 metres but up to the height of 7 metres.	each	120
		24.4.4.3	At Pole above 7 metres but up to the height of 9 metres.	each	136
		24.4.4.4	At Pole above 9 metres	each	159
	24.4.5		Supply and erection of Single Phase weather proof M.S. box of size 20 cm x 15 cm x 10 cm with hinged cover made of 2 mm thick MS sheet, locking arrangements, housed in wall/fixed on pole , including the cost of 1 no 4 way 16 A Bakelite connector, 1 no. 6 amp SP MCB and 1 Nos. 16 amp. neutral links fixed on Bakelite sheet in the M.S. box including painting and necessary connections.	each	640
	24.4.6		Supply and erection of Three Phase weather proof M.S. box of size 30 cm x 20 cm x 15 cm with hinged cover made of 2 mm thick MS sheet, locking arrangements, housed in wall/fixed on pole , including the cost of 1 no 4 way 16 A Bakelite connector, 1 no. 16 amp TP MCB and 4 Nos. 16 amp. neutral links fixed on Bakelite sheet in the M.S. box and necessary connections.	each	1465
	24.4.7		Supplying and embedding following dia G.I. pipe (medium class) in pole collar/ foundation (during casting) for cable entry including bending the pipe to the required shape complete as required.		
		24.4.7.1	32 mm dia	metre	314
		24.4.7.2	40 mm dia	metre	431

Item No.		Description	Unit	Through Rate
24.4.8		Supply and erection of Hot Dip Galvanized octagonal pole of 3mm thickness, with base plate including cost of nut and bolts , earthing studs, Integral Cable termination arrangement 5 mm thick Bakelite base plate on suitable welded MS/GI bracket 32 A four way connector 2 no 10 A SP MCB , end cover and all accessories as supplied by the manufacture including Providing RCC foundation of M25 grade (1 Cement:1 Stone aggregate: 2 Coarse sand) i/c excavation, steel reinforcement (Fe 500) @80 kg/cum of concrete contents, concrete cover 50mm, anchor bolts etc. over a bed of PCC 1:5:10 of required dimensions for octagonal poles of various heights as per following specifications complete in all respects and as per directions of Engineer-in-charge		
	24.4.8.1	3 Metre Long pole with top dia 65 mm and bottom dia 130mm with base plate of size 200 x 200 x 12 mm	each	6609
	24.4.8.2	4 Metre Long pole with top dia 65 mm and bottom dia 130 mm with base plate of size 225 x 225 x12 mm	each	7945
	24.4.8.3	5 Metre Long pole with top dia 65 mm and bottom dia 130mm with base plate of size 250 x 250 x 16 mm	each	11944
	24.4.8.4	6 Metre Long pole with top dia 75 mm and bottom dia 150 mm with base plate of size 275 x 275 x 16 mm	each	15305
	24.4.8.5	7 Metre Long pole with top dia 75 0mm and bottom dia 150 mm with base plate of size 300 x 300 x 20 mm	each	17564
	24.4.8.6	8 Metre Long pole with top dia 100 mm and bottom 200 mm with base plate of size 325 x 325 x 20 mm.	each	23491
	24.4.8.7	9 Metre Long pole with top dia 100 mm and bottom 200 mm with base plate of size 350 x 350 x 20 mm.	each	28027
24.4.9		Erection of High mast (Labour only) on existing CC foundation (foundation to be paid separately and foundation bolt shall be provided)		
	24.4.9.1	12 to 15 metre High mast	each	3844
	24.4.9.2	16 metre High mast	each	5806
	24.4.9.3	20 metre High mast	each	8709
24.4.10		Erection of RCC/ PCC pole of following length in brick ballast and ramming the foundation, finishing with 150mm thick cement concrete (1:3:6) layer on top with including excavation and refilling etc as required.		
	24.4.10.1	Above 2.5 metre and up to 4 metre	each	1233
	24.4.10.2	Above 4 metre and up to 6 metre	each	1789
	24.4.10.3	Above 6 metre and up to 8.0 metre	each	2350
	24.4.10.4	Above 8.0 metre and up to 11.0 metre	each	2415
24.4.11		Erection of MS/GI/Swaged (excluding Octagonal) metallic pole of following length in cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size) foundation including excavation and refilling etc. as required.		
	24.4.11.1	Above 2.5 metre and up to 4 metre	each	590
	24.4.11.2	Above 4 metre and up to 6 metre	each	1223
	24.4.11.3	Above 6 metre and up to 8.0 metre	each	1479
	24.4.11.4	Above 8.0 metre and up to 11.0 metre	each	2413
24.4.12		Erection of RCC/ PCC pole strut in brick ballast and ramming the foundation including excavation and refilling and secured with holding clamps, bolts, nuts, etc. as required.	each	2029
24.4.13		Erection of steel tubular or rail pole strut in cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size) foundation including excavation and refilling and secured with holding clamps, bolts, nuts, etc. as required.	each	2219
24.4.14		Providing and making steel pole collar with cement concrete (1 cement : 3 coarse sand: 6 stone aggregate 20mm) of specified size and shape including form work, plastering if required, curing etc as required. (volume of pole/ pipe not to be deducted)	cum	3943

Item No.		Description	Unit	Through Rate
24.4.15	**B.S.E.N. 10025 High Masts**			
	24.4.15.1	Supply, installation, testing and commissioning of 12.5 mtr. long High Mast manufactured from B.S.E.N. 10025 or equivalent grade material in, 2 (two) section hot dip, galvanized inside and outside in single dip, suitable for wind velocity as per IS 875 Part-3 suitable for 6 nos. luminaire loading fully motorized (power tool) with starter & cable complete along with standard accessories supplied by the manufacturer with 3 nos. steel wire rope double drum system and twin dome aviation light with LED without foundation but including cost of set of foundation nut and bolts, installation at site complete in all respect upto entire satisfaction of Engineer -in-Charge Thickness of Top and Bottom Section = 3 mm (minimum) Top Dia = 150 mm and Bottom Dia = 360mm Thickness of Galvanization - Top = 65 micron (minimum) and Bottom = 85 micron (minimum)	each	145961
	24.4.15 .2	Supply, installation, testing and commissioning of 16 mtr. long High Mast manufactured from B.S.E.N. 10025 or equivalent grade material in, 2 (two) section hot dip, galvanized inside and outside in single dip, suitable for wind velocity as per IS 875 Part-3 suitable for 9/12 nos. luminaire loading fully motorized (power tool) with starter & cable complete along with standard accessories supplied by the manufacturer with 3 nos. steel wire rope double drum system and twin dome aviation light with LED without foundation but including cost of set of foundation nut and bolts, installation at site complete in all respect upto entire satisfaction of Engineer -in-Charge Thickness of Top and Bottom Section = 3 mm & 4mm (minimum) Top Dia = 150 mm and Bottom Dia = 410mm Thickness of Galvanization - Top = 65 micron (minimum) and Bottom = 85 micron (minimum)	each	186683
	24.4.15.3	Supply, installation, testing and commissioning of 20 mtr. long High Mast manufactured from B.S.E.N. 10025 or equivalent grade material in, 2 (two) section hot dip, galvanized inside and outside in single dip, suitable for wind velocity as per IS 875 Part-3 suitable for 9/12 nos. luminaire loading fully motorized (power tool) with starter & cable complete along with standard accessories supplied by the manufacturer with 3 nos. steel wire rope double drum system and twin dome aviation light with LED without foundation but including cost of set of foundation nut and bolts, installation at site complete in all respect upto entire satisfaction of Engineer -in-Charge Thickness of Top and Bottom Section = 3 mm & 4mm (minimum) Top Dia = 150 mm and Bottom Dia = 460mm Thickness of Galvanization - Top = 65 micron (minimum) and Bottom = 85 micron (minimum)	each	228346
24.4.16	Supply and erection of weather proof M.S. box of size 20 cm x 15 cm x 10 cm. covered with 3.00 mm thick M.S. sheet hinged cover, locking arrangement , housed in wall , including the cost of 1 no. 16 amp. 415 volts SP MCB and 2 nos. 63 amp. 415 volts neutral links fixed on hard wood board/10 mm Bakellite sheet in the M.S. box including painting and necessary connections .		each	603

Item No.		Description	Unit	Through Rate
	24.4.17	Supply and erection of weather proof M.S. box of size 20 cm x 15 cm x 10 cm. covered with 3.00 mm thick M.S. sheet hinged cover, housed in 1:3:6 cement concrete muff including suitable size of PVC pipe for in coming and out going cables, including the cost of 1 no. 16 amp. 415 volts SP MCB and 2 nos. 63 amp. 415 volts neutral links fixed on hard wood board/8 mm Bakellite sheet in the M.S. box including the cost of locking arrangement , painting and necessary connections etc. (Muff size 40 cm dia 50 cm high)	each	1008
24.5	**MISCELLANEOUS ITEMS**			
	24.5.1	Supply and jointing three core submersible flat cables of approved make with bare bunched copper conductor insulated and sheathed with PVC for submersible pump motors /fountain lights etc with voltage grade 1100 volts marked with IS:694, 1990 including cost of jointing, materials as well as carriage, loading, unloading etc. complete in all respect up to the entire satisfaction of Engineer- in-Charge.		
	24.5.1.1	Submersible Copper Cable 3 Core 1.5 sqmm	metre	57
	24.5.1.2	Submersible Copper Cable 3 Core 2.5 sqmm	metre	79
	24.5.1.3	Submersible Copper Cable 3 Core 4 sqmm	metre	111
	24.5.1.4	Submersible Copper Cable 3 Core 6 sqmm	metre	160
	24.5.1.5	Submersible Copper Cable 3 Core 10 sqmm	metre	205
	24.5.1.6	Submersible Copper Cable 3 Core 16 sqmm	metre	315
	24.5.1.7	Submersible Copper Cable 3 Core 25 sqmm	metre	466
	24.5.2	S/E mark double walled corrugated (DWC) HDPE, pipe 10 Kg/Cm2 ,laid 0.75 Metre below ground level including digging and refilling of earth including cost of suitable size socket/coupler for HDPE pipe including the cost of labour and material required to complete the job in all respect up to the entire satisfaction of Engineer in charge of the work.		
	24.5.2.1	DWC/HDPE pipe 40/32 mm outer dia/ inner dia	metre	112
	24.5.2.2	DWC/HDPE pipe 50/40 mm outer dia/ inner dia	metre	122
	24.5.2.3	DWC/HDPE pipe 63/50 mm outer dia/inner dia	metre	139
	24.5.2.4	DWC/HDPE pipe 90/75 mm outer dia/inner dia	metre	180
	24.5.2.5	DWC/HDPE pipe 120/105 mm outer dia/ inner dia	metre	270
	24.5.2.6	DWC/HDPE pipe 145/123 mm outer dia/ inner dia	metre	333
	24.5.2.7	DWC/HDPE pipe 180/150 mm outer dia/ inner dia	metre	384
24.6	**DISMANTLING**			
	24.6.1	Dismantling of over head lines comprising of copper/ aluminium over head conductor, G.I. wire, cross arms, insulators etc. as required.	kg	5
	24.6.2	Dismantling of pole/ street light standard/ strut embedded in brick ballast foundation etc. as required.	each	142
	24.6.3	Dismantling of pole/ street light standard/ strut embedded in cement concrete foundation etc. as required.	each	259
24.7	**RCC FOUNDATIONS FOR DG SET**			
		Providing RCC foundation of M20 grade (1 Cement:1.5 Stone aggregate: 3 Coarse sand) i/c excavation, steel reinforcement (Fe 500) @ 50 kg/cum of concrete contents, concrete cover 50mm, over a bed of 75mm thick PCC 1:5:10, of required dimensions as per OEM recommendations to provide levelled surface for placement of the DG set complete in all respects and as per directions of Engineer-in-charge (Size of foundation assumed = 5.0x1.8x1.0m) Unit: per cum	per cum	8637
		Note: As size and dynamic load of DG sets vary from manufacturer to manufacturer, item of DG set foundation have been included on the basis of cubic contents of RCC.		
	24.7.1	30 to 40 KVA DG Set	each	17594
	24.7.2	60 to 90 KVA DG Set	each	24814
	24.7.3	100 KVA DG Set	each	29403
	24.7.4	125 KVA DG Set	each	31132

Item No.		Description	Unit	Through Rate
	24.7.5	250 KVA DG Set	each	60308
	24.7.6	400 KVA DG Set	each	100796
	24.7.7	500 KVA DG Set	each	109338
	24.7.8	750 KVA DG Set	each	126422
24.8		**RCC FOUNDATIONS FOR OCTAGONAL POLES** Providing RCC foundation of M25 grade (1 Cement:1 Stone aggregate: 2 Coarse sand) i/c excavation, steel reinforcement (Fe 500) @80 kg/cum of concrete contents, concrete cover 50mm, anchor bolts etc. over a bed of PCC 1:5:10 of required dimensions for octagonal poles of various heights as per following specifications complete in all respects and as per directions of Engineer-in-charge		
	24.8.1	3m high pole	per foundation	2987
	24.8.2	4m high pole	per foundation	3190
	24.8.3	5m high pole	per foundation	4393
	24.8.4	6m high pole	per foundation	5487
	24.8.5	7m high pole	per foundation	5797
	24.8.6	8m high pole	per foundation	6732
	24.8.7	9m high pole	per foundation	8937
	24.8.8	10m high pole	per foundation	9300
24.9		**RCC FOUNDATIONS FOR HIGH MAST OCTAGONAL POLES** Providing RCC foundation of M25 grade (1 Cement:1 Stone aggregate: 2 Coarse sand) i/c excavation, steel reinforcement (Fe 500) @ 75 kg/cum of concrete contents, concrete cover 50mm, anchor bolts etc. over a bed of PCC 1:5:10 of required dimensions for high mast octagonal poles of various heights as per following specifications complete in all respects and as per directions of Engineer-in-charge		
	24.9.1	12.5 m high mast pole	per foundation	43381
	24.9.2	16m high mast pole	per foundation	57517
	24.9.3	20m high mast pole	per foundation	80274
	24.9.4	25m high mast pole	per foundation	129035
24.10		**CIVIL ITEMS (USED COMMONLY IN ELECTRICAL WORKS)**		
	24.10.1	Digging & refilling of trench 30 cm wide below ground level for erection of pipe/cable (up depth of 1 Metre. underground cable excluding the cost of cable/pipe complete in all respect.	cum	200
	24.10.2	Earth work in excavation in foundations, trenches etc. in all kind of soils, not exceeding 2 metres depth including dressing of bottom and sides of trenches, staking the excavated soil clear from the edge of excavation and subsequent filling around masonry, in 15cm layers with compaction, including disposal of all surplus soil, as directed with in a lead of 30 metres.	cum	153

Item No.	Description	Unit	Through Rate
24.10.3	cement concrete 1:3:6 with stone aggregate 20 mm nominal size in Kerbs and the like items, finished smooth with 6 mm thick cement plaster 1:3 on exposed surface including from work, placing and fixing in position, complete at the ground level or in first storey	cum	3938
24.10.4	cement concrete 1:2:4 with stone aggregate 20 mm nominal size in Kerbs and the like items, finished smooth with 6 mm thick cement plaster 1:3 on exposed surface including from work, placing and fixing in position, complete at the ground level or in first storey	cum	4874
24.10.5	Digging of pucca road of required size for making pit for of foundation for street light pole etc complete in all respect up to the entire satisfaction of Engineer-in charge.	cum	476
24.10.6	Digging of pucca road in required width for laying of cable / pipe complete in all respect up to the entire satisfaction of Engineer-in charge	cum	358

CHAPTER NO. 25

HVAC

CHAPTER NO. 25.0 - HVAC

NOTES:

1. Electrical wiring and fittings to be carried out in all building in accordance with Haryana PWD Specifications:-

2. Unless specified to the contrary, the labour rates for various items of Electrical Installation include handling of materials within 100 metres. Through rates include all rehandling of materials, at the site of work, and no payment is due to contractor on this account.

3. Unless specified to the contrary, the labour rates include the cost of water, tools and plants, labour and materials for scaffolding and centring and shuttering.

4. The through rates of all the items includes the cost of Supply, Errection, Testing and Commissioning

5. Scope of work under each item requires to complete the job in all respects and up to the entire satisfaction of the Engineer-in-Charge.

6. High side equipment's in Central AC or completes VRV system requires detailed design and a no of parameters are specified, specific to site application, hence such items have not been included in HSR.

7. Cost of Widow/Split AC etc. vary significantly on continuous basis, and fixing of such items is generally included in the cost, hence such items has not been included in the HSR.

8. Items covered in this schedule are primarily piping and ducting.

Item No.		Description	Unit	Through Rate
		Central Air Conditioning : Low side Items		
25.1		Supplying, fixing, testing and commissioning of condenser water pipes / non insulated chilled water pipes of following sizes of MS 'C' class along with necessary clamps, vibration isolators and fittings such as bends, tees etc. but excluding valves, strainers, gauges etc. adequately supported on rigid supports duly painted/buried in ground excavation and refilling etc. as per specification and as required complete in all respect.		
	25.1.1	300mm dia.	metre	6840
	25.1.2	250 mm dia	metre	5734
	25.1.3	200mm dia.	metre	4823
	25.1.4	150mm dia.	metre	3096
	25.1.5	125mm dia.	metre	2671
	25.1.6	100mm dia.	metre	2123
	25.1.7	80mm dia.	metre	1779
	25.1.8	65mm dia.	metre	1505
	25.1.9	50mm dia.	metre	1151
	25.1.10	40mm dia.	metre	919
25.2		Extra for Supplying and fixing of insulation on following nominal dia pipes with FR quality expanded polystyrene moulded pipe section of density 20 kg/cum after a thick coat of cold setting adhesive (CPRX compound) wrapping with 500 g polythene faced hessian and then applying 0.6 mm aluminium sheet cladding complete with felt strip at joints repairing etc. as per specifications and as required complete in all respect..	each	Add 25% of cost of pipe
25.3		Supplying, fixing, testing and commissioning of Butterfly valves PN 16 rated without insulation for water circulation as per specifications.		
	25.3.1	300mm dia.	each	19888
	25.3.2	250 mm dia	each	16814
	25.3.3	200mm dia.	each	10012
	25.3.4	150mm dia.	each	5097
	25.3.5	125mm dia.	each	3965
	25.3.6	100mm dia.	each	2983
	25.3.7	80mm dia.	each	2273
	25.3.8	65mm dia.	each	2040
	25.3.9	50 mm dia.	each	1775
	25.3.10	40mm dia.	each	1510
25.4		Supplying, fixing, testing and commissioning o NON - RETURN VALVE with dual plate of C I body SS plates vulcanized NBR seal flanged end & PN 16 pressure rating as specified.		
	25.4.1	200mm dia.	each	13364
	25.4.2	150mm dia.	each	9112
	25.4.3	125mm dia.	each	6111
	25.4.4	100mm dia.	each	4676
	25.4.5	80mm dia.	each	3845
	25.4.6	65mm dia.	each	3584
	25.4.7	50mm dia.	each	3268
	25.4.8	40mm dia.	each	2486
25.5		Supplying, fixing, testing and commissioning o BALANCING VALVE flanged end & PN 16 pressure rating as specified.		
	25.5.1	200mm dia.	each	38290
	25.5.2	150mm dia.	each	20321
	25.5.3	125mm dia.	each	15050

Item No.		Description	Unit	Through Rate
	25.5.4	100mm dia.	each	10630
	25.5.5	80mm dia.	each	7176
	25.5.6	65mm dia.	each	6137
	25.5.7	50mm dia.	each	5546
	25.5.8	40mm dia.	each	3398
25.6	Supplying, fixing, testing and commissioning o STRAINER flanged end & PN 16 pressure rating as specified.			
	25.6.1	200mm dia.	each	13364
	25.6.2	150mm dia.	each	9112
	25.6.3	125mm dia.	each	6111
	25.6.4	100mm dia.	each	4676
	25.6.5	80mm dia.	each	3845
	25.6.6	65mm dia.	each	3584
	25.6.7	50mm dia.	each	3268
	25.6.8	40mm dia.	each	2486
25.7	Supply, installation, and commissioning of factory/site fabricated GSS sheet metal rectangular/round ducting complete with neoprene rubber gaskets, elbows, hangers, supports etc. as per approved drawings and specifications of following sheet thickness complete as required.			
	25.7.1	Thickness 0.63 mm sheet	sqm	909
	25.7.2	Thickness 0.80 mm sheet	sqm	1088
	25.7.3	Thickness 1.00 mm sheet	sqm	1316
	25.7.4	Thickness 1.25 mm sheet	sqm	1565
25.8	Insulation on Butterfly /balancing/Non return/Strainer Valves by providing moulded PUF sections of density 20Kg/m3 or using nitrile rubber 20 mm thick etc as required, complete		each	Add 10% of cost of valve

CHAPTER NO. 26

HORTICULTURE and LANDSCAPING

CHAPTER 26.0 - HORTICULTURE AND LANDSCAPING

Notes:

1. The rates given under this chapter are subject to the PWD specifications.

2. Stacks of well decayed farm yard manure will be reduced by 8% for determining the volume.

3. The through rates for planting and maintenance are excluding the cost of irrigation water since water is available in most of the buildings. Wherever water is not available, cost may be included as per item no. 26.53 and quality of water may be decided as per specifications, soil type and the season.

4. The rates noted below are applicable for gardening works in lawns of the buildings, road sides, high slopes, canal embankments and arboriculture. The depth required to be excavated for planting of trees / grass etc. shall be decided by the Engineer - in - Charge considering the size of root ball, site and climatic conditions. In exceptional circumstances, for any deviation from standard specifications, additional payment/deduction shall be made accordingly.

5. The procurement of earth / sludge or manure shall be from the sources as specified by the Engineer - in - Charge. In case these are imported from a distant place longer than ones specified in the item/s, additional rates shall be paid.

6. Rates are inclusive of loading/unloading and stacking unless specified otherwise.

7. The cost of saplings of trees/shrubs, potted plants and specimen plant or grass etc. of higher specifications, if procured specially for planting shall be paid accordingly.

8. The cost of specialized items for irrigation systems which are not included in this chapter, if procured specifically shall be paid separately.

9. The T&P including lawn mower will be arranged by the agency in labour or through rates. If T&P and lawn mowers are supplied by the Department, deduction shall be made from the rates.

10. For calculation of regular establishment per Mali output lawn area 4048 sqm; trees 500 nos.; shrubs 600 nos.; pot plant ,small size up to 30 cm- 1500 nos. and big size more than 30 cm- 400 nos.; beds 600 sqm, edge/hedge 1500 metres; open area two acres and rough grass three acres has been taken. One supervisor and Head Mali for 20 no. Mali's is to be taken. For seasonal work 10% extra labour is to be taken.

11. The rates are exclusive ESI and EPF but inclusive of all other taxes, GST, Labour Welfare Cess and contractor's profit.

CHAPTER 26.0 - HORTICULTURE AND LANDSCAPING

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
26.1		Supplying and stacking at site of work well-decayed farm-yard manure from any available source, approved by the Engineer-in-charge including screening through sieve of I.S.designation 16 mm with 5 km lead.	cum	63	548	611
26.2		Supplying and stacking of good quality top layer garden earth free from debris and weeds, at site including royalty and carriage/lead 5 km (good earth measured in stacks will be reduced by 20 % for payment) only for filling of pots and flower beds .	cum	167	171	338
26.3		**Supplying at site good earth /soil-less media and/ or organic matter, preparation of top dressing mixture or pot media**				
	26.3.1	Supplying at site of work well-decayed farm-yard manure from any available source, approved by the Engineer-in-charge including screening through sieve of I.S.designation 16 mm with 5 km lead and supply of good earth making mixture in ratio of 1:2	cum	161	316	478
	26.3.2	Supplying at site of work well-decayed farm-yard manure from any available source, approved by the Engineer-in-charge including screening through sieve of I.S.designation 16 mm with 5 km lead and supply of good earth , FARM YARD MANURE and coco peat making mixture in ratio of 2:1:1	cum	100	925	1026
	26.3.3	Supplying at site of work well-screened fine sand and vermi compost at site of work and making mixture in ratio 1:1	cum	57	2972	3029
	26.3.4	Supplying at site of work well-screened Yamuna sand and Neem Cake at site of work and making mixture in ratio 3:1	cum	57	4255	4313
	26.3.5	Supplying at site of work coco peat , vermiculite and perlite in ratio of 2:1:1, adding fertilizer DAP @ 2 kg per cum mixture to make Potting media	cum	57	5030	5087
	26.3.6	Spreading of sludge, farm-yard manure or/and good earth in required thickness (Cost of sludge, farm-yard manure or/and good earth to be paid for separately)	cum	34	-	34
	26.3.7	Mixing earth and sludge or farm yard manure in proportion specified or as directed.	cum	24	-	24
26.4		**SITE CLEARANCE**				
	26.4.1	Excavation in dumped stones or malba including stacking of serviceable and unserviceable material separately and disposal of unserviceable material, lead up to 50m and lift up to 1.5 m, disposed material to be neatly dressed	cum	291	-	291
	26.4.2	Surface dressing of ground including removing rank vegetation and inequalities not exceeding 15 cm deep and disposal of rubbish, lead up to 50 m and lift up to 1.5 m in all kind of soils .	sqm	14	-	14
	26.4.3	clearing jungle manually including uprooting rank vegetation , grass, woody vegetation up to 30cm girth measured at height 1 m above ground level and removal of rubbish up to a distance of 50 m out side the periphery of the area cleared	sqm	7	-	7
	26.4.4	Felling of trees of girth (measured at a height of 1 m above ground level) including cutting of trunks and branches, removing the roots and stacking of serviceable material , disposal of unserviceable material and filling in pits and depression- Beyond 30cm girth up to and including 60 cm girth .	each	194	-	194

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	26.4.5	Felling of trees of girth (measured at a height of 1 m above ground level) including cutting of trunks and branches, removing the roots and stacking of serviceable material , disposal of unserviceable material and filling in pits and depression- Beyond 60cm girth up to and including 120 cm girth .	each	920	-	920
	26.4.6	Felling of trees of girth (measured at a height of 1 m above ground level) including cutting of trunks and branches, removing the roots and stacking of serviceable material , disposal of unserviceable material and filling in pits and dressing - Beyond 120cm girth up to and including 240 cm girth .	each	4117	-	4117
	26.4.7	Felling of trees of girth (measured at a height of 1 m above ground level) including cutting of trunks and branches, removing the roots and stacking of serviceable material , disposal of unserviceable material and filling in pits and dressing above 240 cm girth	each	7266	-	7266
	26.4.8	Uprooting rank vegetation and weeds by digging the area to a depth of 60 cm removing all weeds and other growth with roots by forking repeatedly, breaking clods, rough dressing, flooding with water, uprooting fresh growths after 10 to 15 days and then fine dressing for planting new grass, including disposal of all rubbish with all leads and lifts.	sqm	40	-	40
	26.4.9	Trenching in all kinds of soil up to a depth of 60 cm including removal and stacking of serviceable MATERIALs and then disposing of by spreading and neatly levelling with in a lead of 50 metres and making up the trenched area to proper levels by filling with earth or earth mixed with sludge or/an farm-yard manure before and after flooding trench with water (excluding cost of imported earth and sludge or farm-yard manure)	cum	51	-	51
	26.4.10	Rough dressing the trenched ground including breaking clods.	100 sqm	1	-	1
	26.4.11	Uprooting weeds from the trenched area after 10 to 15 days of its flooding with water including disposal of uprooted vegetation	sqm	3	-	3
	26.4.12	Fine dressing the ground	sqm	2	-	2
26.5		Making lawns with rough grassing including uprooting rank vegetation and weeds by digging area to a depth of 30 cm , removing all weeds and other growth with roots by forking repeatedly, ploughing and dragging with 'swagha' breaking of clods, removal of rubbish, dressing and supplying doob grass roots, and planting at 15 cm apart, including supplying and spreading of farm-yard manure at the rate of 0.18 cum per 100 sqm fertilizers etc	sqm	13	1	14
26.6		Maintenance of rough grassing, including 50 gm DAP and 50 gm Urea fertilizer application , watering and mowing etc for a period of one year.	per sqm per year	19	-	19
26.7		Grassing of play grounds with doob grass including uprooting rank vegetation and weeds by digging area to a depth of 30 cm , removing all weeds and other growth with roots by forking repeatedly, ploughing and dragging with 'swagha' breaking of clods, removal of rubbish, dressing and supplying doob grass roots, and planting at 10 cm apart in both directions , watering weeding including supplying and spreading of farm-yard manure at the rate of 0.18 cum per 100 sqm fertilizers DAP 50 g per sqm etc and maintenance till weed free turf is formed	sqm	15	9	24

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
26.8		Maintenance of grassy grounds including fertilizer application of 50 g DAP and 50 g Urea, watering, weeding, top dressing with good earth and manure mixture @ 0.0125 cum, maintaining fine level, regular mowing and removal of rubbish with all lifts and leads.	per sqm per year	23	-	23
26.9		Turfing lawns with fine grassing (selection no.1/ Bermuda and Mexican/Neelgiri grass)including ploughing, dressing including breaking of clods, removal of rubbish, dressing and supplying of selection no. 1 / Bermuda doob grass and Mexican/Neelgiri grass roots, including supplying and spreading of farmyard manure at the rate of 0.60 cum per 100 sqm, maintenance till weed free turf is formed				
	26.9.1	Planting selection no. 1 grass roots in rows 5 cm apart in both directions .	sqm	30	31	61
	26.9.2	Planting selection no. 1 grass roots in rows 7.5 cm apart in both directions .	sqm	26	22	48
	26.9.3	Planting selection no. 1 grass roots in rows 10 cm apart in both directions .	sqm	20	16	36
	26.9.4	Providing and fixing Selection no. 1 grass turf with earth 50mm to 60mm thickness and ramming with required wooden tools, rolling with light roller to make the surface	sqm	26	86	112
	26.9.5	Planting Neelgiri/ Mexican grass roots in rows 5 cm apart in both directions.	sqm	24	77	102
	26.9.6	Planting Neelgiri/ Mexican grass roots in rows 7.5 cm apart in both directions.	sqm	21	58	80
	26.9.7	Planting Neelgiri/ Mexican grass roots in rows 10 cm apart in both directions.	sqm	21	40	61
	26.9.8	Providing and fixing Neelgiri/ Mexican grass turf with earth 50mm to 60 mm thickness and ramming with required wooden tools, rolling with light roller to make the surface smooth and even.	sqm	21	231	252
26.10		Maintenance of fine grass lawn for one year including fertilizer application, DAP @ 20gm/sqm, urea 40gm/sqm, watering, weeding, top dressing with good earth and manure mixture 2:1 @ 0.01cum per sqm, maintaining fine level, regular mowing and removal of rubbish with all lifts and leads.	sqm	45	4	50
26.11		**Removal of weeds from grassy lawn**				
	26.11.1	Weeding out of lawn, where weeds are up to 50%, by removal of all weeds and other wild growth with roots by forking including disposal of garden rubbish with all leads and lifts complete.	sqm	13	-	13
	26.11.2	Weeding out of lawn, where weeds are up to 25%, by removal of all weeds and other wild growth with roots by forking including disposal of garden rubbish with all leads and lifts complete.	sqm	7	-	7
	26.11.3	Broadleaf Weed control in garden using weedicide, once, including cost of chemical.@3gm Metsulfuron methyl 20% wg per 1000sqm	sqm	0.13	0.18	0.31
	26.11.4	Nut grass (Motha) control in garden using weedicide, once, including cost of chemical Halosulfuron methyl 75% WD @8.40g per 1000 sqm	sqm	0.13	0.56	0.69
26.12		Renovating lawns including, weeding, cheeling the grass, forking the ground, top dressing with mixture of good earth and manure 2:1, mixing the same with forked soil, watering and maintaining the lawns, for 30 days or more, till the grass forms a thick lawn, free from weeds, and fit for mowing and disposal of rubbish as directed, including supplying good earth, if needed, including the cost of well decayed farm-yard manure1.25 cum, Yamuna sand 1.25 cum per 100 sqm .	sqm	29	9	39

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
26.13		Digging holes in all kinds of soil, and refilling the same, with the excavated earth, mixed with well decayed farmyard manure (cost of well decayed farm yard manure to be paid separately)				
	26.13.1	Hole 1.2 metre dia and 1.2 metre deep	per hole	65	-	65
	26.13.2	Hole 0.90 metre dia and 0.90 metre deep	per hole	41	-	41
	26.13.3	Hole 0.75 metre dia and 0.75 metre deep	per hole	24	-	24
	26.13.4	Hole 0.60 metre dia and 0.60 metre deep	per hole	12	-	12
	26.13.5	Hole 0.45 metre dia and 0.45 metre deep	per hole	5	-	5
	26.13.6	Digging of pits in all kinds of soil & refilling the same, with the excavated earth mixed with well decayed farm yard manure @ 30% of pit volume and insecticide for termite control (Excluding cost of FYM and Insecticide.)	cum	71	-	71
26.14		Supplying and planting in prepared pits and watering, healthy , vigorous growing , permanent trees including ,application of 10 ml chlorpyriphos 20% EC, planting desired disease free, 200 cm to 220 cm height ,5 cm to 6 cm calliper size stem , full of foliage ornamental tree sapling each to be supplied in 30cm x 30cm poly bags,	each	16	160	176
26.15		Maintenance of tree including fertilization, application of insecticide, watering, weeding, training, pruning,				
	26.15.1	Maintenance of tree for one year for the 1st three years of age including weeding, hoeing , plant protection , watering from Deptt. source , application of 10 ml chlorpyriphos four times, 0.0289 cum FYM each,50 gm urea and 50 g DAP twice ,replacement of casualty ,disposal of debris and other activities.etc.	each	391	47	438
	26.15.2	Maintenance of tree for one year for the age of tree of 4th, 5th and next years including weeding, hoeing, plant protection, the watering from Deptt. source, application of 10 ml chlorpyriphos four times, 0.0289 cum FYM each, 50 gm urea and 50 g DAP twice, replacement of casualty etc.	each	218	52	270
26.16		Pruning, trimming, shaping of mature trees /shrubs (ht 15 feet and above) including removal and disposal of cut materials up to 50m lead.	each	50	-	50
26.17		**Stacking of Trees**				
	26.17.1	Providing and fixing single stack for a tree with bamboo 38 mm dia, 2.40 m long including rope, wire etc.	each	7	77	84
	26.17.2	Providing and fixing double stake for tree with bamboos 38 mm dia, 2.40 m long including rope, wire etc.	each	13	154	167
	26.17.3	Three point guying of large palms and trees with coir ropes and stacking with 30 mm dia 2.40 m long bamboo.	each	13	128	142
26.18		Supply and planting of disease free healthy , vigorous growing more than 75 cm height permanent shrubs in already prepared pits, supplied in 25 cm x 20 cm poly bags , application of 10 ml chlorpyriphos 20% E.C. termiticide each and watering supplied through the tractor tanker.	each	3	64	67
26.19		Maintenance of shrub for one year including weeding, hoeing, plant protection, watering from Deptt. source, application of 10 ml chlorpyriphos four times in a year , 0.0289cum FYM each, 20 gm urea and 20 gm DAP twice, replacement of casualty etc. with same species and same age of plant				
	26.19.1	Individual shrubs	each	277	47	325
	26.19.2	Shrubs planted in groups making continuous block.	sqm	297	27	323

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
26.20	Supply and Planting rare and specimen tree plants in already prepared pits (Ficus starlight 150 cm height , Terminalia 210 cm height, menatalis , Michelia champaca hybrid more than 180 cm height, Cyprus (Golden juniperous) more than 180 cm height, topiary of 10 to 12 no. well trimmed bolls of more than 30cm size of Ficus nuda, Ficus retusa, Ficus long island , Ficus panda more than 180 cm height, Golden bottle brush , casurina equistefolia , Bottle palm with stem circumference at base more than 40cm ,Washingtonia palm of healthy clear stem height below leaf more Thant 90 cm) including , fertilizer and insecticides chlorpyriphos 20 ml per pit, planting of 180cm to 210cm tall sapling in position and flooding with water .specie of plant will be decided by engineer in charge.	each	11	1109	1119
26.21	Maintenance of specimen tree for one year including weeding, hoeing , plant protection , watering from Deptt. source , application of 20 ml chlorpyriphos four times, 0.0289 cum FYM each,50 gm urea and 50 gm DAP twice ,replacement of casualty ,disposal of debris and other activities.etc.	each	487	165	652
26.22	**Planting seasonal flower in beds**				
26.22.1	Supply and planting flower beds including digging 30 cm deep bed and refilling of beds with excavated soil and FYM 0.0508 cum per sqm , Fertilizer DAP 50 gms and insecticides chlorpyriphos 10 ml per sqm , planting of F1 hybrid flower saplings to be supplied in tray pots / thumb pots at 20 cm distance from plant to plant and row to row minimum 25 no . plants per sqm	sqm	41	197	238
26.22.2	Planting flower beds including digging 30 cm deep bed and refilling of beds with excavated soil and FYM 0.0508 cum per sqm , Fertilizer DAP 50 gms and insecticides chlorpyriphos 10ml per sqm , planting of F1 hybrid well bloomed flower saplings to be supplied in polybags at 25cm distance from plant to plant and row to row minimum 15 no . plants per sqm	sqm	41	664	705
26.23	Maintenance of flower beds for one year including , application of FYM 0.050 cum , insecticide 10 ml, fertilizer 50 gm ,per sqm , planting F1 Hybrid flower seedlings to be supplied in Plastic tray pots/thumb pots in winter, summer and rainy season @ 20cm apart row to row and plant to plant, 25 no. plants per sqm each time each season stacking with Kaanas and including all horticultural practices.	sqm	176	372	548
26.24	Supply and planting bulbous flower of football lily, amaryllis lily , Lilium, gladiolus, Cladium of hybrid colour vise beds including digging 30 cm deep bed and refilling of beds with excavated soil and FYM 0.0508 cum per sqm , Fertilizer DAP 50 gms and insecticides chlorpyriphos 10 ml per sqm , planting of bold size flower bulbs of improved cultivars to be supplied and planted at 23 cm distance from plant to plant and row to row minimum 18 no . bulbs per sqm	sqm	41	402	443
26.25	Maintenance of bulbous flower beds for one year including , application twice of FYM 0.050 cum , insecticide 10ml, fertilizer 20 gm per sqm , planting bulbous flower bulbs of football lily, amaryllis lily , Lilium, gladiolus, Cladium of hybrid colour vise to be supplied in Plastic tray pots/thumb pots in winter, summer season @ 30cm apart row to row and plant to plant, 18 no plants per sqm each time each season stacking with Kaanas and including all horticultural practices	sqm	192	804	996

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
26.26	Supply and planting ground cover plants including digging 30 cm deep bed and refilling of beds with excavated soil and FYM 0.0508 cum per sqm , Fertilizer DAP 50 gms and insecticides chlorpyriphos 10ml per sqm , planting of saplings at 23cm distance from plant to plant and row to row, minimum 19 no. plants per sqm	sqm	41	230	271
26.27	Maintenance of ground cover plants for one year including application of FYM 0.0508 cum , insecticide 10ml, fertilizer 20 gm ,per sqm, replacement of casualty with same specie of plant and all horticultural practices.	sqm	143	59	202
26.28	Supply and planting healthy disease free 30 cm to 45 cm height ground cover of rare species plants .i.e. Rasselia, Chlorophytum, Juniperous prostata, Asparagus grass, cuphea chinensis, ipomea, Portulacaria (Jade plant)Zebrina Trades Cantia etc) including digging 30 cm deep bed and refilling of beds with excavated soil and FYM 0.075cum per sqm , Fertilizer DAP 100 gms and insecticides chlorpyriphos 10ml per sqm , planting of saplings of rare specie of plants to be supplied in 20cm x 20cm ' polybags with full of leaves and in healthy condition at 30cm distance from plant to plant and row to row minimum 15 no. plants per sqm ,and watering	sqm	55	402	457
26.29	Maintenance of Specimen ground cover plants for one year including application of FYM 0.0508 cum , insecticide 10ml four time in a year , fertilizer 50 gm DAP and Urea each per sqm twice in a year , replacement of casualty with same specie of plant and including all horticultural practices.	sqm	163	89	252
26.30	Supplying healthy, well branched, well bloomed and Planting rose beds including digging 30 cm deep bed and refilling of beds with excavated soil and FYM 0.0508 cum per sqm , Fertilizer DAP 50 gms and insecticides chlorpyriphos 10ml per sqm , planting of hybrid Budded rose saplings to be supplied in earthen pots /20cm x20cm polybags , planting of sapling at 45 cm distance from plant to plant and row to row and 5 no. plants per sqm	sqm	25	153	178
26.31	Maintenance of rose beds for one year including application of FYM 0.0289 cum, DAP 100gm ,insecticide chlorpyriphos 20% EC 10 ml, Fungicide Blitox/bavistin 20gm per sqm replacement of dead plants with same specie/quality of plant.	sqm	112	45	157
26.32	Planting permanent edging plants around beds, lawn or along paths including of digging of trench 45 cm wide to 15 cm depth, refilling the excavated earth, mixed with farm-yard manure, supplied at the rate of 0.9 cum per sqm and supplying and planting hedge/ edge at 20 cm apart in one or two rows @11no. well trimmed bushy ,multi branched ,30 cm to 45 cm in height plants to be supplied in 15 cm x 15 cm poly bags per sqm .	metre	16	93	109
26.33	Maintaining the permanent edging plants for the one year including application of FYM @ 0.0289 cum ,chlorpyriphos 9ml, urea and DAP 40gm each per year ,watering, hoeing weeding trimming and shaping ,replacement of casualty as and when noticed.	metre	52	21	73
26.34	Planting permanent hedges including digging of trenches, 60 cm wide and 45 cm deep, refilling the excavated earth, mixed with farm-yard manure, supplied at the rate of 1.62 cum per 18 sqm, DAP 0.6kg, Chlorpyriphos 20%EC@ 0.20 litre per 18 sqm and supplying and planting hedge at 30 cm apart in two rows @ 202 no. well trimmed bushy ,multi-branched ,30 cm to 45 cm in height plants to be supplied in 15 cm x 15 cm poly bags per 18 sqm .	sqm	18	240	258
26.35	Maintaining the hedges for one year including watering, hoeing weeding trimming and shaping ,replacement of casualty as and when noticed, application of Farm yard manure @ 0.0127 m layer over surface, application of insecticide chlorpyriphos @ 2ml per sqm twice , urea @40gm and DAP @10 gm per sqm once in a year.	sqm	240	34	274

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
26.36	Maintaining and Cutting of designer hedge/edge for one year including removing of cut materials, cleaning, hoeing of hedge/edge bed, watering, manuring @ 0.0127 cum/sqm and applying insecticides @ 2ml/sqm and fungicides @ 1ogm/sqm etc including cost of insecticide, water and spraying machine.	sqm	328	34	361
26.37	Providing black nursery polybags filled with mixture of screened manure and good earth in the ratio 1:2 filled to full volume.				
26.37.1	Polyurethane bags size 10 cm dia x 15 cm height	per bag	1	1	1
26.37.2	Polyurethane bags size 15 cm dia x 20 cm height	per bag	2	2	4
26.37.3	Polyurethane bags size 25 cm dia x 30 cm height	per bag	8	8	16
26.37.4	Polyurethane bags size 35 cm dia x 35 cm height	per bag	23	18	40
26.37.5	Polyurethane bags size 45 cm dia x 45 cm height	per bag	45	34	80
26.38	Supply of well burnt cylindrical earthen pots and filling of the following size empty pots with mixture of good earth & manure in the ratio of 2:1 (Two part of Good earth & one part of manure)and placing them				
26.38.1	15 cm size of pots filled to full volume.	per pot	1	34	35
26.38.2	20 cm size of pots filled to full volume.	per pot	2	55	57
26.38.3	25 cm size of pots filled to full volume.	per pot	4	83	87
26.38.4	30 cm size of pots filled to full volume.	per pot	5	120	125
26.38.5	Well finished earthen tray pots 23 cm dia x 23 cm deep size	each	10	98	108
26.38.6	Well finished earthen tray pots 30 cm dia x 23 cm deep size	each	5	200	205
26.39	Providing Circular /square Cement Concrete pots of specified size, cast with cement concrete of nominal mix 1:2:4(1 cement:2 coarse sand:4 graded stone aggregate 6 mm nominal size), including required from work, finishing with cement punning on exposed surface, curing for specified period and stacking in required rows & height, all complete as per direction of Officer-in-Charge. Filling 2/3rd volume with mixture of good earth and screened manure in the ratio 2:1.				
26.39.1	cement pots size 30cm x30cm	per pot	5	131	136
26.39.2	cement pots size 35 cm x35 cm	per pot	11	165	177
26.39.3	cement pots size 45cm x45cm	per pot	24	278	302
26.39.4	cement pots size 50 cm x 50 cm	per pot	33	443	476
26.39.5	cement pots size 60cm x 60 cm	per pot	57	595	651
26.40	Providing 1st quality heavy duty plastic pot with base plate at site of work, filling with mixture of good earth and screened manure and coco peat in the ratio 2:1:1				
26.40.1	15 cm size of pots filled to 2/3rd volume	per pot	1	15	16
26.40.2	20 cm size of pots filled to 2/3rd volume.	per pot	2	31	33
26.40.3	25 cm size of pots filled to full volume.	per pot	4	62	67
26.40.4	30 cm size of pots filled to full volume.	per pot	7	102	110
26.40.5	35 cm size of pots filled to 2/3rdvolume.	per pot	10	123	134
26.40.6	40 cm size of pots filled to 2/3rd volume.	per pot	15	192	207
26.40.7	45 cm size of pots filled to 2/3rd volume.	per pot	22	309	331
26.40.8	50 cm size of pots filled to 2/3rd volume.	per pot	30	475	505
26.40.9	60 cm size of pots filled to 2/3rd volume.	per pot	52	857	909
26.41	Supplying and display seasonal flowers of F1 hybrid quality in earthen pots at site of work, as specified by Engineer-in-charge				
26.41.1	Seasonal well bloomed flower seedlings in 20 cm size of pots	per pot	2	75	77
26.41.2	Seasonal well bloomed flower seedlings in 25 cm size of pots	per pot	4	116	120
26.41.3	Supply and planting F1 hybrid seasonal plants in well bloomed flowering stage in 30 cm size of pots	per pot	3	194	196

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
26.42	Supplying and display Dahlia/Chrysanthemum plants in earthen pots				
26.42.1	Korean/ Spray type chrysanthemum cuttings in 25 cm size of pots, 3 cuttings in per pot.	per pot	2	109	111
26.42.2	Ball type Dahlia/Chrysanthemum cuttings in 25 cm size of pots 3 cutting per pot	per pot	3	91	94
26.42.3	Planting and supplying exhibition quality Dahlia/Chrysanthemum plants well bloomed flowering stage in 30 cm size of pots	per pot	3	347	350
26.43	Maintenance of seasonal plants, Dahlia and Chrysanthemum in pots for one month including replacement of seasonal pot on breakage .	per pot	9	7	17
26.44	Supplying and display indoor decorative plants with fresh foliage,60cm-75 cm in height' 3-4 stems per pot, full of leaves, suitable for earthen pots / plastic pots size 30cm dia and 30cm deep(average size),and displaying indoor including the cost of material (garden soil, coco peat, FYM in2:1:1 proportion),with ,PVC plate. complete in all respects including cost of pot .				
26.44.1	In Plastic Pot	per pot	3	240	243
26.44.2	In Earthen Pot	per pot	11	260	271
26.45	Maintenance of indoor potted plants for one year including watering, application of fertilizer NPK 20:20:20 @20 gm ,and vermi compost 50 gm , manure, snowcem/ apex every month, replacement of pot plate, broken pot, dead plant with same specie of plant etc.	per pot	214	28	242
26.46	Supplying and display specimen pot plant of raphis palm , cephorthia palm 150 cm,areca palm 150-180 cm and similar high quality plants of croton petra 3 plants each in 45 cm plastic pots with plastic plate for indoor display at site of work. with fresh foliage,90 cm- 180 cm in height' 6-8 stems per pot, full of leaves, ,and displaying indoor including the cost of material (garden soil, coco peat, FYM in 2:1:1 proportion),with ,PVC plate. complete in all respects.	per pot	27	858	885
26.47	Maintenance of indoor specimen potted plants in 45 cm plastic pot/ earthen pot/ cement pot for one year including watering, application of fertilizer NPK 20:20:20 @30 gm and vermi compost 100 gm twice , manure, snowcem/ apex every month, replacement of pot plate, replacement of 30% pots every year with same quality plant , dead plant with same specie of plant etc.	per pot	643	87	730
26.48	Supplying decorative plant in 30 cm cement pots for outdoor display at site of work with fresh foliage of 60cm-75 cm in height' 3-4 stems per pot, full of leaves, suitable for earthen pots / plastic pots size 30cm dia and 30cm deep(average size) and displaying including the cost of material (garden soil, coco peat, FYM in2:1:1 proportion),with ,PVC plate. complete in all respects.	per pot	11	349	360
26.49	Maintenance of outdoor potted plants in 30 cm earthen / cement pot for one year including watering, application of fertilizer NPK 20:20:20 @20 gm ,and vermi compost 50 gm , manure, snowcem/ apex every month, replacement of pot plate, broken pot, dead plant with same specie of plant etc.	per pot	391	71	462
26.50	Supplying and display of specimen pot plant of Cyprus , Ficus starlight, Topiary of Ficus retusa and similar high quality plants in 45 cm cement pots with plastic plate for outdoor display at site of work. with fresh foliage,105 cm- 150 cm in height, 3-4 stems per pot, full of leaves, ,and displaying indoor including the cost of material (garden soil, coco peat, FYM in 2:1:1 proportion),with ,PVC plate. complete in all respects.	per pot	27	870	897

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
26.51	Maintenance of outdoor specimen potted plants in more than 45 cm cement pots/earthen pot for one year including watering, application of fertilizer NPK 20:20:20 @30 gm and vermi compost 100 gm twice , manure, snowcem/ apex every month, replacement of pot plate, replacement of 30% pots every year with same quality plant , dead plant with same specie of plant etc.	per pot	490	88	578
26.52	Preparation of mounds of various size and shapes including supply of good earth, in layers not exceeding 20 cm in depth, breaking of clods, watering each layer, dressing etc, lead up to 50 m and lift up to 1.5 m complete as per directions (excluding cost of good earth and manure which will be supplied separately.)	cum	220	-	220
26.53	Watering of trees, shrubs, ground covers etc. through tractor tanker of 5000 litre capacity including cost of water with all leads and lifts and including cost of water, fuel ,filling of tanker, watering at site with all leads and lifts as per direction of officer - in-charge.(for 1 No. Tree 30 litres water per plant 27 no . irrigations per year , shrub 20 litres/ per plant 27 no irrigations per year , lawn 2.5 cm layer or 25 litre/sqm 50 no irrigations per year , ground cover / flower bed / rose bed 2.5 cm layer or 25 litre/sqm 40 no. irrigations per year , hedge for 2.5 cm layer or 25 litre/sqm 40 no. irrigations per year , Pot plant 3 litre water daily 250 irrigations per year	per trip of 5000 litres	-	525	525
26.54	Anti termite treatment of lawns, mature trees.				
26.54.1	Treatment of lawn area through Imidacloprid 30.5% SC including cost of insecticide, water and spraying machine	sqm	-	4	4
26.54.2	Treatment around mature trees by digging holes 30 cm deep and 4 cm dia, 6 to 7 holes around tree using 1% chemical emulsion of Chlorpyriphos 20% E.C using minimum 150 ml insecticide per plant.	each	10	77	87
26.55	Edging of paths/ beds with bricks/tiles laid dry, including required excavation, refilling, consolidating with hand and spreading neatly surplus earth within a lead of 50 meters				
26.55.1	Bricks laid lengthwise with half brick depth	metre	6	31	36
26.55.2	Alternate bricks laid horizontally and vertically	metre	6	40	46
26.55.3	Vertical bricks, half brick projecting above ground	metre	6	61	67
26.55.4	Brick inclined at 60 deg to horizontal	metre	6	52	58
26.55.5	Tiles laid lengthwise with half tile depth	metre	6	31	36
26.55.6	Alternate tiles laid horizontally and vertically	metre	6	40	46
26.56	Providing & fixing of Haridwar Pebbles(White river stone size of 2" to 2.50"dia in natural colour at site of work including loading, unloading, carriage and all taxes paid etc. as per direction of office in charge.	quintal	97	1331	1428
26.57	Clearing herbaceous wild growth				
26.57.1	Clearing by manual labour, collection and disposal of undesirable material including digging roots with Kassi and khurpa	sqm	4	-	4
26.57.2	From central verge, narrow road berm or uneven area with bush cutter, collection and disposal of undesirable material.	sqm	2	-	2
26.57.3	From open areas with shrub master and brush cutter, collection and disposal of undesirable material.	ha	11170	-	11170
26.58	Supply and installation of garden bench				

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	26.58.1	Chair type garden bench with L-shaped sides made of reinforced concrete (M30), thickness 100 mm, overall height 1000 mm, base width 620 mm. Back and seat shall consist of 5 Nos. reinforced concrete planks 1500 mm x 100 mm x 50 mm one plank 1500 mm x 200 mm x 50 mm. Seating height of the bench shall be 450 mm. The bench shall be fixed with nuts on concrete mount, all holes sealed after assembly and installation. All materials required to be as per BIS specifications.	each	57	5334	5391
	26.58.2	Rectangular garden bench with h-shaped sides made of reinforced concrete (M30), thickness 100 mm, back height 750 mm, base width 450 mm. Back and seat shall consist of rectangular reinforced concrete planks 1500 mm x 350 mm x 50 mm. Seating height of the bench shall be 450 mm. The bench shall be fixed with nuts on concrete mount, all holes sealed after assembly and installation. All materials required to be as per BIS specifications.	each	84	3943	4027
	26.58.3	Cast Iron bench of 1800 mm length, 900 mm width, 450 mm seating height, sides made of cast iron. Seat and back shall be made of 10 strips of M.S. pipes 63 mm x 25 mm of 14 gauge with one M.S. Flat 25 x 10 mm welded at the centre, below and back of the seat and back rest. Spray painted with approved brand paint. Fixed by grouting with 1:2:4 cement concrete (Minimum weight of each bench 105 kg). All materials required to be as per BIS specifications.	each	84	12726	12809
26.59		Supply of wooden planter covers for indoor pot plants.				
	26.59.1	Wooden planter 420mm x 420mm x 420mm, consisting of 4 panels each made of 4 No's wooden slats of size 420 mm x 38 mm x 38 mm, 20 No's wooden slats of 420 mm x 38 mm x 25 mm, and 4 No's water proof plywood sheets 4 mm thick of size 344 mm x 382 mm fixed on inner side of each panel fixed with nails, one coat of primer and two coats of enamel paint.	each	566	783	1349
	26.59.2	Wooden planter for 10 inch pot, outer size 330mm x 330mm x 320mm, made of 30 mm x 20 mm horizontal wooden slats and 30 mm x 30 mm vertical slats fixed with nails, finished with spirit polish and varnish as per specifications complete.	each	1230	544	1775
	26.59.3	Wooden planter for 12 inch pot, outer size 400mm x 400mm x 360mm, made of 40 mm x 20 mm horizontal wooden slats and 30 mm x 30 mm vertical slats fixed with nails, finished with spirit polish and varnish as per specifications complete.	each	1508	837	2345
	26.59.4	Wooden planter for 18 inch pot, outer size 600mm x 600mm x 600mm, made of 55 mm x 20 mm horizontal wooden slats and 40 mm x 40 mm vertical slats fixed with nails, finished with spirit polish and varnish as per specifications complete.	each	1948	1968	3916
26.60		Half brick circular tree guard in Ist class bricks internal dia 1.25 metre and height 1.2 metre above ground and 0.20 metre below ground, bottom two courses laid dry and top three courses in cement mortar (1:6) i.e. 1 cement and 6 sand and the intermediate course.	each	270	1427	1696
26.61		Providing and fixing bamboo tree guard with 4 No. legs of bamboo sticks of 25mm dia and 1.5 metre length. Rings of bamboos duly attached to the legs with nuts bolts and washers. Legs up to 30cm dipped in bitumen.	each	27	586	612

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
26.62		PCC tree-guard with appropriate reinforcement with MS bars of 8mm, 6mm and 4mm, having four panels of equal size and specification, consisting of overall height of 1800 mm and overall width of 620 mm including all carriage. All materials required to be as per BIS specifications.	each	76	2196	2272
26.63		Providing and fixing steel tree guard				
	26.63.1	MS circular tree guard 60 cm dia and 1.8 metres. height above ground level formed of 4 Nos. of angle irons of 25 x 25 x 3 mm 2.10 m long, 4 Nos. 25mm x 3mm, 1.5 m long vertical MS flat welded to 3 no. 25 mm x 6mm M.S flat iron rings in two halves bolted together with 8mm dia & 30 mm long bolts and fixing 250 mm X 100 mm iron plate, fixed in ground with 1:2:4 cement concrete, complete in all respects. Minimum weight should be 20.85 kg before primer and paint .	each	360	1524	1884
	26.63.2	MS circular tree guard with wire mesh, having 4 No. legs of angle iron size 25x25x3mm, 1.80 metre. height, 3 No rings of M.S Flats of 25 x 6 mm, 60cm dia and fixing of wire mesh size 50x75mm. Tree guard in two halves bolted together with 8mm dia & 30 mm long bolts, and fixing 250 mm X 100 mm iron plate, fixed in ground with 1:2:4 cement concrete, complete in all respects. Minimum weight should be 23 kgs	each	333	1714	2047
	26.63.3	M.S. Bar circular iron tree guard 60 cm dia, 1.8 m total height, formed of 3 Nos. of MS Round Bars 12 mm dia. 1.9 m long, wire mesh 50 x 75 mm welded to 3 no. 8 mm M.S. Bars rings, fixed in ground with 1:2:4 cement concrete, complete in all respects. Minimum weight 14.32 kg	each	269	1099	1369
	26.63.4	M.S. Flat iron tree guard 45 cm square and 1.8 metres. height above ground level formed of 4 Nos. of angle irons of 25 x 25 x 3 mm 2.1 m long, 5 Nos. 25mm x 3mm horizontal MS flats welded to verticals on each side. Tree guard in two halves bolted together with 8mm dia & 30 mm long bolts, fixed in ground with 1:2:4 cement concrete, complete in all respects. Minimum weight 15.67 kg	each	299	1184	1483
	26.63.5	M.S. Flat iron tree guard 45 cm square and 1.8 metres. height above ground level formed of 4 Nos. of angle irons of 25 x 25 x 3 mm 2.1 m long, 5 Nos. 25mm x 3mm horizontal MS flats welded to verticals on each side, wire mesh 50 x 75 mm welded to angles and flats. Tree guard in two halves bolted together with 8mm dia & 30 mm long bolts, fixed in ground with 1:2:4 cement concrete, complete in all respects. minimum weight 17.54 kg	each	366	1458	1824
	26.63.6	M.S. Flat iron tree guard 45 cm square and 0.8 metres. height above ground level formed of 4 Nos. of angle irons of 25 x 25 x 3 mm 1.1 m long, 2 Nos. 25mm x 3mm horizontal MS flats welded to verticals on each side. Tree guard in two halves bolted together with 8mm dia & 30 mm long bolts, fixed in ground with 1:2:4 cement concrete, complete in all respects. Minimum weight 7.63 kg	each	166	612	778
26.64		Removing, repairing and refixing steel tree guard with 1:2:4 cement concrete, neatly welded surface, painting two coats with 1st quality synthetic enamel paint, writing on plate complete to the satisfaction of officer in-charge.				
	26.64.1	MS circular tree guard 60 cm dia and 1.8 metres. height in two halves bolted together Weight 20.85 kg	each	233	106	340

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	26.64.2	MS circular tree guard with wire mesh, 1.80 metre. height, in two halves bolted together, weight 22.84 kg	each	200	106	306
	26.64.3	M.S. Bar circular iron tree guard 60 cm dia, 1.8 m total height, with wire mesh, welded. Wt 14.32 kg	each	202	104	306
	26.64.4	M.S. Flat iron tree guard 45 cm square and 1.8 metres. Height, in two halves bolted together, weight . 15.67 kg	each	189	95	284
	26.64.5	M.S. Flat iron tree guard 45 cm square and 1.8 metres. Height with wire mesh wire mesh, in two halves bolted together. Wt 15.54 kg	each	183	101	284
26.65		Providing and fixing bamboo Jeffery/ fencing consisting of superior quality 25 mm dia (Average) half cut bamboo placed vertically and fixed together with three numbers horizontal running members of Sal wood in scantling of section 50mm x 25mm, fixed with nails and 4 mm gauge G.I. wire on existing support complete as per directions of Engineer-in-charge.	sqm	115	1095	1210
26.66		Providing and fixing of garden fencing of green hexagonal net.				
	26.66.1	Fixing of fencing with MS angles 25 x 25 x 3 mm, 1.5 m above ground fixed 30 cm under ground at 3m centre to centre with cement concrete 1:2:4. Net to be fixed with nut bolts with washer at three places and one 4 mm GI wire running through the net at top and bottom for stability and strength.	sqm	10	257	267
	26.66.2	Fixing of fencing with MS angles 25 x 25 x 3 mm frame, vertical members 1.5 m above ground fixed 30 cm in ground at 2m centre to centre with cement concrete 1:2:4. Net to be fixed with nut bolts and washers	sqm	80	661	740
26.67		Providing and fixing vertical garden panels on aluminium tube (50 x25 x 1.5 mm) frame, or 18.85 kg per sqm weight MS angle and MS pipe frame fixed on wall, with growing media of coco peat, perlite and vermiculite 2:1:1, amended with fertilizers and plants as specified by the engineer in charge including drip irrigation of Netafem, Harvel, Hunter, Rain bird, Jain irrigation systems minimum BIS Standard material , planter used should be virgin plastic, , plants supplied should in coco peat and vermiculite medium and every plants should be of permanent decorative quality height of plants should be 30cm to 45 cm .complete.				
	26.67.1	Indoor vertical garden	sqm	446	9201	9647
	26.67.2	Outdoor vertical garden	sqm	315	8597	8912
26.68		Maintenance of vertical garden for one year, complete with replacement of plants, panels, drip equipment etc., replenishing decomposed media, watering and fertilization to the entire satisfaction of officer in-charge				
	26.68.1	Indoor vertical garden	sqm	151	959	1110
	26.68.2	Outdoor vertical garden	metre	154	873	1027
26.69		Supply and installation of inline drip irrigation				
	26.69.1	LDPE Emitting Pipe 16 mm; Class 2 (0.6 m x 1 to 4 Lph), Anti-rodent, complete with all accessories as per BIS standard specifications	metre	20	33	53
	26.69.2	LDPE Emitting Pipe 16 mm; Class 2 (0.5 m x 1 to 4 Lph), Anti-rodent, complete with all accessories as per BIS standard specifications	metre	21	30	51
	26.69.3	LDPE Emitting Pipe 16 mm; Class 2 (0.4 m x 1 to 4 Lph), Anti-rodent, complete with all accessories as per BIS standard specifications	metre	21	30	51
	26.69.4	LDPE Emitting Pipe 16 mm; Class 2 (0.3 m x 1 to 4 Lph), Anti-rodent, complete with all accessories as per BIS standard specifications	metre	21	30	51

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	26.69.5	LDPE Emitting Pipe 16 mm; Class 2 (0.6 m x 1 to 4 Lph), complete with all accessories as per BIS standard specifications	metre	21	30	51
	26.69.6	LDPE Emitting Pipe 16 mm; Class 2 (0.5 m x 1 to 4 Lph), complete with all accessories as per BIS standard specifications	metre	21	30	51
	26.69.7	LDPE Emitting Pipe 16 mm; Class 2 (0.4 m x 1 to 4 Lph), complete with all accessories as per BIS standard specifications	metre	21	30	51
	26.69.8	LDPE Emitting Pipe 16 mm; Class 2 (0.3 m x 1 to 4 Lph), complete with all accessories as per BIS standard specifications	metre	21	30	51
	26.69.9	LDPE Emitting Pipe 16 mm; Class 2 (0.6 m x 1 to 4 Lph), pressure compensating, complete with all accessories as per BIS standard specifications	metre	21	30	51
	26.69.10	LDPE Emitting Pipe 16 mm; Class 2 (0.5 m x 1 to 4 Lph), pressure compensating, complete with all accessories as per BIS standard specifications	metre	21	30	51
	26.69.11	LDPE Emitting Pipe 16 mm; Class 2 (0.4 m x 1 to 4 Lph), pressure compensating, complete with all accessories as per BIS standard specifications	metre	21	30	51
	26.69.12	LDPE Emitting Pipe 16 mm; Class 2 (0.3 m x 1 to 4 Lph), pressure compensating, complete with all accessories as per BIS standard specifications	metre	21	30	51
	26.69.13	LDPE Emitting Pipe 16 mm; Class 2 (0.6 m x 1 to 4 Lph), pressure compensating, Anti siphoning, complete with all accessories as per BIS standard specifications	metre	21	30	51
	26.69.14	LDPE Emitting Pipe 16 mm; Class 2 (0.5 m x 1 to 4 Lph), pressure compensating, Anti siphoning, complete with all accessories as per BIS standard specifications	metre	21	33	54
	26.69.15	LDPE Emitting Pipe 16 mm; Class 2 (0.4 m x 1 to 4 Lph), pressure compensating, Anti siphoning, complete with all accessories as per BIS standard specifications	metre	21	27	47
	26.69.16	LDPE Emitting Pipe 16 mm; Class 2 (0.3 m x 1 to 4 Lph), pressure compensating, Anti siphoning, complete with all accessories as per BIS standard specifications	metre	21	29	50
26.70		Supply and installation of drip irrigation lines with external emitters/ micro-sprinklers/bubblers				
	26.70.1	LDPE lateral Pipe 16 mm; Class 2 2.5 kg/cm2, complete with all accessories as per BIS standard specifications	metre	21	27	47
	26.70.2	Installation of pressure compensating drip emitters complete with all accessories as per BIS standard specifications	metre	21	13	34
	26.70.3	Installation of pressure compensating non-leakage drip emitters complete with all accessories as per BIS standard specifications	metre	21	13	34
	26.70.4	Installation of Non pressure compensating drip emitters complete with all accessories as per BIS standard specifications	metre	21	7	27
	26.70.5	Micro sprinkler having 1.5-4 m throw radius with stake, vinyl tubing and all other accessories as per BIS standard specifications	metre	21	146	167
	26.70.6	Installation of adjustable flow bubbler with all accessories complete as per BIS standard specifications	metre	21	490	511
26.71		Supply and installation of pop up sprinklers				

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	26.71.1	Pop up Impact Rotors 3/4" inlet and radius ranging from 7-12 m with interchangeable nozzles with check valve and all accessories complete as per BIS standard specifications and setting flow rate as directed.	metre	69	1944	2012
	26.71.2	Pop up geared rotors 3/4" inlet and radius ranging from 7-12 m with interchangeable nozzles with check valve and all accessories complete as per BIS standard specifications and setting flow rate as directed.	metre	69	1944	2012
	26.71.3	Pop up Spray heads 1/2" inlet and radius ranging from 3-5 m with interchangeable nozzles and all accessories complete as per BIS standards and setting flow rate as directed with pop up having moulded wiper seal moulded into cap	metre	69	872	941
26.72	Supply and installation of Rain Gun					
	26.72.1	Rain Gun of Aluminium with brass inlet size 32mm internal diametre with throw radius of 14-22 m, with interchangeable nozzles and arc adjustment and all accessories complete as per BIS standards	each	2068	8849	10917
	26.72.2	Rain Gun of Aluminium with brass inlet size 32mm internal diametre with throw radius of 20-35 m, with interchangeable nozzles and arc adjustment and all accessories complete as per BIS standards	each	2068	25949	28017
	26.72.3	Portable system Rain Gun of Aluminium with brass inlet size 32mm internal diametre with throw radius of 14-22 m, interchangeable nozzles, arc adjustment, with 1.5 m height GI tripod stand and all accessories complete as per BIS standards	each	2068	12575	14643
26.73	Supply and installation of filters/ pressure relief valve for drip/ sprinkler system					
	26.73.1	Sand/Media filter 25 cum/hr, with back wash and by pass assembly made in mild steel body as per B IS standard.	each	2068	43615	45683
	26.73.2	Sand/Media filter 40 cum/hr, with back wash and bypass assembly made in mild steel body as per B IS standard.	each	2068	48971	51039
	26.73.3	Sand/Media filter 50 cum/hr, with back wash and bypass made in mild steel body as per B IS standard.	each	2068	63586	65654
	26.73.4	Disc filter 15 cum/hr, with flush valve size 38mm inlet with disc clean element strong precision engineered and radially grooved disc to provide three dimensional filter as per B IS standard.	each	2068	4897	6965
	26.73.5	Disc filter 25 cum/hr, with flush valve size 38mm inlet with disc clean element strong precision engineered and radially grooved disc to provide three dimensional filter as per B IS standard.	each	2068	9947	12015
	26.73.6	Disc filter 50 cum/hr, with flush valve size 38mm inlet with disc clean element strong precision engineered and radially grooved disc to provide three dimensional filter as per B IS standard.	each	2068	13467	15535
	26.73.7	Hydro cyclone/ Sand separator 10-16 cum/hr, with flush valve, SS clamp, BSP thread cone, O'ring, with SS lock pin and collector tank as per B IS standard.	each	2068	9182	11250
	26.73.8	Hydro cyclone/ Sand separator 12-30 cum/hr, with flush valve , SS clamp, BSP thread cone, O'ring, with SS lock pin and collector tank as per B IS standard.	each	2068	10646	12714
	26.73.9	Hydro cyclone/ Sand separator 20-40 cum/hr, with flush valve, SS clamp, BSP thread cone, O'ring, with SS lock pin and collector tank as per B IS standard.	each	2068	12243	14311
	26.73.10	Supply and installation of 50mm i/d hydraulic pressure relief valve of polemeride with accessories for pressure regulation of irrigation system as per B IS standard.	each	2068	13973	16041

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
26.74	Supply and installation of artificial grass with tape, adhesive and all accessories, complete as per BIS standard.					
	26.74.1	40 mm artificial turf	sqm	12	818	831
	26.74.2	35 mm artificial turf	sqm	12	639	651
	26.74.3	25 mm artificial turf	sqm	12	599	611
	26.74.4	20 mm artificial turf	sqm	12	506	518
	26.74.5	10 mm artificial turf	sqm	12	386	398
26.75	Installation of green roof structural layers on already waterproofed roof deck as per BIS Standard material					
	26.75 .1	Base layers for Extensive and semi intensive green roof consisting of 1 mm thick HDPE root barrier including 25% overlap , 25 mm layer of water borne stone aggregate (6 mm size) and 2 layers of geotextile (120 gsm and 200 gsm each) but excluding plant substrate	sqm	21	305	327
	26.75 .2	Base layers for Extensive and semi intensive green roof consisting of 1 mm thick HDPE root barrier including 25% overlap, 20 mm drain cell and 120 gsm geotextile but excluding plant substrate	sqm	18	458	477
	26.75 .3	Base layers for Intensive green roof consisting of 1 mm thick HDPE root barrier, 50 mm layer of water borne stone aggregate (6 mm size) and 2 layers of geotextile (120 gsm and 200 gsm EACH) but excluding plant substrate.	sqm	32	305	337
	26.75 .4	Base layers for intensive green roof consisting of 1 mm thick root barrier, 30 mm drain cell and 200 gsm geotextile but excluding plant substrate	sqm	32	600	632
	26.75 .5	Supply and installation of light weight plant substrate as specified light weight expanded clay aggregates 2.8 mm crushed 0.3cum, coco peat 7.15kg, Biochar 60kg, vermicompost 80 kg including 30mm thick 2 no. drain cell of 2 sqm per cum .	cum	85	7228	7312
	26.75 .6	Supply and installation of medium weight plant substrate as specified. light weight expanded clay aggregates 2.8 mm crushed 0.08 cum, coco peat 7.15kg, Biochar 0.5cum, vermicompost 60 kg, good earth 0.5 cum per cum of substrate .	cum	81	3866	3947
	26.75 .7	Supply and installation of amended soil for plant substrate as specified. coco peat 7.15kg, vermicompost 90 kg , good earth 0.80cum per cum of substrate .	cum	136	1115	1251
	26.75 .8	Supply and installation of non woven coir mat minimum 600 gsm without netting, latex bound as water absorption and storage layer for green roof.	sqm	1	117	118
26.76	Providing and fixing pair of Plastic dustbins 100 litre volume each, of two different colours, for dry and wet waste, made of virgin plastic to be mounted on MS rectangular hollow section 50 x 25 x 3 mm frames pivoted on 3 MS square hollow section verticals, 1 m above ground, one 35 cm RHS welded to each vertical member at base and grouted in 180 x 40 x 30 cm 1:2:4 cement concrete.		each set	687	11257	11944
26.77	Supply of well grinded in powder form De-oiled Neem cake in packed gunny bags		quintal	-	2555	2555
26.78	Supplying at site of work sludge duly stacked at site.		cum	-	673	673
26.79	Grassing with 'Doob' /selection grass including watering and maintenance of the lawn for 30 days or more till the grass forms a thick lawn free from weeds and fit for moving including supplying good earth if needed-and maintenance of the lawn for 30 days or more till the grass forms a thick lawn free from weeds and fit for moving including supplying good earth if needed-					

Item No.		Description	Unit	Labour Rate	Material Rate	Through Rate
	26.79.1	In rows 15 cm apart in either direction	100 sqm	400	-	400
	26.79.2	In rows 7.5 cm apart in either direction	100 sqm	800	-	800
	26.79.3	Filling mixture of earth and sludge or farm-yard manure in the desired proportion in trenches, flooding with water and levelling (cost of supply earth and sludge or farm-yard manure and mixing does not include in this rate)	cum	48	-	48
26.80		Cutting/shaping of Topiary above120cm height of trees removing of cut materials, cleaning, hoeing of plants complete design , hoeing of trees (Topiary) watering manure etc. (Excluding the cost of MATERIAL which will be supplied separately)and as per direction of office in charge as per direction of officer in charge.	per tree per month	69	-	69
26.81		Supply of Oasis floral foam brick (premium) Box (1 Box containing 20 bricks) at site of work including loading, unloading, carriage with taxes paid etc. And as per direction of officer in charge.	each	-	798	798
26.82		Arranging cut flowers in flower vases and display the same in a presentable manner including cleaning of vases and replacement of water etc. complete (Cost of Cut flowers will be paid separately) as per direction of officer in charge.				
	26.82.1	For 3 to 6 spikes	per flower	9	-	9
	26.82.2	For 7 to 12 spikes	per flower	11	-	11
	26.82.3	For 15 to 20 spikes	per flower	17	-	17
	26.82.4	For above 20 spikes	per flower	22	-	22
26.83		Providing and fixing of Tuflex Garden fencing Hexagonal net/ or equivalent of green colour having contents Weight grams /sqm 510(+/- 8%) in width of 60cm. With bamboo of 90 cm Length and 18-20 cm in girth . The bamboo should be painted with green colour, 1st quality and of approved brand and manufacture two or more coats and fixed 30cm below ground level and 60cm above ground level at a distance of 1.50 metres. The net and bamboo complete and as per direction of Engineer- In- charge.	metre	10	155	165

Item No.	Description	Unit	Through Rate
	FOLIAGE/SHADE LOVING PLANTS		
26.84	Providing and displaying of Aglaonema Butterfly plant having ht.30 cm 10 to 12 fresh, healthy and attractive colourful leaves, well developed in 25 cm size Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	233
26.85	Providing and displaying of Aglaonema Ice plant ht.25 cm having 10 to 12 fresh, healthy and attractive colourful leaves, well developed in 25 cm size Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	233
26.86	Providing and displaying of Aglaonema Parrot Jungle plant (three in one), having ht. 30 cm and above with 20 to 25 leaves, well developed, fresh & healthy in 25 cm size of poly bag & as per direction of the officer-in-charge.	each	85
26.87	Providing and displaying of Aglaonema Dove variety Plant, having ht. 30 cm to 45 cm with 8 to 10 leaves, well developed, fresh and healthy in 25 cm size of poly bag & as per direction of the officer-in-charge.	each	110
26.88	Providing and displaying of Aglaonema Pseudo bractatum plants, having ht. 30 cm and above with 3 to 4 suckers & 20 to 25 leaves, well developed, fresh and healthy in 25 cm size of poly bag & as per direction of the officer-in-charge.	each	110
26.89	Providing and Displaying of Aglaonema Sam ht.30 cm well developed three in one, having 18 to 20 fresh, healthy and attractive colourful leaves in 30 cm size Earthen pot/Chali/Tray & as per direction of the officer-in-charge.	each	388
26.90	Providing and displaying of Aglaonema Snow White hybrid plant (three in one), having ht. 30 cm & above with 6 to 8 leaves, bright colour, well developed, fresh and healthy in 25 cm size of Earthen pot/Plastic pot . (Specimen Plant) & as per direction of the officer-in-charge.	each	274
26.91	Providing and displaying of Aglaonema Silver Queen plant, having 30 cm to 45 cm. ht. with 12 to 15 leaves, multi suckers, fresh and healthy leaves, well developed in 25 cm dia Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	204
26.92	Providing and displaying of Aglaonema ernesto Plant (three in one), having ht. 45 cm & above with 12 to 15 leaves, well developed, fresh and healthy in 25 cm size of Earthen pot/Plastic pot .& as per direction of the officer-in-charge.	each	238
26.93	Providing and displaying of Aglaonema marentifolium variety plant, having ht. 23 cm to 30 cm with 8 to 10 leaves, well developed, fresh and healthy with colourful leaves in 20 cm size of poly bag/Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	85
26.94	Providing and displaying of Aglaonema modestum plant, having ht. 23 cm to 30 cm with 3 to 4 suckers & 15 to 20 leaves, well developed, fresh and healthy in 25 cm size of poly bag & as per direction of the officer-in-charge.	each	85
26.95	Providing and displaying of Aglaonema nitida plant, having ht. 30 cm to 45 cm with 8 to 10 leaves, well developed, fresh and healthy with attractive leaves in 25 cm size of Earthen pot/ Plastic pot .& as per direction of the officer-in-charge.	each	204
26.96	Providing and displaying of Araucaria cookie plant, having ht. 45 cm to 60 cm, straight, well developed, fresh and healthy with lush green leaves from bottom to top in 20 cm size of Earthen pot/Plastic pot. & as per direction of the officer-in-charge.	each	233
26.97	Providing and displaying of Araucaria cookie plant, having ht. 60 cm to 75 cm, straight, well developed, fresh and healthy with lush green leaves from bottom to top in 25 cm size of Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	271
26.98	Providing and Displaying of Araucaria cookie having ht. 75 cm to 90 cm, straight, well developed, fresh and healthy with lush green leaves from bottom to top in 25 cm size of earthen pot/plastic pot & as per direction of the officer-in-charge.	each	323
26.99	Providing and displaying of Araucaria cookie plant, having ht. 90 cm to 1.20 m, straight, well developed, fresh and healthy with lush green leaves from bottom to top in 25 cm size of Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	475
26.100	Providing and displaying of Araucaria cookie plant, having ht. 1.50 m to 1.80 m, straight, well developed, fresh and healthy with lush green leaves from bottom to top in 30 cm size of Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	711
26.101	Providing and displaying of Areca Palm plant, having ht. 90 cm to 1.05 m with 4 to 5 suckers, well developed, fresh and healthy with lush green foliage in 25 cm size of Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	199
26.102	Providing and displaying of Areca Palm plant, having ht. 1.05 m to 1.20 m with 5 to 6 suckers, well developed, fresh and healthy with lush green foliage in 25 cm size of Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	213

Item No.	Description	Unit	Through Rate
26.103	Providing and displaying of Areca palm plant, having ht. 1.20 m to 1.50 m with 6 to 8 suckers, well developed, fresh and healthy with lush green foliage in 25 cm size of Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	244
26.104	Providing and displaying of Areca Palm plant, having ht. 1.50 m to 1.95 m with 8 to 10 suckers, well developed, fresh and healthy with lush green foliage in 30 cm size of Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	441
26.105	Providing and displaying of Areca Palm plant, having ht. 1.95 m to 2.40 m with 12 to 14 suckers, well developed, fresh and healthy with lush green foliage in 35 cm size of Bucket type cement pots & as per direction of the officer-in-charge.	each	747
26.106	Providing and displaying of Brassia Variegated plant, having ht. 30 cm, well developed with fresh and healthy foliage in 20 cm size of Earthen pot/Plastic pot/Poly bag& as per direction of the officer-in-charge.	each	96
26.107	Providing and displaying of Brassia Variegated plant, having ht. 30 cm to 45 cm, well developed with fresh and healthy foliage in 25 cm size of Earthen pot/Plastic pot . & as per direction of the officer-in-charge.	each	150
26.108	Providing and displaying of Brassia hicolour 3 in 1 well developed with fresh, healthy from bottom to top with 30 cm to 45 cm ht. in 25 cm size Plastic pot/Earthen pot & as per direction of the officer-in-charge.	each	161
26.109	Providing and displaying of Chamaedorea elegans palm plant, having ht. 60 cm to 75 cm, well developed with fresh and healthy leaves in 25 cm size of Earthen pot/Plastic pot . & as per direction of the officer-in-charge.	each	136
26.110	Providing and displaying of Croton Challenger variety plant, having ht. 30cm and above, well developed with full of fresh and healthy leaves in 20 cm size of Poly bag & as per direction of the officer-in-charge.	each	57
26.111	Providing and displaying of Croton baby golden variety plant, having ht.30 cm and above, well developed with full of fresh and healthy leaves in 20 cm size of Poly bag & as per direction of the officer-in-charge.	each	52
26.112	Providing and displaying of Croton Baby Golden Punctatumaureum plant, having ht. 23 cm to 30 cm, well developed with fresh and healthy foliage in 15 cm size of Poly bag as per direction of the officer-in-charge.	each	43
26.113	Providing and displaying of Croton Golden plant, having ht. 45 cm to 60 cm with 2 to 3 branches, well developed, fresh and healthy foliage in 25 cm size of Poly bag as per direction of the officer-in-charge.	each	71
26.114	Providing and displaying of Croton Baby Golden plant (three in one), having ht. 30cm, multi branches, well developed with fresh and healthy foliage in 25 cm size of Poly bag as per direction of the officer-in-charge.	each	107
26.115	Providing and displaying of Croton golden (Broad Leaves) plant, having ht. 60 cm to 75 cm with 3 to 4 branches, well developed, fresh and healthy leaves in 25 cm size of Poly bag . & as per direction of the officer-in-charge.	each	71
26.116	Providing and displaying of Croton Golden specimen plant, having ht. 90 cm to 1.05 cm with 5 to 6 branches, well developed, fresh and healthy foliage in 30 cm size of Earthen pot/Plastic pot/Poly bag as per direction of the officer-in-charge.	each	217
26.117	Providing and displaying of Croton Duck foot (Elite) plant, having ht. 45 cm and above with 3 to 4 branches, well developed, fresh and healthy leaves in 25 cm size of Earthen pot/Plastic pot. & as per direction of the officer-in-charge.	each	142
26.118	Providing and displaying of Croton Duck Foot (Elite) plant, having ht. 60 cm to 75 cm with 4 to 5 branches, well developed, fresh and healthy colourful leaves in 25 cm size of Earthen pot/ Plastic pot & as per direction of the officer-in-charge.	each	407
26.119	Providing and displaying of Croton Petra Bangalore variety plant, having ht 30 cm & above, well developed with fresh and healthy leaves in 20 cm size of Earthen pot/Plastic pot. & as per direction of the officer-in-charge.	each	149
26.120	Providing and displaying of Croton Petra plant, having ht. 30 cm & above with 2 to 3 branches, well developed, fresh and healthy leaves in 25 cm size of Earthen pot/Plastic pot. & as per direction of the officer-in-charge.	each	155
26.121	Providing and displaying of Croton Petra Bangalore variety plant, having ht. 60 cm to 75 cm with 4 to 6 branches, well developed, fresh and healthy colourful leaves in 25 cm size of Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	434

Item No.	Description	Unit	Through Rate
26.122	Providing and displaying of Specimen Croton Petra Bangalore variety plant, having ht. 60 cm to 75 cm with 4 to 6 branches, well developed, fresh & healthy foliage approximately 60-65 leaves in 30 cm size of Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	678
26.123	Providing and displaying of Dieffenbachia Tropic-snow plant, having ht. 45 cm & above with 8 - 10 leaves, well developed, fresh & healthy in 20 cm size of Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	99
26.124	Providing and displaying of Dieffenbachia mosaic plant, having ht. 23 cm to 30 cm with 10-12 leaves, well developed, fresh and healthy in 20 cm size of Earthen pot/Plastic pot . & as per direction of the officer-in-charge.	each	99
26.125	Providing and displaying of Dieffenbachia maculata plant, having ht. 30 cm to 45 cm with 5 and above leaves, well developed, fresh and healthy & attractive variegated foliage in 20 cm size of Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	190
26.126	Providing and displaying of Dieffenbachia superba, well developed, with 10-12 fresh, healthy and attractive leaves 45 cm to 60 cm ht. in 25 cm size Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	207
26.127	Providing and displaying of Dracaena Song of India plant (three in one), having ht. 30 cm and above, multi-branched, well developed with fresh and healthy leaves in 20 cm size of Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	142
26.128	Providing and displaying of Dracaena song of India specimen plant (three in one), having ht. 60 cm & above, well developed, fresh and healthy with good foliage in 20 cm size of Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	178
26.129	Providing and displaying of Dracaena Song of India Green plant (three in one), having ht. 30 cm, well developed, fresh & healthy, lush green foliage from bottom to top in 20 cm size of Polybag & as per direction of the officer-in-charge.	each	57
26.130	Providing and displaying of Dracaena Song of India variegated plant, having ht. 30 cm to 45 cm, well developed, fresh & healthy foliage with bright leaves in 20 cm size of Polybag & as per direction of the officer-in-charge.	each	57
26.131	Providing and displaying of Dracaena Kedarnath plant, having ht. 30 cm & above, well developed with good colourful foliage in 20 cm size of Polybag & as per direction of the officer-in-charge.	each	57
26.132	Providing and displaying of Dracaena margineta plant, having ht. 30 cm to 45 cm with colourful leaves, fresh and healthy in 20 cm size of Polybag & as per direction of the officer-in-charge.	each	59
26.133	Providing and displaying of Dracaena mahatma plant, having ht. 30 cm to 45 cm, well developed, fresh and healthy foliage in 20 cm size of Polybag & as per direction of the officer-in-charge.	each	57
26.134	Providing and displaying of Dracaena pendanus, well developed, having 6 to 8 suckers with healthy foliage in 20 cm size Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	233
26.135	Providing and displaying of Dracaena rosea plant, having ht. 30 cm & above with 8 to10 leaves, well developed, fresh and healthy in 15 cm size of Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	75
26.136	Providing and displaying of Dracaena Victoria plant, having ht. 30 cm & above, well developed with full of leaves, fresh and healthy in 15 cm size of Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	75
26.137	Providing and displaying of Dracaena fragrans"Massangeana" plant, having ht. 30 cm & above with full of leaves, well developed, fresh and healthy in 15 cm size of Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	75
26.138	Providing and displaying of Dracaena waraneckii plant, having ht. 30 cm to 45 cm. with good colour foliage, well developed, fresh and healthy in 15 cm size of Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	71
26.139	Providing and displaying of Livistona palm plant, having ht. 30 cm to 45 cm, well developed with 5 to 6 leaves, fresh & healthy foliage in 20 cm size of Earthen pot/Plastic pot as per direction of the officer-in-charge.	each	109
26.140	Providing and displaying of Livistona palm plant, having ht. 60 cm to 75 cm, well developed with 8 to 10 leaves, fresh & healthy foliage in 30 cm size of Earthen pot/Plastic pot . as per direction of the officer-in-charge.	each	271

Item No.	Description	Unit	Through Rate
26.141	Providing and displaying of Monestaria plant mounted on moss stick 90 cm ht., 2 to 3 plant in one pot well developed with fresh & healthy foliage in 25 cm size of Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	271
26.142	Providing and displaying of Money Plant Broad Leaves mounted on moss stick 75 cm ht., 3 to 4 plants in each pot, well developed with full of fresh & healthy leaves in size of 25 cm Top dia x 18 cm Bottom dia x 25 cm Perpendicular height Earthen pot/Plastic pot . & as per direction of the officer-in-charge.	each	233
26.143	Providing and displaying of Money Plant Broad Leaves mounted on moss stick 0.90 m ht., 5 to 6 plants in each pot, well developed with full of fresh & healthy leaves in size of 25 cm Top dia x 18 cm Bottom dia x 25 cm Perpendicular height Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	310
26.144	Providing and displaying of Money Plant Golden leaves mounted on moss stick 90cm ht., having 3 plants at equal distance, well developed with full of fresh, shinning and healthy leaves from bottom to top in 25 cm size of Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	233
26.145	Providing and displaying of Philodendron Burgundy plant mounted on moss stick 90 cm ht., well developed with full of fresh & healthy leaves from bottom to top in 25 cm size of Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	326
26.146	Providing and displaying of Philodendron emerald red colour plant, mounted on moss stick 90 cm ht., having 3 plants placed at equal distance, well developed with full of fresh & healthy leaves in 25 cm size of Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	475
26.147	Providing and displaying of Philodendron Envy plant, mounted on moss stick 90 cm ht., well developed with full of fresh & healthy leaves in 30 cm size of Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	543
26.148	Providing and displaying of Philodendron Oxicodium plant, mounted on moss stick 90 cm ht., having 3 plants placed at equal distance, well developed with full of fresh & healthy leaves in 20 cm size of Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	204
26.149	Providing and displaying of Philodendron Oxicodium Golden Colour plant, Mounted on moss stick 90 cm ht., having 3 plants placed at equal distance, well developed with full of fresh & healthy leaves in 20 cm Top dia x 16 cm Bottom dia x 20 cm Perpendicular height Earthen pot/ Plastic pot & as per direction of the officer-in-charge.	each	217
26.150	Providing and displaying of Philodendron Oxicodium Golden Colour plant, Mounted on moss stick 1.20 m ht., having 3 to 4 plants placed at equal distance, well developed with full of fresh & healthy leaves in 25 cm size of Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	295
26.151	Providing and displaying of Philodendron Oxicodium plant, mounted on moss stick 1.20 m ht., having 3 plants placed at equal distance, well developed with full of fresh & healthy leaves in 25 cm size of Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	310
26.152	Providing and displaying of Philodendron selloum plant, having ht. 30 cm to 45 cm with 8 to 10 leaves, well developed, fresh and healthy foliage in 20 cm size of Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	204
26.153	Providing and displaying of Philodendron selloum plant, having ht. 45 cm to 60 cm with 12 to 16 leaves, well developed, fresh and healthy foliage in 25 cm size of Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	271
26.154	Providing and displaying of Philodendron ceylon gold plant, having ht. 30 cm to 45 cm with 8 to10 leaves, well developed, fresh & healthy bright colour leaves in 25 cm size of Earthen pot/ Plastic pot & as per direction of the officer-in-charge.	each	242
26.155	Providing and displaying of Philodendron Xanadu plant, having 15 to 20 leaves, well developed with full of fresh & healthy leaves in 25 cm size of Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	231
26.156	Providing and displaying of Philodendron moonlight plant, having ht. 30 cm to 45 cm with 10 to 12 leaves, well developed, fresh & healthy bright colour leaves in 25 cm size of Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	258
26.157	Providing and displaying of Phoenix palm plant, having ht. 75 cm to 90 cm with 10 to 15 or more leaves, well developed, fresh and healthy in 25 cm size of Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	271

Item No.	Description	Unit	Through Rate
26.158	Providing and displaying of Raphes palm plant, having ht. 45 cm to 60 cm with 5 to 7 suckers, well developed, full of fresh and healthy leaves in 25 cm size of Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	233
26.159	Providing and displaying of Rhapis Excelsa Palm plant, having ht. 75 cm to 90 cm with 12 to 15 equal suckers, well developed, full of fresh & healthy leaves from bottom to top in 25 cm size Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	407
26.160	Providing and displaying of Rhapis Palm plant, having ht. 75 cm to 90 cm with 15 to 18 equal suckers, well developed, full of fresh and healthy leaves from bottom to top in 35 cm PVC Pots/C.Pots & as per direction of the officer-in-charge.	each	446
26.161	Providing and displaying of Rhapis palm specimen plant, having ht. 1.50 m to 1.65 m with 40 to 50 lush green suckers, well developed, fresh & healthy foliage leaves in 40 cm size of Earthen Pot/Chali/Tray & as per direction of the officer-in-charge.	each	669
26.162	Providing and displaying of Rubber plant black variety, well developed, having 45 to 60 cm height with fresh, healthy and attractive colourful leaves in 25 cm size Earthen pot/Plastic pot as per direction of officer-in-charge.	each	116
26.163	Providing and displaying of Rubber plant variegated, well developed, having 45 to 60 cm height with fresh, healthy and attractive colourful leaves in 20 cm size Earthen pot/Plastic pot	each	194
26.164	Providing and displaying of Seaforthia Palm plant, having ht. 90cm to 1.20 m with 6-8 suckers, well developed, fresh and healthy lush green leaves from bottom to top in 20 cm size of Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	452
26.165	Providing and displaying of Seaforthia Palm plant, having ht. 1.20 cm to 1.50 cm with 8-10 suckers, well developed, fresh and healthy lush green leaves from bottom to top in 25 cm size of Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	497
26.166	Providing and displaying of Seaforthia Palm plant, having ht. 1.50 m to 1.80 m with 12-15 suckers, well developed, fresh and healthy lush green leaves from bottom to top in 30 cm size of Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	640
26.167	Providing and displaying of Sanchezia Nobili's plant, having ht. 30 cm & above, well developed with fresh & healthy foliage in 15 cm size of Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	45
26.168	Providing and displaying of Schefflera high colour plant, having ht. 25 cm to 30 cm, well developed with fresh & healthy foliage in 15 cm size of Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	52
26.169	Providing and Displaying of Schefflera green 3 in 1 well developed with fresh, healthy and attractive foliage from having 45 cm to 60 cm ht. in 25 cm size Earthen pot/Plastic pot/as per direction of officer-in-charge.	each	258
26.170	Providing and displaying of Schefflera high colour plant (three in one), having ht. 25 cm to 30 cm, well developed with fresh and healthy foliage in 30 cm size of Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	171
26.171	Providing of Schefflera Green plant (three in one), mounted on moss stick 90 cm, well developed with full of fresh & healthy leaves from bottom to top with rich foliage in 25 cm size of Earthen pot/Plastic pot .& as per direction of the officer-in-charge. .	each	355
26.172	Providing and displaying of Schefflera Varieged plant, mounted on moss stick 90 cm ht., 3 to 4 plants placed in each pot at equal distance, well developed with full of fresh & healthy bright leaves from bottom to top in 25 cm size of Earthen pot/Plastic pot & as per direction	each	355
26.173	Providing and displaying of Spathiphyllum (peace Lilly), having 15 cm to 25 cm ht. blooming stag with fresh & healthy foliage well developed in 15 cm of Earthen pot/plastic pot & as per direction of the officer-in-charge.	each	116
26.174	Providing and displaying of Syngonium golden plant, mounted on moss stick 90 cm ht., 3 to 4 plants placed in each pot at equal distance, well developed with full of fresh & healthy leaves from bottom to top in 25 cm size of Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	244
26.175	Providing and displaying of Syngonium Varieged plant, mounted on moss stick 90 cm ht., 3 to 4 plants placed in each pot at equal distance, well developed with full of fresh & healthy leaves from bottom to top in 25 cm size of Earthen pot/Plastic pot & as per direction of the officer-in-charge.	each	244
	SEASONAL PLANTS		

Item No.	Description	Unit	Through Rate
26.176	Providing and Displaying of Allyssum white in full bloom well developed fresh & healthy in 15 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	54
26.177	Providing and Displaying of Anemone hybrid (3 in one) variety well developed with fresh & healthy Flower in full bloom in 20 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	109
26.178	Providing and Displaying of Antirrhinum Hybrid Dwarf variety (3 in one) well developed with fresh & healthy Flower multi branch in full bloom in 20 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	68
26.179	Providing and Displaying Antirrhinum Hybrid dwarf variety, specimen (8-10 plants) with fresh & healthy foliage in full bloom well developed in 35 cm Earthen Tray/Challi Pot and as per direction of the officer-in-charge.	each	678
26.180	Providing and Displaying Antirrhinum variety, well developed, fresh & healthy 1' to 1.5' ht, in full bloom with stacking in 20 cm Earthen Pot/Plastic Pot as per direction of the officer-in-charge.	each	68
26.181	Providing and Displaying Asiatic Lilly hybrid variety (3 in one) plants in each pot having in full bloom 3 to 5 flowers 30 to 45 cm ht. well developed in 25 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	163
26.182	Providing and Displaying Aster Hybrid variety in different colour, well developed with fresh & healthy foliage in full bloom 23 to 30 cm ht., in 15 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	54
26.183	Providing and Displaying Bigonia rex having 15 to 23 cm ht., well developed with fresh & healthy foliage with 10 to 12 flowers in bloom in 20 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	81
26.184	Providing and Displaying Brachycome well developed with fresh & healthy foliage with 100 to 120 flowers stacking with green painted bamboo stick in 25 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	163
26.185	Providing and Displaying Calceolaria hybrid variety in full bloom well developed with fresh & healthy foliage in 20 cm Earthen Pot/Plastic Pot as per direction of the officer-in-charge.	each	150
26.186	Providing and Displaying Calendula double variety well developed with fresh & healthy foliage in full bloom in 20 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	68
26.187	Providing and Displaying Chrysanthemum double variety, well developed, having 45 to 60 cm ht., with 6 and above flowers with half blooming condition, fresh and healthy with bamboo stacking in 25 cm Earthen Pot and as per direction of the officer-in-charge.	each	150
26.188	Providing and Displaying Chrysanthemum single variety in different colour well developed having 45 to 60 cm ht., minimum 100 and above half bloom flowers open well stacked with bamboo stick having three layer tiding by thread fresh and healthy foliage in 25 cm Earthen Pot and as per direction of the officer-in-charge.	each	163
26.189	Providing and Displaying Chrysanthemum single named variety in different colour well developed, having 45 to 60 cm ht., minimum 150 and above half bloom flowers well stacked with bamboo stick having three layer tiding by thread fresh and healthy foliage in 30 cm Earthen Pot and as per direction of the officer-in-charge.	each	190
26.190	Providing and Displaying Cineraria dwarf in different colour with fresh & healthy foliage well developed in 20 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	68
26.191	Providing and Displaying Cineraria Hybrid dwarf variety in different colour well developed with fresh & healthy foliage in bloom in 25 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	81
26.192	Providing and Displaying Cineraria long 45 to 60 cm ht., 8 to 10 branch with full bloom specimen plant with green painted stacking in 30 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	163
26.193	Providing and Displaying Clarkia well developed with fresh & healthy foliage, 5 to 6 branch in full bloom with stacking in 25 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	136
26.194	Providing and Displaying Clianthus well developed, with fresh & healthy foliage in bloom 30 to 45 cm ht., with stacking in 25 cm Earthen Pot/Plastic Pot and as per direction of the officer- in-charge.	each	109

Item No.	Description	Unit	Through Rate
26.195	Providing and Displaying Coleus broad leaves having 3 to 4 branches equal well developed with fresh & healthy foliage in different colour in 25 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	68
26.196	Providing and Displaying Coleus broad leaves having 5 to 6 branches equal well developed with fresh & healthy foliage in different colour in 25 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	109
26.197	Providing and Displaying Cyclamen hybrid variety fresh & healthy in full bloom well developed in 25 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	271
26.198	Providing and Displaying Cyclamen hybrid variety specimen 5-6 plants fresh & healthy in full bloom well developed in 35 cm Earthen Tray and as per direction of the officer-in-charge.	each	509
26.199	Providing and Displaying Dahlia double Kenya variety in different colour well developed with 3 to 4 flowers in half bloom, good foliage stacked with Green painted Bamboo sticks, 45 to 60 cm height in 25 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	109
26.200	Providing and Displaying Dahlia single in different colour with fresh & healthy foliage well developed with 6 to 8 half blooming buds in 15 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	34
26.201	Providing and Displaying Daisy well developed with fresh & healthy foliage in full bloom in 15 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	54
26.202	Providing and Displaying Dianthus dwarf in different colour fresh & healthy bloom in 15 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	54
26.203	Providing and Displaying Dianthus dwarf specimen 6-8 plants with fresh & healthy foliage in full bloom well developed in 60 cmx35 cm Earthen Tray and as per direction of the officer-in-charge.	each	475
26.204	Providing and Displaying Dianthus in different colour well developed with fresh & healthy foliage 30 cm ht., in full bloom with stacking in 20 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	68
26.205	Providing and Displaying Freesia hybrid 6 to 8 plants in full bloom, with fresh and healthy flower and foliage stacked with Green painted bamboo sticks in 25 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	109
26.206	Providing and Displaying Gazania hybrid in different colour well developed with fresh & healthy foliage with full bloom in 25 cm Earthen Pot/Plastic Pot and as per direction of the officer-in- charge.	each	81
26.207	Providing and Displaying Geranium double variety having 30 cm ht., in different colour well developed with fresh & healthy foliage (3 in one) well bloomed in 25 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	169
26.208	Providing and Displaying Gerbera Hybrid, well developed, with fresh and healthy foliage, fully blooms in 25 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	109
26.209	Providing and Displaying Helianthus different colour with full bloom (3 in one) fresh & healthy in 35 cm Earthen Pot/Plastic Pot well developed as per direction of the officer-in-charge.	each	271
26.210	Providing and Displaying Impatiens in different colour well developed fresh and healthy (3 in one) well bloomed in 30 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	136
26.211	Providing and Displaying Marigold Jaffri dwarf in different colour well developed with fresh & healthy foliage with 12 to 15 flowers in full bloom specimen plant 23 to 30 cm ht. in 20 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	68
26.212	Providing and Displaying Marigold Jaffri orange/yellow/Russet colour well developed with fresh & healthy foliage with 40 to 50 flowers in bloom specimen plant 60 to 75 cm ht in 30 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	190
26.213	Providing and Displaying Marigold Jaffri French orange/yellow/Russet colour well developed with fresh & healthy foliage with 60 to 75 flowers in bloom specimen plant 60 to 75 cm ht in 30 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	136
26.214	Providing and Displaying Kalanchoe Hybrid variety in different colour well developed with fresh & healthy foliage in full bloom in 20 cm Earthen pot/Plastic Pot and as per direction of the officer-in-charge.	each	68

Item No.	Description	Unit	Through Rate
26.215	Providing and Displaying Marigold(Tagetes) inca hybrid different colour having 30 cm and above ht., with 6 to 8 flowers in bloom & blooming condition, well developed pot should be fully covered with fresh and healthy, foliage and flowers in 20 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	81
26.216	Providing and Displaying Mimulus multi branching bushy plant in different colour well developed fresh & healthy in full bloom in 20 cm Earthen Pot in 20 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	96
26.217	Providing and Displaying Mesembryanthemum in different colour well developed with fresh & healthy foliage in full bloom in 15 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	41
26.218	Providing and Displaying Nemesia well developed with fresh & healthy with good attractive foliage full blooming in 20 cm Earthen Pot/ Plastic Pot and as per direction of the officer-in-charge.	each	68
26.219	Providing and Displaying Nasturtium in different colour well developed with fresh & healthy foliage with full bloom in 20 Cm Earthen Pot/ Plastic Pot as per direction of the Officer-in-charge.	each	68
26.220	Providing and Displaying Ornamental Kale Hybrid variety in full bloom with fresh & healthy foliage well developed in 20 cm Earthen Pot/ Plastic Pot and as per direction of the officer-in-charge.	each	68
26.221	Providing and Displaying Pansy Hybrid Sakata in different colour specimen 15-20 plants with fresh & healthy foliage in full bloom well developed in 60x35 cm Earthen Tray and as per direction of the officer-in-charge.	each	407
26.222	Providing and Displaying Pansy Hybrid Sakata well developed with fresh & healthy foliage with 3 to 4 flower in bloom in 20 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	68
26.223	Providing and Displaying Pansy hybrid sakata in different colour with fresh & healthy foliage well developed in 15 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	34
26.224	Providing and Displaying Petunia hybrid different colour single well developed in full bloom in 20 cm Earthen/Plastic Pot and as per direction of the officer-in-charge.	each	54
26.225	Providing and Displaying Petunia hybrid different variety in different colour well developed with fresh and healthy foliage in full bloom in 25 cm Earthen Pot/Plastic Pot as per direction of the officer-in-charge.	each	81
26.226	Providing and Displaying Petunia hybrid well developed with fresh & healthy foliage in full bloom 15-20 plants in 60x35 cm Earthen Tray and as per direction of the officer-in charge.	each	34
26.227	Providing and Displaying Petunia hybrid well developed with fresh & healthy foliage in full bloom 15-20 plants in 60x35 cm Earthen Tray as per direction of the officer-in-charge.	each	407
26.228	Providing and Displaying Phlox in different colour well developed with fresh & healthy foliage 30 cm ht., in full bloom with stacking in 25 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	68
26.229	Providing and Displaying Poinsettia Dwarf variety different colour well developed 25 to 30 cm ht., 3 to 4 branch full bloom with fresh & healthy foliage in 20 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	231
26.230	Providing and Displaying Poinsettia dwarf multi head, having 25 to 30 cm ht., with 5 to 7 branches with fully different coloured top with fresh & healthy foliage well developed in 25 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	326
26.231	Providing and Displaying Primula Hybrid variety specimen 5-6 plants in each Pot with fresh & healthy foliage in full bloom different colour well developed in 60x35 cm Earthen Tray and as per direction of the officer-in-charge.	each	543
26.232	Providing and Displaying Primula Hybrid variety well developed with fresh & healthy foliage with full bloom in 25 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	109
26.233	Providing and Displaying Ranunculus Hybrid variety in different colour specimen 5-6 plants in each Pot with fresh & healthy foliage in full bloom well developed in 60x35 cm Earthen Tray and as per direction of the officer-in-charge.	each	651
26.234	Providing and Displaying Ranunculus Hybrid variety well developed with fresh & healthy foliage with 2-3 flower in bloom in 25 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	136

Item No.	Description	Unit	Through Rate
26.235	Providing and Displaying Salvia dwarf variety with fresh & healthy foliage well developed multi branching in blooming stage in 15 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	34
26236	Providing and Displaying Salvia ht. 45 to 60 cm multi branches stacking with bamboo stick specimen plants type with full bloom well developed in 30 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	163
26.237	Providing and Displaying Salvia ht. 45 to 60 cm multi branches stacking with bamboo stick specimen plants type with full bloom well developed in 25 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	136
26.238	Providing and Displaying Salvia red Hybrid dwarf variety having 15 to 25 cm ht., well developed with fresh & healthy foliage in bloom in 20 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	68
26.239	Providing and Displaying Salvia red Hybrid dwarf variety having 15 to 25 cm ht., specimen 6 plants with fresh & healthy foliage in full bloom well developed in 35 cm Earthen Tray and as per direction of the officer-in-charge.	each	68
26.240	Providing and Displaying Star of Bethlehem (Chinchi - Rinchi), 5 to 6 plant in each Pot full bloom, with fresh and healthy foliage flower in 35 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	434
26.241	Providing and Displaying Stock Double Blue non-branching having 30 to 45 cm ht., with full bloom, well developed in 20 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	68
26.242	Providing and Displaying Stock double white colour dwarf variety with fresh and healthy foliage with bloom in 20 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	81
26.243	Providing and Displaying Stock single in different colour well developed with fresh & healthy foliage with full bloom in 20 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	68
26.244	Providing and Displaying Tulip Dutch hybrid variety (3 in one) plants in each pot in full bloom fresh & bright in different colour well developed in 25 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	231
26.245	Providing and Displaying Verbena in different colour having 30 to 45 cm ht., well developed with fresh & healthy foliage in bloom condition in 25 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	81
26.246	Providing and Displaying Celosia well developed fresh & healthy 20 to 25 cm ht. (attractive) multi branching at blooming stage in 20 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	68
26.247	Providing and Displaying Cladium Hybrid variety 3 to 4 plants well developed with fresh & healthy foliage 30 to 45 cm ht. in different colour 25 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	81
26.248	Providing and Displaying Cockscomb well developed fresh & healthy 20 to 25 cm ht. attractive colours fully bloomed in 20 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	54
26.249	Providing and Displaying Cosmos well developed fresh & healthy 20 to 25 cm ht. attractive colours multi branching at blooming stage in 20 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	54
26.250	Providing and Displaying Gaillardia double hybrid variety well developed 30 to 45 cm ht 20 to 30 fresh & healthy flower with green painted bamboo stick in 25 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	68
26.251	Providing and Displaying Gomphrena well developed fresh & healthy 30 to 45 cm ht. bushy plant 15 & above flower in 20 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	54
26.252	Providing and Displaying Kochia well developed fresh & healthy 20 to 25 cm ht. lush green well shaped in 15 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	41
26.253	Providing and Displaying Kochia well developed fresh & healthy 30 to 45 cm ht. lush green well shaped in 25 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	54

Item No.	Description	Unit	Through Rate
26.254	Providing and Displaying Portulaca hybrid in different colour with bloom well developed fresh & healthy in 20 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	109
26.255	Providing and Displaying Sunflower hybrid well developed 15 to 20 cm ht. with fresh & healthy foliage at blooming stage in 15 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	41
26.256	Providing and Displaying Sunflower single well developed 8 to 10 half bloom buds multi branched in fresh & healthy full stacked with green painted bamboo stick stacking in 25 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	81
26.257	Providing and Displaying Tapioca varigated (Manihot esculenta) well developed fresh & healthy 30 to 45 cm ht. in bright colour foliage in 15 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	41
26.258	Providing and Displaying Vinca different colour 6 to 8 well developed branch in full bloom stacked with green painted Bamboo stick in 20 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	68
26.259	Providing and Displaying Vinca different colour fresh & healthy 25 to 30 cm ht. with bloom multi branchy in 15 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	34
26.260	Providing and Displaying Vinca Hybrid in different colour fresh & healthy 20 to 25 cm ht. with bloom in 20 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	54
26.261	Providing and Displaying Zinnia hybrid double in different colour well developed fresh & healthy 30 to 45 cm ht. (3 to 4 plants in each pot) full bloom in 20 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	54
26.262	Providing and stacking Motia of height 25 to 30 cm., 2 to 3 branch in earthen pots of size 20 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	52
26.263	Providing and stacking Mogra of height 25 to 30 cm., 2 to 3 branch in earthen pots of size 20 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	58
26.264	Providing and stacking Canna dwarf of height 25 to 30 cm., 2 to 3 suckers in earthen pots of size 20 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge.	each	45
26.265	Bush Rose in different colour 2 to 3 healthy branch 30 cm and above ht. well developed with 8 or more flowers / flower buds in 20 cm Earthen pot / Plastic pot as per direction of the officer-in-charge.	each	65
26.266	Providing and Displaying Budded Rose (H.T. variety) 3 to 4 healthy branch 30 cm and above ht. well developed with one and above flower plant in 15 cm Earthen Pot, as per direction of the officer-in-charge.	each	41
26.267	Providing and Displaying Creeper Rose variety 3 to 4 healthy branch 60 cm and above ht. well developed with one and above flowers in 20 cm Earthen Pot, as per direction of the officer-in- charge.	each	96
26.268	Providing and Displaying of Standard Rose (H.T. variety) 3 to 4 healthy branch 90 cm and above ht. well developed with one and above flowers in 25 cm Earthen Pot, as per direction of the officer-in-charge.	each	190
	ORNAMENTAL PLANTS		
26.269	Providing and Displaying Acalypha Different colour well developed, fresh & healthy with good foliage, multi branch 30 to 45 cm ht. in 15 cm size of Earthen Pot/ Plastic Pot bushy plant as per direction of the officer-in-charge.	each	45
26.270	Providing and Displaying Acalypha green well developed, fresh & healthy with good foliage, multi branch 30 to 45 cm ht. in 15 cm size Earthen Pot/ Plastic Pot bushy plant as per direction of the officer-in-charge.	each	45
26.271	Providing and Displaying Acalypha red well developed with fresh & healthy 30 to 45 cm ht. in 15 cm size Earthen Pot/ Plastic Pot as per direction of the officer-in-charge.	each	52
26.272	Providing and Displaying Acalypha twisted well developed with fresh & healthy 30 cm ht. in 15 cm size Earthen Pot/ Plastic Pot as per direction of the officer-in-charge.	each	52
26.273	Providing and Displaying Adenium Obesum grafted well developed with fresh & healthy 30 to 60 cm ht. in 25 cm size Earthen Pot/ Plastic Pot as per direction of the officer-in-charge.	each	362
26.274	Providing and Displaying Adenium Obesum well developed with fresh & healthy 4 to 5 branch 60 to 75 cm ht. in 40 cm size Earthen Pot/ Plastic Pot as per direction of the officer-in-charge.	each	711

Item No.	Description	Unit	Through Rate
26.275	Providing and Displaying Bamboo Buddha valley with fresh & healthy 3 to 4 suckers having 75 to 90 cm ht. in 30 cm size Earthen Pot/ Plastic Pot as per direction of the officer-in-charge.	each	581
26.276	Providing and Displaying Bamboo Buddha vally variety with umbrella shape plant having 120 to 135 ht. with fresh & healthy foliage well developed in 40 cm Cement pot multi branch, bushy plant as per direction of the officer-in-charge.	each	1292
26.277	Providing and Displaying Bamboo Buddha Valley with fresh & healthy 5 to 6 suckers 1.80 m to 2.10m ht umbrella type plant well developed in 50 cm Cement Pot as per direction of the officer-in-charge.	each	1809
26.278	Providing and Displaying Bird of paradise well developed with fresh & healthy 90 to 120 cm ht in 30 cm Earthen Pot/ Plastic Pot as per direction of the officer-in-charge.	each	491
26.279	Providing and Displaying Bismarckia Palm 115 to 180 cm ht., well developed 12 and above good colour fresh and healthy leaves in 40 cm Cement Pot as per direction of the officer-in-charge.	each	2442
26.280	Providing and Displaying Bougainvillea named variety, Sobhra, Thima, Marry palmar, Cherry Blossom etc. well developed with fresh & healthy bushy plant in full bloom 75 to 90 cm ht. in 35 cm Cement Pot as per direction of the officer-in-charge.	each	407
26.281	Providing and Displaying Cycus cirsnallis well developed with fresh & healthy 35 to 40 lush green leaves in 40 cm Cement Pot as per direction of the officer-in-charge.	each	2455
26.282	Providing and Displaying Cycus revoluta in 35 cm challi, specimen plant, having 30 to 40 with fresh and healthy, leaves having 25cm to 30cm circumference of base stem well developed as per direction of the officer-in-charge.	each	1492
26.283	Providing and Displaying Cycus revoluta specimen plant, having 45 to 50 fresh and healthy, leaves having 30cm to 35cm circumference of base stem well developed in 40 cm challi, as per direction of the officer-in-charge.	each	1938
26.284	Providing and Displaying Cyprus Golden 30 to 45 cm ht. well developed good Golden colour foliage, Conical Shape in 30 cm Earthen Pots as per direction of the officer-in-charge.	each	478
26.285	Providing and Displaying Cyprus golden well shaped developed with good coloured foliage fresh & healthy 60 to 75 cm ht in 35 cm Earthen Pot as per direction of the officer-in-charge.	each	543
26.286	Providing and Displaying Cyprus Golden Conical Shape 150 to 165 cm ht., with fresh and healthy Golden colour foliage in 40 cm Cement Pot as per direction of the officer-in-charge.	each	2035
26.287	Providing and Displaying Euphorbia milli hybrid variety with multi branch, full bloom, with fresh and healthy well developed having 30 to 45 cm ht. in 35 cm Cement Pots as per direction of the officer-in-charge.	each	814
26.288	Providing and Displaying Ficus black vivion piller Topiary (cylinder type) well developed with fresh & healthy 180 to 210 cm ht in 40 cm Cement Pot as per direction of the officer-in-charge.	each	2584
26.289	Providing and Displaying Ficus Long Island Topiary well developed with fresh & healthy 5 to 6 ball specific size and shape 120 to 150 cm ht in 40 cm Cement Pot as per direction of the officer-in-charge.	each	1550
26.290	Providing and Displaying Ficus Nuda Topiary well developed with fresh & healthy 8 to 10 big ball specific size and shape 180to 210cm ht in 40 cm Cement Pot as per direction of the officer-in-charge.	each	3269
26.291	Providing and Displaying Ficus Nuda well developed with fresh & healthy foliage 45 to 60cm spread 75 to 90 cm ht. bushy plant in 35 cm Cement Pot as per direction of the officer-in- charge.	each	426
26.292	Providing and Displaying Ficus Retusa Topiary well developed with fresh & healthy 8 to 10 big ball specific size and shape 180 to 210cm ht in 40 cm Cement Pot as per direction of the officer-in-charge.	each	2713
26.293	Providing and Displaying Ficus reginold well developed fresh & healthy foliage 60 to 75 cm spread 105 to 120 cm ht., Bushy plant in 35 cm Cement Pot as per direction of the officer-in-charge.	each	475
26.294	Providing and Displaying Ficus resnold piller type Topiary well developed with fresh & healthy 210 to 240 cm ht in 40 cm Cement Pot as per direction of the officer-in-charge.	each	3101

Item No.	Description	Unit	Through Rate
26.295	Providing and Displaying Ficus resnold Topiary well developed with fresh & healthy 8 to 10 big ball specific size 210 to 240 cm ht in 50 cm Cement Pot as per direction of the officer-in-charge.	each	2577
26.296	Providing and Displaying Ficus Starlight with fresh, healthy and attractive foliage 90 to 120 cm spread 75 to 90 cm ht., specimen bushy plant, in 35 cm Cement Pot as per direction of the officer-in-charge.	each	1085
26.297	Providing and Displaying Fishtail palm well developed with fresh & healthy foliage leaves of ht 180to 190 cm Specimen plant in 35 cm Cement Pot as per direction of the officer-in-charge.	each	388
26.298	Providing and Displaying Foxtail palm well developed with fresh & healthy foliage of ht. 210 to 240 cm in big 40 cm Cement Pot as per direction of the officer-in-charge.	each	1492
26.299	Providing and Displaying Furcaira variegated well developed with fresh & healthy foliage 8 to 10 leaves in 30 cm Earthen Pot as per direction of the officer-in-charge.	each	284
26.300	Providing and Displaying Furcaria Variegated hybrid well developed with fresh & healthy foliage 20 and above attractive leaves in 35 cm Cement Pot as per direction of the officer-in-charge.	each	568
26.301	Providing and Displaying Golden Bottle brush Topiary well developed with fresh & healthy foliage 5 to 6 big ball 115 to 180 cm ht in 40 cm Cement Pot as per direction of the officer-in- charge.	each	614
26.302	Providing and Displaying Zamia palm well developed with fresh & healthy leaves 120 cm ht in 35 cm cement pot as per direction of the officer-in-charge.	each	1163
26.303	Providing and Displaying Latania Rubra Palm well developed with fresh & healthy foliage 150 to 180 cm ht. with 6 to 7 leaves in big 35 cm Cement Pot as per direction of the officer-in- charge.	each	1292
26.304	Providing and Displaying Mascarena palm well developed with fresh & healthy foliage leaves 180 to 210 cm ht in 40 cm Cement Pot as per direction of the officer-in-charge.	each	2326
26.305	Providing and Displaying Phoenix roebelenii palm well developed having 20 to 25 fresh & healthy leaves 90 to 135 cm ht. in 35 cm Cement Pot as per direction of the officer-in-charge.	each	678
26.306	Providing and Displaying Topiary plant of Ficus Bush King well developed with fresh & healthy foliage from Top to Bottom with single piller 60 to 75 cm spread, 210 to 225 cm ht., in 35 cm Cement Tray/Cement Pot as per direction of the officer-in-charge.	each	1628
26.307	Providing and Displaying Topiary plant of Ficus Nuda well developed with fresh & healthy foliage from Top to Bottom with single piller 75 to 90 cm spread, 195 to 210 cm ht. in 35 cm Cement Tray /Cement Pot as per direction of the officer-in-charge.	each	1628
26.308	Providing and Displaying Topiary plant of Ficus Panda well developed with fresh & healthy foliage with 6 to 7 Balls and 75 to 90 cm spread each Ball, 150 to 165 cm ht., in 35 cm Cement Tray /Cement Pot as per direction of the officer-in-charge.	each	1421
26.309	Providing and Displaying Topiary planted Casuarina plant fresh & healthy having 8 to 10 specific shape and size ball well developed 195 to 210 cm ht. in 40 cm Cement Pot as per direction of the officer-in-charge.	each	1357
26.310	Providing and Displaying Travellers palm well developed with fresh & healthy foliage 150 to 180 cm ht. in 35 cm Cement Pot as per direction of the officer-in-charge.	each	611
26.311	Providing and Displaying Travellers palm well developed with fresh & healthy leaves foliage 210 to 240 cm ht specimen plant in 40 cm Cement Pot as per direction of the officer-in-charge.	each	1227
26.312	Providing and Displaying Washingtonia filifera palm well developed 90 to 105 cm stem ht. having 5 to 6 straight fresh and healthy leaves in 35 cm Cement Pot as per direction of the officer-in- charge.	each	678
	GROUND COVERS		
26.313	Providing and stacking of Alpinia Variegated (three in one) having ht. 30 cm and above, with fresh and healthy variegated foliage in 20 cm size of Earthen Pot / Plastic Pot & as per direction of the officer-in-charge.	each	156
26.314	Providing and stacking of Alternanthera species of height 15 cm to 20 cm, full of branches and foliage in 15 cm size of Polybag & as per direction of the officer-in- charge.	each	26
26.315	Providing and stacking of Asparagus marrie, well developed 15 to 20 leaves, full of branches and foliage in 15 cm size of Earthen Pot / Plastic Pot & as per direction of the officer-in-charge.	each	71

Item No.	Description	Unit	Through Rate
26.316	Providing and stacking of Asparagus sprengeri of height 15 cm to 20 cm, full of leafy branches in 15 cm size of Polybag & as per direction of the officer-in-charge.	each	52
26.317	Providing and stacking of Aspidistra, having 10 to 15 leaves well developed with fresh & healthy in 15 cm size of Earthen Pot / Plastic Pot & as per direction of the officer-in-charge.	each	52
26.318	Providing and stacking of Clerodendrum inerme of ht. 20 cm to 30 cm multi branched in 15 cm size of Polybag & as per direction of the officer-in-charge.	each	13
26.319	Providing and stacking of Clerodendrum inerme having ht. 25 cm to 30 cm multi branched in 15 cm size of Earthen Pot / Plastic Pot & as per direction of the officer-in-charge.	each	26
26.320	Providing and stacking of Chlorophytum (Green), full of leafy suckers in 15 cm size of Polybag & as per direction of the officer-in-charge.	each	26
26.321	Providing and stacking of Chlorophytum-variegated, full of leafy suckers in 15 cm size of Polybag & as per direction of the officer-in-charge.	each	26
26.322	Providing and stacking of Cuphea chinensis of ht. 20-30 cm full of branches and healthy foliage in 15 cm size of Polybag & as per direction of the officer-in-charge.	each	26
26.323	Providing and stacking of Dianella variegated, with 3 to 4 variegated leaves in 15 cm size of Earthen Pot / Plastic Pot & as per direction of the officer-in-charge.	each	39
26.324	Providing and stacking of Duranta Golden, having ht.15 to 20 cm bushy shape with fresh and healthy leaves in 20 cm size of Polybag & as per direction of the officer-in- charge.	each	26
26.325	Providing and stacking of Euphorbia milli hybrid variety, having ht.30 cm to 45 cm with multi branch, full bloom, fresh and healthy leaves in 20 cm size of Earthen Pot / Plastic Pot & as per direction of the officer-in-charge...	each	90
26.326	Providing and stacking of Euphorbia milli hybrid variety, having ht. 30 cm to 45 cm with multi branch, full bloom, fresh and healthy leaves in 25 cm size of Earthen Pot / Plastic Pot & as per direction of the officer-in-charge..	each	136
26.327	Providing and stacking of Ipomea (Golden leaves), with fresh and healthy leaves in 10 cm size of Earthen Pot / Plastic Pot & as per direction of the officer-in-charge.	each	26
26.328	Providing and stacking of Iresine herbstii, of height 20-30 cm. full of branches well developed in 10 cm size of Earthen Pot / Plastic Pot & as per direction of the officer-in-charge.	each	19
26.329	Providing and stacking of Iresine herbstii, of height 20-30 cm., full of branches well developed in 10 cm size of Earthen Pot / Plastic Pot & as per direction of the officer-in-charge.	each	26
26.330	Providing and stacking of Juniperous prostrata with 5 to 6 lateral branches and green foliage in 15 cm size of Earthen Pot / Plastic Pot & as per direction of the officer-in-charge.	each	39
26.331	Providing and stacking of Ophiopogon, Green/Black full of leaves in 10 cm size of Earthen Pot / Plastic Pot & as per direction of the officer-in-charge	each	26
26.332	Providing and stacking of Ophiopogon jaburan (variegated), full of variegated leaves in 10 cm size of Earthen Pot / Plastic Pot & as per direction of the officer-in-charge.	each	26
26.333	Providing and stacking of Ophiopogon jaburan (variegated), full of variegated leaves in Earthen Pot/Plastic Pot of size 15 cm. as per direction of the officer-in-charge.	each	39
26.334	Providing and stacking of Portulacaria afra (Jade) with 5 to 6 branches in 15 cm size of Earthen Pot / Plastic Pot & as per direction of the officer-in-charge.	each	39
26.335	Providing and stacking of Schefflera green, having 3 to 4 branch, ht. 30 to 45 cm well developed with fresh & healthy in 15 cm size of Earthen Pot/Plastic Pot as per direction of the officer-in- charge.	each	39
26.336	Providing and stacking of Setcreasea purpurea full of variegated leaves in 15 cm size of Earthen Pot/Plastic Pot as per direction of the officer-in-charge.	each	26
26.337	Providing and stacking of Syngonium (Butterfly) variegated with 2-3 suckers healthy foliage in Earthen Pot/Plastic Pot of size 15 cm. as per direction of the officer-in-charge.	each	39
26.338	Providing and stacking of Syngonium golden of height 30-45 cm. with 2-3 suckers healthy foliage in Earthen Pot/Plastic Pot of size 15 cm. as per direction of the officer-in-charge.	each	39
26.339	Providing and stacking of Syngonium miniature dwarf, having height 30-45 cm. with 2-3 suckers healthy foliage in Earthen Pot/Plastic Pot of size 15 cm. as per direction of the officer-in- charge.	each	54

Item No.	Description	Unit	Through Rate
26.340	Providing and stacking of Syngonium variegated, of height 20-30 cm. with 2-3 suckers healthy foliage in Earthen Pot/Plastic Pot of size 10 cm. as per direction of the officer-in-charge.	each	27
26.341	Providing and stacking of Tradescantia, full of leaves in Earthen Pot/Plastic Pot of size 15 cm. as per direction of the officer-in-charge.	each	27
26.342	Providing and stacking of Tradescantia zebrina having in 15 cm size of Earthen Pot / Plastic Pot & as per direction of the officer-in-charge.	each	26
26.343	Providing and stacking of Wedelia trilobata, full of leaves in 15 cm size of Poly bags & as per direction of the officer-in-charge.	each	19
	TREE PLANTS		
26.344	Providing and stacking of Acacia auriculiformis of ht 150-165 cm in bag size of 25 cm as per direction of the officer-in-charge.	each	84
26.345	Providing and stacking of Adansonia digitata (kalp vricksh) of ht 150-165 cm in bag size of 25 cm as per direction of the officer-in-charge.	each	342
26.346	Providing and stacking of Albizzia lebbek of height 150-165 cm. in bag of size 25 cm as per direction of the officer-in-charge.	each	84
26.347	Providing and stacking of Alstonia scholaris of height 150-165 cm. in bag of size 25 cm as per direction of the officer-in-charge.	each	84
26.348	Providing and stacking of Azadirachta indica (Neem) of height 120-130cm in big Polybag of size 25 cm as per direction of the officer-in-charge.	each	84
26.349	Providing and stacking of Bassia latifolia (Mahua) of height 90-105 cm. in big Polybag of size 25 cm as per direction of the officer-in-charge.	each	84
26.350	Providing and stacking of Bauhinia blakeana (Kachnar) of height 120-150 cm. in big poly bags of size 25 cm as per direction of the officer-in-charge.	each	103
26.351	Providing and stacking of Bauhinia purpurea (Kachnar) of height 150-165 cm. in big poly bags of size 25 cm as per direction of the officer-in-charge.	each	65
26.352	Providing and stacking of Bombax ceiba of height 150-165 cm. in big poly bags of size 25 cm as per direction of the officer-in-charge.	each	90
26.353	Providing and stacking of Bottle palm of ht. 120-150 cm bottom girth 15-20 cm well developed in big poly bags of size 25 cm as per direction of the officer-in-charge.	each	233
26.354	Providing and stacking of Bottle palm of ht. 210-240 cm bottom girth 25-30 cm well developed in big HDPE bags.	each	452
26.355	Providing and stacking of Bottle palm of ht. 270-300 cm bottom girth 30-40 cm well developed in big HDPE bags as per direction of the officer-in-charge.	each	711
26.356	Providing and stacking of Butea frondosa (Flame of Forest) of height 60-75 cm. in big poly bags of size 25 cm as per direction of the officer-in-charge.	each	71
26.357	Providing and stacking of Callistemon lanceolatus of height 150-165 cm. in big poly bags of size 25 cm as per direction of the officer-in-charge.	each	84
26.358	Providing and stacking of Casuarina equisetifolia of height 150-165 cm in big poly bags of size 25 cm as per direction of the officer-in-charge.	each	78
26.359	Providing and stacking of Cassia fistula (Amaltash) of height 120-135 cm. in big poly bags of size 25 cm as per direction of the officer-in-charge.	each	84
26.360	Providing and stacking of Cassia siamea of height 150-165 cm. in big poly bags of size 25 cm as per direction of the officer-in-charge.	each	84
26.361	Providing and stacking of Cassia javanica of height 120-150 cm. in big poly bags of size 25 cm as per direction of the officer-in-charge.	each	110
26.362	Providing and stacking of Cassia nodosa of height 120-150 cm. in big poly bags of size 25 cm as per direction of the officer-in-charge.	each	84
26.363	Providing and stacking of Ceiba pentandra of height 150-165 cm. in big poly bags of size 25 cm as per direction of the officer-in-charge.	each	84
26.364	Providing and stacking of Chorisia speciosa of height 150-165 cm. in big poly bags of size 25 cm as per direction of the officer-in-charge.	each	103
26.365	Providing and stacking of Chukrassia tabularis of height 150-165 cm. in big poly bags of size 25 cm as per direction of the officer-in-charge.	each	84

Item No.	Description	Unit	Through Rate
26.366	Providing and stacking of Dalbergia sissoo (Seasam) of height 120-135 cm. in big poly bags of size 25 cm as per direction of the officer-in-charge.	each	71
26.367	Providing and stacking of Delonix regia (Gulmohar) of height 150-165 cm. in big poly bags of size 25 cm as per direction of the officer-in-charge.	each	78
26.368	Providing and stacking of Erythrina indica of height 150-165 cm. in big Polybag of size 25 cm as per direction of the officer-in-charge.	each	84
26.369	Providing and stacking of Ficus benjamina (green) of height 120-135 cm. with 6-8 branches and lush green foliage in gunny bags of size 25 cm as per direction of the officer-in-charge.	each	136
26.370	Providing and stacking of Ficus benjamina (green) of height 150-165 cm., bushy with healthy branches and lush green foliage in 35 cm HDPE bags as per direction of the officer-	each	233
26.371	Providing and stacking of Ficus bengalensis (Bargad) of height 120-135 cm. in big poly bags of size 25 cm as per direction of the officer-in-charge.	each	84
26.372	Providing and stacking of Ficus bengalensis (varigated) of height 75-90 cm., multibranched in earthen pots of size 30 cm as per direction of the officer-in-charge.	each	103
26.373	Providing and stacking of Ficus bengalensis krishna of height 75-90 cm., multibranched in earthen pots of size 30 cm as per direction of the officer-in-charge.	each	155
26.374	Providing and stacking of Ficus elastica Decora (Rubber) of height 45-60 cm. in earthen pots of size 25 cm as per direction of the officer-in-charge.	each	84
26.375	Providing and stacking of Ficus infectoria (Pilkhan) of height 150-165 cm. in big Polybag of size 25 cm as per direction of the officer-in-charge.	each	84
26.376	Providing and stacking of Ficus lyrata of height 45-60 cm. in earthen pots of size 25 cm as per direction of the officer-in-charge.	each	116
26.377	Providing and stacking of Ficus nuda of height 120-135 cm. with 6-8 branches and lush green foliage in gunny bags of size 25 cm as per direction of the officer-in-charge	each	155
26.378	Providing and stacking of Ficus nuda of height 150-165 cm., bushy with healthy branches and lush green foliage in big size HDPE bags as per direction of the officer-in-charge.	each	245
26.379	Providing and stacking of Ficus religiosa (Peepal) of height 150-165 cm. in big poly bags of size 30 cm as per direction of the officer-in-charge.	each	84
26.380	Providing and stacking of Ficus retusa well branched of height 120-135 cm. in big poly bags of size of 30 cm as per direction of the officer-in-charge.	each	155
26.381	Providing and stacking of Ficus shiela of height 150-165 cm. in big poly bags of size 25 cm as per direction of the officer-in-charge.	each	110
26.382	Providing and stacking of Fishtail palm of ht. 150-180 cm bottom girth 15-20 cm well developed in big poly bags of size 25 cm as per direction of the officer-in-charge.	each	258
26.383	Providing and stacking of Fishtail palm of ht. 210-240 cm bottom girth 25-30 cm well developed in 30 cm HDPE bags as per direction of the officer-in-charge.	each	388
26.384	Providing and stacking of Fishtail palm of ht. 270-300 cm bottom girth 30-35 cm well developed in 40 cm HDPE bags as per direction of the officer-in-charge.	each	711
26.385	Providing and stacking of Foxtail palm of ht. 120-150 cm bottom girth 12-15 cm well developed in big poly bags of size 25 cm as per direction of the officer-in-charge.	each	297
26.386	Providing and stacking of Foxtail palm of ht. 180-210 cm bottom girth 15-20 cm well developed in big size HDPE bags as per direction of the officer-in-charge.	each	620
26.387	Providing and stacking of Foxtail palm of ht. 240-270 cm bottom girth 25-30 cm well developed in big size HDPE bags as per direction of the officer-in-charge.	each	840
26.388	Providing and stacking of Grevillea robusta (Silver Oak) of height 150-165 cm. in big poly bags of size 25 cm as per direction of the officer-in-charge.	each	65
26.389	Providing and stacking of Heterophragma adenophyllum (Marore fali) of height 150-165 cm. in Big poly bag of size 25 cm as per direction of the officer-in-charge.	each	78
26.390	Providing and stacking of Ingla dulcis (Jungle Jalebi) of height 150-165 cm. in big poly bags of size 25 cm as per direction of the officer-in-charge.	each	103
26.391	Providing and stacking of Jacaranda mimosifolia of height 150-165 cm. in big poly bags of size 25 cm as per direction of the officer-in-charge.	each	78
26.392	Providing and stacking of Kigelia pinnata of height 150-165 cm. in big poly bags of size 25 cm as per direction of the officer-in-charge.	each	103

Item No.	Description	Unit	Through Rate
26.393	Providing and stacking of Lagerstroemia flosreginae of height 150-165 cm in big poly bag of size 25 cm as per direction of the officer-in-charge.	each	155
26.394	Providing and stacking of Lagerstroemia thorelli of height 150-165 cm in big poly bag of size 25 cm as per direction of the officer-in-charge.	each	155
26.395	Providing and stacking of Magnolia grandiflora of height 150-165 cm. in big poly bag of size 25 cm as per direction of the officer-in-charge.	each	491
26.396	Providing and stacking of Mangifera indica (Mango-grafted) of height 60-75 cm. in big poly bag of size 25 cm as per direction of the officer-in-charge.	each	71
26.397	Providing and stacking of Melia azedarach of height 120-135 cm. in big poly bag of size 25 cm as per direction of the officer-in-charge.	each	58
26.398	Providing and stacking of Michelia champa (Golden Champa) of height 90-105 cm. in earthen pots of size 25 cm as per direction of the officer-in-charge.	each	116
26.399	Providing and stacking of Milletia ovalifolia of height 120-135 cm. in big poly bag of size 25 cm as per direction of the officer-in-charge.	each	71
26.400	Providing and stacking of Millingtonia hortensis of height 150-165 cm. in big poly bag of size 25 cm as per direction of the officer-in-charge.	each	90
26.401	Providing and stacking of Mimusops elengi (Maulsri) of height 150-165 cm. in big poly bag of size 25 cm as per direction of the officer-in-charge.	each	97
26.402	Providing and stacking of Mimusops elengi (Maulsri) of height 180-195 cm., well developed with thick stem in 30 cm HDPE bag as per direction of the officer-in-charge.	each	161
26.403	Providing and stacking of Nauclea cadamba (Kadam) of height 150-165 cm. in big poly bag of size 25 cm as per direction of the officer-in-charge.	each	84
26.404	Providing and stacking of Parkinsonia species of height 120-135 cm. in big poly bag of size 25 cm as per direction of the officer-in-charge.	each	58
26.405	Providing and stacking of Peltophorum species of height 150-165 cm. in big poly bags of size 25 cm as per direction of the officer-in-charge.	each	78
26.406	Providing and stacking of Phoenix sylvestris Roxb. (Wild date palm/khajur) of height 150-165 cm. in 30-35 cm size HDPE Bag as per direction of the officer-in-charge.	each	840
26.407	Providing and stacking of Phyllanthus emblica (Amla) of height 150-165 cm. in 30 cm HDPE Bag as per direction of the officer-in-charge.	each	116
26.408	Providing and stacking of Pinus longifolia (Pinus) of height 90-105 cm. in cement pots of size 35 cm as per direction of the officer-in-charge.	each	711
26.409	Providing and stacking of Pithecellobium dulce (Jungle Jalebi) of height 120-150 cm. in Big HDPE Bag as per direction of the officer-in-charge.	each	78
26.410	Providing and stacking of Plumeria acutifolia of height 120-135 cm. with 2-3 branches in HDPE bag of size 30 cm as per direction of the officer-in-charge.	each	142
26.411	Providing and stacking of Plumeria acutifolia of height 150-165 cm. with 3-4 branches in 35 cm HDPE bag as per direction of the officer-in-charge.	each	258
26.412	Providing and stacking of Plumeria alba of height 120-135 cm. with 2-3 branches in bags of size 30 cm as per direction of the officer-in-charge.	each	155
26.413	Providing and stacking of Plumeria alba of height 165-180 cm. with 3-4 branches and thick stem in 35 cm HDPE bags as per direction of the officer-in-charge.	each	291
26.414	Providing and stacking of Plumeria alba dwarf of height 90-105 cm. with 3-4 branches and thick stem in 40 cm HDPE bags as per direction of the officer-in-charge.	each	969
26.415	Providing and stacking of Plumeria Rubra of height 120-150 cm. with 3-4 branches and thick stem in 35 cm HDPE bags as per direction of the officer-in-charge.	each	517
26.416	Providing and stacking of Pongamia glabra (Papri) of height 120-135 cm. in big poly bag of size 25 cm as per direction of the officer-in-charge.	each	65
26.417	Providing and stacking of Polyalthia longifolia (Ashok) of height 150-165 cm. in polybags of size 25 cm as per direction of the officer-in-charge.	each	103
26.418	Providing and stacking of Polyalthia longifolia (Ashok) of height 180-195 cm. in gunny bag of size 30 cm as per direction of the officer-in-charge.	each	129
26.419	Providing and stacking of Polyalthia pendula (Ashok Pendula) of height 150-165 cm. in polybags of size 25 cm as per direction of the officer-in-charge.	each	103

Item No.	Description	Unit	Through Rate
26.420	Providing and stacking of Polyalthia pendula (Ashok Pendula) of height 180-195 cm. in gunny bag of size 30 cm as per direction of the officer-in-charge.	each	129
26.421	Providing and stacking of Pterospermum acerifolium (Kanak Champa) of height 150-165 cm. in big poly bags of size 25 cm as per direction of the officer-in-charge.	each	84
26.422	Providing and stacking of Putranjiva roxburghii of height 90-105 cm. in big Polybag of size 25 cm as per direction of the officer-in-charge.	each	58
26.423	Providing and stacking of Saraca indica (Sita Ashok) of height 105-120 cm. in big poly bags of size 25 cm as per direction of the officer-in-charge.	each	103
26.424	Providing and stacking of Schleichera trijuga (Kusum) of height 150-165 cm. in big poly bags of size 25 cm as per direction of the officer-in-charge.	each	90
26.425	Providing and stacking of Spathodea campanulata of height 150-165 cm. in big poly bags of size 25 cm as per direction of the officer-in-charge.	each	97
26.426	Providing and stacking of Eugenia jambolana (Jamun) of height 150-165 cm. in big poly bags of size 25 cm as per direction of the officer-in-charge.	each	97
26.427	Providing and stacking of Tabebuia sp. of height 150-165 cm. in big polybags of size 25 cm as per direction of the officer-in-charge.	each	110
26.428	Providing and stacking of Tamarindus indica (Imli) of height 120-150 cm. in big polybags of size 25 cm as per direction of the officer-in-charge.	each	103
26.429	Providing and stacking of Tecoma argentea of height 120-135 cm. in big poly bag of size 25 cm as per direction of the officer-in-charge.	each	103
26.430	Providing and stacking of Tectona grandis (Teak) of height 150-165 cm. in big polybags of size 25 cm as per direction of the officer-in-charge.	each	142
26.431	Providing and stacking of Terminalia arjuna of height 150-165 cm. in big polybags of size 25 cm as per direction of the officer-in-charge.	each	78
26.432	Providing and stacking of Washingtonia filifea palm stem ht. 90-105 cm with 6-7 healthy leaves lush green leaves well developed in big size HDPE Bags as per direction of the officer-in- charge.	each	517
26.433	Providing and stacking of Washingtonia filifea palm stem ht. 120-135 cm with 8-10 healthy leaves lush green leaves well developed in big size HDPE Bags as per direction of the officer- in-charge.	each	840
	SHRUBS		
26.434	Providing and stacking of Bauhinia acuminata of height 60-75 cm. in Polybag of size 20 cm as per direction of the officer-in-charge.	each	58
26.435	Providing and stacking of Bauhinia tomentosa (yellow) of height 60-75 cm. in Polybag of size 20 cm as per direction of the officer-in-charge.	each	58
26.436	Providing and stacking of Beloperone species of height 30-45 cm. in poly bags of size 20 cm as per direction of the officer-in-charge.	each	52
26.437	Providing and stacking of Caesalpinia pulcherrima species of height 45-60 cm. in Polybag of size 20 cm as per direction of the officer-in-charge.	each	58
26.438	Providing and stacking of Calliandra, emarginata of height 45-60 cm. in Polybag of size 20 cm as per direction of the officer-in-charge.	each	45
26.439	Providing and stacking of Calliandra hybrida of height 75-90 cm. with 4-5 branches in bag of size 25 cm as per direction of the officer-in-charge.	each	58
26.440	Providing and stacking of Calliandra hybrida of height 105-120 cm., well branched, bushy in big size HDPE bag as per direction of the officer-in-charge.	each	116
26.441	Providing and stacking of Cassia biflora of height 45-60 cm. in earthen pots of size 15 cm as per direction of the officer-in-charge.	each	58
26.442	Providing and stacking of Cassia biflora of height 60-75 cm. with 4-5 branches in earthen pot of size 20 cm as per direction of the officer-in-charge.	each	71
26.443	Providing and stacking of Cassia biflora of height 90-105 cm., well branched, bushy in 30 cm HDPE bag as per direction of the officer-in-charge.	each	129
26.444	Providing and stacking of Cassia laevigata of height 45-60 cm. in Polybag of size 20 cm as per direction of the officer-in-charge.	each	45

Item No.	Description	Unit	Through Rate
26.445	Providing and stacking of Cassia laevigata of height 60-75 cm. with 4-5 branches in bag of size 20 cm as per direction of the officer-in-charge.	each	52
26.446	Providing and stacking of Cestrum nocturnum (Raat ki Rani) of height 60-75 cm. with 4-5 branches in bag of size 25 cm as per direction of the officer-in-charge.	each	52
26.447	Providing and stacking of Chandni dwarf of height 15-20 cm., well branched in earthen pots of size 15 cm as per direction of the officer-in-charge as per direction of the officer-in-	each	45
26.448	Providing and stacking of Dombeya mastersii of height 60-75 cm. with 4-5 branches in bag of size 25 cm as per direction of the officer-in-charge.	each	142
26.449	Providing and stacking of Euphorbia caracasana (bronze colour leaves) of height 60-75 cm. with 2-3 branches in earthen pots of size 15 cm as per direction of the officer-in-charge.	each	52
26.450	Providing and stacking of Euphorbia caracasana (bronze colour leaves) of height 60-75 cm. with 4-5 branches in bag of size 25 cm as per direction of the officer-in-charge.	each	71
26.451	Providing and stacking of Euphorbia caracasana (bronze colour leaves) of height 90-105 cm., bushy in big size HDPE bag as per direction of the officer-in-charge.	each	136
26.452	Providing and stacking of Euphorbia pulcherrima (dark red double bracts) well branched of height 60-75 cm. in earthen pots of size 25 cm as per direction of the officer-in-charge.	each	142
26.453	Providing and stacking of Euphorbia pulcherrima (dark red) well branched (poinsettia Red Hegg) of height 60-75 cm. in earthen pots of size 20 cm as per direction of the officer-in-charge.	each	78
26.454	Providing and stacking of Excoecaria bicolour of height 45-60 cm. in earthen pots of size 15 cm as per direction of the officer-in-charge.	each	52
26.455	Providing and stacking of Ficus blackii (F.vivion) of height 45-60 cm. with 6-8 branches healthy foliage in earthen pots of size 25 cm as per direction of the officer-in-charge.	each	142
26.456	Providing and stacking of Ficus blackii (F.vivion) (bushy) of height 150-165 cm. with 8-10 branches and healthy foliage in earthen pots of size 30 cm as per direction of the officer-in-charge.	each	323
26.457	Providing and stacking of Ficus Reginald well branched, bushy of height 60-75 cm. in earthen pots of size 25 cm as per direction of the officer-in-charge.	each	129
26.458	Providing and stacking of Ficus panda of height 30-45 cm. with 3-4 branches and healthy foliage in p.bag of size 20 cm as per direction of the officer-in-charge.	each	45
26.459	Providing and stacking of Ficus panda of height 45-60 cm. with 6-7 branches and healthy foliage in p.bag of size 25 cm as per direction of the officer-in-charge.	each	71
26.460	Providing and stacking of Ficus panda of height 60-90 cm, with 8-10 branches, and healthy foliage, bushy in big size HDPE bag as per direction of the officer-in-charge.	each	233
26.461	Providing and stacking of Ficus panda of height 90-105 cm. with 10-12 branches and healthy foliage, well formed in cement pots of size 30 cm as per direction of the officer-in-charge.	each	291
26.462	Providing and stacking of Ficus long Island of height 15 cm to 20 cm, full of branches and foliage in 15 cm size of Earthen Pot / Plastic Pot & as per direction of the officer-in-charge.	each	58
26.463	Providing and stacking of Gardenia jasminoides of height 45-60 cm. with 3-4 branches in earthen pots of size 15 cm as per direction of the officer-in-charge.	each	65
26.464	Providing and stacking of Hamelia patens of height 30-45 cm. with 3-4 branches in poly bags of size 20 cm as per direction of the officer-in-charge.	each	26
26.465	Providing and stacking of Hamelia patens of height 60-75 cm. with 6-8 branches in poly bags of size 25 cm as per direction of the officer-in-charge.	each	65
26.466	Providing and stacking of Hamelia patens of height 90-105 cm. bushy in big size HDPE bags as per direction of the officer-in-charge.	each	129
26.467	Providing and stacking of Hamelia patens (Dwarf) of height 30-45 cm. with 3-4 branches in earthen pots of size 15 cm as per direction of the officer-in-charge.	each	52
26.468	Providing and stacking of Hibiscus rosasinensis of height 45-60 cm. with 3-4 branches in earthen pots of size 15 cm as per direction of the officer-in-charge.	each	45
26.469	Providing and stacking of Hibiscus rosasinensis of height 60-75 cm. with 5-6 branches in p.bag of size 20 cm as per direction of the officer-in-charge.	each	58

Item No.	Description	Unit	Through Rate
26.470	Providing and stacking of Hibiscus rosasinensis of height 90-105 cm., bushy in 35 cm HDPE bag as per direction of the officer-in-charge.	each	116
26.471	Providing and stacking of Hibiscus variegated of height 45-60 cm. with 3-4 branches and healthy variegated foliage in earthen pots of size 15 cm as per direction of the officer-in-charge.	each	58
26.472	Providing and stacking of Hibiscus variegated of height 60-75 cm. with 8-10 branches and healthy variegated foliage in cement pots of size 35 cm as per direction of the officer-in-charge.	each	233
26.473	Providing and stacking of Hibiscus variegated of height 60-75 cm. with healthy variegated foliage in Polybag size 25 cm as per direction of the officer-in-charge.	each	71
26.474	Providing and stacking of Jatropha multifida (red colour) of height 45-60 cm. with 2-3 branches in earthen pots of size 15 cm as per direction of the officer-in-charge.	each	45
26.475	Providing and stacking of Jatropha multifida (red colour) of height 60-75 cm. multibranched in Polybag of size 20 cm as per direction of the officer-in-charge.	each	58
26.476	Providing and stacking of Largerstroemia indica of height 90-105 cm. multibranched in poly bags of size 25 cm as per direction of the officer-in-charge.	each	52
27.477	Providing and stacking of Largerstroemia indica of height 45-60 cm. in Polybag of size 20 cm as per direction of the officer-in-charge.	each	39
26.478	Providing and stacking of Malpighia coccigera of height 30-45 cm., multibranched in Polybag of size 20 cm as per direction of the officer-in-charge.	each	65
26.479	Providing and stacking of Murraya exotica of height 45-60 cm. in poly bags of size 15 cm as per direction of the officer-in-charge.	each	19
26.480	Providing and stacking of Murraya Koenigii spreng (Kadipatta/meetha neem) of ht 45-60 cm well developed in Polybag of size 20 cm. per direction of the officer-in-charge.	each	32
26.481	Providing and stacking of Mussaenda erythrophylla (Rosea) of height 60-75 cm. multi branched in Polybag of size 25 cm as per direction of the officer-in-charge.	each	142
26.482	Providing and stacking of Nerium oleander (kaner) of height 45-60 cm. with 3-4 branches in poly bags of size 20 cm as per direction of the officer-in-charge.	each	39
26.483	Providing and stacking of Nerium oleander (kaner) of height 60-75 cm. with 5-6 branches in poly bags of size 25 cm as per direction of the officer-in-charge.	each	52
26.484	Providing and stacking of Nerium oleander (kaner) dwarf of height 30-40 cm. in earthen pot of size 20 cm as per direction of the officer-in-charge.	each	52
26.485	Providing and stacking of Nerium oleander variegated of height 45-60 cm. in earthen pots of size 20 cm as per direction of the officer-in-charge.	each	52
26.486	Providing and stacking of Nerium oleander variegated of height 60-75 cm., multibranched in Polybag of size 25 cm as per direction of the officer-in-charge.	each	78
26.487	Providing and stacking of Nyctanthes arbor-tristis (Hasingar) of ht. 90-105 cm in Polybag of size 20 cm as per direction of the officer-in-charge.	each	52
26.488	Providing and stacking of Plumbego capensis well developed with fresh and healthy 30 to 45 cm ht., with bloom in 20 cm Polybag as per direction of the officer-in-charge.	each	78
26.489	Providing and stacking of Putranjiva roxburghii of ht. 45-60 cm in bag of size 15 cm as per direction of the officer-in-charge.	each	26
26.490	Providing and stacking of Putranjiva roxburghii of ht. 60-75 cm in bag of size 20 cm as per direction of the officer-in-charge.	each	39
26.491	Providing and stacking of Tabernaemontana coronaria (Chandni single) of height 45-60 cm. in Polybag of size 20 cm as per direction of the officer-in-charge.	each	45
26.492	Providing and stacking of Tabernaemontana coronaria (Chandni single) of height 75-90 cm. with 5-6 branches in bag of size 25 cm as per direction of the officer-in-charge.	each	58
26.493	Providing and stacking of Tabernaemontana coronaria (Chandni single) of height 90-105 cm.,bushy in 35 cm size HDPE bag as per direction of the officer-in-charge.	each	103
26.494	Providing and stacking of Tabernaemontana coronaria (chandni variegated) of height 45-60 cm. with 3-4 branches Polybag of size 20 cm as per direction of the officer-in-charge.	each	58

Item No.	Description	Unit	Through Rate
26.495	Providing and stacking of Tabernaemontana coronaria (Chandni single) variegated of height 60-75 cm., 5-6 branches in p.bags of size 25 cm as per direction of the officer-in-charge.	each	71
26.496	Providing and stacking of Tabernaemontana coronaria (Chandni single) variegated of height 105-120 cm., multibranched, bushy in 35 cm size HDPE bag as per direction of the officer-in- charge.	each	142
26.497	Providing and stacking of Tabernaemontana divaricata (Chandni double) of height 45-60 cm. in Polybag of size 20 cm as per direction of the officer-in-charge.	each	52
26.498	Providing and stacking of Tabernaemontana divaricata (Chandni double) of height 75-90 cm. with 4-5 branches in bag of size 25 cm as per direction of the officer-in-charge.	each	52
26.499	Providing and stacking of Tabernaemontana divaricata (Chandni double) of height 90-105 cm., bushy in 35 cm size HDPE bag as per direction of the officer-in-charge.	each	116
26.500	Providing and stacking of Tecoma gaudichaudi of height 45-60 cm. in Polybag of size 20 cm as per direction of the officer-in-charge.	each	45
26.501	Providing and stacking of Tecoma gaudichaudi of height 60-75 cm. with 5-6 branches in p.bag of size 25 cm as per direction of the officer-in-charge.	each	65
26.502	Providing and stacking of Tecoma gaudichaudi of height 90-105 cm.,bushy in 35 cm size HDPE bag as per direction of the officer-in-charge.	each	142
26.503	Providing and stacking of Tecoma stans of height 45-60 cm. branched in Polybag of size 20 cm as per direction of the officer-in-charge.	each	58
26.504	Providing and stacking of Tecoma stans of height 60-75 cm. branched in Polybag of size 20 cm as per direction of the officer-in-charge.	each	78
26.505	Providing and stacking of Tecoma stans of height 90-105 cm. bushy in 35 cm size HDPE bag as per direction of the officer-in-charge.	each	155
26.506	Providing and stacking of Thevetia nerifolia of height 30-45 cm. with 3-4 branches in poly bags of size 20 cm as per direction of the officer-in-charge.	each	45
26.507	Providing and stacking of Thevetia nerifolia of height 60-75 cm. with 5-6 branches in poly bags of size 25 cm as per direction of the officer-in-charge.	each	58
26.508	Providing and stacking of Thuja compacta of height 45-60 cm., well branched in Polybag of size 25 cm as per direction of the officer-in-charge.	each	84
26.509	Providing and stacking of Thuja compacta of height 75-90 cm., conical shaped, well formed with healthy foliage in Polybag of size 30 cm as per direction of the officer-in-charge.	each	168
	CREEPER PLANTS		
26.510	Providing and staking Allamanda cathartica of height 30 cm to 45 cm. in 20 cm size of Polybag & as per direction of the officer-in-charge.	each	58
26.511	Providing and stacking Allamanda violacea of height 30 cm to 45 cm. in poly bag of size 20 cm as per direction of the officer-in-charge.	each	58
26.512	Providing and stacking Bignonia venusta (Golden shower) of height 30 cm to 45 cm. in 20 cm size of Polybag & as per direction of the officer-in-charge.	each	52
26.513	Providing and stacking Bougainvillea (Variety Butiana, Lady Mary Baring, Mahara, Mohan, Scarlet Queen, Variegated, Glabra Formosa, Peruviana Odissi, Paratha, Subhra,Thimma, Spectabilis L.N Birla, Refulgens) of height 30 cm. to 45 cm. with 2-3 branches in 20 cm size of Polybag & as per direction of the officer-in-charge. .	each	52
26.514	Providing and stacking Clerodendrum splendens of height 30 cm to 45 cm. in 20 cm size of Polybag & as per direction of the officer-in-charge.	each	39
26.515	Providing and stacking Clerodendrum thomsoniae of height 30 cm to 45 cm in 20 cm size of poly bag & as per direction of the officer-in-charge.	each	58
26.516	Providing and stacking Ipomoea purpurea (Morning glory) of height30 cm to 45 cm. in 20 cm size of Polybag & as per direction of the officer-in-charge.	each	45
26.517	Providing and stacking Jasmine grandiflorum (chameli) of height 30 cm to 45 cm. in 20 cm size of Polybag & as per direction of the officer-in-charge. .	each	39
26.518	Providing and stacking Jasmine humile (Yellow) of height 30 cm to 45 cm. in 20 cm size of Polybag & as per direction of the officer-in-charge.	each	39

Item No.	Description	Unit	Through Rate
26.519	Providing and stacking Passiflora caerulea (Rakhi bel) of height 30 cm to 45 cm. in 20 cm size of Polybag & as per direction of the officer-in-charge.	each	65
26.520	Providing and stacking Petra volubilis of height 30 cm to 45 cm. in 20 cm size of Polybag & as per direction of the officer-in-charge.	each	62
26.521	Providing and stacking Quisqualis indicia of height 30 cm to 45 cm. in 20 cm size of Polybag & as per direction of the officer-in-charge.	each	32
26.522	Providing and stacking Tecoma grandiflora of height 30 cm to 45 cm. in 20 cm size of Polybag & as per direction of the officer-in-charge.	each	52
26.523	Providing and stacking Vernonia elaegnifolia (curtain creeper) plant of height 30 cm to 45 cm. in 20 cm size of Polybag & as per direction of the officer-in-charge.	each	32
	ANNUAL FLOWER SEEDLINGS/CUTTINGS		
26.524	Providing and stacking winter seasonal F1-Hybrid seedlings/cuttings at site of work well developed and healthy free from disease in per tray and each tray having 100 Nos. plants as per direction of the officer-in-charge.		
26.524.1	Alyssum	per tray	775
26.524.2	Antirrhinum dwarf	per tray	1107
26.524.3	Aster dwarf	per tray	922
26.524.4	Brachycome	per tray	922
26.524.5	Calendula double	per tray	922
26.524.6	Carnation (double) Dutch	per tray	1845
26.524.7	Carnation (double) Lilliput	per tray	2214
26.524.8	Carnation hybrid	per tray	1568
26.524.9	Chrysanthemum double	per tray	738
26.524.10	Cineraria	per tray	969
26.524.11	Cineraria dwarf hybrid	per tray	1292
26.524.12	Clarkia hybrid	per tray	1292
26.524.13	Cosmos hybrid	per tray	1292
26.524.14	Dahlia double	per tray	969
26.524.15	Daisy hybrid	per tray	738
26.524.16	Dianthus hybrid	per tray	922
26.524.17	Gazania hybrid	per tray	922
26.524.18	Gerbera hybrid double	per tray	4061
26.524.19	Lupine hybrid	per tray	775
26.524.20	Marigold French Hybrid dwarf	per tray	775
26.524.21	Marigold Inca hybrid	per tray	922
26.524.22	Nasturtium	per tray	922
26.524.23	Nemesia hybrid	per tray	775
26.524.24	Pansy Hybrid	per tray	1199
26.524.25	Petunia hybrid	per tray	1199
26.524.26	Phlox mix colour hybrid	per tray	922
26.524.27	Poppy double	per tray	922
26.524.28	Salvia	per tray	775
26.524.29	Salvia Hybrid different colour	per tray	922
26.524.30	Stock double	per tray	922
26.524.31	Verbena hybrid	per tray	738
26.525	Providing and stacking summer & rainy F1-Hybrid seasonal seedlings at site of work well developed and healthy free from disease in per tray and each tray having 100 Nos. plants as per direction of the officer-in-charge.		
26.525.1	Balsam seedling	per tray	922

Item No.	Description	Unit	Through Rate
26.525.2	Celosia argentea & Celosia crostata Hybrid	per tray	775
26.525.3	Cosmos hybrid	per tray	1107
26.525.4	Gaillardia Double	per tray	775
26.525.5	Gomphrena	per tray	922
26.525.6	Kochia	per tray	775
26.525.7	Portulaca hybrid	per tray	775
26.525.8	Sunflower Dwarf	per tray	922
26.525.9	Vinca Hybrid	per tray	775
26.525.10	Zinnia hybrid	per tray	775

CHAPTER NO. 27

BRIDGES (SUBSTRUCTURE, SUPERSTRUCTURE, BEARINGS AND EXPANSION JOINTS)

CHAPTER 27.0 - Bridges (Substructure, Superstructure, Bearings & Expansion Joints)

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	SUB-STRUCTURE						
27.1	Brick masonry work in 1:3 in sub-structure including scaffolding complete excluding pointing and plastering, as per drawing and MoRT&H Specifications 1300 and 2200	1300 & 2200	cum	1138	-	4329	5467
27.2	Pointing with cement mortar (1:3) on brick work in substructure as per MoRT&H Specifications	1300 & 2200	sqm	55	-	14	69
	Scaffolding is already included in item 27.1						
27.3	Plastering (12 mm thick) with cement mortar (1:3) on brick work in sub-structure as per MoRT&H Specifications	1300 & 2200	sqm	55	-	66	121
	1.Scaffolding is already included in item no. 27.1						
	2.The number of masons and Mazdoors already catered in the cement mortar have been taken into account while providing these categories in brick masonry, pointing and plastering.						
27.4	Stone masonry work in cement mortar 1:3 for substructure including scaffolding complete as per drawing and MoRT&H MORT&H Specifications 1400 and 2200	1400 & 2200					
27.4.1	Random Rubble Masonry		cum	1557	-	3384	4941
	(coursed/uncoursed)						
27.4.2	Coursed rubble masonry (first sort)		cum	1901	-	3389	5291
27.4.3	Ashlar masonry (first sort)		cum	3064	-	3541	6604
	Plain ashlar						
	The labour already considered in the cement mortar have been taken into account while providing these categories in the stone masonry works.						
	Plain/Reinforced cement concrete in sub-structure complete as per drawing and MORT&H MoRT&H Specifications 1500,1700 and 2200	1500, 1700 & 2200					
27.5	**PCC Grade M15 (with concrete Mixer)**						
	Height up to 5m		cum	713	510	3238	4462
27.6	**PCC Grade M20 (with concrete Mixer)**						
	Height up to 5m		cum	713	623	3732	5068
27.7	**PCC Grade M25**						
27.7.1	Height up to 5m						
27.7.1.1	**Using concrete Mixer**		cum	713	623	4120	5456
27.7.1.2	**With Batching Plant, Transit Mixer and Concrete Pump**		cum	89	567	4147	4803
27.7.2	Height 5m to 10m						
27.7.2.1	**Using concrete Mixer**		cum	713	623	4219	5555
27.7.2.2	**With Batching Plant, Transit Mixer and Concrete Pump**		cum	89	567	4322	4977
27.7.3	Height above 10m						
27.7.3.1	**Using concrete Mixer**		cum	713	623	4567	5903

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
27.7.3.2	**With Batching Plant, Transit Mixer and Concrete Pump**		cum	89	567	4540	5196
27.8	**PCC Grade M30**						
27.8.1	Height up to 5m						
27.8.1.1	**Using concrete Mixer**		cum	713	623	4162	5498
27.8.1.2	**With Batching Plant, Transit Mixer and Concrete Pump**		cum	89	1186	4248	5523
27.8.2	Height 5m to 10m						
27.8.2.1	**Using concrete Mixer**		cum	713	623	4362	5698
27.8.2.2	**With Batching Plant, Transit Mixer and Concrete Pump**		cum	89	567	4363	5018
27.8.3	Height above 10m						
27.8.3.1	**Using concrete Mixer**		cum	713	623	4612	5948
27.8.3.2	**With Batching Plant, Transit Mixer and Concrete Pump**		cum	89	567	4583	5238
27.9	**RCC Grade M20**						
27.9.1	Height up to 5m						
27.9.1.1	**Using concrete Mixer**		cum	713	623	3755	5091
27.9.1.2	**With Batching Plant, Transit Mixer and Concrete Pump**		cum	89	567	3767	4423
27.9.2	Height 5m to 10m						
27.9.2.1	**Using concrete Mixer**		cum	713	623	3940	5276
27.9.2.2	**With Batching Plant, Transit Mixer and Concrete Pump**		cum	89	567	3928	4583
27.9.3	Height above 10m						
27.9.3.1	**Using concrete Mixer**		cum	713	623	4172	5508
27.9.3.2	**With Batching Plant, Transit Mixer and Concrete Pump**		cum	89	1186	4246	5521
27.10	**RCC Grade M25**						
27.10.1	Height up to 5m						
27.10.1.1	**Using concrete Mixer**		cum	713	623	4148	5484
27.10.1.2	**With Batching Plant, Transit Mixer and Concrete Pump**		cum	89	567	4173	4829
27.10.2	Height 5m to 10m						
27.10.2.1	**Using concrete Mixer**		cum	713	623	4328	5664
27.10.2.2	**With Batching Plant, Transit Mixer and Concrete Pump**		cum	89	567	4331	4987
27.10.3	Height above 10m						
27.10.3.1	**Using concrete Mixer**		cum	713	623	4597	5933
27.10.3.2	**With Batching Plant, Transit Mixer and Concrete Pump**		cum	89	567	4568	5224
27.11	**RCC Grade M30**						
27.11.1	Height up to 5m						
27.11.1.1	**Using concrete Mixer**		cum	713	623	4148	5484
27.11.1.2	**With Batching Plant, Transit Mixer and Concrete Pump**		cum	89	1186	4260	5535
27.11.2	Height 5m to 10m						
27.11.2.1	**Using concrete Mixer**		cum	713	623	4303	5639

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
27.11.2.2	**With Batching Plant, Transit Mixer and Concrete Pump**		cum	89	567	4335	4991
27.11.3	Height above 10m						
27.11.3.1	**Using concrete Mixer**		cum	713	623	4522	5858
27.11.3.2	**With Batching Plant, Transit Mixer and Concrete Pump**		cum	89	567	4530	5185
27.12	**RCC Grade M35**						
27.12.1	Height up to 5m						
27.12.1.1	**Using concrete Mixer**		cum	713	623	4279	5615
27.12.1.2	**With Batching Plant, Transit Mixer and Concrete Pump**		cum	89	567	4211	4867
27.12.2	Height 5m to 10m						
27.12.2.1	**Using concrete Mixer**		cum	713	623	4402	5738
27.12.2.2	**With Batching Plant, Transit Mixer and Concrete Pump**		cum	89	567	4318	4973
27.12.3	Height above 10m						
27.12.3.1	**Using concrete Mixer**		cum	713	623	4586	5922
27.12.3.2	**With Batching Plant, Transit Mixer and Concrete Pump**		cum	89	567	4477	5133
27.13	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and MoRT&H Specifications	1600 & 2200	tonne	1967	-	66909	68876
27.14	Supplying, fitting and placing Mild steel reinforcement complete in sub-structure as per drawing and MoRT&H Specification	1600 & 2200	tonne	1723	-	65578	67302
27.15	Providing weep holes in Brick masonry/Plain/ Reinforced concrete abutment, wing wall/ return wall with 100 mm dia AC pipe, extending through the full width of the structure with slope of 1V :20H towards drawing force. Complete as per drawing and MoRT&H Specifications	2706 & 2200	nos.	14	-	243	258
27.16	**Back filling behind abutment, wing wall and return wall complete as per drawing and MoRT&H Specification**	710.1.4.of IRC:78 & 2200					
27.16.1	Granular material		cum	342	139	930	1411
27.16.2	Sandy material		cum	342	140	930	1412
27.17	Providing and laying of Filter media with granular materials/stone crushed aggregates satisfying the requirements laid down in clause 2504.2.2. of MoRTH specifications to a thickness of not less than 600 mm with smaller size towards the soil and bigger size towards the wall and provided over the entire surface behind abutment, wing wall and return wall to the full height compacted to a firm condition complete as per drawing and MoRT&H Specification.	710.1.4.of IRC:78 and 2200	cum	391	4	1581	1977
27.18	Supplying, fitting and fixing in position true to line and level cast steel rocker bearing conforming to IRC: 83(Pt.-1) section IX and clause 2003 of MoRTH specifications complete including all accessories as per drawing and MoRT&H Specifications.	1000, 2000 & 2200	per tonne capacity	3	-	656	659

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
27.19	Supplying, fitting and fixing in position true to line and level forged steel roller bearing conforming to IRC: 83(Pt.-1) section IX and clause 2003 of MoRTH specifications complete including all accessories as per drawing and MoRT&H Specifications.	1000 , 2000 & 2200	per tonne capacity	3	-	525	528
27.20	Supplying, fitting and fixing in position true to line and level sliding plate bearing with PTFE surface sliding on stainless steel complete including all accessories as per drawing and MoRT&H Specifications and BS: 5400, section 9.1 & 9.2 (for PTFE) and clause 2004 of MoRTH Specifications.	2000 & 2200	per tonne capacity	9	-	229	239
27.21	Supplying, fitting and fixing in position true to line and level elastomeric bearing conforming to IRC: 83 (Part-II) section IX and clause 2005 of MoRTH specifications complete including all accessories as per drawing and MoRT&H Specifications.	2000 & 2200	per cubic centimetre	0	-	1	1
27.22	Supplying, fitting and fixing in position true to line and level sliding plate bearing with stainless steel plate sliding on stainless steel plate with mild steel matrix complete including all accessories as per drawing and MoRT&H Specifications.	2000 & 2200	per tonne capacity	7	-	236	243
27.23	Supplying, fitting and fixing in position true to line and level POT-PTFE bearing consisting of a metal piston supported by a disc or unreinforced elastomer confined within a metal cylinder, sealing rings, dust seals, PTFE surface sliding against stainless steel mating surface, complete assembly to be of cast steel/fabricated structural steel, metal and elastomer elements to be as per IRC: 83 part-I & II respectively and other parts conforming to BS: 5400, section 9.1 & 9.2 and clause 2006 of MoRTH Specifications complete as per drawing and approved MoRT&H Specifications.	2000 & 2200	per tonne capacity	4	-	184	188
	Spherical Bearing						
27.24	Supplying, fitting and fixing in position true to line and level cast Steel spherical bearings bearing conforming to IRC: 83(Pt.-IV) section IX and clause 2014 of MoRTH specifications complete including all accessories as per drawing and MoRT&H Specifications.	2000, 1000 & 2200	per tonne capacity	3	-	315	318
	SUPER STRUCTURE						
	Furnishing and Placing Reinforced/ Prestressed cement concrete in super-structure as per drawing and MoRT&H clause 1500, 1600 and 1700 of MORT&H Specification	1500 &1600 1700					
27.25	**RCC Grade M20, Using Concrete Mixer**		cum	713	623	3254	4590
27.25.1	**For solid slab super-structure, Add 20-30 per cent of labour, material and machinery cost for Formwork**						
27.25.1.1	Height up to 5m		cum	713	623	4172	5508
27.25.1.2	Height 5m to 10m		cum	713	623	4402	5738

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
27.25.1.3	Height above 10m		cum	713	623	4631	5967
27.25.2	**For T-beam & slab, 25-35 per cent of labour, material and machinery cost**						
27.25.2.1	Height up to 5m		cum	713	623	4402	5738
27.25.2.2	Height 5m to 10m		cum	713	623	4631	5967
27.25.2.3	Height above 10m		cum	713	623	4861	6197
27.26	**RCC M-20, Using Batching Plant, Transit Mixer and Concrete Pump**		cum	89	608	3252	3949
27.26.1	**For solid slab super-structure, 20-30 per cent of labour, material and machinery cost**						
27.26.1.1	Height up to 5m		cum	89	608	4042	4739
27.26.1.2	Height 5m to 10m		cum	89	608	4239	4936
27.26.1.3	Height above 10m		cum	89	608	4437	5134
27.26.2	**For T-beam & slab, 25-35 per cent of labour, material and machinery cost**						
27.26.2.1	Height up to 5m		cum	89	608	4239	4936
27.26.2.2	Height 5m to 10m		cum	89	608	9884	10581
27.26.2.3	Height above 10m		cum	89	608	4634	5331
27.27	**RCC Grade M25**						
	Using Concrete Mixer		cum	713	623	3624	4960
	For formwork and staging add the following:						
27.27.1	**For solid slab super-structure, 20-30 per cent of labour, material and machinery cost**						
27.27.1.1	Height up to 5m		cum	713	623	4616	5952
27.27.1.2	Height 5m to 10m		cum	713	623	4864	6200
27.27.1.3	Height above 10m		cum	713	623	5112	6448
27.27.2	**For T-beam & slab, 25-35 per cent of labour, material and machinery cost**						
27.27.2.1	Height up to 5m		cum	713	623	4864	6200
27.27.2.2	Height 5m to 10m		cum	713	623	5112	6448
27.27.2.3	Height above 10m		cum	713	623	5360	6696
27.28	**Using Batching Plant, Transit Mixer and Concrete Pump**		cum	89	608	3627	4324
	For formwork and staging add the following:						
27.28.1	**For solid slab super-structure, 20-30 per cent of labour, material and machinery cost**						
27.28.1.1	Height up to 5m		cum	89	608	4492	5189
27.28.1.2	Height 5m to 10m		cum	89	608	4708	5405
27.28.1.3	Height above 10m		cum	89	608	4925	5621
27.28.2	**For T-beam & slab, 25-35 per cent of labour, material and machinery cost**						
27.28.2.1	Height up to 5m		cum	89	608	4708	5405
27.28.2.2	Height 5m to 10m		cum	89	608	4925	5621
27.28.2.3	Height above 10m		cum	89	608	5141	5838
27.29	**RCC Grade M 30**						

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	Using Concrete Mixer		cum	746	623	3671	5040
27.29.1	**For solid slab super-structure, 20-30 per cent of labour, material and machinery cost**						
27.29.1.1	Height up to 5m		cum	746	623	4679	6048
27.29.1.2	Height 5m to 10m		cum	746	623	4931	6299
27.29.1.3	Height above 10m		cum	746	623	5183	6551
27.29.2	**For T-beam & slab, 25-35 per cent of labour, material and machinery cost**						
27.29.2.1	Height up to 5m		cum	746	623	4931	6299
27.29.2.2	Height 5m to 10m		cum	746	623	5183	6551
27.29.2.3	Height above 10m		cum	746	623	5435	6803
27.30	**Using Batching Plant, Transit Mixer and Concrete Pump.**		cum	93	608	3675	4376
	For formwork and staging add the following:						
27.30.1	**For solid slab super-structure, 20-30 per cent of labour, material and machinery cost**						
27.30.1.1	Height up to 5m		cum	93	608	4550	5251
27.30.1.2	Height 5m to 10m		cum	93	608	4769	5470
27.30.1.3	Height above 10m		cum	93	608	4987	5688
27.30.2	**For T-beam & slab, 25-35 per cent of labour, material and machinery cost**						
27.30.2.1	Height up to 5m		cum	93	608	4769	5470
27.302.2	Height 5m to 10m		cum	93	608	4987	5688
27.30.2.3	Height above 10m		cum	93	608	5206	5907
27.31	**RCC/PSC Grade M35**						
	Using Concrete Mixer.		cum	746	623	3769	5137
	For formwork and staging add the following:						
27.31.1	**For solid slab super-structure, 18-28 per cent of labour, material and machinery cost**						
27.31.1.1	Height up to 5m		cum	746	623	4694	6062
27.31.1.2	Height 5m to 10m		cum	746	623	4951	6319
27.31.1.3	Height above 10m		cum	746	623	5207	6576
27.31.2	**For T-beam & slab, 23-33 per cent of labour, material and machinery cost**						
27.31.2.1	Height up to 5m		cum	746	623	4951	6319
27.31.2.2	Height 5m to 10m		cum	746	623	5207	6576
27.31.2.3	Height above 10m		cum	746	623	5464	6833
27.31.3	**For box girder and balanced cantilever, 38-58 per cent of cost of concrete.**						
27.31.3.1	Height up to 5m		cum	746	623	5721	7090
27.31.3.2	Height 5m to 10m		cum	746	623	6235	7603
27.31.3.3	Height above 10m		cum	746	623	6749	8117
27.32	**Using Batching Plant, Transit Mixer and Concrete Pump**		cum	93	608	3769	4470

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	For formwork and staging add the following:						
27.32.1	**For solid slab super-structure, 18-28 per cent of labour, material and machinery cost**						
27.32.1.1	Height up to 5m		cum	93	608	4574	5275
27.32.1.2	Height 5m to 10m		cum	93	608	4797	5498
27.32.1.3	Height above 10m		cum	93	608	5021	5722
27.32.2	**For T-beam & slab, 23-33 per cent of labour, material and machinery cost**						
27.32.2.1	Height up to 5m		cum	93	608	4797	5498
27.32.2.3	Height 5m to 10m		cum	93	608	5021	5722
27.32.2.3	Height above 10m		cum	93	608	5244	5945
27.32.3	**For box girder and balanced cantilever, 38-58 per cent of cost of concrete.**						
27.32.3.1	Height up to 5m		cum	93	608	5468	6169
27.32.3.2	Height 5m to 10m		cum	93	608	5915	6616
27.32.3.3	Height above 10m		cum	93	608	6362	7062
27.33	**PSC Grade M-40**						
	Using concrete mixer.		cum	799	623	3911	5333
	For formwork and staging add the following:						
27.33.1	**For solid slab super-structure, 20-30 per cent of labour, material and machinery cost**						
27.33.1.1	Height up to 5m		cum	799	623	4978	6399
27.33.1.2	Height 5m to 10m		cum	799	623	5244	6666
27.33.1.3	Height above 10m		cum	799	623	5511	6932
27.33.2	**For T-beam & slab, 25-35 per cent of labour, material and machinery cost**						
27.33.2.1	Height up to 5m		cum	799	623	5244	6666
27.33.2.2	Height 5m to 10m		cum	799	623	5511	6932
27.33.2.3	Height above 10m		cum	799	623	5778	7199
27.34	**Using Batching Plant, Transit Mixer and Concrete Pump**		cum	99	608	3911	4619
	For formwork and staging add the following:						
27.34.1	**For solid/voided slab super-structure, 18-28 per cent of labour, material and machinery cost**						
27.34.1.1	Height up to 5m		cum	99	608	4742	5450
27.34.1.2	Height 5m to 10m		cum	99	608	4973	5681
27.34.1.3	Height above 10m		cum	99	608	5204	5912
27.34.2	**For T-beam & slab including launching of precast girders by launching truss up to 40 m span, 23-33 per cent of labour, material and machinery cost**						
27.34.2.1	Height up to 5m		cum	99	608	4973	5681
27.34.2.2	Height 5m to 10m		cum	99	608	5204	5912
27.34.2.3	Height above 10m		cum	99	608	5435	6143

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
27.34.3	**For cast-in-situ box girder, segment construction and balanced cantilever, 38-58 per cent of cost of concrete.**						
27.34.3.1	Height up to 5m		cum	99	608	5666	6374
27.34.3.2	Height 5m to 10m		cum	99	608	6128	6836
27.34.3.3	Height above 10m		cum	99	608	6590	7298
27.35	**PSC Grade M-45 using Batching Plant, Transit Mixer and Concrete Pump**		cum	99	608	4142	4850
	For formwork and staging add the following:						
27.35.1	**For solid slab/voided slab super-structure, 16-26 per cent of cost of concrete labour, material and machinery cost**						
27.35.1.1	Height up to 5m		cum	99	608	4918	5625
27.35.1.2	Height 5m to 10m		cum	99	608	5160	5868
27.35.1.3	Height above 10m		cum	99	608	5403	6110
27.35.2	**For T-beam & slab including launching of precast girders by launching truss up to 40 m span, 21-31 per cent of cost of concrete.**						
27.35.2.1	Height up to 5m		cum	99	608	5160	5868
27.35.2.2	Height 5m to 10m		cum	99	608	5403	6110
27.35.2.3	Height above 10m		cum	99	608	5645	6353
27.35.3	**For cast-in-situ box girder, segmental construction and balanced cantilever, 36-56 per cent of cost of concrete.**						
27.35.3.1	Height up to 5m		cum	99	608	5888	6595
27.35.3.2	Height 5m to 10m		cum	99	608	6373	7080
27.35.3.3	Height above 10m		cum	99	608	6858	7565
27.36	**PSC Grade M-50 using Batching Plant, Transit Mixer and Concrete Pump**		cum	99	608	4307	5014
	For formwork and staging add the following:						
27.36	**For cast-in-situ box girder, segmental construction and balanced cantilever, 35-55 per cent of cost of concrete**						
27.36.1	Height up to 5m		cum	99	608	6062	6769
27.36.2	Height 5m to 10m		cum	99	608	6563	7271
27.36.3	Height above 10m		cum	99	608	7065	7772
27.37	**PSC Grade M- 55 using Batching Plant, Transit Mixer and Concrete Pump**		cum	99	608	4565	5273
	For formwork and staging add the following:						
	For cast-in-situ box girder, segmental construction and balanced cantilever, 35-55 per cent of cost of concrete						
27.37.1	Height up to 5m		cum	99	608	6410	7118
27.37.2	Height 5m to 10m		cum	99	608	6938	7645
27.37.3	Height above 10m		cum	99	608	7465	8173

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	1.Where ever concrete is carried out using batching plant, transit mixer, concrete pump, admixtures conforming IS: 9103 @ 0.4 per cent of weight of cement may be added for achieving desired slump of concrete. **2. Cement provided for various components of the super structure is for estimating purpose only. Actual quantity of cement will be as per approved mix design. Similarly, the provision for coarse and fine aggregates is for estimating purpose and the exact quantity shall be as per the mix design.** **3. The items like needle and surface vibrators are part of minor T & P which is already covered under the overhead charges. As such these items have not been added separately in the rate analysis.**						
27.38	Supplying, fitting and placing HYSD bar reinforcement in super-structure complete as per drawing and MoRT&H specifications	1600	tonne	2713	-	67033	69746
27.39	High tensile steel wires/strands including all accessories for stressing, stressing operations and grouting complete as per drawing and MoRT&H Specifications	1800	tonne	8607	12745	112803	134155
27.40	Providing and laying Cement concrete wearing coat M-30 grade including reinforcement complete as per drawing and MoRT&H Specifications	2702	cum	71	-	10782	10853
27.41	**Mastic Asphalt wearing coat**	516 & 2702					
	Providing and laying 12 mm thick mastic asphalt wearing course on top of deck slab excluding prime coat with paving grade bitumen meeting the requirements given in table 500-29, prepared by using mastic cooker and laid to required level and slope after cleaning the surface, including providing antiskid surface with bitumen precoated fine grained hard stone chipping of 9.5 mm nominal size at the rate of 0.005cum per 10 sqm and at an approximate spacing of 10 cm centre to centre in both directions, pressed into surface when the temperature of surfaces not less than 100 deg. C, protruding 1 mm to 4 mm over mastic surface, all complete as per clause 516 of MoRTH Specification (5th Revision, 2013)		sqm	83	241	175	498
27.42	**RCC Railing**						
27.42.1	Construction of precast RCC railing of M30 Grade, aggregate size not exceeding 12 mm, true to line and grade, tolerance of vertical RCC post not to exceed 1 in 500, centre to centre spacing between vertical post not to exceed 2000 mm, leaving adequate space between vertical post for expansion including reinforcement complete as per approved standard of MORT&H vide drawing no. SD/202 and MoRT&H specifications.	2703, 1500, 1600 & 1700	running metre	0	-	1889	1889

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
27.42.2	Construction of RCC railing of M30 Grade in-situ with 20 mm nominal size aggregate, true to line and grade, tolerance of vertical RCC post not to exceed 1 in 500, centre to centre spacing between vertical post not to exceed 2000 mm, leaving adequate space between vertical post for expansion including reinforcement complete as per approved standard plans of MORT&H vide drawing no. SD/202 and MoRT&H specifications.	2703, 1500, 1600 & 1700	running metre	0	-	1830	1830
27.43	**Providing, fitting and fixing mild steel railing complete as per drawing and MoRT&H Specification**	2703.2 & 1900	running metre	342	-	2985	3327
27.44	Drainage Spouts complete as per drawing no. SD/205 and MoRT&H MoRT&H specification clause 2705 with 6 meter long GI 100 mm dia drainage GI light grade pipe (For Bridges)	2705					
27.44.1	**For fabrication**		no.	29	-	1594	1623
27.44.2	**For fixing in position**		no.	190	-	1594	1784
27.45	PCC M15 Grade levelling course below approach slab complete as per drawing and MoRT&H MoRT&H specification clause 2700	2700	cum	0	-	4056	4056
27.46	Reinforced cement concrete approach slab including reinforcement and formwork complete as per drawing and MoRT&H specification clause 1500,1600,1700 & 2704	1500,1600, 1700 & 2704	cum	0	-	8143	8143
27.47	**Precast - pretensioned Girders**	1800 &					
	Providing, precasting, transportation and placing in position precast pretensioned concrete girders as per drawing and MoRT&H specifications		cum	3403	4330	18336	26069
27.48	Providing and fixing Helical pipes 600 mm dia in voided concrete slabs	1700 & 1800	running metre	123	-	2008	2131
27.49	**Painting on concrete surface**	800					
	Providing and applying 2 coats of water based cement paint to unplastered concrete surface after cleaning the surface of dirt, dust, oil, grease, efflorescence and applying paint @ of 1 litre for 2 sqm.		sqm	24	-	25	49
27.50	**Buried Joint**	2604 of 1st					
	Providing and laying a buried expansion joint, expansion gap being 20 mm, covered with 12 mm thick, 200 mm wide galvanised weld able structural steel plate as per IS: 2062, placed symmetrical to centre line of the joint, resting freely over the top surface of the deck concrete, welding of 8 mm dia. 100 mm long galvanised nails spaced 300 mm c/c along the centre line of the plate, all as specified in clause 2604 of MoRTH Specification 1st Revision 2003.		running metre	24	-	1420	1445
27.51	**Filler joint**	2604					
27.51.1	Providing & fixing 2 mm thick corrugated copper plate in expansion joint complete as per drawing & MoRTH Specification (5th Revision, 2013) clause 2604.		running metre	41	-	3553	3594

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
27.51.2	Providing & fixing 20 mm thick compressible fibre board in expansion joint complete as per drawing & MoRT&H Specification.		running metre	8	-	126	134
27.51.3	Providing and fixing in position 20 mm thick premoulded joint filler in expansion joint for fixed ends of simply supported spans not exceeding 10 m to cater for a horizontal movement up to 20 mm, covered with sealant complete as per drawing and MoRT&H specifications.		running metre	12	-	136	148
27.51.4	Providing and filling joint sealing compound as per drawings and MoRT&H specifications with coarse sand 6 per cent bitumen by weight - 10 mm depth		running metre	24	-	5	29
27.52	**Asphaltic Plug joint**	2608					
	Providing and laying of asphaltic plug joint to provide for horizontal movement of 25 mm and vertical movement of 2 mm, depth of joint varying from 75 mm to 100 mm, width varying from 500 mm to 750 mm (in traffic direction), covered with a closure plate of 200mm x 6mm of weld able structural steel conforming to IS: 2062, asphaltic plug to consist of polymer modified bitumen binder, carefully selected single size aggregate of 12.5 mm nominal size and a heat resistant foam caulking/backer rod, all as per approved drawings and MoRTH specifications (5th Revision, 2013) clause 2608.		running metre	53	205	1078	1336
27.53	**Elastomeric Slab Steel Expansion Joint**	2605					
	Providing and laying of an elastomeric slab steel expansion joint, catering to right or skew (less than 20 deg., moderately curved with maximum horizontal movement up to 50 mm, complete as per approved drawings and standard specifications to be installed by the manufacturer/supplier or their authorised representative ensuring compliance to the manufacturer's instructions for installation and clause 2605 of MoRTH specifications (5th Revision, 2013) for road & bridge works.		running metre	61	-	13569	13630
27.54	**Compression Seal Joint**	2609					
	Providing and laying of compression seal joint consisting of steel armoured nosing at two edges of the joint gap suitably anchored to the deck concrete and a preformed chloroprene elastomer or closed cell foam joint sealer compressed and fixed into the joint gap with special adhesive binder to cater for a horizontal movement up to 40 mm and vertical movement of 3 mm as per clause 2609 of MoRTH Specification (5th Revision, 2013).		running metre	37	-	6740	6777
27.55	**Strip Seal Expansion Joint**	2606					

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	Providing and laying of a strip seal expansion joint catering to maximum horizontal movement up to 70 mm, complete as per approved drawings and standard specifications to be installed by the manufacturer/supplier or their authorised representative ensuring compliance to the manufacturer's instructions for installation as per clause 2606 of MoRTH Specification (5th Revision, 2013).		running metre	51	-	5429	5480
27.56	**Modular Strip / Box Seal Joint**	2607					
	Providing and laying of a modular strip Box seal expansion joint including anchorage catering to a horizontal movement beyond 70 mm and up to 140mm, complete as per approved drawings and standard specifications to be installed by the manufacturer/supplier or their authorised representative ensuring compliance to the manufacturer's instructions for installation as per clause 2607 of MoRTH Specification (5th Revision, 2013).		running metre	57	-	34023	34080
27.57	**Modular Strip / Box Seal Joint**	2607					
	Providing and laying of a modular strip box seal expansion joint catering to a horizontal movement beyond 140mm and up to 210mm, complete as per approved drawings and standard specifications to be installed by the manufacturer/supplier or their authorised representative ensuring compliance to the manufacturer's instructions for installation as per clause 2607 of MoRTH Specification (5th Revision, 2013).		running metre	71	-	376044	376115

CHAPTER NO. 28

WATER PROOFING and HEAT INSULATION OF BUILDINGS

CHAPTER 28.0 - WATER PROOFING TREATMENT AND HEAT INSULATION OF BUILDINGS

LIST OF BUREAU OF INDIAN STANDARD (BIS) CODES

Sr. No.	B.I.S. No.	Subject
1	IS 73	Paving Bitumen Specifications
2	IS 702	Specifications for Industrial Bitumen
3	IS 1322	Specifications for Bitumen felts for Water Proofing and Damp Proofing
4	IS 2645	Specifications for Integral Cement Water Proofing Compounds
5	IS 3370 (Part -1)	Code of Practice for Concrete Structures for the Storage of Liquid: Part -1 General Requirements.
6	IS 3384	Specifications for Bitumen Primer for Water Proofing and Damp Proofing
7	IS 7193	Specification for Glass Fibre Bitumen Felts
8	IS 12200	Provision of Water Stops at Transfers Construction Joints in Masonry and Concrete Dams - Code of Practice.
9	IS 12432 (Part-3)	Application for Spray Applied Insulation - Code of Practice Part-3 Polyurethane / Polyisocyarurate

CHAPTER 28.0 - WATER PROOFING AND HEAT INSULATION OF BUILDINGS

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
28.1	Providing and laying four courses water proofing treatment with bitumen felt over roofs consisting of first and third courses of blown bitumen 85/25 or 90/15 conforming to IS : 702 applied hot @ 1.45 Kg per square metre of area for each course, second course of roofing felt type 3 grade-I (hessian based self finished bitumen felt) and fourth and final course of stone grit 6 mm and down size or pea sized gravel spread at 6 cubic decimetre per square metre, including preparation of surface but excluding grading complete with :				
	28.1.1 Bitumen felt (hessian base) type 3 grade I conforming to IS : 1322	sqm	64	236	300
28.2	Providing and laying six courses water proofing treatment with bitumen felt over roofs consisting of first, third and fifth course of blown bitumen 85/25 or 90/15 conforming to IS : 702 applied hot @ 1.45, 1.20 and 1.45 Kg per square metre of area respectively, second and fourth courses of roofing felt type 3 grade I conforming to IS : 1322 (Hessian based self finished bitumen felt) , sixth and final course of stone grit 6 mm and down size or pea sized gravel spread at 6 cubic decimetre per sqm including preparation of surface but excluding grading, complete.	sqm	94	389	483
28.3	Providing and laying six courses water proofing treatment with bitumen felt over roofs consisting of first, third and fifth courses of blown or / and residual bitumen applied hot at 1.45, 1.20 and 1.70 kg per square metre of area respectively, second and fourth courses of roofing felt type 2 grade I (fibre base self finished bitumen felt) six and final courses of stone grit 6 mm and down size or pea sized gravel spread at 6 cubic decimetre per sqm including preparation of surface, excluding grading, complete.	sqm	127	400	527
28.4	Providing and laying six courses water proofing treatment with bitumen felt over roofs consisting of first, third and fifth courses of blown or / and residual bitumen applied hot at 1.45, 1.20 and 1.70 kg per square metre of area respectively, second and fourth courses of roofing felt type 2 grade II (glass fibre base self finished bitumen felt) and sixth and final course of stone grit 6 mm and down size or pea sized gravel spread at 6 cubic decimetre per sqm including preparation of surface but excluding grading, complete.	sqm	127	400	527
28.5	Deduct for omitting in water proofing treatment final course of spreading stone grit 6 mm down size or pea sized gravel :				
	28.5.1 at 6 cudm per sqm	sqm	2	6	8
	28.5.2 at 8 cudm per sqm	sqm	3	8	11
	WATERPROOFING TREATMENT TO TERRACE AREA USING LIQUID APPLIED SINGLE COMPONENT PITCH FREE POLYURETHANE COATING				

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
28.6	Providing and applying waterproofing treatment to sound, moisture free concrete surface using liquid applied single component pitch free polyurethane coating capable of bridging substrate cracks up to 2 mm. It shall be applied in two coats at coverage rate of 2kg/sqm to a achieve a minimum DFT of 1.3 mm. The membrane formed shall confirm to following minimum properties: 1) Elongation : >400% as per ASTM D 412 2) Tensile Strength : 2.5 N/mm2 as per ASTM D 412 3) Adhesion in-peel test : >50 N as per ASTM C- 836 4) Recovery from 350% elongation : 95% as per ASTM D 412 5) Water Vapour Transmission 2.3mm film: 0.6 g/m2/hr 6) Initial Hardness Shore A : min 60 as per ASTM D 2240 7) Root resistant : protection screed required System includes supply , application and termination of coating all complete as per the manufacturer's methodology. Clean the RCC slab/screed surface & wall for treatment by removing dust, dirt and layers of concrete over the surface. etc. by mechanical tools and wire brushing. Pressure grouting at construction joints or honeycombs with non shrink cementations grout by mixing shrinkage compensating admixture per bag of cement as per manufacturer's recommendations. Prepare a side gola of 50X50 mm at the junction using polymer modified mortar. Providing and applying liquid applied single component pitch free polyurethane coating in 2 coats at coverage rate of 2kg/sqm to a achieve a minimum DFT of 1.3 mm. (Fibre cloth/fleece/reinforcement should not be used in between two coats of PU as it has adverse effect on elongation property and also affects bonding with slab). Termination shall be done 300 mm above FFl by providing a groove cut of 30mm x 30mm & seal it with shrinkage compensated polymer modified mortar. Lay a 150 GSM geotextile layer to protect the coating from external damage on final coating before laying of screed concrete/final finish. It shall be applied as per manufactures specification. Rates are incl of surface preparation, grouting and chemical application only. (Rates for geotextile, protection plaster and final finishes such as screed or Brick bat filling for slope, china mosaic, tiles etc is not included in above item. It will be added as per EIC requirements).	sqm	67	710	777
	WATERPROOFING TREATMENT TO TERRACE AREA USING TWO COMPONENT 100% SOLIDS HYBRID POLYUREA COATING				
28.7	Providing and applying waterproofing treatment using two component 100% solid content, hybrid polyurea/polyurethane, rapid curing and highly resilient fully bonded cured to membrane having a mixed density of 1.02g/l. Minimum recommended coverage rate is 1.5ltr/sqm in 2 coats to achieve a total DFT of 1.5mm. cured membrane shall exhibit: 1) Tensile strength ASTM D412 : >13 MPa 2)Tear Resistance ASTM D624C : 50 N/mm2 3) Shore A Hardness: 80 4)Elongation ASTM D412 : >450% 5 (1kg, CS 10 wheels,ASTM D 4060): 1.3 mg/1000 cycles 6) Service temperature: -20°C to +80°C 7) Resistant to Fire (EN13501-1)-Class E,d0 Manufacturers shall provide Certificate for Zero VOC, resistance to fire, 25 years life expectancy test certificate before the start of work. System includes supply , application and termination of coating all complete as per the manufacturer methodology. Clean the RCC slab/screed surface & wall for treatment by removing dust, dirt and layers of concrete over the surface. etc. by mechanical tools and wire brushing. Pressure grouting at construction joints or honeycombs with non shrink cementations grout by mixing shrinkage compensating admixture per bag of cement as per manufacturer's recommendations. Prepare a side gola of 50X50 mm at the junction using polymer modified mortar. Providing and applying two component 100% solid content, hybrid polyurea/polyurethane membrane at coverage rate of 1.5ltr/sqm in 2 coats to achieve a total DFT of 1.5mm. It must be applied utilizing plural heated high-pressure spray proportioning machine/spray gun . Termination shall be done 300 mm above FFl by providing a groove cut of 30mm x 30mm & seal it with shrinkage compensated polymer modified mortar. Lay a 150 GSM geotextile layer to protect the coating from external damage on final coating before laying of screed concrete/final finish. It shall be applied as per manufactures specification. Rates are incl of surface preparation, grouting and chemical application only. (Rates for geotextile, protection plaster and final finishes such as screed or Brick bat filling for slope, china mosaic, tiles etc is not included in above item. It will be added as per EIC/clients requirements).	sqm	127	1164	1291
	WATERPROOFING TREATMENT TO RAFT BOTTOM				
	WATERPROOFING TREATMENT TO RAFT BOTTOM USING HDPE MEMBRANE				

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
28.8	Supplying and applying waterproofing treatment for 'Raft Slab' by using 1.2 mm thick fully bonded HDPE sheet membrane complying to BS8102:2009/ IS 16471-2017. The HDPE shall be virgin HDPE & not recycled, thickness of bare HDPE shall not be less than 0.8 mm coated with pressure sensitive adhesive layer and a trafficable granular top layer. The HDPE membrane shall have the following typical properties: 1. Tensile Strength : >27 Mpa (as per ASTM D412) 2. Puncture Resistance: >1000N±5% (as per ASTM E154) 3. Elongation: >500% 4. Peel adhesion to concrete: >1500N/m (as per ASTM D903 Modified) 5. Resistance to Hydrostatic Head: >70 metre (as per ASTM D751-06(2011) 6. UV exposure test (60 days): No change 7. Lap Joint Strength : 1500N/m (as per ASTM D1876) HDPE Membrane shall be installed over the entire PCC area with standard 75 mm selvedge laps and end laps overlaid with HDPE Sealed Tape as per manufacturer's instructions. The rates are inclusive of supply and installation of membrane as per manufacturer methodology. The rates are inclusive of surface preparation, injection grouting at honeycombed areas all complete as per manufacturer methodology. **WATERPROOFING TREATMENT TO RAFT BOTTOM USING 4-5mm Thick HDPE MEMBRANE**	sqm	86	650	735
28.9	Supplying and installing positive side waterproofing treatment for 'Raft Slab' using 4-5mm thick blended polyethylene / polypropylene membrane incorporating a cell mesh, enabling the membrane to mechanically bond with the poured concrete. The membrane shall be supplied with one self-adhesive selvedge to provide sealed laps and comply with British Standard 8102 2009. Membrane shall have 125 years of certificate of durability and Water tightness test. The membrane should have the following typical properties : 1. Resistance to static loading (EN 12730 method B): 15 Kg 2. Tensile Strength (EN 12311-2): L: >18MPa, T: >10MPa 3. Elongation at break (EN 12311-2): L: >800%, T: >600% 4. Elongation at peak load (EN 12311-2): L: >800%, T: >600% 5. Crack Bridging (ASTM C1305): up to 5mm (100 cycles) 6. Durability of water tightness against durability (EN 1296/ EN 1928): Pass 7. Resistance to impact (EN 12691 Method A): 1500mm 8. Puncture Resistance (ASTM E154-08): 672N 9. Resistance to tear (nail shank): EN 12310-1): 720N (Longitudinal) 10. Reaction to fire (EN ISO 11925-2): Pass 11. Joint Strength (EN 12317-2): ≥220N (Lap) & ≥150N (Butt) 12. Resistance to Alkali(EN 1847/EN 1928)-Pass Membrane shall be installed over the entire PCC area with standard 80 mm selvedge laps and end laps overlaid as per manufacturer's instructions. The rates are inclusive of supply and installation of membrane as per manufacturer methodology. The rates are inclusive of surface preparation, injection grouting at honeycombed areas all complete as per manufacturer methodology.	sqm	86	1398	1484
28.10	Providing and laying integral cement based treatment for water proofing on horizontal surface at all depth below ground level for under ground structures as directed by Engineer-in-Charge and consisting of : (i) Ist layer of 22 mm to 25 mm thick approved and specified rough stone slab over a 25 mm thick base of cement mortar 1:3 (1 cement : 3 coarse sand) mixed with water proofing compound conforming to IS:2645 in the recommended proportion over the levelling course (levelling course to be paid separately). Joints sealed and grouted with cement slurry mixed with water proofing compound. (ii) 2nd layer of 25 mm thick cement mortar 1:3 (1 cement: 3 coarse sand) mixed with water proofing compound in recommended proportions. (iii) Finishing top with stone aggregate of 10 mm to 12 mm nominal size spreading @ 8 cudm/sqm thoroughly embedded in the 2nd layer.				

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
	28.10.1 Using rough kota stone.	sqm	223	693	915
	RETAINING WALL WATERPROOFING FROM EXTRERNAL SIDE				
	WATERPROOFING TREATMENT TO RETAINING WALL AREA FROM EXTERNAL SIDE USING SELF-ADHESIVE POLYMER MODIFIED BITUMINOUS MEMBRANE				
28.11	Supplying and installing 1.5 mm thick SBS membrane, self-adhesive polymer modified bitumen comprising of a cross laminated HDPE carrier film. Membrane shall come with a BBA certification giving a durability of membrane up to the life of the structure and shall have Tensile Strength : L: 215N/50mm T: 220N/50mm (as per BS EN12311-1), Elongation : L: 324% and T: 238% (as per BS EN12311-1), Water Vapour Permeability : Impermeable to ISO 12572 (as per BS EN 1931), Resistance to Hydrostatic Head: Min 60m(as per ASTM D5385), Adhesion to primed concrete : 4.9mm (as per ASTM D1000). The surface shall be primed using Bituminous Primer and membrane shall be installed with an edge lap of 50 mm and end lap of 150 mm. Membrane Termination shall be done by providing a groove cut of 30mm x 30mm, put the membrane inside the groove, nailing of aluminium flashing at 200mm c/c & sealing with a suitable PU Sealant at the termination of waterproofing membrane at minimum of 300mm height on the vertical wall, as per the manufacturer's Specification. Membrane shall be protected using 8mm thick dimple board for protection as per manufacturer's recommendation followed by backfilling. The rates are inclusive of surface preparation, crack filling, injection grouting at honeycombed areas, coving, priming all complete as per manufacturer methodology but excluding for protection board.	sqm	123	600	722
	WATERPROOFING TREATMENT TO RETAINING WALL AREA FROM EXTERNAL SIDE USING LIQUID APPLIED SINGLE COMPONENT PITCH FREE POLYURETHANE COATING				
28.12	Providing and applying waterproofing treatment to sound, moisture free concrete surface using liquid applied single component pitch free polyurethane coating capable of bridging substrate cracks up to 2 mm. It shall be applied in two coats at coverage rate of 2kg/sqm to a achieve a minimum DFT of 1.3 mm. The membrane formed shall confirm to following minimum properties: 1) Elongation : >400% as per ASTM D 412 2) Tensile Strength : 2.5 N/mm2 as per ASTM D 412 3) Adhesion in-peel test : >50 N as per ASTM C- 836 4) Recovery from 350% elongation : 95% as per ASTM D 412 5) Water Vapour Transmission 2.3mm film: 0.6 g/m2/hr 6) Initial Hardness Shore A : min 60 as per ASTM D 2240 7) Root resistant : protection screed required System includes supply , application and termination of coating all complete as per the manufacturer methodology. Clean the RCC slab/screed surface & wall for treatment by removing dust, dirt and layers of concrete over the surface. etc. by mechanical tools and wire brushing. Pressure grouting at construction joints or honeycombs with non shrink cementations grout by mixing shrinkage compensating admixture per bag of cement as per manufacturer's recommendations. Providing and applying liquid applied single component pitch free polyurethane coating in 2 coats at coverage rate of 2kg/sqm to a achieve a minimum DFT of 1.3 mm. (Fibre cloth/fleece/reinforcement should not be used in between two coats of PU as it has adverse effect on elongation property and also affects bonding with slab). Termination shall be done 300 mm above vertical wall by providing a groove cut of 30mm x 30mm & seal it with shrinkage compensated polymer modified mortar. Membrane shall be protected using 8mm thick dimple board for protection as per manufacturer's recommendation followed by backfilling. The rates are inclusive of surface preparation, crack filling, injection grouting at honeycombed areas, coving, priming all complete as per manufacturer methodology but excluding the cost of protection board.	sqm	92	713	805
28.13	Providing and laying integral cement based treatment for water proofing on the vertical surface by fixing specified stone slab 22 mm to 25 mm thick with cement slurry mixed with water proofing compound conforming to IS:2645 in recommended proportions with a gap of 20 mm (minimum) between stone slabs and the receiving surfaces and filling the gaps with neat cement slurry mixed with water proofing compound and finishing the exterior of stone slab with cement mortar 1:3 (1 cement : 3 coarse sand) 20 mm thick with neat cement punning mixed with water proofing compound in recommended proportion complete at all levels and as directed by Engineer-in-charge :				

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
	28.13.1 Using rough Kota stone	sqm	351	732	1083
28.14	Providing and laying water proofing treatment to vertical and horizontal surfaces of depressed portions of W.C., kitchen and the like consisting of: (i) Ist course of applying cement slurry @ 4.4 kg/sqm mixed with water proofing compound conforming to IS 2645 in recommended proportions including rounding off junction of vertical and horizontal surface. (ii) IInd course of 20 mm cement plaster 1:3 (1 cement : 3 coarse sand) mixed with water proofing compound in recommended proportion including rounding off junction of vertical and horizontal surface. (iii) IIIrd course of applying blown or residual bitumen applied hot at 1.7 kg. per sqm of area. (iv) IVth course of 400 micron thick PVC sheet. (Overlaps at joints of PVC sheet should be 100 mm wide and pasted to each other with bitumen @ 1.7 kg/sqm).	sqm	153	267	420
28.15	Providing and laying water proofing treatment in sunken portion of WCs, bathroom etc., by applying cement slurry mixed with water proofing cement compound consisting of applying : (a) First layer of slurry of cement @ 0.488 kg/sqm mixed with water proofing cement compound @ 0.253 kg/ sqm This layer will be allowed to air cure for 4 hours. (b) Second layer of slurry of cement @ 0.242 kg/sqm mixed with water proofing cement compound @ 0.126 kg/sqm This layer will be allowed to air cure for 4 hours followed with water curing for 48 hours. The rate includes preparation of surface, treatment and sealing of all joints, corners, junctions of pipes and masonry with polymer mixed slurry.	sqm	162	99	261
28.16	Providing and laying water proofing treatment on roofs of slabs by applying cement slurry mixed with water proofing cement compound consisting of applying: (a) after surface preparation, first layer of slurry of cement @ 0.488 kg/sqm mixed with water proofing cement compound @ 0.253 kg/sqm (b) laying second layer of Fibre glass cloth when the first layer is still green. Overlaps of joints of fibre cloth should not be less than 10 cm. (c) third layer of 1.5 mm thickness consisting of slurry of cement @ 1.289 kg/sqm mixed with water proofing cement compound @ 0.670 kg/sqm and coarse sand @ 1.289 kg/sqm This will be allowed to air cure for 4 hours followed by water curing for 48 hours. The entire treatment will be taken up to 30 cm on parapet wall and tucked into groove in parapet all around. (d) fourth and final layer of brick tiling with cement mortar (which will be paid for separately). For the purpose of measurement the entire treated surface will be measured.	sqm	139	225	364
28.17	Providing and laying integral cement based water proofing treatment including preparation of surface as required for treatment of roofs, balconies, terraces etc consisting of following operations: (a) Applying a slurry coat of neat cement using 2.75 kg/sqm of cement admixed with water proofing compound conforming to IS. 2645 and approved by Engineer-in-charge over the RCC slab including adjoining walls up to 300 mm height including cleaning the surface before treatment. (b) Laying brick bats with mortar using broken bricks/brick bats 25 mm to 115 mm size with 50% of cement mortar 1:5 (1 cement : 5 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge over 20 mm thick layer of cement mortar of mix 1:5 (1 cement :5 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge to required slope and treating similarly the adjoining walls up to 300 mm height including rounding of junctions of walls and slabs.				

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
	(c) After two days of proper curing applying a second coat of cement slurry using 2.75 kg/ sqm of cement admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge. (d) Finishing the surface with 20 mm thick joint less cement mortar of mix 1:4 (1 cement :4 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge including laying glass fibre cloth of approved quality in top layer of plaster and finally finishing the surface with trowel with neat cement slurry and making pattern of 300x300 mm square 3 mm deep. (e) The whole terrace so finished shall be flooded with water for a minimum period of two weeks for curing and for final test."All above operations to be done in order and as directed and specified by the Engineer-in-Charge :				
28.17.1	With average thickness of 120 mm and minimum thickness at khurra as 65 mm.	sqm	239	506	744
28.18	Providing and mixing integral crystalline admixture for water proofing treatment to RCC structures like basement raft, retaining walls, reservoir, sewage & water treatment plant, tunnels / subway and bridge deck etc. at the time of transporting of concrete into the drum of the ready-mix truck , using integral crystalline admixture @0.80% (minimum) to the weight of cement content per cubic meter of concrete) or higher as recommended by the manufacturer's specification in reinforced cement concrete at site of work. The material shall meet the requirements as specified in ACI-212-3R-2010 i.e. by reducing permeability of concrete by more than 90%, compared with control concrete as per DIN 1048 and resistant to 16 bar hydrostatic pressure. The crystalline admixture shall be capable of self-healing of cracks up to a width of 0.50mm. The work shall be carried out all complete as per specification and the direction of the Engineer-in-charge. The product performance shall carry guarantee for 10 years against any leakage.	kg	8	353	361
28.19	Providing and applying integral crystalline (dry shake) of hydrophilic in nature for waterproofing treatment to the RCC structures like basement raft, foundation slab, sewage & water treatment plant slab, warehouses floor, parking structures and water tank base slab etc. sprinkled @0.60kg per sqm or higher as recommended by the manufacturer's specification over the lean concrete of above cited structures. The material shall meet the requirements as specified in ACI-212-3R-2010 i.e. by reducing permeability of concrete by more than 85%, compared control concrete as per DIN 1048 and resistant to 16 bar hydrostatic pressure on negative side. The crystalline dry-shake shall be capable of self-healing of cracks up to a width of 0.50mm. The work shall be carried out all complete as per specification and the direction of the Engineer-in-charge. The product performance shall carry guarantee for 10 years against any leakage.	sqm	13	280	293
28.20	Providing and applying integral crystalline slurry of hydrophilic in nature for waterproofing treatment to the RCC structures like retaining walls of the basement, water tanks, roof slabs, podiums, reservoir, sewage & water treatment plant, tunnels / subway and bridge deck etc., prepared by mixing in the ratio of 5 : 2 (5 parts integral crystalline slurry : 2 parts water) for vertical surfaces and 3 : 1 (3 parts integral crystalline slurry : 1 part water) for horizontal surfaces and applying the same from negative (internal) side with the help of synthetic fibre brush. The material shall meet the requirements as specified in ACI-212-3R-2010 i.e. by reducing permeability of concrete by more than 90% compared with control concrete as per DIN 1048 and resistant to 16 bar hydrostatic pressure on negative side. The crystalline slurry shall be capable of self-healing of cracks up to a width of 0.50mm. The work shall be carried out all complete as per specification and the direction of the engineer-in-charge. The product performance shall carry guarantee for 10 years against any leakage.				
28.20.1	For vertical surface two coats @ 0.70 kg per sqm	sqm	13	433	446
28.20.2	For horizontal surface one coat @1.10 kg per sqm	sqm	8	340	348

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
28.21	Providing & Applying polymer modified, flexible cementitious negative side waterproofing coating with elastic waterproofing polymers on interior wall plaster surface in three coats @14.35 kg /10 sqm one coat of self priming of cementitious waterproofing polymer(dilution with water in the ratio of 1:1) and two coats of cementitious waterproofing polymer (dilution with water in the ratio of 3:1) after scrapping and properly cleaning the surface to remove pre-existing paint film & loose particles till plaster is visible, complete in all respect as per the direction of Engineer-in-Charge.	sqm	29	370	399
28.22	Providing & Applying high quality acrylic modified resin based texture of Dholpur/Red sand stone Pattern with anti algae and UV resistance properties to be applied as intermediate finish in desired pattern @ 43.04 kgs/10 sqm to form film of 1- 1.5 mm thickness after scrapping and properly cleaning the surface to remove loose particles from the plaster surface, followed by top coating with Premium Acrylic Smooth exterior paint with Silicone additives of required shade by two or more coats @ 1.43 litres/10 sqm, complete as the direction of Engineer -in-Charge.	sqm	98	245	343
28.23	Providing and applying fibre reinforced elastomeric liquid water proofing membrane with resilient acrylic polymers having Sun Reflectivity Index (SRI) of 105 on top of concrete roof in three coats @10.76 litre/ 10 sqm One coat of self-priming of elastomeric waterproofing liquid (dilution with water in the ratio of 3:1) and two coats of undiluted elastomeric waterproofing liquid (dry film thickness of complete application/system not less than 500 microns). The operation shall be carried out after scrapping and properly cleaning the surface to remove loose particles with wire brushes, complete in all respect as per the direction of Engineer-in-Charge.	sqm	50	292	341
28.24	Supplying and applying bituminous solution primer on roof and / or wall surface at 0.24 litre per sqm	sqm	13	14	28
28.25	Grading roof for water proofing treatment with				
	28.25.1 Cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size)	cum	985	3253	4237
	28.25.2 Cement mortar 1:3 (1 cement : 3 coarse sand)	cum	2618	4308	6927
	28.25.3 Cement mortar 1:4 (1cement : 4 coarse sand)	cum	2604	3340	5944
28.26	Supplying and filling cinder on roof (up to three storeys) including light ramming.	cum	473	912	1385
28.27	Providing and laying cinder concrete in cement 1:15 (1 cement and 15 cinder) on terraced roofs & (up to three Storeys), laid to slope, including consolidating the same.	cum	877	1395	2272
28.28	Providing and Placing in position suitable PVC water stops conforming to IS:12200 for construction/ expansion joints between two RCC members and fixed to the reinforcement with binding wire before pouring concrete etc. complete :				
	28.28.1 Serrated with central bulb (225 mm wide, 8-11 mm thick)	metre	5	260	265
	28.28.2 Dumb bell with central bulb (180 mm wide, 8 mm thick)	metre	5	208	213
	28.28.3 Kickers (320 mm wide, 5 mm thick)	metre	5	240	245
28.29	Providing and applying crystalline mortar by mixing in the ratio of 4.5 : 1 (4.5 parts crystalline mortar : 1 part water) for the treatment of faulty construction joints, cracks, tie rod holes and spalled & honeycombed surface of RCC underground structures like basement, water tanks, bridge deck etc. to ensure water tightness. The crystalline mortar shall conform to the EN 1504-3 having compressive strength Class R4 ≥45 MPa and adhesive bond strength Class R3 ≥1.5 MPa. The work shall be carried out all complete as per specification and the direction of the Engineer-In-Charge. The product performance shall carry guarantee for 10 years against any leakage.				

Item No.	Description		Unit	Labour Rate	Material Rate	Through Rate
	28.29.1	For sealing cracks and faulty construction joints, routed out/making U-shape groove size 25x25mm and then primed the area with integral crystalline slurry @0.05kg/running metre and while the surface is tacky filled the groove up to surface with crystalline mortar @1.50kg/running metre. Once crystalline mortar is touch dry then finally applied two coats of integral crystalline slurry @0.05kg/running metre per coat.	metre	16	465	481
	28.29.2	For patching of tie rod holes, prepared tie rod hole surface and then primed the area with integral crystalline slurry @0.070kg/sqm and while the surface is tacky repair and then filled the tie rod holes with crystalline mortar@0.040kg per hole. The crystalline mortar should be tightly rodded into tie rod holes or packed tightly (For 25x25x25 mm tie rod hole, use 0.040kg to fill the hole)	each	3	11	14
28.30	Providing and applying of swellable type water stop tape, 19mm x 25mm thick in linear meter (expansive nature) for construction joints treatment of RCC structure such as raft slab, retaining walls, water storage tank and at the junctions of raft slab with the retaining walls etc.. After cleaning the surface, one coat of required primer for swellable water stop tape shall be applied throughout the length of the joint @3.78 litre per 240 running meter. Over the primed surface swellable type water stop tape shall be placed. The work shall be carried out all complete as per specification and the direction of the Engineer-In-Charge. The product performance shall carry guarantee for 10 years against any leakage.		metre	10	506	516
28.31	Providing and laying in situ seven course water proofing treatment with APP (Atactic poly-propylene) modified Polymeric membrane over roof consisting of first coat of bitumen primer @ 0.40 litre per sqm, 2nd, 4th & 6th courses of bonding material @ 1.20 Kg/sqm, which shall consist of blown type bitumen of grade 85/25 conforming to IS : 702, 3rd and 5th layers of roofing membrane APP modified Polymeric membrane 1.5 mm thick of 2.25 Kg/sqm weight consisting of five layers prefabricated with centre core as 20 micron HMHDPE film sandwiched on both sides with polymeric mix and the polymeric mix is protected on both side with 20 micron HMHDPE film. 7th, the top most layer shall be finished with brick tiles of class designation 10 grouted with cement mortar 1:3 (1cement : 3 fine sand) mixed with 2% integral water proofing compound by weight of cement over a 12 mm layer of cement mortar 1:3 (1 cement : 3 fine sand) and finished neat (item of laying brick tiles shall be paid for separately).		sqm	64	412	476
28.32	Providing and laying in situ five course water proofing treatment with APP (Atactic Polypropylene) modified Polymeric membrane over roof consisting of first coat of bitumen primer @ 0.40 litre per sqm, 2nd & 4th courses of bonding material @ 1.20 kg/sqm, which shall consist of blown type bitumen of grade 85/25 conforming to IS : 702, 3rd layer of roofing membrane APP modified Polymeric membrane 2.0 mm thick of 3.00 Kg/ sqm weight consisting of five layers prefabricated with centre core as 100 micron HMHDPE film sandwiched on both sides with polymeric mix and the polymeric mix is protected on both side with 20 micron HMHDPE film. 5th, the top most layer shall be finished with brick tiles of class designation 10 grouted with cement mortar 1:3 (1 cement : 3 fine sand) mixed with 2% integral water proofing compound by weight of cement over a 12 mm layer of cement mortar 1:3 (1 cement : 3 fine sand) and finished neat (item of laying brick tiles shall be paid for separately).		sqm	47	275	322

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
28.33	Providing and laying in situ seven course water proofing treatment with APP (Atactic Polypropylene) modified Polymeric membrane over roof consisting of first coat of bitumen primer @ 0.40 litre per sqm, 2nd, 4th & 6th courses of bonding material @ 1.20 kg/sqm, which shall consist of blown type bitumen of grade 85/25 conforming to IS : 702, 3rd and 5th layers of roofing membrane APP modified Polymeric membrane 2.0 mm thick of 3.00 Kg/sqm weight consisting of five layers prefabricated with centre core as 100 micron HMHDPE film sandwiched on both sides with polymeric mix and the polymeric mix is protected on both side with 20 micron HMHDPE film. 7th, the top most layer shall be finished with brick tiles of class designation 10 grouted with cement mortar 1:3 (1 cement : 3 fine sand) mixed with 2% integral water proofing compound by weight of cement over a 12 mm layer of cement mortar 1:3 (1 cement : 3 fine sand) and finished neat (item of laying brick tiles shall be paid for separately).	sqm	64	469	533
28.34	Providing and fixing APP (Atactic Polypropylene Polymer) modified prefabricated five layer 2 mm thick water proofing membrane, black finished reinforced with glass fibre matt consisting of a coat of bitumen primer for bitumen membrane @ 0.40 litre/sqm by the same membrane manufacture of density at 25°C, 0.87 - 0.89 kg/ litre and viscosity 70 - 160 cps. Over the primer coat the layer of membrane shall be laid using Butane torch and sealing all joints etc., and preparing the surface complete. The vital physical and chemical parameters of the membrane shall be as under : Joint strength in longitudinal and transverse direction at 23°C as 350/300 N/ 5 cm. Tear strength in longitudinal and transverse direction as 60/80N. Softening point of membrane not less than 150°C. Cold flexibility shall be up to -2°C when tested in accordance with ASTM, D - 5147. The laying of membrane shall be got done through the authorised applicator of the manufacture of membrane.				
	28.34.1 2mm (for corrugated roof sheets)	sqm	63	249	312
28.35	Providing and laying APP (Atactic Polypropylene Polymer) modified prefabricated five layer, 3 mm thick water proofing membrane, black finished reinforced with glass fibre matt consisting of a coat of bitumen primer for bitumen membrane @ 0.40 litre/sqm by the same membrane manufactured of density at 25°C, 0.87 - 0.89 kg/litre and viscosity 70 - 160 cps. Over the primer coat the layer of membrane shall be laid using butane torch and sealing all joints etc., and preparing the surface complete. The vital physical and chemical parameters of the membrane shall be as under : Joint strength in longitudinal and transverse direction at 23°C as 350/300 N/5 cm. Tear strength in longitudinal and transverse direction as 60/80N. Softening point of membrane not less than 150°C. Cold flexibility shall be up to -2°C when tested in accordance with ASTM, D - 5147. The laying of membrane shall be got done through the authorised applicator of the manufacturer of membrane :				
	28.35.1 3 mm thick	sqm	63	339	403
28.36	Providing and laying APP (Atactic Polypropylene Polymer) modified prefabricated five layer 3 mm thick water proofing membrane, black finished reinforced with non-woven polyester matt consisting of a coat of bitumen primer for bitumen membrane @ 0.40 litre/sqm by the same membrane manufacture of density at 25°C, 0.87-0.89 kg/ litre and viscosity 70-160 cps. Over the primer coat the layer of membrane shall be laid using Butane Torch and sealing all joints etc, and preparing the surface complete. The vital physical and chemical parameters of the membrane shall be as under : Joint strength in longitudinal and transverse direction at 23°C as 650/ 450N/ 5cm. Tear strength in longitudinal and transverse direction as 300/250N. Softening point of membrane not less than 150°C. Cold flexibility shall be up to -2°C when tested in accordance with ASTM, D - 5147. The laying of membrane shall be got done through the authorised applicator of the manufacturer of membrane :				
	28.36.1 3 mm thick	sqm	63	361	424
28.37	Extra for covering top of membrane with Geotextile, 120 gsm non woven, 100% polyester of thickness 1 to 1.25 mm bonded to the membrane with intermittent touch by heating the membrane by Butane Torch as per manufactures recommendation.	sqm	14	62	75

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
28.38	Water proofing treatment of RCC sunshade with Zycosil/equivalent water proofing Solution (1 litre of Zycosil/equivalent & 20 litres of water stirred first & 2 litres of Zycoprime/equivalent added and stirred (total 23 litres)) till it meets the saturation level and testing as per RILEM or by water drops test in which water drops do not absorb but drops remain or rolls.	sqm	31	64	95
28.39	Water proofing of roof terraces, Basements, Retaining Walls, Water tanks etc with Zydex Zycoprime / Elastobar / Equivalent solution so as to form a water-resistant cementitious bonding coat and to form on-site seamless cross-linked elastomeric membrane on the concrete surface to reduce its porosity. Creating a cementitious elastomeric polymeric membrane of 2 coats of Elastobar and Zycoprime/Equivalent after application of Zycosil & Zycoprime Solution in New Construction. Take equal parts of Elastobar and Cement and form a paste. Add little water to the paste to make it brush able. Apply the paste on surface with brush. Leave the surface for drying for at least 4 - 6 hours to get elastomeric membrane. After this application, make one more layer of rough cementitious membrane using mixture of 1 Part of Zycoprime + 1 Part of Cement + 1 Part of fine sand. Apply paste on the surface with a brush to make a rough texture. Now your surface is ready to bond well with tiles/screed.	sqm	49	318	367
	Thermal Insulation of Buildings				
28.40	Providing fixing thermal insulation of ceiling (under deck insulation) with Resin Bonded Fibre glass wool conforming to IS : 8183, density 24kg / m3, 50mm thick, wrapped in 200 G Virgin Polythene bags, fixed to ceiling with metallic cleats (50x50x3 mm) @ 60 cm and wire mesh of 12.5 mm x 24 gauge wire mesh, for top most ceiling of building.	sqm	96	244	340
28.41	Providing and fixing thermal insulation with Resin Bonded Fibre glass wool conforming to IS: 8183. Density 16 kg/m³, 50 mm thick, wrapped in 200G Virgin Polythene bags placed over existing false ceiling and held in position by criss-crossing GI wire.	sqm	36	147	184
28.42	Thermal Insulation of roofing with Expanded polystyrene fixed with suitable adhesive to the false ceiling as per the directions of the Engineer-in-charge:				
	28.42.1 With Type N - Normal 50 mm thick	sqm	36	181	217
	28.42.2 With Type SE - Self Extinguishing type 50 mm thick	sqm	36	216	253
28.43	Providing and fixing Heat Resistant Terrace Tiles (300 mm x 300 mm x 20 mm) with SRI (solar refractive index) > 78, solar reflection > 0.70 and initial emittance > 0.75 on waterproof and sloped surface of terrace, laid on 20 mm thick cement sand mortar in the ratio of 1:4 (1 cement : 4 coarse sand) and grouting the joints with mix of white cement & marble powder in ratio of 1:1, including rubbing and polishing of the surface up to 3 cuts complete, including providing skirting up to 150 mm height along the parapet walls in the same manner.	sqm	313	739	1052
28.44	Providing and laying roof insulation with 40 mm thick impervious sprayed, closed cell free Rigid Polyurethane foam over deck insulation conforming to IS - 12432 Pt. III (density of foam being 40-45 kg/ cum), over a coat of polyurethane primer applied @ 6-8 sqm per litre, laying 400 G polythene sheet over PUF spray and providing a wearing course of 40 mm thick cement screed 1:2:4 (1 cement : 2 coarse sand : 4 stone aggregate 20 mm nominal size) in chequered rough finish, in panels of 2.5 m x 2.5 m and embedding with 24 G wire netting and sealing the joints with polymerized mastic, all complete as per direction of Engineer-in-Charge.	sqm	117	809	926
28.45	Providing and fixing thermal insulation with Resin Bonded Fibre glass wool conforming to IS: 8183 having density 24 kg/m3, 50 mm thick, wrapped in 200G Virgin Polythene Bags fixed to wall with screw, rawl plug & washers and held in position by criss crossing GI wire etc. complete as per directions of Engineer-in-Charge.	sqm	38	209	247
28.46	Providing and fixing thermal insulation of ceiling (under deck insulation) with Resin Bonded Rockwool conforming to IS: 8183,density 48 kg/ m3, 50 mm thick, wrapped in 200 G Virgin Polythene bags fixed to ceiling with metallic cleats (50x50x3 mm) @ 60 cm and wire mesh of 12.5mm x 24 gauge wire mesh, for top most ceiling of building.	sqm	96	211	307

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
28.47	Providing and fixing thermal insulation with Resin bonded rock wool conforming to IS: 8183, density 48 kg/m3, 50 mm thick, wrapped in 200 G virgin Polythene bags placed over existing false ceiling and held in position by criss-crossing GI wire.	sqm	36	176	212
28.48	Providing and fixing thermal insulation with Resin Bonded rock wool conforming to IS: 8183, having density 48 kg/m3,50 mm thick, wrapped in 200 G Virgin Polythene Bags fixed to wall with screw, rawl plug & washers and held and in position by criss crossing GI wire etc. complete as per directions of Engineer-in-Charge.	sqm	38	176	214
28.49	Providing and applying two coats of High Albedo paint having minimum Solar Reflective Index (SRI) 108 (with solar reflectance & thermal emittance tested as per ASTM) C 1549 and ASTM C 1371 respectively), VOC less than 10 cc/gm. The coating thickness and the methodology of application shall strictly as per manufacturer's specifications and as approved by Engineer-in-Charge. Surface preparation includes cleaning with metal wire brush to remove all dust, fungus etc., washing with water all complete. The contractor shall give guarantee for the performance of SRI and also the durability of coating, all complete as per direction of Engineer-in-Charge.	sqm	40	215	255
28.50	Providing and fixing Heat Resistant Terrace Tiles (300 mm x 300 mm x 20 mm) with SRI (solar refractive index) > 78, solar reflection > 0.70 and initial emittance > 0.75 on waterproof and sloped surface of terrace, laid on 20 mm thick cement sand mortar in the ratio of 1:4 (1 cement : 4 coarse sand) and grouting the joints with mix of white cement & marble powder in ratio of 1:1, including rubbing and polishing of the surface upto 3 cuts complete, including providing skirting upto 150 mm height along the parapet walls in the same manner.	sqm	252	847	1099
	POLYURETHANE FOAM (PUF) INSULATION				
28.51	Providing and applying 75mm thick two component, HFC blown, free from CFC/HCFC polyurethane based spray able rigid foam system, closed-cell type, designed to meet insulation requirements in roof applications. PUF shall be applied seamless in-situ and is ideal for fast return to service. PUF should be applied through a suitable metered application machine, by specialist applicators and should be covered by waterproofing system. The thickness of the individual layers of PUF applied foam should be minimum 10 - 15 mm. PUF should have the following properties: 1. Viscosity at 20°C, cps: Part A ISO 300, Part B POLYOL 600 2. Compressive strength,ASTM D-1621/94,kPa> 400 3. Tensile strength,ASTM D1623/78, kPa:>500 4. Adhesion to substrate,ASTM D4541, kPa:> 180 5. Thermal conductivity at 25C as per ASTM C518/91, W/m K:≤ 0.023 6. Closed cell content,ISO4590, %:> 96 7. Water absorption,EN12087, %:< 2.5 8. Water Vapour Transmission,EN12086, perms132 9. Flash Points, ºC: Part A ISO > 200, Part B POLYOL > 65 10. Fire resistance,DIN4102: Class B2 11. Foam Density, kg/m3 ASTM D1622: 45 to 50 12. Specific c Gravity at 20°C: Part A ISO 1.23, Part B POLYOL 1.23 It shall be applied as per manufactures specification. Rates are incl of surface preparation, grouting and chemical application only.	sqm	96	1205	1301
28.52	Providing and fixing extruded polystyrene (XPS) foam 50mm thick of density 32 Kg./ cum for thermal insulation with cramps of GI strip 25mm wide x 3mm thick fixed with screw/ nail for holding the walls at regular intervals in cavity walls complete in all respect.	sqm	133	757	891

CHAPTER NO. 29

STRUCTURAL and ALUMINIUM GLAZING

CHAPTER NO. 29.0 - STRUCTURAL AND ALUMINUM GLAZING

NOTES:

1. HERMETICALLY SEALED STRUCTURAL GLAZED UNIT

1.1 Insulating glass shall be a double glazed unit comprising two sheets of float glass panes separated by a spacer, hermetically sealed using primary and secondary sealants.

1.2 The design of insulating glass system shall consist of:

1.3 Hollow Spacer Bar: The hollow aluminium spacer bar shall be of required size and shape and shall be colour anodized. The spacer bar shall have two lines of perforations in the inner surface.

1.4 Desiccant: The desiccant shall be Neftomol 3 A Chemetall or equivalent. The desiccant filled in the aluminium spacer bar shall be synthesized crystalline compounds of Aluminium Hydroxide, Caustic Soda and Sodium Silicate which absorbs water molecules. The desiccant shall be of 3 A size. The quantity of desiccant used shall not be less than 35 gm/m length of spacer bar. Filled spacer bar frame shall not be stored for more than 6 hours before assembly and sealing of the unit to ensure proper functioning of the desiccant.

1.5 Primary Sealant: The primary sealant shall be single component, thermo plastic solvent free sealing compound based on polysosutylene. The sealant surface shall be free from cavities, depression and other defects.

1.6 Secondary Sealant: The secondary sealant in double glazed unit shall be silicone sealant. Before application of silicone/ polysulphide, the surface must be cleaned and free from oil, grease, dust and other loose matter. The surfaces shall be cleaned with alcohol or other suitable solvents. The polysulphide shall be mixed and applied mechanically using automatic mixing machine in the manner approved by Engineer-in-Charge.

1.7 EPDM- GASKETS: The EPDM Gaskets shall be of size and profile as shown in drawings and as called for, to render the glazing, doors, windows, ventilators etc. air and water tight.

1.8 EPDM gasket shall meet the requirements as given in Table below:

S. No.	Description	Standard to Follow	Specification
1	Tensile strength Kg.f/cm^2	ASTM-D 412	70 Min.
2	Elongation at break %	ASTM-D 412	250 Min.
3	Modulus 100% Kgf/cm^2	ASTM-D 412	22 Min.
4	Compression set % at 0° CC 22 Hrs.	ASTM-D 395	50 Max.
5	Ozone resistance	ASTM-D 1149	No visible cracks

1.9 Measurement: The height and width of double glazed/single glazed unit (the area of glass unit outside the snap beading shall only be measured) as fixed in place shall be measured correct to one centimeter and area calculated in sqm. correct to second place of decimal shall be taken for payment.

1.10 Rate: The rate shall include the cost of all the materials, labours involved in all the operations as described in the nomenclature of item and particular specification.

1.11 The cost of providing extruded aluminium frames, shadow boxes, extruded aluminium section capping for fixing in the grooves of the curtain glazing and vermin proof stainless steel wire mesh shall be paid for separately under relevant items under this sub- head. However, for the purpose of payment, only the actual area of structural glazing (including width of grooves) on the external face shall be measured in sqm up to two decimal places.

1.12 The following performance test are to be conducted on structural glazing system if area of structural glazing exceeds 2500 sqm from the certified laboratories accreditated by NABL (National Accreditation Board for Testing and Calibration Laboratories), Department of Science & Technologies, India. Cost of testing is payable separately.

1.12 (a) Competent authority will decide the necessity of testing on the basis of cost of the work, cost of the test and importance of the work.

1.12 (b) Performance Laboratory Test for Air Leakage Test (-50pa to - 300pa) & (+50pa to +300pa) as per ASTM E-283-04 testing method for a range of testing limit 1 to 200 mVhr

1.12 (c) Static Water Penetration Test. (50pa to 1500pa) as per ASTME- 331-09 testing method for a range up to 2000 ml.

1.12 (d) Dynamic Water Penetration (50pa to 1500pa) as per AAMA 501.01- 05 testing method for a range upto 2000 ml

1.12 (e) Structural Performance Deflection and deformation by static air pressure test (1.5 times design wind pressure without any failure) as per ASTME-330-10 testing method for a range upto 50 mm

1.12 (f) Seismic Movement Test (upto 30 mm) as per AAMA 501.4-09 testing method for Qualitative test, Tests to be conducted on site.

1.12 (g) Onsite Test for Water Leakage for a pressure range 50 kpa to 240 kpa (35psi) upto 2000 ml

CHAPTER NO. 29.0 - STRUCTURAL AND ALUMINUM GLAZING

LIST OF BUREAU OF INDIAN STANDARD CODES

Sr. No.	B.I.S. No.	Subject
1	IS 1285	Wrought Aluminium and Aluminium Alloy, Extruded Round Tube and Hollow sections (For General Engineering Purposes) - Specification
2	IS 1868	Anodic coating on Aluminium and its Alloys-Specification
3	IS 3965	Dimensions for wrought Aluminium and Aluminium Alloys bars, rods and sections.
4	IS 5523	Method of testing anodic coating on aluminium and its alloys.
5	IS 6012	Measurement of coating thickness by Eddy Current Method
6	IS 6477	Dimensions of extruded hollow section and tolerances
7	IS 14900	Transparent Float glass- Specifications.

CHAPTER 29.0 - STRUCTURAL GLAZING AND ALUMINIUM GLAZING

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
29.1	Providing and supplying aluminium extruded tubular and other aluminium sections as per the architectural drawings and approved shop drawings , the aluminium quality as per grade 6063 T5 or T6 as per BS 1474,including super durable powder coating of 60-80 microns conforming to AAMA 2604 of required colour and shade as approved by the Engineer-in-Charge. (The item includes cost of material such as cleats, sleeves, screws etc. necessary for fabrication of extruded aluminium frame work. Nothing extra shall be paid on this account). The weight of aluminium extruded section shall be taken for purpose of payment.	kg	-	360	360
29.2	Providing, assembling and supplying vision glass panels (IGUs) comprising of hermetically-sealed 6-12- 6 mm insulated glass (double glazed) vision panel units of size and shape as required and specified, comprising of an outer heat strengthened float glass 6mm thick, of approved colour and shade with reflective soft coating on surface # 2 of approved colour and shade, an inner Heat strengthened clear float glass 6mm thick, spacer tube 12mm wide, desiccants, including primary seal and secondary seal (structural silicone sealant) etc. all complete for the required performances, as per the Architectural drawings, as per the approved shop drawings, as specified and as directed by the Engineer-in-Charge. The IGUs shall be assembled in the factory/ workshop of the glass processor. (Payment for fixing of IGU Panels in the curtain glazing is included in cost of item No.29.6) For payment, only the actual area of glass on face # 1 of the glass panels (excluding the areas of the grooves and weather silicone sealant) provided and fixed in position, shall be measured in sqm				
	(i) Coloured tinted float glass 6mm thick substrate with reflective soft coating on face # 2, + 12mm Air gap + 6mm Heat Strengthened clear Glass of approved make having properties as visible Light transmittance (VLT) of 25 to 35 %, Light reflection internal 10 to 15%, light reflection external 10 to 20 %, shading coefficient (0.25- 0.28) and U value of 3.0 to 3.3 W/m2 degree K etc. The properties of performance glass shall be decided by technical sanctioning authority as per the site requirement.	sqm	271	2271	2541
29.3	Extra for openable side / top hung vision glass panels (IGUs) including providing and supplying at site all accessories and hardwares for the openable panels as specified and of the approved make such as heavy duty stainless steel friction hinges, min 4 -point cremone locking sets with stainless steel plates, handles, buffers etc. including necessary stainless steel screws/ fasteners, nuts, bolts, washers etc. all complete as per the Architectural drawings, as per the approved shop drawings, as specified and as directed by the Engineer- in-Charge.	sqm	173	2432	2605
29.4	Providing, fabricating and supplying shadow box of required size and shape, for fixing in the spandrel portion of the structural glazing, in linear as well as curvilinear portions of the building by providing semi -rigid, inorganic, non-combustible fibre glass wool insulation 50 mm thick, conforming to IS: 8183 and BS: 3958 Part 5. The insulation layer shall have facing (factory bonded on surface # 1 of the fibre glass insulation layer), of black non-woven fibre glass tissue of nominal thickness 0.5 mm and nominal mass not less than 60 gm /sqm, made of randomly oriented glass fibres distributed in a binder by a wet-lay process including fixing 1.5 mm thick solid aluminium sheet backing using, 6 mm thick cement board including SS rivets, nuts, bolts, washers etc complete.	sqm	96	1386	1482
29.5	Providing and supplying Spandrel Glass Panels comprising of 6 mm thick heat strengthened monolithic float glass of approved colour and shade with reflective soft coating on surface # 2 of approved colour and shade so as to match the colour and shade of the IGUs in the vision panels etc. ,all complete for the required performances as specified, as per the Architectural drawings, as per the approved shop drawings, as specified, and as directed by the Engineer- in- Charge.				

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
	For payment, only the actual area of glass on face # 1 of the glass panels (but excluding the area of grooves and weather silicone sealant) provided and fixed in position, shall be measured in sqm (Payment for fixing of Spandrel Glass Panels in the curtain glazing is included in cost of relevant Item)."(i) Coloured tinted float glass 6mm thick substrate with reflective soft coating on face # 2, having properties as visible Light transmittance (VLT) of 25 to 35 %, Light reflection internal 10 to 15%, light reflection external 10 to 20 %, shading coefficient (0.25- 0.28) and U value of 3.0 to 3.3 W/m2 K etc. . The properties of performance glass shall be decided by technical sanctioning authority as per the site requirement.	sqm	181	1415	1596
29.6	Designing, fabricating, testing, protection, installing and fixing in position semi (grid) unitized system of structural glazing (with open joints) for linear as well as curvilinear portions of the building for all heights and all levels, including: (a) Structural analysis & design and preparation of shop drawings for the specified design loads conforming to IS 875 part III (the system must passed the proof test at 1.5 times design wind pressure without any failure), including functional design of the aluminium sections for fixing glazing panels of various thicknesses, aluminium cleats, sleeves and splice plates etc. gaskets, screws, toggles, nuts, bolts, clamps etc., structural and weather silicone sealants, flashings, fire stop (barrier)-cum-smoke seals, microwave cured EPDM gaskets for water tightness, pressure equalisation & drainage and protection against fire hazard including: (b) Fabricating and supplying serrated M.S. hot dip galvanised / Aluminium alloy of 6005 T5 brackets of required sizes, sections and profiles etc. to accommodate 3 Dimensional movement for achieving perfect verticality and fixing structural glazing system rigidly to the RCC/ masonry/structural steel framework of building structure using stainless steel anchor fasteners/ bolts, nylon separator to prevent bimetallic contacts with nuts and washers etc. of stainless steel grade 316, of the required capacity and in required numbers. (c) Providing and filling, two part pump filled, structural silicone sealant and one part weather silicone sealant compatible with the structural silicone sealant of required bite size in a clean and controlled factory / work shop environment, including double sided spacer tape, setting blocks and backer rod, all of approved grade, brand and manufacture, as per the approved sealant design, within and all around the perimeter for holding glass. (d) Providing and fixing in position flashings of solid aluminium sheet 1 mm thick and of sizes, shapes and profiles, as required as per the site conditions, to seal the gap between the building structure and all its interfaces with curtain glazing to make it watertight. (e) Making provision for drainage of moisture/ water that enters the curtain glazing system to make it watertight, by incorporating principles of pressure equalization, providing suitable gutter profiles at bottom (if required), making necessary holes of required sizes and of required numbers etc. complete. This item includes cost of all inputs of designing, labour for fabricating and installation of aluminium grid, installation of glazed units, T&P, scaffolding and other incidental charges including wastages etc., enabling temporary structures and services, cranes or cradles etc. as described above and as specified. The item includes the cost of getting all the structural and functional design including shop drawings checked by a structural designer, dully approved by Engineer-in-charge. The item also includes the cost of all mock ups at site, cost of all samples of the individual components for testing in an approved laboratory, field tests on the assembled working structural glazing as specified, cleaning and protection till the handing over of the building for occupation. In the end, the Contractor shall provide a water tight structural glazing having all the performance characteristics etc. all complete as required, as per the Architectural drawings, as per item description, as specified, as per the approved shop drawings and as directed by the Engineer- in-Charge.	sqm	565	1008	1573

Item No.	Description	Unit	Labour Rate	Material Rate	Through Rate
	Notes for Item 29.6: **1. The cost of providing extruded aluminium frames, shadow boxes, extruded aluminium section capping for fixing in the grooves of the curtain glazing and vermin proof stainless steel wire mesh shall be paid for separately under relevant items under this sub- head. However, for the purpose of payment, only the actual area of structural glazing (including width of grooves) on the external face shall be measured in sqm up to two decimal places.** **2. The following performance test are to be conducted on structural glazing system if area of structural glazing exceeds 2500 sqm from the certified laboratories accreditated by NABL(National Accreditation Board for Testing and Calibration Laboratories), Department of Science & Technologies, India. Cost of testing is payable separately.** **3. Competent authority will decide the necessity of testing on the basis of cost of the work, cost of the test and importance of the work.** **3.1. Performance Laboratory Test for Air Leakage Test (-50pa to - 300pa) & (+50pa to +300pa) as per ASTM E-283-04 testing method for a range of testing limit 1 to 200 mVhr** **3.2. Static Water Penetration Test. (50pa to 1500pa) as per ASTME- 331-09 testing method for a range up to 2000 ml.** **3.3 Dynamic Water Penetration (50pa to 1500pa) as per AAMA 501.01-05 testing method for a range up to 2000 ml** **3.4 Structural Performance Deflection and deformation by static air pressure test (1.5 times design wind pressure without any failure) as per ASTME-330-10 testing method for a range up to 50 mm** **3.5 Seismic Movement Test (up to 30 mm) as per AAMA 501.4-09 testing method for Qualitative test, Tests to be conducted on site.** **3.6 Onsite Test for Water Leakage for a pressure range 50 kpa to 240 kpa (35psi) up to 2000 ml**				
29.7	Design supply & installation of suspended Spider Glazing system designed to withstand the wind pressure as per IS 875 (Part-III). The Suspended System held with Spider Fittings of SS-316 Grade Steel of approved manufacturer with glass panel having 12 mm thick clear toughened glass held together with SS- 316 Grade Stainless steel Spider & bolt assembly with laminated glass fins 21 mm thick. The Glass fins and glass panel assembly shall be connected to Slab/beams by means of SS- 316 Grade stainless steel brackets & Anchor bolts and at the bottom using SS channel of 50x25x2mm using fastener & anchor bolts, non staining weather sealants of approved make, Teflon/ nylon bushes and separators to prevent bi-metallic contacts, all complete to perform as per specification and approved drawings. The complete system to be designed to accommodate thermal expansion & seismic movements etc. The joints between glass panels (6 to 8 mm) and gaps at the perimeter & in U channel of the assembly to be filled with non staining weather sealant, so as to make the entire system fully water proof & dust proof. The rate shall include all design, Engineering and shop drawing including approval from structural designer, labour, T&P, scaffolding, other incidental charges including wastage, enabling temporary services all fitting fixers nut bolts, washer, Buffer plates, fastener, anchors, SS channel laminated glass etc. all complete. For the purpose of payment, actual elevation area of Glazing including thickness of joints and the portion of Glass panel inside the SS channel shall be measured.	sqm	304	6913	7217

CHAPTER NO. 30

REPAIR and MAINTENANCE of BUILDINGS

CHAPTER 30: REPAIRS OF BUILDINGS

LIST OF BUREAU OF INDIAN STANDARD CODES

Sr. No.	B.I.S. No.	Subject
1	IS 419	Specifications for Putty for use in Window Frames
2	IS 14900	Specifications for Transparent Float Glass

CHAPTER 30.0 - REPAIRS AND MAINTENANCE OF BUILDING

Item No.	Description	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	EARTH WORK					
30.1	Pumping out water caused by springs, tidal or river seepage, broken water mains or drains and the like.	kilolitre	43	31	-	75
	STONE MASONRY WORKS					
30.2	Raking out joints of stone masonry surface to the required width and depth, with due care and precaution, by mechanical / manual means, including preparing and cleaning the surface for re-pointing/ refilling of joints, including disposal of rubbish to the dumping ground with all lead and lift.	sqm	16	-	-	16
30.3	Cleaning the sand stone surface and removing dirt, dust, bird dropping, grease, oil, algae, fungus, monkey beats, vegetable growth etc., including providing, applying and washing the surface with liquid Ammonia Chemical of 5% solution and other chemical cleaning agent as approved by Archaeological Survey of India/ Engineer-in-charge, of approved brand and manufacturer, with the help of required scrubbers and also cleaning with machine operated water jet mixed with desired quantity of fine silica where ever required, without causing any scratching/ damage to the stone surface and finally washing the surface with clean water with the help of pressure jet machine, complete in all respect, including taking all precautions to safeguard ventilators, windows, doors etc. by suitable covering so as to avoid any damage to the building/structure, all as per direction of Engineer-in-charge (The rate is inclusive of all materials & labours involved except scaffolding).	sqm	62	-	10	71
30.4	Providing and applying antifungal wash treatment using 3% solution of sodium pentachlorophenate, of reputed brand and manufacturer, on cleaned sand stone surface at desired locations as per direction of Engineer-in-charge (The rate is inclusive of all materials & labours involved except scaffolding).	sqm	24	-	7	31
30.5	Ruled / Flush pointing on existing Red sand stone masonry surface with lime, surkhi and marble dust mortar in the ratio of 1:1.5:1/2 {One lime: 1.5 surkhi (50% red and 50% light yellow surkhi) : 1/2 marble dust}. (The rate is inclusive of all materials & labours involved except scaffolding).	sqm	105	-	6	112
30.6	Applying two or more coat of Ethyl Silicate chemical as approved by Archaeological Survey of India/ Engineer-in-charge, of approved brand and manufacturer, with brush or spray on the existing stone masonry surface till there is no further absorption of chemical by stone surface, including protecting the applied surface from direct sunlight by suitable means during application, all complete as per direction of the Engineer-in-Charge (The rate is inclusive of all materials & labours involved except scaffolding).	sqm	23	-	234	256
30.7	Applying breathable, non-reactive, antifungal, and water repellent Saline/Siloxane chemical as approved by Archaeological Survey of India/ Engineer-in-charge, of approved brand and manufacture, diluted with solvent mineral Turpentine oil in the ratio of 1:12 (One part of approved chemical :12 Part of Turpentine oil), on the existing sand stone masonry surface with two or more coats to give uniform application of chemical on the surface, all complete as per direction of Engineer-In-charge (The rate is inclusive of all materials & labours involved except scaffolding).	sqm	16	-	54	70
	ROOFING AND CEILING WORKS					

Item No.	Description	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
30.8	Providing and fixing 16 mm M.S. Fan clamps of standard shape and size in existing R.C.C. slab, including cutting chase, anchoring clamp to reinforcement bar, including cleaning, refilling, making good the chase with matching concrete, plastering and painting the exposed portion of the clamps complete.	each	141	-	58	199
30.9	Regarding terracing of mud phaska covered with tiles or brick, in cement mortar by dismantling tiles or bricks, removing mud plaster, preparing the surface of mud phaska to proper slope, relaying mud plaster gobri leaping and tiles or bricks, grouted in cement mortar 1:3 (1 cement : 3 fine sand), including replacing unserviceable tiles or bricks with new ones and disposal of unserviceable material to the dumping ground (the cost of the new tiles or brick excluded), all complete as per direction of Engineer-in-Charge.	sqm	205	-	40	245
30.10	Replacing sand stone slabs in roofing, laid in cement mortar 1:4 (1 cement : 4 coarse sand), including necessary repairs and cement pointing with same mortar complete, including disposal of rubbish to dumping ground, all complete as per direction of Engineer-in-Charge.					
	30.10.1 Red sand stone slabs 30 to 50 mm thick	sqm	294	-	182	476
30.11	Renewing/replacing of wooden battens in roofs, including making good the holes in wall and painting with oil type wood preservative of approved brand and manufacture complete, including removal of rubbish to the dumping ground, all complete as per direction of Engineer-in-Charge.					
	30.11.1 Sal wood battens	cum	3096	-	80319	83415
30.12	Renewing/replacing of wooden beams in roofs including making good the holes in walls and painting with oil type wood preservative of approved brand and manufacture complete, including removal of rubbish to the dumping ground, all complete as per direction of Engineer-in-Charge.					
	30.12.1 Not exceeding 4.00 metres in length.					
	30.12.1.1 Sal wood beams	cum	5651	-	81145	86797
	30.12.1.2 Hollock wood beams	cum	5651	-	47697	53348
	30.12.2 Above 4.00 metres and up to 5.00 metres length.					
	30.12.2.1 Sal wood beams	cum	6419	-	81311	87730
	30.12.2.2 Hollock wood beams	cum	6419	-	47828	54247
30.13	Replacing joists (karries) including hoisting, fixing in position and applying wood preservative on unexposed surface etc. complete with :					
	30.13.1 Sal wood	cum	3670	-	79670	83340
	30.13.2 Hollock wood	cum	3670	-	46560	50230
30.14	Taking out wind ties from roof including cutting out rusted bolts, nuts etc. and removing materials to any distance within compound and stacking.	kg	2	-	-	2
30.15	Fixing of old wind tie with new fittings including painting two or more coats with anticorrosive bitumastic paint of approved brand & manufacturer over and including priming coat of ready mixed zinc chromate yellow primer of approved brand.	metre	17	-	57	74
	FINISHING WORKS					
30.16	Repairs to plaster of thickness 12 mm to 20 mm in patches of area 2.5 sq.meters and under, including cutting the patch in proper shape, raking out joints and preparing and plastering the surface of the walls complete, including disposal of rubbish to the dumping ground, all complete as per direction of Engineer-in-Charge.					
	30.16.1 With cement mortar 1:4 (1 cement : 4 fine sand)	sqm	137	-	60	197
	30.16.2 With cement mortar 1:4 (1cement: 4 coarse sand)	sqm	137	-	61	198

Item No.	Description	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
30.17	Repair to plaster of thickness 12mm to 20 mm in patches of area 2.5 sqm and under, including cutting the patch in proper shape, raking out joints and preparing plastering the wall surface with white cement based polymer modified self curing mortar, including disposal of rubbish, all complete as per the direction of Engineer-In-Charge.	sqm	110	-	245	355
30.18	Hacking of CC flooring including cleaning for surface etc. complete as per direction of the Engineer-in-Charge.	sqm	1	-	-	1
30.19	Raking out joints in lime or cement mortar and preparing the surface for re-pointing or replastering, including disposal of rubbish to the dumping ground, all complete as per direction of Engineer-in-Charge.	sqm	16	-	-	16
30.20	Flush pointing with cement mortar 1:3 (1 cement : 3 fine sand) mixed with 2% of integral water proofing compound by weight of cement for prefixed flat tile bricks on top of mud phaska :					
	30.20.1 With F.P.S. brick tiles	sqm	38	-	7	45
	30.20.2 With modular brick tiles	sqm	38	-	8	46
30.21	Removing white or colour wash by scrapping and sand papering and preparing the surface smooth including necessary repairs to scratches etc. complete	sqm	8	-	-	8
30.22	Removing dry or oil bound distemper, water proofing cement paint and the like by scrapping, sand papering and preparing the surface smooth including necessary repairs to scratches etc. complete.	sqm	11	-	-	11
30.23	White washing with lime to give an even shade :					
	30.23.1 Old work (two or more coats)	sqm	7	-	2	9
	30.23.2 Old work (one or more coats)	sqm	5	-	1	6
30.24	Distempering with dry distemper of approved brand and manufacture (one or more coats) and of required shade on old work to give an even shade.	sqm	25	-	5	29
30.25	Distempering with 1st quality acrylic distemper (Ready mix) having VOC content less than 50 grams/ litre of approved brand and manufacture to give an even shade :					
	30.25.1 Old work (one or more coats)	sqm	25	-	7	32
30.26	Painting with oil type wood preservative of approved brand and manufacture:					
	30.26.1 Old work (one or more coats)	sqm	8	-	14	22
30.27	Wall painting with plastic emulsion paint of approved brand and manufacture to give an even shade:					
	30.27.1 One or more coats on old work	sqm	27	-	20	47
30.28	Painting with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade :					
	30.28.1 One or more coats on old work	sqm	28	-	16	43
30.29	Painting with aluminium paint of approved brand and manufacture to give an even shade:					
	30.29.1 One or more coats on old work	sqm	27	-	9	37
30.30	Painting with acid proof paint of approved brand and manufacture of required colour to give an even shade :					
	30.30.1 One or more coats on old work	sqm	27	-	21	48
30.31	Painting with black anti-corrosive bitumastic paint of approved brand and manufacture to give an even shade :					
	30.31.1 One or more coats on old work	sqm	27	-	7	35
30.32	French spirit polishing :					
	30.32.1 One or more coats on old work	sqm	87	-	12	99
30.33	Polishing on wood work with ready made wax polish of approved brand and manufacture :					
	30.33.1 Old work	sqm	30	-	8	37

Item No.	Description		Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
30.34	Distempering with 1st quality acrylic distemper (ready made) having VOC content less than 50 gm per litre. of approved manufacturer and of required shade and colour complete. as per manufacturer's specification.						
	30.34.1	One or more coats on old work	sqm	17	-	7	24
30.35	Finishing walls with water proofing cement paint of required shade :						
	30.35.1	Old work (one or more coats applied @ 2.20 kg/10 sqm) over priming coat of primer applied @ 0.80 litres/10 sqm complete including cost of Priming coat.	sqm	37	-	18	55
	30.35.2	Old work (one or more coats @ 2.20 kg/10 sqm) complete.	sqm	26	-	11	37
30.36	Finishing walls with textured exterior paint of required shade :						
	30.36.1	Old work (Two or more coats on existing cement paint surface applied @ 3.28 litre/10 sqm	sqm	34	-	102	137
	30.36.2	Old work (One or more coats) applied @ 1.82 litre/10 sqm	sqm	25	-	57	82
30.37	Finishing walls with Acrylic Smooth exterior paint of required shade :						
	30.37.1	Old work (Two or more coat applied @ 1.67 litre/ 10 sqm) on existing cement paint surface	sqm	34	-	37	71
	30.37.2	Old work (One or more coat applied @ 0.90 litre/10 sqm).	sqm	25	-	20	45
30.38	Finishing walls with Premium Acrylic Smooth exterior paint with Silicone additives of required shade						
	30.38.1	Old work (Two or more coats applied @ 1.43 litre/ 10 sqm) over existing cement paint surface	sqm	34	-	34	68
	30.38.2	Old work (One or more coats applied @ 0.83 litre/ 10 sqm) over existing cement paint surface	sqm	25	-	20	45
30.39	Varnishing with flatting varnish of approved brand and manufacture one or more coats on old work.		sqm	26	-	12	38
30.40	Painting on G.S. sheet with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade :						
	30.40.1	Old work (one or more coats)	sqm	27	-	7	34
30.41	Painting (one or more coats) on rain water, soil waste and vent pipes and fittings with black anticorrosive bitumastic paint of approved brand and manufacture on old work :						
	30.41.1	75 mm diameter pipes	metre	8	-	2	10
	30.41.2	100 mm diameter pipes	metre	10	-	2	13
	30.41.3	150 mm diameter pipes	metre	15	-	4	18
30.42	Painting (one or more coats) on rain water, soil waste and vent pipes and fittings with synthetic enamel paint of approved brand and manufacture and required colour on old work :						
	30.42.1	75 mm diameter pipes	metre	7	-	3	10
	30.42.2	100 mm diameter pipes	metre	9	-	3	12
	30.42.3	150 mm diameter pipes	metre	14	-	5	19
30.43	Repainting sand cast iron/ centrifugally cast iron (spun) iron, soil, waste, vent pipes and fittings with one coat of synthetic enamel paint of any colour such as chocolate, grey or buff etc :						
	30.43.1	100 mm diameter pipe	metre	10	-	5	15
	30.43.2	75 mm diameter pipe	metre	7	-	4	11
30.44	Repainting G.I. pipes and fittings with synthetic enamel white paint with one coat of approved quality :						
	30.44.1	15 mm diameter pipe	metre	2	-	1	3
	30.44.2	20 mm diameter pipe	metre	2	-	1	4
	30.44.3	25 mm diameter pipe	metre	3	-	2	5

Item No.	Description	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	30.44.4 32 mm diameter pipe	metre	4	-	2	6
	30.44.5 40 mm diameter pipe	metre	4	-	2	7
	30.44.6 50 mm diameter pipe	metre	5	-	3	8
30.45	Re-painting C.I. cistern with bitumastic or any other anti-corrosive paint inside and white paint on the outside surface of the cistern, flush pipe, other fittings, etc. complete, including polishing of wooden seat and lid and cleaning of W.C. pan with acid wherever necessary.	each	157	-	96	253
30.46	Repainting C.I. cistern with synthetic enamel paint of approved colour, brand and manufacture on the outside surface of cistern, flush pipe, other fittings etc. complete.	each	72	-	45	117
30.47	Repainting bath tub of size 1700x730x430 mm with enamel paint.	each	181	-	199	380
30.48	Re-lettering with black Japan paint of approved brand and manufacture.	per letter per cm height	1	-	-	1
	WOOD WORKS					
30.49	Fixing chowkhats in existing opening including embedding chowkhats in floors or walls cutting masonry for holdfasts, embedding hold fasts in cement concrete blocks of size 15 x 10 x 10 cm with cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size), making good the damages to walls and floors as required complete, including disposal of rubbish to the dumping ground, all complete as per direction of Engineer-in-Charge.					
	30.49.1 Door chowkhats	each	507	-	105	612
	30.49.2 Window chowkhats	each	328	-	68	397
	30.49.3 Clerestory window chowkhats	each	237	-	34	271
30.50	Fixing Chowkhat in existing opening in brick/ RCC wall with dash fasteners/Chemical fasteners of appropriate size (3 Nos. on each vertical member of door Chowkhat and 2 Nos. on each vertical member of window chowkhats), including Cost of dash fasteners/ chemical fastener.	each	38	-	109	147
39.51	Taking out existing wooden door/window shutter, repair by cutting, painting etc. and refixing of repaired door/window shutters to existing door frames, including replacement of hinges with screws, etc. as required, all complete as per the direction of the Engineer-in-charge.	each	128	-	19	146
30.52	Making the opening in brick masonry including dismantling in floor or walls by cutting masonry and making good the damages to walls, flooring and jambs complete, to match existing surface i/c disposal of malba/ debris/rubbish to the nearest municipal dumping ground, all complete as per direction of Engineer-in-Charge.					
	30.52.1 For door/ window/ clerestory window	sqm	344	-	24	369
30.53	Replacing and fixing 25 mm thick shutters for cup board etc i/c disposal of dismantled shutters, if any:					
	30.53.1 Panelled or panelled & glazed shutters :					
	30.53.1.1 Superior class teak wood including nickel plated bright finished M.S. piano hinges with necessary screws.	sqm	682	-	2880	3562
	30.53.1.2 Ist class teak wood including nickel plated bright finished M.S. piano hinges with necessary screws.	sqm	682	-	2294	2976
	30.53.2 Glazed shutters :					
	30.53.2.1 Superior class teak wood including nickel plated bright finished M.S. piano hinges with necessary screws.	sqm	551	-	3137	3688

Item No.	Description		Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	30.53.2.2	Ist class teak wood including nickel plated bright finished M.S. piano hinges with necessary screws.	sqm	551	-	2505	3057
30.54	Renewing glass panes, with putty and nails wherever necessary including racking out the old putty:						
	30.54.1	Float glass panes of nominal thickness 4 mm (weight not less than 10kg/sqm)	sqm	168	-	468	636
	30.54.2	Float glass panes of nominal thickness 5 mm (weight not less than 12.5kg/sqm)	sqm	168	-	754	922
30.55	Renewing glass panes, with wooden fillets wherever necessary:						
	30.55.1	Float glass panes of nominal thickness 4 mm (weight not less than 10kg/sqm)	sqm	324	-	486	810
	30.55.2	Float glass panes of nominal thickness 5 mm (weight not less than 12.5kg/sqm)	sqm	324	-	772	1096
30.56	Renewing glass panes and refixing existing wooden fillets:						
	30.56.1	Float glass panes of nominal thickness 4 mm (weight not less than 10kg/sqm)	sqm	219	-	444	663
	30.56.2	Float glass panes of nominal thickness 5 mm (weight not less than 12.5kg/sqm)	sqm	219	-	730	948
30.57	Supplying and fixing new wooden fillets wherever necessary:						
	30.57.1	2nd class teak wood fillets	metre	18	-	14	32
	30.57.2	Hollock wood fillets	metre	18	-	8	26
30.58	Renewal of old putty of glass panes (length)		metre	16	-	3	19
30.59	Refixing old glass panes with putty and nails		sqm	219	-	36	254
30.60	Fixing old glass panes with wooden fillets (excluding cost of fillets)		sqm	222	-	-	222
30.61	Replacing and fixing bright finished brass single acting spring hinges with necessary brass screws etc. complete ;						
	30.61.1	150 mm	each	24	-	575	599
	30.61.2	125 mm	each	24	-	393	417
	30.61.3	100 mm	each	24	-	343	367
30.62	Replacing and fixing bright finished brass double acting spring hinges with necessary brass screws etc. complete :						
	30.62.1	150 mm	each	24	-	646	671
	30.62.2	125 mm	each	24	-	543	567
	30.62.3	100 mm	each	24	-	524	549
30.63	Replacing and fixing bright finished brass flush bolts with necessary brass screws etc. complete :						
	30.63.1	250 mm	each	10	-	203	213
	30.63.2	150 mm	each	8	-	177	185
	30.63.3	100 mm	each	8	-	125	133
30.64	Replacing and fixing 150 mm bright finished floor brass door stopper with rubber cushion, necessary brass screws etc. to suit shutter thickness complete		each	4	-	217	221
30.65	Replacing and fixing bright finished brass hard drawn hooks and eyes :						
	30.65.1	300 mm	each	3	-	78	81
	30.65.2	250 mm	each	3	-	75	78
	30.65.3	200 mm	each	3	-	66	69
	30.65.4	150 mm	each	3	-	52	55
	30.65.5	100 mm	each	3	-	45	48
30.66	Replacing and fixing bright finished brass helical door spring (superior quality).		each	24	-	391	415
30.67	Replacing and fixing chromium plated brass butt hinges with necessary chromium plated brass screws etc. complete.						

Item No.	Description	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	30.67.1 125x70x4 mm (ordinary type)	each	9	-	144	153
	30.67.2 100x70x4 mm (ordinary type)	each	9	-	120	129
	30.67.3 75x65x4 mm (heavy type)	each	9	-	136	146
	30.67.4 75x40x2.5 mm (ordinary type)	each	9	-	73	83
	30.67.5 50x40x2.5 mm (ordinary type)	each	4	-	32	36
30.68	Replacing and fixing 85x42 mm chromium plated brass pull bolt lock with necessary chromium plated brass screws, nuts, bolts and washers etc. complete.	each	12	-	215	227
30.69	Replacing and fixing brass curtain rods of wall thickness 1.25 mm with two brass brackets fixed with brass screws and wooden plugs etc. wherever necessary complete.					
	30.69.1 20 mm diameter.	metre	13	-	256	269
	30.69.2 25 mm diameter.	metre	13	-	321	334
30.70	Replacing and fixing bright finished brass fan light pivot with necessary brass screws etc. complete.	each	4	-	31	35
30.71	Replacing and fixing 300 mm long bright finished brass chain with hook for fan light including necessary brass screws etc. complete.	each	5	-	52	57
30.72	Replacing/repairing and fixing plain Jaffri door and window shutters including bright or/and black enamelled M.S. butt hinges with necessary screws 35x10 mm laths placed 35 mm apart (frames to be paid separately), including fixing 50x12 mm beading complete with :					
	30.72.1 Second class teak wood	sqm	564	-	2799	3363
	STEEL AND IRON WORKS					
30.73	Providing and fixing M.S. round or square bars with M.S. flats at required spacing in wooden frames of windows and clerestory windows.	kg	11	-	70	80
30.74	Replacing and fixing bright finished brass casement window fasteners or peg stays to windows/ ventilators with necessary welding and machine screws etc. complete.	kg	55	-	294	349
30.75	Replacing and fixing bright finished brass quadrant stay 300 mm long with necessary brass screws etc. complete.	each	5	-	148	153
30.76	Replacing and fixing 14 mm bright finished brass spring catch to steel centre hung ventilators with necessary welding and machine screws etc. complete.	each	11	-	22	33
30.77	Renewing bottom rail and/or top runner of collapsible gate including making good all damages and applying priming coat of zinc chromate yellow primer of approved brand and manufacturer.	kg	34	-	98	132
30.78	Renewing Wrought iron or M.S. Wheel or roller of steel door or gate and fitting and fixing the same with necessary clamps, nuts and bolts/welding and erection etc. complete.					
	30.78.1 Wheel 50 mm dia and below	each	28	-	107	135
	30.78.2 Wheel above 50 mm dia	each	54	-	158	212
	WATER SUPPLY, SEWERAGE AND DRAINAGE WORKS					
30.79	Cutting holes of required size in brick masonry wall for fixing of exhaust fan including providing and fixing 300 mm dia PVC pipe conforming BIS-12818 and making good the same etc. complete as per direction of Engineer-in-charge.	each	40	-	56	95
30.80	Dismantling 15 to 40 mm dia G.I. pipe including stacking of dismantled pipes (within 50 metres lead) as per direction of Engineer-in-Charge.					
	30.80.1 Internal Work- Exposed on wall	metre	1	-	-	1

Item No.	Description		Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
30.81	Providing and fixing G.I. Union in existing G.I. pipe line, cutting and threading the pipe and making long screws, including excavation, refilling the earth or cutting of wall and making good the same complete wherever required :						
	30.81.1	15 mm nominal bore	each	239	-	60	299
	30.81.2	20 mm nominal bore	each	239	-	95	334
	30.81.3	25 mm nominal bore	each	239	-	157	396
	30.81.4	32 mm nominal bore	each	239	-	209	448
	30.81.5	40 mm nominal bore	each	239	-	280	520
	30.81.6	50 mm nominal bore	each	326	-	339	665
	30.81.7	65 mm nominal bore	each	326	-	715	1041
	30.81.8	80 mm nominal bore	each	326	-	780	1106
30.82	Making holes by cutting cores of appropriate dia in RCC floors and roofs of thickness up to 6" (six inches) for passing drain pipe and repairing the hole after insertion of drain pipe etc. including finishing-complete so as to make it leak proof.						
	30.82.1	Drain pipe of 150mm internal dia	each	1117	-	-	1117
	30.82.2	Drain pipe of 100mm internal dia	each	766	-	-	766
30.83	Dismantling W.C. Pan of all sizes including disposal of dismantled materials i/c malba all complete as per directions of Engineer-in-Charge.		each	31	-	-	31
30.84	Providing & fixing White vitreous china water closet squatting pan (Indian type) along with "S" or "P" trap including dismantling of old WC seat and "S" or "P" trap at site complete with all operations including all necessary materials, labour and disposal of dismantled material i/c malba, all complete as per the direction of Engineer-in charge.						
	30.84.1	Long pattern W.C Pan of size 580x440 mm	each	736	-	1070	1806
	30.84.2	Orissa pattern W.C Pan of size 580x440 mm	each	718	-	1914	2632
30.85	Replacing and fixing C.P. brass chain and rubber plug complete for sink or wash basin:						
	30.85.1	32 mm dia	each	6	-	52	58
	30.85.2	40 mm dia	each	6	-	52	58
30.86	Cleaning and desilting of gully trap chamber, including removal of rubbish mixed with earth etc. and disposal of same, all as per the direction of Engineer-in-charge.		each	48	-	-	48
30.87	Raising manhole cover and frame slab to required level including dismantling existing slab and making good the damage as required (Raising depth of manhole to be paid separately) :						
	30.87.1	Rectangular manhole 90x80 cm with rectangular cover 600 x 450 mm of grade LD - 2.5	each	940	-	643	1584
	30.87.2	Rectangular manhole 120x90 cm with circular cover 500 mm dia of grade MD - 10	each	1462	-	999	2460
	30.87.3	Rectangular manhole 120x90 cm with circular cover 560 mm dia of grade HD - 20	each	1357	-	923	2280
	30.87.4	Circular manhole 140 cm dia with circular cover 600 mm dia of grade EHD - 35	each	75	-	62	138
30.88	Making connection of drain or sewer line with existing manhole including breaking into and making good the walls, floors with cement concrete 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) cement plastered on both sides with cement mortar 1:3 (1 cement : 3 coarse sand), finished with a floating coat of neat cement and making necessary channels for the drain etc. complete :						
	30.88.1	For pipes 100 to 250 mm diameter	each	218	-	50	268
	30.88.2	For pipes 250 to 300 mm diameter	each	231	-	86	317

Item No.	Description	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	30.88.3 For pipes 350 to 450 mm diameter	each	320	-	139	459
30.89	Disconnecting damaged overhead/terrace PVC water storage tank of any size from water supply line and removing from the terrace including shifting at ground level as per direction of Engineer-in-charge.	each	119	-	-	119
30.90	Cleaning of terrace/loft water storage tank (inside surface area) up to 2000 litre capacity at all heights with coconut brushes, duster etc., removal of silt, rubbish from the tank and cleaning the tank with fresh water disinfecting with bleaching powder @ 0.5gm per litre capacity of tank including marking the date of cleaning on the side of tank body with the help of stencil and paint and disposing of malba all complete as per direction of Engineer-in-Charge. (The old date already written on tank should be removed with paint remover or black paint and if date is not written with the stencil or old date is not removed deduction will be made @ Rs. 0.10 per litre) (if during cleaning any GI fittings or ball cock is damaged that is to be repaired by contractor at his own cost and nothing extra will be paid on this account)	500 litres	71	-	10	81
30.91	Cleaning of chocked sewer line by diesel running vehicle mounting hydraulic operated high pressure suction cum jetting sewer cleaning machine fitted with pump having 4000 litres suction capacity and 6000 litres water jetting tank capacity including skilled operator, supervising engineer etc. for cleaning and partial desilting of manholes and dechocking of sewer lines. Dechocking and flushing of sewer line from one manhole to another by high pressure jetting system of 2200 PSI for sewer line from 150mm dia up to 300mm	metre	7	94	2	103
30.92	Cleaning of under ground sump, Over Head R.C.C. Tank (independent staging) including disposal of silt and rubbish, all as per direction of Engineer-in-Charge. The cleaning shall consist following operations:- (i)Tank shall be emptied of water by pumping & bottom shall be cleaned of silt and other deposits. (ii) Entire surface area of the sump shall then scrubbed thoroughly with wire brush etc. and pressure washed with water. (iii) Chlorination of RCC internal surface by liquid chlorine. (iv) The treated surface shall be dried using air jetting and all loose particles shall be removal from the surface. (v) Finally the surface shall be treated with ultraviolet radiation etc. as per direction of Engineer-in-Charge.	sqm	23	13	-	36
	SCAFFOLDING FOR REPAIR WORKS					
30.93	Providing and fixing double scaffolding system (cup lock type) on the exterior side, up to seven story height made with 40 mm dia M.S. tube 1.5 m centre to centre, horizontal & vertical tubes joining with cup & lock system with M.S. tubes, M.S. tube Challies, M.S. clamps and M.S. staircase system in the scaffolding for working platform etc. and maintaining it in a serviceable condition for the required duration as approved and removing it there after .The scaffolding system shall be stiffened with bracings, runners, connection with the building etc wherever required for inspection of work at required locations with essential safety features for the workmen etc. complete as per directions and approval of Engineer-in-charge .The elevational area of the scaffolding shall be measured for payment purpose .The payment will be made once irrespective of duration of scaffolding. **Note: - This item to be used for maintenance work judicially and where necessary deduction for scaffolding in the existing item is to be done.**	sqm	78	-	57	135

Item No.	Description	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
30.94	Providing and fixing double scaffolding system (cup lock type) on the exterior side of building/structure, up to 25 metre height, above ground level, including additional rows of scaffolding in stepped manner as per requirement of site, made with 40mm dia M.S. tube, placed 1.5 metre centre to centre, horizontal & vertical tubes joint with cup & lock system with M.S. Tubes, M.S. tube challis, M.S. clamps and staircase system in the scaffolding for working platform etc. and maintaining it in a serviceable condition for execution of work of cleaning and/ or pointing and/ or applying chemical and removing it thereafter. The scaffolding system shall be stiffened with bracings, runners, connecting with the building etc, wherever required, if feasible, for inspection of work at required locations with essential safety features for the workmen etc., complete as per directions and approval of Engineer-in-charge. **Note:- (1) The elevational area of the scaffolding shall be measured for payment purpose.** **(2) The payment will be made once only for execution of all items for such works.** **(3) This item to be used for maintenance work judicially and where necessary deduction for scaffolding in the existing item is to be done.**	sqm	78	-	57	135

CHAPTER NO. 31

STRENGTHENING and RETROFITTING of BUILDINGS

CHAPTER 31.0 - STRENGTHENING AND RETROFITTING OF BUILDINGS

Item No.	Description	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
31.1	Providing and fixing hard drawn steel wire fabric of size 75 x25 mm mesh or other suitable size wire mesh to be fixed & firmly anchored to the concrete surface by means of "L" shaped mild steel shear key welded with existing reinforcement including the cost of materials, labour, tool & plants as approved by Engineer-in-charge.	sqm	71	-	607	678
31.2	Chipping of unsound/weak concrete material from slabs, beams, columns etc. with manual Chisel and/ or by standard power driven percussion type or of approved make including tapering of all edges, making square shoulders of cavities including cleaning the exposed concrete surface and reinforcement with wire brushes etc. and disposal of debris for all lead and lifts all complete as per direction of Engineer-In-Charge					
31.2.1	75mm average thickness	sqm	123	-	-	123
31.2.2	50mm average thickness	sqm	84	-	-	84
31.2.3	25 mm average thickness	sqm	43	-	-	43
31.3	Cleaning of reinforcement from rust from the reinforcing bars to give it a total rust free steel surface by using alkaline chemical rust remover of approved make with paint brush and removing loose particles after 24 hours of its application with wire brush and thoroughly washing with water and allowing it to dry, all complete as per direction of Engineer-In-Charge.					
31.3.1	Bars up to 12 mm diameter	metre	1	-	3	4
31.3.2	Bars above 12 mm diameter	metre	3	-	6	8
31.4	Providing, mixing and applying bonding coat of approved adhesive on chipped portion of RCC as per specifications and direction of Engineer-In-charge complete in all respect.					
31.4.1	SBR Polymer (@10% of cement weight) modified cementitious bond coat @ 2.2 kg cement per sqm of surface area mixed with specified proportion of approved polymer	sqm	21	-	68	90
31.4.2	Epoxy bonding adhesive having coverage 2.20 sqm/kg of approved make	sqm	11	-	345	356
31.5	Providing, mixing and applying SBR polymer (of approved make @ minimum 2% by wt. of cement used) modified plain/reinforced cement concrete for structural members having minimum characteristic compressive strength [with ordinary portland cement, coarse sand and graded stone aggregate of 10mm maximum size in proportion as per design criteria] with specified average thickness. **Note: Rates shall be for finished surface area of concrete and shall include the cost of labour, concrete and appropriate approved Super-Plasticiser for rendering concrete as flow able and SBR polymer but shall exclude cost of reinforcement, bond coat, Shear Keys, centering and shuttering, strutting, propping etc (Payment under this item shall be made only after proper wet curing has been done and surface has been satisfactorily evaluated by sounding/tapping with a blunt metal instrument)**					
31.5.1	50mm thick in Grade M 25 with cement content not less than 330 kg per cum	sqm	91	-	229	320
31.5.2	75mm thick in Grade M 25 with cement content not less than 330 kg per cum	sqm	137	-	343	480

Item No.	Description		Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
31.6	Providing and laying SBR Polymer modified (of approved make @ minimum 2% by wt. of cement used) plain/reinforced concrete jacket for the structural members e.g. columns, pillars, piers, beams etc with concrete having the specified minimum characteristic compressive strength [with ordinary portland cement, coarse sand and graded stone aggregate of 10mm maximum size in proportion as per design criteria] with specified average thickness all-round existing core of RCC member. **Note: Rates shall be for finished surface area of concrete and shall include the cost of making holes in existing RCC slab, if required, for pouring concrete in shuttering mould of jacket and appropriate approved Super-Plasticiser for rendering concrete as flow able self compacting and SBR polymer but shall exclude cost of reinforcement, bond coat, Shear Keys, centering and shuttering, strutting, propping etc (Payment under this item shall be made only after proper wet curing has been done and surface has been satisfactorily evaluated by sounding/tapping with a blunt metal instrument)**						
	31.6.1	50mm thick in Grade M 25 with cement content not less than 330 kg per cum	sqm	91	-	229	320
	31.6.2	75mm thick in Grade M 25 with cement content not less than 330 kg per cum	sqm	480	-	-	480
	31.6.3	100mm thick in Grade M 25 with cement content not less than 330 kg per cum	sqm	640	-	-	640
31.7	Providing, mixing and applying SBR polymer (of approved make) modified Cement mortar in proportion of 1:4 (1 cement: 4 graded coarse sand with polymer minimum 2% by wt. of cement used) as per specifications and directions of Engineer-in-charge. **Note: Measurement and payment: The pre-measurement of thickness shall be done just after the surface preparation is completed and Payment under this item shall be made only after proper wet curing has been done and surface has been satisfactorily evaluated by sounding / tapping with a blunt metal instrument and/or the 75mm size cube crushing strength at the end of 28 days to be not less than 30 N/sqmm2).**						
	31.7.1	12 mm average thickness.	sqm	81	-	75	156
	31.7.2	25 mm average thickness in 2 layers.	sqm	108	-	156	264
	31.7.3	50 mm average thickness in 3 layers.	sqm	216	-	313	529
31.8	Providing and injecting approved grout in proportion recommended by the manufacturer into cracks/honey-comb area of concrete/masonry by suitable gun/pump at required pressure including cutting of nipples after curing etc. complete as per directions of Engineer-in-Charge. **(The payment shall be made on the basis of actual weight of approved grout injected.)**						
	31.8.1	Stirrer mixed Acrylic Polymer of approved make @ 2% of weight of cement used) modified Cement slurry made with non shrink compound in concrete/RCC work	kg	15	-	27	42
	31.8.2	Stirrer mixed SBR Polymer (of approved make) modified Cement slurry made with Shrinkage Compensating Cement in concrete/RCC work.	kg	15	-	31	46
	31.8.3	Epoxy injection grout in concrete/RCC work of approved make	kg	3	-	760	764

Item No.	Description		Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
31.9	Cleaning of exposed concrete surface of sticking material including loose and foreign material by sand blasting with coarse sand followed by and including cleaning with oil free air blast as per direction of Engineer in charge.		sqm	17	53	84	155
31.10	Shotcreting R.C.C. columns, beams and slabs etc. in layers with approved design mix concrete having the specified minimum characteristic compressive strength [with ordinary portland cement, coarse sand and graded stone aggregate of 10 mm maximum size in proportion as per design criteria] including the cost of centering and shuttering at edges and corners etc. as directed by Engineer- in-Charge **Note: Rates shall include the providing necessary ground wires etc. The levelling gauges, if used, shall be paid for separately. Payment under this item shall be made only after proper wet curing has been done and surface has been satisfactorily evaluated by sounding/tapping with a blunt metal instrument.**						
	31.10.1	25mm thick in Grade M 25 with cement content not less than 330 kg per cum	sqm	142	153	100	395
	31.10.2	50mm thick in Grade M 25 with cement content not less than 330 kg per cum	sqm	176	253	201	630
	31.10.3	75mm thick in Grade M 25 with cement content not less than 330 kg per cum	sqm	210	414	301	925
31.11	Providing and inserting 12mm dia galvanised steel injection nipple in honey comb area and along crack line including drilling of holes of required diametre (20mm to 30mm) up to depth from 30mm to 80mm at required spacing and making the hole & crack dust free by blowing compressed air, sealing the distance between injection nipple with adhesive chemical of approved make and allow it to cure complete as per direction of Engineer-In-Charge.		each	25	-	124	150
31.12	Drilling suitable holes in reinforced or plain cement concrete with power driven drill machine to a minimum depth of 100mm up to 200mm in RCC beams, lintels, columns and slabs to introduce steel bars for sunshades/balconies including fixing the steel bars in position using epoxy resin anchor grout of approved make but excluding the cost of reinforcement, all complete as per direction of Engineer-In-Charge.						
	31.12.1	Up to and including 12mm dia.	each	36	10	15	62
	31.12.2	More than 12mm and up to 25mm dia	each	43	10	51	105
31.13	Providing, erecting, maintaining and removing temporary protective screens made out of specified fabric with all necessary fixing arrangement to ensure that it remains in position for the work duration as required by the Engineer-in-charge.						
	31.13.1	Woven PVC cloth	sqm	8	-	33	42
31.14	Rebarring work with 10ml inject able mortar epoxy adhesive (Hybrid Urethane Methacrylate adhesive) or chemical compound of make as approved by Engineer-in-Charge complete in all respect including drilling and cost of all materials						
	31.14.1	8mm dia (hole size 12 mm dia & depth up to 80 mm)	each	-	-	325	325
	31.14.2	10 mm dia (hole size 14 mm.& hole depth up to 100 mm)	each	-	-	584	584
	31.14.3	12mm dia (hole size 16mm.& hole depth up to 120 mm)	each	-	-	714	714
	31.14.4	16mm dia (hole size 20 mm dia & depth up to 200mm)	each	-	-	909	909

Item No.	Description		Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	31.14.5	20mm dia (hole size 24 mm dia & depth up to 240mm)	each	-	-	1104	1104
	31.14.6	25mm dia (hole size 30 mm dia & depth up to 300 mm)	each	-	-	1298	1298
	31.14.7	32 mm dia bar hole size 36 mm dia & depth up to 320 mm	each	-	-	1428	1428

CHAPTER NO. 32

INNOVATIVE TECHNOLOGIES NEW MATERIALS and SOLAR PANELS

Item No.	Description	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	NEW TECHNOLOGY ITEMS					
	PREFAB/PRECAST TECHNOLOGY					
32.1	Fabrication & Manufacturing of Prestressed Hollow Core slab (Hollow area 25 to 30%) of different thickness & modular width 1200 mm in Controlled Factory Environment with approved methodology confirming to IS 10297:1982 by using long line casting method having arrangement of proper steel bed. Concreting should be done by batch mixing plant capable of producing zero slump concrete, transported through automatic shutters of standard make & layer on bed with the help of extruder/Slip former, finishing, curing and also provision of steam curing. Cutting, making necessary cut-out/holes of required sizes for services in slab element after achieving required strength, yard handling & stacking all complete as per approved shop drawings & design mix as per the direction of the Engineer-in-charge. (Cost of strands should be paid separately).					
	Note :Less cement used as per design mix is recoverable. However no extra payment shall be made if excess cement is used as per design mix.					
32.1.1	Concrete Grade-M-40 (cement content 400 kg)					
32.1.1.1	100 mm thick hollow core slab	metre	253	-	372	625
32.1.1.2	120 mm thick hollow core slab	metre	336	-	440	776
32.1.1.3	150 mm thick hollow core slab	metre	404	-	541	945
32.1.1.4	200 mm thick hollow core slab	metre	489	-	666	1154
32.1.1.5	250 mm thick hollow core slab	metre	595	-	824	1419
32.1.1.6	300 mm thick hollow core slab	metre	701	-	982	1684
32.1.1.7	350 mm thick hollow core slab	metre	808	-	1141	1948
32.1.1.8	400 mm thick hollow core slab	metre	914	-	1299	2213
32.1.2	Extra for using M-50 (Cement content 425 kg) instead of M-40					
32.1.2.1	100mm thick hollow core slab	metre	-	-	17	17
32.1.2.2	120mm thick hollow core slab	metre	-	-	20	20
32.1.2.3	150mm thick hollow core slab	metre	-	-	25	25
32.1.2.4	200mm thick hollow core slab	metre	-	-	31	31
32.1.2.5	250mm thick hollow core slab	metre	-	-	39	39
32.1.2.6	300mm thick hollow core slab	metre	-	-	47	47
32.1.2.7	350mm thick hollow core slab	metre	-	-	55	55
32.1.2.8	400mm thick hollow core slab	metre	-	-	63	63
32.1.3	Extra for using M-60 (Cement content 440 kg) instead of M-40					
32.1.3.1	100mm thick hollow core slab	metre	-	-	27	27
32.1.3.2	120mm thick hollow core slab	metre	-	-	32	32
32.1.3.3	150mm thick hollow core slab	metre	-	-	40	40
32.1.3.4	200mm thick hollow core slab	metre	-	-	50	50
32.1.3.5	250mm thick hollow core slab	metre	-	-	63	63
32.1.3.6	300mm thick hollow core slab	metre	-	-	75	75
32.1.3.7	350mm thick hollow core slab	metre	-	-	88	88
32.1.3.8	400mm thick hollow core slab	metre	-	-	101	101

Item No.	Description		Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
32.2	Fabrication and manufacturing of solid precast concrete element with provisions of shear keys, connecting loops, dowel tubes and proper lifting accessories for walls, beams, slabs, stairs, column etc, of various thickness, shape and size of different concrete grades manufactured in controlled factory environment with approved methodology including moulds (Pallet system, Tilts form, table moulds, battery moulds, vertical moulds, beam moulds, column moulds, staircase moulds, Facade mould, etc.), mixing, transporting and placing of concrete, vibrating, curing, finishing, making necessary cut-out/holes of required sizes for services, yard handling & stacking all complete as per IS 11447:1985 and as per approved shop drawings and design mix as per the direction of Engineer-in-Charge (Cost of reinforcement, Mechanical, Electrical and Plumbing inserts will be paid separately). **Note :Less cement used as per design mix is recoverable. However no extra payment shall be made if excess cement is used as per design mix.**						
	32.2.1	Concrete grade M-35 (Cement content 370 kgs)	cum	3123	-	7595	10719
	32.2.2	Extra for using M-40 (Cement content 400 kg) instead of M-35	cum	-	-	224	224
	32.2.3	Extra for using M-50 (Cement content 425 kg) instead of M-35	cum	-	-	411	411
	32.2.4	Extra for using M-60 (Cement content 440 kg) instead of M-35	cum	-	-	523	523
32.3	Providing & laying in position Prestressing steel strands (low relaxation) on hollow core bed by using mechanical pulling arrangement like Rabbit/ Bed master including all accessories for Stressing & destressing operations as per approved make conforming to IS1343 & grade FY-1860 etc, complete as per drawings and direction of Engineer -in-charge.		kg	4	58	82	145
32.4	Transportation of Precast Elements by flat bed Trailer (Double / Triple axle 40ft Length with proper accessories like A frame etc) from factory, including the cost of loading , unloading & stacking at site with the help of required capacity cranes.						
	32.4.1	Lead within 15km	tonne	29	287	-	316
	32.4.2	Add/Deduct over item 32.4.1 for every additional lead of 5 km	tonne	-	31	-	31
32.5	Erection & Installation of Precast/Prestressed Concrete elements in correct & final position with proper line level and plumb at site making all arrangements (i.e. cranes, push-pull jacks & all another T & P for lifting Placing & Alignment of elements, within erection tolerance as per IS 15916 as per approved shop drawings and all complete as per the direction of Engineer-in-Charge but excluding the cost of sim pads, non shrink grout and steel works i.e. hangers. All work up to fourth floor.						
	32.5.1	Prestressed hollow core Slab up to 200 mm	sqm	29	146	-	175
	32.5.2	Prestressed hollow core slab above 200 mm up to 400 mm thickness	sqm	36	320	-	355
	32.5.3	Solid concrete wall elements	cum	451	1566	-	2017
32.6	Providing & Applying weather proof sealant on outer joints of approved make confirming to IS & directed by Engineer-in-charge.						
	32.6.1	Sealant 25mmx10mm at joints	metre	-	-	123	123
32.7	Providing & Laying of levelling sim pads required sizes (5x5cm to 10x10cm) of PVC / Rubber to adjust level of bearing surface of supporting members as per the direction of Engineer in charge.						

Item No.	Description		Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	32.7.1	2mm thick	each	5	-	13	18
	32.7.2	5 mm thick	each	5	-	20	24
	32.7.3	10 mm thick	each	5	-	32	37
32.8	Providing & Grouting of dowel tubes / Shear keys / Joints of precast members with M-60 grade cementitious grout (Non Shrink) of approved make by suitable means (Free flowing /pump),curing etc. Complete as per directions of Engineer-in-charge. (The payment shall be made on the basis of actual weight of approved grout injected.)						
	32.8.1	Stirrer mixed cementitious grout (non shrink) of approved make in dowel tubes / Shear keys / Joints of precast members.	kg	14	-	38	53
	COLD FORM LIGHT GAUGE STEEL FRAMED STRUCTURE						
32.9	Designing, providing, installing and fixing factory finished custom designed cold form Light Gauge Steel Framed super structure comprising of steel wall panel, trusses, purlins etc manufactured out of minimum 0.75 mm thick steel sheet as per design requirements. The steel sheet shall be galvanized (AZ-150gms Aluminium Zinc Alloy coated steel having minimum yield strength 300-550 Mpa) conforming to AISI specifications and IBC 2009 for cold formed steel framing and construction and also as per IS: 875-1987, ISO 800-1984 and IS:801- 1975. The wind load shall be as per provisions of IS 875 (part -III). LGSFS frame shall be designed as per IS: 801 using commercially available software such as Frame CAD Pro-11.7/ STAAD PRO-V8i/ArchitekV2.5.16/ Rivet architecture-2011 or equivalent. Proper usage of Connection Accessories like Heavy Duty Tension Ties, Light Duty Hold-ons, Twist Straps (to connect truss with wall frames), Strong Tie, Tie Rod, H-Brackets, Boxing Sections, L-Shaped Angles for better structural stability. The framing section shall be cold form C-type having minimum web depth 89 mm x 39mm flange x 11mm lip in required length as per structural design requirement duly punched with dimple/slot at required locations as per approved drawings. The slots will be along centre line of webs and shall be spaced minimum 250mm away from both ends of the member. The frame can be supplied in panellized or knock down condition in specific dimensions and fastened with screws extending through the steel beyond by minimum of three exposed threads. All self drilling tapping screws for joining the members shall have a Type II coating in accordance with ASTM B633(13) or equivalent corrosion protection of gauge 10 & 12, TPI 16 & 8 of length 20mm. The frames shall be fixed to RCC slab or Tie beam over Neoprene rubber using self expanding carbon steel anchor bolt of dia as per approved drawings. design subject to minimum 12mm diameter and 121mm length conforming to AISI 304 and 316 at 500mm c/c with minimum embedment of 100mm in RCC (RCC to be paid separately) and located not more than 300mm from corners or termination of bottom tracks complete in all respects. The item also includes the submission of stability reports duly examined and issued by any NIT/IIT. The rate includes the concept design, detailed design, fabrication of sections, transportation, installation and all required fixing arrangement at site as described above.		kg	12	-	179	191
32.10	Providing and fixing of external wall system on Light gauge steel frame work with outer face having 6mm thick heavy duty fibre cement board fixed on 9mm thick heavy duty fibre cement board confirming to IS 14862:2000, category IV type A (High pressure steam cured) as per standard sizes fixed with self-drilling / taping screws / fasteners @ 60cm c/c of approved make. A grove of 2 mm to 3mm shall be maintained and groves shall be sealed with silicon based sealant. The board shall be fixed in a staggered pattern. Screws shall be of counter sunk rib head of 1.60mm to 4 mm thick of 8 to 10 gauge of length varying from 25 to 45 mm and internal face 12.5mm thick gypsum plaster board fixed on 8mm thick fibre cement board confirming to IS 14862:2000 of category III type B (High pressure steam cured) as per standard sizes fixed with self-drilling / taping screws / fasteners @ 60cm c/c of approved make, proper taping and jointing to be done using fibre mesh tape and epoxy and acrylic based jointing compound for seamless finish.(cost of frame work to be paid for separately).		sqm	264	-	2644	2908

Item No.	Description	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
32.11	Providing and fixing internal wall panels on Light gauge steel frame work with 12.5mm thick gypsum plaster board conforming IS 2095:2011 fixed on 8mm thick fibre cement board conforming to IS 14862:2000 of category III type B (High pressure steam cured) as per standard sizes fixed with self-drilling / taping screws / fasteners @ 60cm c/c of approved make, Screws shall be of counter sunk rib head of 1.60mm to 4 mm thick of 8 to 10 gauge of length varying from 25 to 45 mm. Proper taping and jointing to be done using fibre mesh tape and epoxy and acrylic based jointing compound for seamless finish.(cost of frame work to be paid for separately)	sqm	150	-	1676	1825
	EPS CORE WALLS AND ROOF PANELS					
32.12	Providing and fixing in position, 200 mm thick factory made Expanded Polystyrene Core (EPS Core) wall panels consisting of EPS core sandwiched between two Engineered sheets of welded wire fabric mesh duly finished with shotcrete materials on outer faces. The fabric mesh shall be made of 3 mm dia G.I. wire mesh with 50 mm pitch in both the directions and on both faces of the wall, kept at 120-135 mm gap and connected by the zig zag G.I. wire of 3 mm dia at alternate row by welding (at an angle ranging from 50-70 degree) . The EPS core shall consist of 100 mm thick EPS of density not less than 20 kg/ per cum Both the outer faces of the panel shall be finished by applying the layer of 50 mm thick cement mortar 1:3 {1 cement: 3 coarse sand (not having more than 40% stone chips of size up to 6 mm)} À with the help of Shotcreting/guniting equipment etc at a pressure not less than 1 bar (100Kn/m2) and both surfaces finished with trowel. Fixing operations of wall panels shall be completed in all respect as per drawings and specifications and under the overall direction of the Engineer-in-charge.	sqm	199	-	2807	3006
32.13	Providing and fixing in position, 230mm thick factory made Expanded Polystyrene Core (EPS Core) roof/floor panels made of 3 mm dia G.I. wire mesh with 50 mm pitch in both the directions and on both faces of panel, kept at 120-135 mm gap and connected by the zig zag G.I. wire of 3 mm dia at alternate row by welding (at an angle ranging from 50-70 degree). The EPS core shall consist of 100 mm thick EPS of density not less than 20kg/ per cum The bottom side of the panel shall be finished by applying a layer of 60-65 mm thick cement mortar 1: 3 {1 cement: 3 coarse sand (not having more than 40% stone chips of size up to 6 mm)} À with the help of Shotcreting equipment etc at a pressure of not less than 1 bar (100Kn/m2) and surface finished with trowel. The top face of the panel shall be provided and finished by applying 70-75 mm thick layer of cement concrete 1:1.5: 3 (1 cement :1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size). Fixing operations of roof/floor panels shall be completed in all respect as per drawings and specifications and under the overall direction of the Engineer-in-charge.	sqm	448	-	2808	3256

Item No.	Description	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
32.14	Providing and fixing in position, 130 mm thick factory made Expanded Polystyrene Core (EPS Core) wall panels consisting of EPS core sandwiched between two Engineered sheets of welded wire fabric mesh duly finished with shotcrete materials on outer faces. The fabric mesh shall be made of 3 mm dia zinc coated G.I. wire mesh with 50 mm pitch in both the directions and on both faces of the wall and connected by GI wire of 3mm dia at alternate row by welding. The EPS core shall consist of 60 mm thick EPS of density not less than 16 kg/ per cum Both the outer faces of the panel shall be finished by applying the layer of 35 mm thick cement mortar 1:3 {1 cement: 3 coarse sand (not having more than 40% stone chips of size up to 6 mm)} with the help of Shotcreting/guniting equipment etc at a pressure not less than 1 bar (100KN/m2) and both surfaces finished with trowel. Fixing operations of wall panels shall be completed in all respect as per drawings and specifications and under the overall direction of the Engineer-in-charge.	sqm	192	-	1319	1511
32.15	Providing and fixing in position factory made EPS cement sandwich wall/roof/floor light weight solid core panels made of core material of EPS granule balls/beads (conforming to IS 4671:1984 and shall have density not less than 15kg per cum) adhesive, cement, sand, Flyash and other bonding material in mortar state processed to form in a preset mould. The outer face on both sides of the panels will be non asbestos fibre cement board confirming to IS 14862:2000 or Calcium silicate board confirming to EN 14306:2009 of 5mm thick each. Panel shall be laid on 6mm thick cement mortar (1 cement: 2 fine sand) mixed with chemical adhesive of 0.5kg per 50kg of cement or shall be preferably fixed into 'C' channel made of 1.2mm thick MS plate screwed/fastenened to the slab/column/beam etc. The panel shall fixed vertically with tongue and groove joint and horizontally locked with steel bar between each other and floors and filled with cement mortar and adhesive. Panels should be used as floor & roofing with additional structural support, steel or RCC depending upon the design. All the operation shall be completed in all respect as per drawings, Manufacturers specifications and under the overall direction of Engineer-in-Charge (Cost of all the material is included except "C channel" which will be paid separately).					
32.15.1	Non load bearing panels 50mm thick of required size	sqm	53	-	1006	1059
32.15.2	Non load bearing panels 60mm thick of required size	sqm	53	-	1155	1209
32.15.3	Non load bearing panels 75mm thick of required size	sqm	53	-	1431	1485
32.15.4	Non load bearing panels 90mm thick of required size	sqm	53	-	1732	1785
32.15.5	Non load bearing panels 100mm thick of required size	sqm	53	-	2065	2119
	FIBRE REINFORCED LIGHT WEIGHT WALL AND ROOF PANELS					

Item No.	Description	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
32.16	Providing and fixing in position factory made non asbestos fibre reinforced aerated cement sandwich wall/roof/floor light weight solid core panels made of light weight cement concrete core composed of OPC cement, pulverized Flyash, quick lime, cotton pulp & Gypsum in mortar state mixed with aeration agent in a preset mould. The outer face on both sides of the panels will be non asbestos fibre cement board confirming to IS 14862:2000. These solid wall panels are installed using Galvanized iron steel tracks/C channel of 1mm thick of required sizes as recommended by manufacturer's and fixed to floor and RCC soffit in plumb to each other with steel screw/fasteners. The panel shall be fixed vertically with tongue & groove joint with cement based polymer modified jointing compound. The exposed surface finished with fibre mesh/glass fibre tape with polymer based jointing compound having superior flexibility. Panels should be used as floor & roofing with additional structural support, steel or RCC depending upon the design. All the operation shall be completed in all respect as per drawings, Manufacturers specifications and under the overall direction of Engineer-in-Charge (Cost of all the material is included except "tracks/C channel" which will be paid separately).					
32.16.1	Non load bearing panels 50mm thick of required size (minimum 4mm thick fibre cement board)	sqm	131	-	908	1039
32.16.2	Non load bearing panels 75mm thick of required size (minimum 5mm thick fibre cement board)	sqm	131	-	1119	1250
32.17	Supplying of standard quality GFRG panel of 124 mm thickness with modular cavities purchased from GFRG panel manufacturing plant in the country, cut to required wall sizes and floor/ roof slab sizes in correct length and height, including cutting of door, window and ventilator opening as per the cutting drawing prepared by architects /design engineers for the construction of GFRG building and loaded in stillages for transportation to the construction site. Cost of panel includes security deposits, hire charges of stillages & jaws, cost of transportation in trucks/ lorries without any damages up to 300kms including all leads and lifts from GFRG manufacturing plant to construction site and unloading at site using suitable fork lift/ crane. (Payment shall be made on the basis of area of one side of panel without reduction of opening of door/ window / ventilator). For transportation above 300kms, additional charges to be paid.	sqm	-	-	1195	1195

Item No.	Description	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
32.18	Erection of GFRG Panels in walls in all floors using suitable crane as per instructions of Engineer-in-Charge, as per cutting drawings and structural drawings, in perfect line and plumb, above RCC plinth beam/GFRG panel below and provide necessary lateral/ slanting support to keep the wall panel in safe position, providing & tying of Reinforcement as per structural drawings and applying a coat of water repellent coating Zycosil/equivalent or equivalent product (1 Zycosil/equivalent compound :10 water) to saturation level over RCC plinth beam to provide water proofing treatment to joint between wall panel & plinth beam as per the guide lines / instruction by the engineer in charge. (Cost of reinforcement, water proofing of walls and plinth beam/GFRG panel below joints and installation of door/ window frames before filling of concrete shall be paid separately). The rate quoted shall include making provision for laying of lintels, beams, sunshades, staircase beams, lofts, plumbing work, electrical conduits and any structural insertion etc., as per the drawing and direction of the engineer in charge. The payment shall be made based on the actual exposed area (one side only) of the panel. Note: i) When cutting panel, "A" side is to be for outside or external surface of respective external wall and B side is to be for internal surface of wall ii)Erection of panel is to be with reference to both building plan & cutting drawing by following notational mark indicated in the cutting drawing as well as notional mark written on each panel cut as per cutting drawing	sqm	194	-	-	194
32.19	Filling of empty cavities (as shown in the structural design drawing) with quarry dust mixed with 5% cement (by volume). After initial infill of 50 mm thick with M25 concrete at base/bottom of cavities to seal off, infill wall panel cavities in 3 stages as detailed below, (i) 1st pour / infill to be limited to 0.3 to 0.50 m height from bottom of the panel. (ii) 2nd Pour/ infill: infilling shall be done only after 90 minutes interval between successive pours. The maximum height of infill shall be restricted to 1.5m height or up to the top level of door / window. (iii) 3rd pour/infill: After an interval of 90 minutes of second pour, infill or pour the balance height up to the bottom of embedded RCC tie beam. Pour enough water just required to dampen the dry mix enough to form cake form after each stage. (cost of laying M25 concrete shall be paid separately) (If any rain falls in between any stages of concrete pour, make sure to cover the panel top to prevent ingress of water or water falling into the cavities. In case of water collection over the concrete inside the panel, drill 10mm hole in GFRG panel immediately above concrete filled level to drain out water before pour/in-fill of balance concreting)	cum	114	-	2004	2118

Item No.	Description	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
32.20	Laying of GFRG panel as roof / floor slab panel and staircase panel using suitable crane as per instructions of Engineer-in-Charge, including providing support system with 25mm x 300mm-400 mm wide plywood, as runner with proper prop below proposed micro beams including (a) Cutting of top flange of panel to 180 mm wide (leaving 25mm projection on either side) to provide RCC embedded micro beam as per cutting drawings and structural drawings. (b) Reinforcement for micro beams and tie beams to be provided in position with proper anchorage as per structural drawings. (c) Provision for Electrical cabling, fan hooks and laying of pipes for plumbing work. (d) Concreting of Tie beam, micro beam and top of GFRG panels (50 mm thick) with M-25 cement concrete mix using coarse aggregate of size less than 20 mm including laying of 10 gauge 100x100 size weld mesh with 25 mm effective cover from the panel top.	sqm	221	-	-	221
32.21	Application of ZMB 60/equivalent solution (100 Kg ZMB 60/equivalent, 1 litre ZMB Nano Thinner, 20 litre water & 1 litre Zycoprime/equivalent = 122 litre/kg) over already applied coat of Zycosil/equivalent & Zycoprime/equivalent solution on the top of all the RCC plinth beams by brush/spray coat before erection of GFRG over RCC plinth beams in GF. In the case of upper floors 150 mm wide on floor slab for all the external walls, bath/toilet/wet areas (3 hrs drying time) before erection of wall panel on upper floors including erection of parapet wall.	sqm	99	-	117	216
32.22	After erection of GFRG wall panels, seal all GFRG wall joints with paper tape temporarily. Water proofing treatment of vertical joints with Zycosil/equivalent water proofing Solution (1 litre of Zycosil/equivalent & 20 litres of water stirred first & 2 litres of Zycoprime/equivalent added and stirred (total 23 litres)) with 50 ml syringe till the gap and in filled concrete is completely saturated. After removing the paper seal, seal off the vertical joints with water proofing material "Grout RW/equivalent " (Sealing cost excluded.)	metre	25	-	29	54
32.23	Filling of joints between RCC plinth beam / floor slab and wall panel of external walls, toilet / bath room / wet areas walls on all floor and parapet wall over roof slab, stair case head room at the time of erection of GFRG panels with Grout RW/equivalent sealant compound after the erection of panel before the infill of concrete in panel cavities and fine finish. This applies for all horizontal and vertical joints between GFRG wall and slab panels.	metre	19	-	8	27
	SLIP FORM SHUTTERING SYSTEMS					
32.24	Providing and fixing of customized Aluminium formwork for monolithic construction RCC members with a repetitive usage of 100 times using grade 5052 aluminium for panel sheets of minimum 4 mm thick and grade 6061 (Type-6) aluminium for extruded sections. The form work includes of beam components i.e. beam side panel, prop head for soffit beam, beams soffit panel, beam soffit bulk head and deck components i.e. deck panel, deck prop, prop length, deck mid, soffit length, deck beam bar and wall components i.e. wall panel, rocker, kiker and internal soffit corner, external soffit corner, external corner, internal corner etc.,The panels are held in position by a simple pin and wedge system that passes through holes in the out side rib of each panel. The tolerance of finished panels to be (-1 mm), and shall conform to IS 14687-1999. Pins and wedges to be made of high grade mild steel, all complete as per direction of Engineer-in charge.(Cost of RCC work shall be paid separately)	sqm	42	-	97	139

Item No.	Description	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
32.25	Designing, Providing, installing and fixing factory finished customed design Pregalvanized high tensile steel joists manufactured from G350 Z275 confirming to IS:277-1992, minimum coating of galvanizing 275 gm/sqm, minimum yield stress 35 MPa & minimum tensile strength of 380 MPa placed 1.23 metre apart to support the load of slab etc as per the design & directions of Engineer-in-Charge.	kg	8	-	117	125
32.26	Providing and fixing special adjustable lock bars of mild steel E-250 to support the temporary plywood for work between joists during construction as per design & directions of the Engineer-in-charge.	kg	8	-	1	10
32.27	Centering and shuttering with 12mm thick shuttering plywood confirming to IS 4990:2011 and removal of form at all heights. Plywood will be supported on lock bars.					
	32.27.1 Suspended floors, roofs, landings, balconies and access platform.	sqm	7	-	70	77
32.28	Providing and fixing roofing consist of 0.8 mm thick galvanized steel deck sheet confirming to IS 277:1992 used as permanent shuttering over which MS wire mesh 3mm laid at 100x100 mm grid including edge trim covered with concrete. This metal deck will be supported on structural steel beam with shear studs. (Structural steel like Beam, column, joists etc. & concrete of different grade as per design will be paid separately).	sqm	85	-	1029	1114
	USE OF C&D WASTE					
32.29	Providing and laying factory made Precast concrete solid blocks of 200 mm thickness of grade M10 made of C&D waste from approved manufacturer in foundation and plinth in:					
	32.29.1 Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	686	-	3961	4648
32.30	Providing and laying factory made Precast concrete solid blocks of 200 mm thickness of grade M10 made of C&D waste from approved manufacturer in superstructure above plinth level up to floor IV level					
	32.30.1 Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	1058	-	3961	5020
32.31	Providing and laying half block masonry with factory made Precast concrete solid blocks of 100 mm thickness of grade M10 made of C&D waste from approved manufacturer in foundation and plinth in:					
	32.31.1 Cement mortar 1:4(1 cement : 4 coarse sand)	sqm	106	-	408	515
32.32	Providing and laying half block masonry with factory made Precast concrete solid blocks of 100 mm thickness of grade M10 made of C&D waste from approved manufacturer in superstructure above plinth level up to floor IV level:					
	32.32.1 Cement mortar 1:4 (1 cement : 4 coarse sand)	sqm	165	-	408	573
32.33	Providing and laying 60mm thick factory made cement concrete paver block of approved shape and colour of M -30 grade made of C&D waste by block making machine with vibratory compaction laid in required pattern and including over 50mm thick compacted bed of coarse sand, filling the joints with fine sand etc. all complete as per the direction of Engineer-in-charge.	sqm	92	-	470	562
	THERMAL INSULATION					

Item No.	Description	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
32.34	Providing and fixing of external thermal insulation and composite system with First layer of self-extinguishing type Expanded Polystyrene (EPS) insulation boards of 120 mm thick (max 1mX0.5m section), confirming to IS 4671:1984, having thermal conductivity of 0.034 W/mK, (measured as per IS 3346-1980), density of 20-24 kg/m³ measured as per IS 5688-1982, Fire retardant property self-extinguishing type as per EN 13501-1, bonded with special polymer modified cementitious adhesive confirming to EOTA ETAG 004 (European Technical Approval) formulated to bond polystyrene insulation boards to typical mineral substrate (according to ETAG 004) and Polypropylene mechanical fasteners with plastic pin confirming to EOTA ETAG 014 (European Technical Approval) having dia 10mm & L=200mm on finished level wall and the junction between two adjacent EPS boards to be sealed with low expansion moisture cure Polyurethane Foam. Second layer consists of Fibreglass mesh covered with alkali-resistant coating, mass per unit area ≥145 gm/m², mesh size: 3.9x4.0 mm ±10% embedded in special polymer modified cementitious Base Coat with hydrophobes and the corners will be protected with Corner-beads with alkali-resistant mesh wings at least 10 cm wide, mesh mass per unit area min 145 gm/m². The surface will be levelled, finished, made smooth complete in all respect as per manufactures specification and as per directions of Engineer-in-Charge.	sqm	423	-	2231	2654
32.35	Supplying and fixing 10 Gauge weld mesh of size 100mm x100 mm for floor/roof slab concrete screed over the micro beams as reinforcement. The weld mesh shall be fixed as per drawing.	sqm	10	-	205	214
	NEW MATERIALS					
	AntiCrak Alkali resistant glass fibres					
32.36	Providing and mixing of Cemfil AntiCrak Alkali resistant glass fibres to arrest the plastic shrinkage, cracking & improve the performance of concrete, flooring, renders or other special mortar mixes and to provide as a secondary reinforcement in concrete at 600 gms /cum of concrete and containing minimum 127 millions of fibres of length 12mm, diameter 14 microns, specific gravity 2.68 g/cm3, modulus of elasticity 72 Gpa and having the aspect ratio (length/dia) of 857, including cost of labour, material and HOM etc. complete as per directions of Engineer-in-charge. Technical Specifications: High dispersion Alkali Resistant (Zirconia content minimum 16%) chopped micro glass fibre as per ASTM C 1666/C 1666 M-07 Type II, to control cracking processes that can take place during the entire life-span of concrete, from cracks due to volume changes in fresh(settlement and plastic shrinkage) and hardened states (thermal and drying shrinkage),to post-crack load-bearing capacity contribution having Filament diameter (ASTM D 578) 14 micron, Filament length 12mm (1/2"), Specific gravity (ASTM D 3800) 2.68 g/cm3, Loss of Ignition (ISO 1980:1980) 0.55%, Moisture Content (ISO 3344:1977) max 0.3%, Tensile Strength 1700 Mpa, Softening Point 860 Deg C, Dosage 600 g/m3 or 85 gms/50 kgs of cement bag.	per kg	33	-	440	473

Item No.	Description	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
32.37	Providing and mixing of Cemfil AntiCrak Alkali resistant glass fibres to act as a replacement of steel reinforcement in supported slabs/deck slab in residential and commercial buildings, industrial slabs on-ground, compression layers, pavements and precast concrete to provide secondary reinforcement in concrete to control plastic, thermal and dry shrinkage cracking at 5 kg/cum of concrete, fibre of length 36mm, filament diameter 19 micron, specific gravity 2.68 g/cm3, modulus of elasticity 72 Gpa and having the aspect ratio (length/dia) of 67, including cost of labour, material and HOM etc. complete and as per directions of Engineer-in-charge. Technical Specifications: High Performance Alkali Resistant (Zirconia content minimum 16%) glass macro fibre as per ASTM C 1666/C 1666 M-07 Type II, engineered to reinforce against plastic, thermal and drying shrinkage cracking having aspect ratio (length/diameter) 67, fibre length 36 mm, specific gravity (ASTM D 3800) 2.68 g/cm3, loss of ignition (ISO 1980:1980) 0.55%, moisture content (ISO 3344:1977) max 0.3%, Tensile Strength 1700 Mpa, Softening Point 860 deg C.	per kg	32	-	4616	4648
32.38	Coloured and textured imprinted cast in place concrete flooring applying finishing of the top surface by sprinkling of colour hardener @ 2.5 Kg per sqm comply with ASTM C 979, floating and levelling the surface, application of release agent, imprint the design in concrete with imprinting tools, cleaning the surface with water jet (next day) and application of acrylic based sealer for complete finishing. Work included by providing and laying 75mm thick M-30 grade concrete and mixing of Chopped Glass Fibre as per ASTM C 1666/C 1666 M-07 Type II, Filament diameter (ASTM D 578) 14 micron, Filament length 12mm (1/2"), Specific gravity (ASTM D 3800) 2.68 g/cm3, Tensile Strength 1700 Mpa, dosage 600 g/m3 or 85 gms/50 kgs of cement bag, well compaction for necessary finish of top surface, side supports, levelling, pumping, curing compound etc., complete treatment of construction joints by groove cutting of 4mmx 20mm panel size approx 3x3mtr and filling the same with baker road and providing PU joint sealer etc. and as per directions of Engineer-in-charge.	sqm	304	-	1631	1935
	THERMAL INSULATION					
32.39	Providing and fixing 50 mm thick extruded polystyrene rigid insulation board of required size between cavity wall, complying with ISO 4898:2008 & ASTM C 578-08b - type VI, having thermal conductivity of 0.0289 W/m K as per ASTM C 578 (measured as per IS 3346), compressive strength of > 350 kPa listed as per ASTM D 1621, density of 34-36 kg/m³ as per ASTM D 1622, water absorptions ≤ 1% by volume as per ASTM D 2842, oxygen index of 24.1 to 28.1 listed as per ASTM D 2863, cell size 0.4 mm of dia (max) as per ASTM D 3576. Fire retardant property as per DIN 4102, Part 1 of class B2 and as per ASTM E84 class A, fixed with suitable water based adhesive and fastener, complete in all respect as per the direction of Engineer-in-Charge.	sqm	38	-	695	734

Item No.	Description	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
32.40	Providing and fixing 50 mm thick extruded polystyrene rigid insulation board of required size under deck on ceiling surface, complying with ISO 4898:2008 & ASTM C 578-08b - type VI, having thermal conductivity of 0.0289 W/m K as per ASTM C 578 (measured as per IS 3346), compressive strength of > 350 kPa listed as per ASTM D 1621, density of 34-36 kg/cum as per ASTM D 1622, water absorptions ≤ 1% by volume as per ASTM D 2842, oxygen index of 24.1 to 28.1 listed as per ASTM D 2863, cell size 0.4 mm of dia (max) as per ASTM D 3576. Fire retardant property as per DIN 4102, Part 1 of class B2 and as per ASTM E84 class A, fixed with suitable water based adhesive and fastener, complete in all respect as per the direction of Engineer-in-Charge.	sqm	68	-	695	764
	ROOFING & CEILING					
	ALUMINIUM PROFILE SHEET ROOFING					
32.41	Providing at all heights, levels and locations Aluminium profile industrial troughed sheet of Alloy 31500/31000/40800, conforming to IS 1254, IS 737, IS 2676. The sheet shall be fixed using self drilling/self tapping SS screws of size 5.5x65 mm with EPDM seal complete up to required pitch in horizontal, vertical or curved surfaces i/c cutting to size and shape where required as per specifications, detail drawings and direction of Engineer-in-Charge. The rate shall be inclusive of all screws, seal, ridge, labour, scaffolding, machinery for fixing and approved sealant where required etc. but excluding the cost of purlins, rafters and trusses.					
	32.41.1 0.71 mm thick, the profile detail width 1044/920 mm, cover width 1000/875 mm.	sqm	36	-	866	902
	32.41.2 0.91 mm thick, the profile detail width 1044/920 mm, cover width 1000/875 mm.	sqm	36	-	1122	1158
	CALCIUM SILICATE FIBRE REINFORCED CEILING TILES					
32.42	Providing and fixing false ceiling at all heights with integral densified calcium silicate reinforced with fibre and natural filler false ceiling tiles of Size 595x595mm of approved texture, design and patterns having NRC (Noise Reduction coefficient) of 0.50 (minimum) as per IS 8225:1987, Light reflectance of 85% (minimum). Non combustible as per BS:476 (part-4), fire performance as per BS:476 (part 6 &7), humidity resistance of 100%, thermal conductivity < 0.043 W/m K as per ASTM 518:1991,in true horizontal level suspended on inter-locking metal T-Grid of hot dipped galvanised iron section of 0.33mm thick (galvanized @ 120 grams per sqm including both sides) comprising of main-T runners of size 24x38 mm of length 3000 mm, cross - T of size 24x32 mm of length 1200 mm and secondary intermediate cross-T of size 24x32 mm of length 600mm to form grid module of size 600 x 600 mm, suspended from ceiling using galvanised mild steel items (galvanizing @ 80 grams per sqm) i.e. 50 mm long, 8 mm outer diameter M-6 dash fasteners, 6 mm dia fully threaded hanger rod up to 1000 mm length and L-shape level adjuster of size 85x25x25x2 mm. Galvanised iron perimeter wall angle of size 24x24x0.40 mm of length 3000 mm to be fixed on periphery wall / partition with the help of plastic rawl plugs at 450 mm centre to centre and 40 mm long dry wall S.S screws. The work shall be carried out as per specifications, drawing and as per directions of the Engineer-in-Charge.					
	32.42.1 With 15 mm thick tegular edged light weight calcium silicate false ceiling tiles.	sqm	191	-	1141	1332

Item No.	Description	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
32.43	Providing and fixing false ceiling at all heights with integral densified calcium silicate reinforced with fibre and natural filler false ceiling tiles of Size 595x595 mm of approved texture, design and patterns having NRC (Noise Reduction coefficient) of 0.50 (minimum) as per IS 8225:1987, Light reflectance of 85% (minimum). Non combustible as per BS:476 (part-4), fire performance as per BS:476 (part 6 &7), humidity resistance of 100%, thermal conductivity < 0.043 W/m K as per ASTM 518:1991, in true horizontal level suspended on inter-locking metal powder coated T-Grid of hot dipped galvanised iron section of 0.40 mm thick on Silhouette profile, rotary stitched double webbed white with 6mm reveal profile (white/black),comprising of main-T runners of size 15x42mm of length 3000 mm, cross - T of size 15x42 mm of length 1200 mm and secondary intermediate cross-T of size 15x42 mm of length 600mm to form grid module of size 600 x 600 mm, suspended from ceiling using galvanised mild steel items (galvanizing @ 80 grams per sqm) i.e. 50 mm long, 8 mm outer diameter M-6 dash fasteners, 6 mm dia fully threaded hanger rod up to 1000 mm length and L-shape level adjuster of size 85x25x2 mm. Galvanised iron perimeter wall angle of size 22x19x0.40 mm of length 3000 mm to be fixed on periphery wall / partition with the help of plastic rawl plugs at 450 mm centre to centre and 40mm long dry wall S.S screws. The work shall be carried out as per specifications, drawing and as per directions of the Engineer-in-Charge.					
	32.43.1 With 15 mm thick integral densified micro edge light weight calcium silicate false ceiling tiles	sqm	191	-	1433	1624
32.44	Providing and fixing in position wall panelling at all heights with integral densified calcium silicate panels/tiles of size 595 x 595mm, having NRC (Noise Reduction coefficient) of 0.50 (minimum) as per IS 8225:1987, Light reflectance of 85% (minimum). Non combustible as per BS:476 (part-4), fire performance as per BS:476 (part 6 &7), humidity resistance of 100%, thermal conductivity <0.043 W/m K as per ASTM 518:1991, comprising of a frame made from especially fabricated galvanised mild steel sheet 0.50 mm thick pressed section (galvanizing @120 grams per sqm including both sides) i.e. vertical studs of size 48 x 34 x 36 mm are placed at 600mm centre to centre in a floor and ceiling channel section of size 50 x 32m fixed to the floor and soffit at 600mm centres using 12mm dia,50mm long wedge type expanded zinc alloy dash fastener with 10mm bolt. This same channel is then to be fixed in horizontal direction at 600mm centre to centre so as to form a grid of 600mm x 600mm. Glass wool of 50mm thickness is then to be inserted in the slots and finally calcium silicate non combustible panels/tiles are to be screw fixed with self tapping pan head nickel coated mild steel screws of size 13 x 3.2mm on to this grid leaving an even groove of 1 mm between the panels. The joints between the panels are to be duly jointed and finished using recommended jointing calcium silicate based compound and fibre joint tape roll 50mm wide (90 metre)roll and two coats of primer suitable for panelling as per manufacturer's specification as per direction of Engineer-in-Charge all complete.					
	32.44.1 With 15 mm thick fully perforated square/butt edge light weight calcium silicate panels/ tiles	sqm	315	-	1942	2257

Item No.	Description	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
32.45	Providing and fixing 15 mm thick false ceiling tiles at all heights with integral densified calcium silicate reinforced with fibre and natural filler false ceiling tiles of Size 595x595 mm of approved texture, design and patterns having NRC (Noise Reduction coefficient) of 0.50 (minimum) as per IS 8225:1987, Light reflectance of 85% (minimum). Non combustible as per BS:476 (part-4), fire performance as per BS:476 (part 6 &7), humidity resistance of 100%, thermal conductivity < 0.043 W/m K as per ASTM 518:1991,in true horizontal level on the existing frame work consisting of T-sections and Lsections suitably fixed according to tile size as per direction of Engineer-in-charge.	sqm	175	-	935	1110
	GLASS FIBRE REINFORCED GYPSUM CEILING TILES					
32.46	Providing & fixing false ceiling at all heights with GRG (Glass Fibre Reinforced Gypsum) false ceiling tiles of Size 595x595 mm of approved texture, design and patterns having moisture content less than 2%, humidity resistance of 99%, NRC0.50 to 0.75 as per IS 8225:1987, Non combustible as per BS 476 (part 4)-1970 and light reflectance of 85% (minimum) to be laid in true horizontal level suspended on inter-locking metal T-Grid of hot dipped galvanised iron section of 0.33mm thick (galvanized @ 120 grams per sqm including both sides) comprising of main-T runners of size 15x32 mm of length 3000 mm, cross - T of size 15x32 mm of length 1200 mm and secondary intermediate cross-T of size 15x32 mm of length 600mm to form grid module of size 600 x 600 mm, suspended from ceiling using galvanised mild steel items (galvanizing @ 80 grams per sqm) i.e. 50 mm long, 8 mm outer diameter M-6 dash fasteners, 6 mm dia fully threaded hanger rod up to 1000 mm length and L-shape level adjuster of size 85x25x2 mm. Galvanised iron perimeter wall angle of size 24x24x0.40 mm of length 3000 mm to be fixed on periphery wall / partition with the help of plastic rawl plugs at 450 mm centre to centre and 40 mm long dry wall wood screws. The work shall be carried out as per specifications, drawing and as per directions of the Engineer-in-Charge.					
32.46.1	With semi perforated 12 mm thick micro tegular edged GRG false ceiling tiles.	sqm	191	-	1012	1203
32.46.2	With fully perforated 12 mm thick micro tegular edged or 10 mm thick square edged GRG false ceiling tiles.	sqm	191	-	1134	1325
	MINERAL FIBRE CEILING TILES					

Item No.	Description		Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
32.47	Providing and fixing mineral fibre false ceiling tiles at all heights of size 595X595mm of approved texture, design and pattern. The tiles should have Humidity Resistance (RH) of 99%, Light Reflectance ≥ 85%, Thermal Conductivity k = 0.052 - 0.057 w/m K, Fire Performance as per (BS 476 pt - 6 &7)in true horizontal level suspended on interlocking T-Grid of hot dipped all round galvanized iron section of 0.33 mm thick (galvanized @120 gsm) comprising of main T runners of 15x32 mm of length 3000 mm, cross T of size 15x32mm of length 1200 mm and secondary intermediate cross T of size 15x32 mm of length 600 mm to form grid module of size 600x600 mm suspended from ceiling using galvanized mild steel item (galvanised@80gsm) 50 mm long 8mm outer diameter M-6 dash fasteners, 6 mm diameter fully threaded hanger rod up to 1000 mm length and L-shape level adjuster of size 85x25x2 mm, spaced at 1200 mm centre to centre along main 'T'. The system should rest on periphery walls /partitions with the help of GI perimeter wall angle of size24x24X3000 mm made of 0.40 mm thick sheet, to be fixed to the wall with help of plastic rawl plug at 450 mm centre to centre & 40 mm long dry wall S.S. screws. The exposed bottom portion of all T-sections used in false ceiling support system shall be pre-painted with polyester baked paint, for all heights. The work shall be carried out as per specifications, drawings and as per directions of the engineer-in-charge.						
	32.47.1	With 16 mm thick bevelled tegular mineral fibre false ceiling tile (NRC 0.55 to 0.6	sqm	49	-	1205	1253
	32.47.2	With 20 mm thick bevelled tegular mineral fibre false ceiling tile (NRC 0.7)	sqm	191	-	1450	1641
	32.47.3	With 16 mm thick bevelled tegular mineral fibre Anti-microbial false ceiling tile confirming to ISO 5 (class 100) specifications	sqm	191	-	1302	1493
	NON FIRE METALLIC DOOR FRAMES AND SHUTTERS						
32.48	Providing & Fixing in place metallic all plain Non Fire doors finished with Powder Coating In Regular RAL shades. Over all of thickness of the shutter to be 46mm thick manufactured from 0.8mm GPSP Galvanised Steel Sheet confirming to IS:277 with provision of Reinforcement Pad and necessary provision for receiving the appropriate hardwares .The Shutter shall have Paper Honeycomb core in fill . Door shall be coated with pure polyester/Epoxy Polyester powder having thickness of 60-80 micron as per directions of Engineer-in-charge.		sqm	362	-	3433	3795
32.49	Providing & Fixing in place metallic all embossed Non Fire doors (Embossed sheet in single side of door) finished with Powder Coating In Regular RAL shades as desired by Engineer- In-Charge. Over all of thickness of the shutter to be 46mm thick manufactured from 0.8mm GPSP Galvanised Steel Sheet confirming to (IS277) with provision of Reinforcement Pad and necessary provision for the receiving appropriate hardwares. The Shutter shall be filled with Paper Honeycomb core in fill . Doors should be Coated with pure polyester/Epoxy Polyester powder having coating thickness of 60-80 micron		sqm	362	-	3842	4204

Item No.	Description	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
32.50	Providing & Fixing in place metallic all Plain Wood finish Non Fire doors finished with wooden shades as desired by Engineer-In-Charge. Over all of thickness of the shutter to be 46mm thick manufactured from 0.8mm GPSP Galvanised Steel Sheet confirming to (IS277) With provision of Reinforcement Pad and necessary provision for the receiving appropriate hardwares .The Shutter shall be filled with Paper Honeycomb core in fill. Doors to be Coated with pure polyester/Epoxy Polyester powder having coating thickness of 60-80 micron .	sqm	362	-	4417	4779
32.51	Providing & Fixing in place metallic All Plain Embossed Wood Finish Non Fire doors (Embossed sheet in single side of door) finished with wooden shades as desired by Engineer- In-Charge. Over all of thickness of the shutter to be 46mm thick manufactured from 0.8mm GPSP Galvanised Steel Sheet confirming to (IS277) With provision of Reinforcement Pad and necessary provision for the receiving appropriate hardwares .The Shutter shall be filled with Paper Honeycomb core in fill . Doors shall be Coated with pure polyester/Epoxy Polyester powder having coating thickness of 60-80 micron.	sqm	362	-	4689	5052
32.52	Providing & Fixing in place metallic All Plain Embossed Wood Finish doors double leaf Non Fire doors (Embossed sheet in single side of door) finished with wooden shades as desired by Engineer- In-Charge. Over all of thickness of the shutter to be 46mm thick manufactured from 0.8mm GPSP Galvanised Steel Sheet confirming to (IS277) With provision of Reinforcement Pad and necessary provision for the receiving appropriate hardwares .The Shutter shall be filled with Paper Honeycomb core in fill . Doors shall be Coated with pure polyester/Epoxy Polyester powder having coating thickness of 60-80 micron.	sqm	543	-	3501	4045
32.53	Providing & Fixing in place metallic All Plain Embossed Wood Finish Non Fire doors (Embossed sheet in single side of door) finished with wooden shades as desired by Engineer- In-Charge. Over all of thickness of the shutter to be 46mm thick manufactured from 0.8mm GPSP Galvanised Steel Sheet confirming to (IS277) With provision of Reinforcement Pad and necessary provision for the receiving appropriate hardwares .The Shutter shall be filled with Paper Honeycomb core in fill . Doors shall be Coated with pure polyester/Epoxy Polyester powder having coating thickness of 60-80 micron.	sqm	543	-	4621	5165
32.54	Providing & Fixing in place door frame of Section 100x58mm made of GPSP Sheet (IS277) constructed from sheet thickness 1.2mm . Steel Frame Shall have a single rebate of 58mm duly filled with Puf . The Frame shall be finished Powder Coating In Regular RAL shades as desired by Engineer- In-Charge . Door Frame should be Coated with pure polyester/Epoxy Polyester powder coating having thickness of 60-80 micron and provided with 3mm thick hinge enforcement plates.	metre	194	-	909	1103
32.55	Providing & Fixing in place door frame of Section 170x58mm made of GPSP Sheet (IS277) constructed from sheet thickness 1.2mm with single rebate of 58mm duly filled with Puf. The Frame shall be finished Powder Coating In Regular RAL shades as desired by Engineer- In-Charge and Coated with pure polyester/Epoxy Polyester powder coating having thickness of 60-80 micron. Frame should be provided with 3mm thick hinge enforcement plates.	metre	194	-	1169	1362

Item No.	Description	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
32.56	Providing & Fixing in place door frame of Section 100x58mm made of GPSP Sheet (IS277) constructed from sheet thickness 1.2mm with a single rebate of 58mm duly filled with Puf. The Frame shall be finished with Powder Coating In Regular RAL shades as desired by Engineer- In-Charge with pure polyester/Epoxy Polyester powder coating having thickness of 60-80 micron. Frame should be provided with 3mm thick hinge enforcement plates.	metre	194	-	1169	1362
32.57	Providing & Fixing in place door frame of Section 170x58mm made of GPSP Sheet (IS277) constructed from sheet thickness 1.2mm with a single rebate of 58mm duly filled with Puf and finished with Powder Coating In Regular RAL shades as desired by Engineer- In-Charge . Frame should be Coated with pure polyester/Epoxy Polyester powder coating having thickness of 60-80 micron and provided with 3mm thick hinge enforcement plates.	metre	194	-	1428	1622
	GREEN BUILDING ITEMS					
32.58	Providing and fixing thermal insulation on external wall with CFC Free closed cell, high performance rigid Polyurethane Foam(PUF) Insulation Slab conforming to IS: 12436 having density not less than 36±2 kg/m3, thermal conductivity (K-value) 0.021 W/m.K measured at 10 deg. C mean temperature and classified as "not easily ignitable" per BS: 476, Part-5, fixed with the help of adhesive (patch applied) & PVC fastener to the wall surface and all complete as per the instruction of engineer-in-charge					
	32.58.1 40 mm thick Polyurethane foam(PUF) rigid insulation board	sqm	25	-	1115	1140
	32.58.2 50 mm thick Polyurethane foam(PUF) rigid insulation board	sqm	25	-	1251	1276
32.59	Providing and applying thermal insulation on external wall with impervious sprayed CFC free, closed cell rigid Polyurethane foam wall insulation conforming to IS- 12432 Part III (density of foam being 35±5 kg/m3, thermal conductivity (K-value) 0.023 W/m.K over a coat of polyurethane primer applied @ 6-8 sqm per litre and covering it externally as per specs and direction of engineer-in- charge.					
	32.59.1 40 mm thick PUF Spray	sqm	35	-	669	704
	32.59.2 50 mm thick PUF Spray	sqm	35	-	818	853
32.60	Providing & fixing on external side of finished external wall, extruded polystyrene (XPS) thermal insulating boards with ship lap joining on length side, (having thermal conductivity of 0.028 W/m.K on 90 days aging at 24 deg.C as per ASTM C518, compressive strength of over 250 kpa as per ASTM D1621, tensile strength of over 300 kpa as per ASTM D1623 and has flammability of Class B2 as per DIN 4102, water absorption of less than 1% as per ASTM D2842) with the help of a minimum 2 mm thick polymerized mortar adhesive & mountings as per manufacturer's guidelines; over the installed XPS boards, providing & laying a 3-4 mm thick finishing layer of polymerized mortar base coat with fibre glass mesh of min. 150 gsm embedded in it using notched trowel as per manufacturer's guidelines and as per the instruction of engineer-in- charge.					
	32.60.1 25 mm thick Extruded polystyrene rigid insulation board	sqm	37	-	440	476
	32.60.2 50 mm thick Extruded polystyrene rigid insulation board	sqm	37	-	780	816
	32.60.3 75 mm thick Extruded polystyrene rigid insulation board	sqm	37	-	1153	1190

Item No.	Description		Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	32.60.4	100 mm thick Extruded polystyrene rigid insulation board	sqm	37	-	1526	1563
32.61	Providing and fixing between 2 layers of brick work/ concrete walls, thermal insulation with CFC free closed cell, high performance rigid Polyurethane Foam (PUF) insulation slab conforming to IS: 12436 having density not less than 36±2kg/m3, thermal conductivity (K- value) 0.021 W/m.K measured at 10 deg. C mean temperature and classified as "not easily ignitable" per BS: 476, Part-5 fixed to the wall with the screw, raw plug and washers etc. and holding in position with crisscross GI wire, in staggered form and all complete as per specs or directions of engineer-in-charge.						
	32.61.1	40 mm thick Polyurethane foam(PUF) rigid insulation board	sqm	25	-	678	703
	32.61.2	50 mm thick Polyurethane foam(PUF) rigid insulation board	sqm	25	-	815	840
32.62	Providing and injecting/pouring CFC free closed cell, high performance rigid Polyurethane foam between 2 layers of brick work/ concrete walls having thermal insulation not more than 0.024 W/m.K, core density 35±5 kg/m3 (conforming to IS-13205) and water absorption not more than 2.5%, inside wall cavity after making injection ports at 60 cm centre to centre. The insulation foam shall be injected with the help of high pressure specially designed foaming machine like gusmer/graco or equivalent in dry brick wall cavity including plugging of holes and all complete as per the instruction of engineer-in-charge.						
	32.62.1	40 mm thick PUF Spray	sqm	46	-	599	645
	32.62.2	50 mm thick PUF Spray	sqm	46	-	748	794
32.63	Providing and fixing thermal insulation with resin bonded Rock wool between 2 layers of brick work/ concrete walls conforming to IS: 8183 and density 48 kg/m3 having thermal conductivity value of not more than 0.043 W/m.K, wrapped in 200G virgin polythene bags fixed to the wall with the screw, rawl plug and washers and held in position by crisscross GI wire etc. and all complete as per specs or directions of engineer-in-charge.						
	32.63.1	25 mm thick Resin bonded Rock wool	sqm	49	-	184	233
	32.63.2	50 mm thick Resin bonded Rock wool	sqm	49	-	227	277
	32.63.3	65 mm thick Resin bonded Rock wool	sqm	49	-	271	320
	32.63.4	75 mm thick Resin bonded Rock wool	sqm	49	-	314	363
32.64	Providing and fixing between 2 layers of brick work/ concrete walls thermal insulation with Resin Bonded Fibre glass wool conforming to IS: 8183 having density 48 kg/m3, wrapped in 200G Virgin Polythene Bags fixed to wall with screw, rawl plug & washers and held in position by criss crossing GI wire etc. complete as per directions of Engineer-in-Charge.						
	32.64.1	12 mm thick Resin bonded Glass wool	sqm	49	-	179	228
	32.64.2	25 mm thick Resin bonded Glass wool	sqm	49	-	215	264
	32.64.3	50 mm thick Resin bonded Glass wool	sqm	49	-	273	322

Item No.	Description		Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
32.65	Providing and fixing between 2 layers of brick work/ concrete walls extruded polystyrene (XPS) thermal insulating boards with ship lap joining on length side, (having thermal conductivity of 0.028 W/m.K on 90 days aging at 24 deg.C as per ASTM C518, compressive strength of over 250 kpa as per ASTM D1621, tensile strength of over 300 kpa as per ASTM D1623 and has flammability of Class B2 as per DIN 4102, water absorption of less than 1% as per ASTM D2842 fixed with suitable water based adhesive and fastener, complete in all respect as per the direction of Engineer-in-Charge.						
	32.65.1	50 mm thick Extruded polystyrene rigid insulation board	sqm	25	-	769	794
	32.65.2	75 mm thick Extruded polystyrene rigid insulation board	sqm	25	-	1169	1193
	32.65.3	100 mm thick Extruded polystyrene rigid insulation board	sqm	25	-	1568	1592
32.66	Providing and fixing thermal insulation of ceiling (under deck insulation) with Resin Bonded Rockloyd Rockwool (Non Combustible Grade) conforming to IS: 8183 and density 48 kg/ m3, wrapped in 200 G Virgin Polythene bags fixed to ceiling with metallic cleats (50x50x3 mm) @ 60 cm and wire mesh of 12.5mm x 24gauge wire mesh, for top most ceiling of building and all complete as per engineer in charge						
	32.66.1	25 mm thick Resin bonded Rock wool	sqm	147	-	279	426
	32.66.2	50 mm thick Resin bonded Rock wool	sqm	147	-	323	469
	32.66.3	65 mm thick Resin bonded Rock wool	sqm	147	-	366	513
	32.66.4	75 mm thick Resin bonded Rock wool	sqm	147	-	410	556
32.67	Providing and laying on smooth roof surface with CFC free, closed cell free Rigid Polyurethane foam slab over deck insulation conforming to IS -12436 (density of foam being 36±2 kg/m3) having thermal conductivity not more than 0.024 W/m.K, over a coat of cold adhesive like CPRX compound, laying 400 G polythene sheet over PUF slab and providing a wearing course of 40 mm thick cement screed 1: 2 : 4 (1 cement : 2 coarse sand : 4 stone aggregate 20 mm nominal size) in chequered rough finish, in panels of 2.5 m x 2.5 m and embedding with 24 G wire netting and sealing the joints with polymerized mastic, all complete as per direction of engineer-in-charge						
	32.67.1	40 mm thick Polyurethane foam(PUF) rigid insulation board	sqm	259	-	1024	1283
	32.67.2	50 mm thick Polyurethane foam (PUF) rigid insulation board	sqm	259	-	1160	1419
	32.67.3	60 mm thick Polyurethane foam (PUF) rigid insulation board	sqm	259	-	1296	1555
	32.67.4	70 mm thick Polyurethane foam (PUF) rigid insulation board	sqm	259	-	1432	1690

Item No.	Description		Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
32.68	Providing and laying roof insulation with impervious sprayed, closed cell CFC free Rigid Polyurethane foam over deck insulation conforming to IS - 12432 Pt. III (density of foam being 40-45 kg/cum), over a coat of polyurethane primer applied @ 6-8 sqm per litre, laying 400G polythene sheet over PUF spray and providing a wearing course of 40mm thick cement screed 1 : 2 :4 (1 cement : 2 coarse sand : 4 stone aggregate 20mm nominal size) in chequered rough finish, in panels of 2.5m x 2.5 m and embedding with 24 G wire netting and sealing the joints with polymerised mastic and all complete as per direction of Engineer-in-Charge.						
	32.68.1	40 mm thick PUF Spray	sqm	259	-	876	1134
	32.68.2	50 mm thick PUF Spray	sqm	259	-	1011	1269
	32.68.3	60 mm thick PUF Spray	sqm	259	-	1146	1404
	32.68.4	70 mm thick PUF Spray	sqm	259	-	1281	1540
32.69	Providing and laying on smooth roof surface with extruded polystyrene (XPS) thermal insulating boards with ship lap joining on length side, (having thermal conductivity of 0.028 W/m.K on 90 days aging at 24 deg.C as per ASTM C518, compressive strength of over 250 kpa as per ASTM D1621, tensile strength of over 300 kpa as per ASTM D1623 and has flammability of Class B2 as per DIN 4102, water absorption of less than 1% as per ASTM D2842, over a coat of cold adhesive like CPRX compound, laying 400 G polythene sheet over PUF slab and providing a wearing course of 40 mm thick cement screed 1: 2 : 4 (1 cement : 2 coarse sand : 4 stone aggregate 20 mm nominal size) in chequered rough finish, in panels of 2.5 m x 2.5 m and embedding with 24 G wire netting and sealing the joints with polymerized mastic, all complete as per direction of engineer-in-charge						
	32.69.1	50 mm thick Extruded polystyrene rigid insulation board	sqm	259	-	1058	1317
	32.69.2	75 mm thick Extruded polystyrene rigid insulation board	sqm	259	-	1426	1685
	32.69.3	100 mm thick Extruded polystyrene rigid insulation board	sqm	259	-	1794	2053
	SOLAR PANELS						
32.70	Supply Installation testing commissioning of Solar Photovoltaic grid connected roof top Plant conforming to MNRE specifications as amended, consisting of Mono/Poly Crystalline silicon solar cells, net metering facility, necessary protections, earthing, mounted on Aluminium/GI structure of suitable strength with following components complete as required:- (a) Solar Photovoltaic Module manufactured in India, conforming to IS 14286/IEC 61215, IS/IEC 61730-Part-1, IS/IEC 61730-Part-2. Solar Photovoltaic Module conversion efficiency shall not be less than 16.5%. PV modules used in solar power plants/ systems must be warranted for their output peak watt capacity, which should not be less than 90% at the end of 10 years and 80% at the end of 25 years. (b) Power Conditioning Unit (PCU) of 350-800 V DC Input voltage range and 400 V AC, three phase, 4 wire, 50Hz +/- 2.5 Hz, output voltage suitable to generate AC (c) Power with efficiency not less than 97%, total harmonic distortion less than 3% and suitable for ambient temperature from 0 to 50 degrees C. The PCU shall adjust the voltage and frequency level to suit grid frequency						

Item No.	Description	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	(d) Data Monitoring System complete with accessories.					
	(e) Fixing of Array junction box & Main junction box with IP 65 protection and termination arrangement for incoming and outgoing cable along with glands, lugs and other accessories etc. as required.					
	(f) Lightning and surge voltage protection.					
	(g) Connections & Interconnections by supplying & fixing required size XLPE insulated copper conductor 1.1 kV grade armoured power and control cables between solar modules, main power cable to grid supply PCU unit along with supplying & fixing of necessary channel/conduit lugs and other accessories etc. as required.					
32.70.1	Above 1 kWp and up to 10 Kwp	KWp				54534
32.70.2	Above 10 kWp and up to 100 Kwp	KWp				48042
32.70.3	Above 100 kWp and up to 500 Kwp	KWp				44796

CHAPTER NO. 33

RAIN WATER HARVESTING AND TUBEWELLS

CHAPTER 33.0 - RAIN WATER HARVESTING & TUBEWELLS

Item No.	Description		Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	RAIN WATER HARVESTING						
33.1	Boring with 100 mm diameter casing pipe for hand pump / tube well, in all soils except ordinary hard rocks requiring blasting, including removing the casing pipe after the hand pump / tube well is lowered and tested :						
	33.1.1	Up to 6 metres depth	metre	251	-	-	251
	33.1.2	Beyond 6 m and up to 12 m depth	metre	300	-	-	300
	33.1.3	Beyond 12 m and up to 18 m depth	metre	351	-	-	351
33.2	Providing and placing in position filters of 40 mm diameter G.I. pipe with brass strainer of approved quality.		metre	86	-	527	614
33.3	Providing and fixing to filter and lowering to proper levels 40 mm G.I. pipe for tube well including cleaning and priming the tube well.		metre	34	-	316	351
33.4	Providing and placing in position hand pump of approved quality for 40 mm diameter G.I. pipe complete with all accessories.		each	76	-	882	958
33.5	Providing and fixing factory made precast RCC perforated drain covers, having concrete of strength not less than M-25, of size 1000 x 450x50 mm, reinforced with 8 mm dia four Nos. longitudinal & 9 Nos. cross sectional T.M.T. hoop bars, including providing 50 mm dia perforations @ 100 to 125 mm c/c, including providing edge binding with M.S. flats of size 50 mm x 1.6 mm complete, all as per direction of Engineer-in-charge.		each	13	-	1136	1149
	TUBEWELLS						
33.6	Boring/drilling bore well of required dia for casing/ strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, preparing and submitting strata chart/ bore log, including hire & running charges of all equipments, tools, plants & machineries required for the job, all complete as per direction of Engineer-in-charge, up to 90 metre depth below ground level.						
	33.6.1	All types of soil					
		33.6.1.1 300 mm dia	metre	95	477	-	572
		33.6.1.2 350 mm dia	metre	104	522	-	625
		33.6.1.3 400 mm dia	metre	133	668	-	801
	33.6.2	Rocky strata including Boulders					
		33.6.2.1 300 mm dia	metre	267	981	-	1248
		33.6.2.2 350 mm dia	metre	289	993	-	1281
		33.6.2.3 400 mm dia	metre	354	1039	-	1393
33.7	Boring/drilling bore well of required dia for casing/ strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, preparing and submitting strata chart/ bore log, including hire & running charges of all equipments, tools, plants & machineries required for the job, all complete as per direction of Engineer -in-charge, beyond 90 metre & up to 150 metre depth below ground level.						
	33.7.1	All types of soil					
		33.7.1.1 300 mm dia	metre	111	556	-	667
		33.7.1.2 350 mm dia	metre	123	618	-	741
		33.7.1.3 400 mm dia	metre	166	835	-	1001
	33.7.2	Rocky strata including Boulders					
		33.7.2.1 300 mm dia	metre	302	1004	-	1306
		33.7.2.2 350 mm dia	metre	318	1016	-	1334

Item No.	Description		Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	33.7.2.3	400 mm dia	metre	413	1244	-	1656
33.8	Supplying, assembling, lowering and fixing in vertical position in bore well, Unplasticised PVC medium well casing (CM) pipe of required dia, conforming to IS: 12818, including required hire and labour charges, fittings & accessories etc. all complete, for all depths, as per direction of Engineer -in-charge.						
	33.8.1	100 mm nominal size dia	metre	2	-	575	578
	33.8.2	150 mm nominal size dia	metre	2	-	662	665
	33.8.3	200 mm nominal size dia	metre	2	-	1027	1030
33.9	Supplying, assembling, lowering and fixing in vertical position in bore well Unplasticised PVC medium well screen (RMS) pipes with ribs, conforming to IS: 12818, including hire & labour charges, fittings & accessories etc. all complete, for all depths, as per direction of Engineer-in-charge.						
	33.9.1	100 mm nominal size dia	metre	2	-	625	627
	33.9.2	150 mm nominal size dia	metre	2	-	717	719
	33.9.3	200 mm nominal size dia	metre	2	-	1095	1097
33.10	Supplying, assembling, lowering and fixing in vertical position in bore well, ERW (Electric Resistance Welded) FE 410 mild steel screwed and socketed/plain ended casing pipes of required dia, conforming to IS: 4270, of reputed & approved make, including painted with outside surface with two coats of anticorrosive paint of approved brand and manufacture, including required hire & labour charges, fittings & accessories, all complete, for all depths, as per direction of Engineer-in-charge.						
	33.10.1	100 mm nominal size dia having minimum wall thickness 5.00 mm	metre	30	-	1073	1103
	33.10.2	150 mm nominal size dia having minimum wall thickness 5.00 mm	metre	36	-	1517	1553
	33.10.3	200 mm nominal size dia having minimum wall thickness 5.40 mm	metre	41	-	1891	1932
33.11	Supplying, assembling, lowering and fixing in vertical position in bore well, ERW (Electric Resistance Welded) FE 410 plain slotted (having slot of size 1.6/3.2 mm) mild steel threaded and socketed/ plain bevel ended pipe (type A) of required dia, conforming to IS: 8110, of reputed and approved make, having wall thickness not less than 5.40 mm, including painted with outside surface with two coats of anticorrosive bitumastic paint of approved brand and manufacture, including hire & labour charges, fittings & accessories, all complete, for all depths, as per direction of Engineer -in-charge.						
	33.11.1	100 mm nominal size dia	metre	30	-	1099	1129
	33.11.2	150 mm nominal size dia	metre	36	-	1552	1588
	33.11.3	200 mm nominal size dia	metre	42	-	1925	1967
33.12	Supplying, filling, spreading & levelling stone boulders of size range 5 cm to 20 cm, in recharge pit, in the required thickness, for all leads & lifts, all complete as per direction of Engineer-in-charge.		cum	60	-	1104	1164
33.13	Supplying, filling, spreading & levelling gravels of size range 5 mm to 10 mm, in the recharge pit, over the existing layer of boulders, in required thickness, for all leads & lifts, all complete as per direction of Engineer-in-charge.		cum	60	-	1104	1164
33.14	Supplying, filling, spreading & levelling coarse sand of size range 1.5 mm to 2 mm in recharge pit, in required thickness over gravel layer, for all leads & lifts, all complete as per direction of Engineer -in-charge.		cum	60	-	1104	1164

Item No.	Description	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
33.15	Gravel packing in tube well construction in accordance with IS: 4097, including providing gravel fine/ medium/ coarse, in required grading & sizes as per actual requirement, all complete as per direction of Engineer-in-charge.	cum	72	-	1234	1306
33.16	Providing and fixing suitable size threaded mild steel cap or spot welded plate to the top of bore well housing/ casing pipe, removable as per requirement, all complete for bore well of:					
	33.16.1 100 mm dia	each	9	-	175	184
	33.16.2 150 mm dia	each	10	-	195	205
	33.16.3 200 mm dia	each	13	-	260	273
33.17	Providing and fixing M.S. clamp of required dia to the top of casing/ housing pipe of tube well as per IS: 2800 (part I), including necessary bolts & nuts of required size complete.					
	33.17.1 100 mm clamp	each	177	-	1089	1266
	33.17.2 150 mm clamp	each	186	-	1148	1334
	33.17.3 200 mm clamp	each	212	-	1308	1521
33.18	Providing and fixing Bail plug/ Bottom plug of required dia to the bottom of pipe assembly of tube well as per IS:2800 (part I).					
	33.18.1 100 mm dia	each	-	-	212	212
	33.18.2 150 mm dia	each	-	-	264	264
	33.18.3 200 mm dia	each	-	-	290	290
33.19	Development of tube well in accordance with IS : 2800 (part I) and IS: 11189, to establish maximum rate of usable water yield without sand content (beyond permissible limit), with required capacity air compressor, running the compressor for required time till well is fully developed, measuring yield of well by "V" notch method or any other approved method, measuring static level & draw down etc. by step draw down method, collecting water samples & getting tested in approved laboratory, i/c disinfection of tube well, all complete, including hire & labour charges of air compressor, tools & accessories etc., all as per requirement and direction of Engineer-in-charge.	hour	-	592	561	1153

CHAPTER NO. 34

ROAD FURNITURE

CHAPTER 34.0 - ROAD FURNITURE

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
34.1	**Cast in Situ Cement Concrete M20 Kerb** Construction of cement concrete kerb with top and bottom width 115 and 165 mm respectively, 250 mm high in M 20 grade PCC on M-10 grade foundation 150 mm thick, foundation having 50 mm projection beyond kerb stone, kerb stone laid with kerb laying machine, foundation concrete laid manually, all complete as per clause 408	408					
34.1.1	**Using Concrete Mixer**		per metre	25	40	179	244
34.1.2	**Using Concrete Batching and Mixing Plant**		per metre	4	45	182	231
34.2	**Cast in Situ Cement Concrete M 20 Kerb with Channel** Construction of cement concrete kerb with channel with top and bottom width 115 and 165 mm respectively, 250 mm high in M 20 grade PCC on M10 grade foundation 150 mm thick, kerb channel 300 mm wide, 50 mm thick in PCCM20 grade, sloped towards the kerb, kerb stone with channel laid with kerb laying machine, foundation concrete laid manually, all complete as per clause 408	408					
34.2.1	**Using Concrete Mixer**		per metre	30	58	345	433
34.2.2	**Using Concrete Batching and Mixing Plant**		per metre	5	63	352	420
34.3	**Printing New Letter and Figures of any Shade** Printing new letter and figures of any shade with synthetic enamel paint black or any other approved colour to give an even shade	801					
34.3.1	**Hindi (Matras commas and the like not to be measured and paid for Half letter shall be counted as half)**		cm height per letter	1	-	-	1
34.3.2	**English and Roman (Hyphens not to be paid)**		cm height per letter	1	-	-	1
	Cautionary Sign Boards						
34.4	Cautionary sign board 900x900x900mm triangular as per IRC 67- 2012 with retro reflective Sheeting as per ASTM D 4956 09 and as per IRC 67 2012 fixed over 4mm thick aluminium Composite material (ACM) sheeting having aluminium skin thickness of 0.4 to 0.5 mm on both sided and fixing the same with suitable size aluminium alloy rivets @ 200 mm c/c to back support frame of 25x25x3mm angle iron supported on a square hollow steel section post 60x60x3.2mm conforming to IS 4923 without cost of definition plate firmly fixed to ground in foundation concrete M-25 of size 0.45x0.45x0.75m for vertical post complete as per clause 801 of MORT&H specifications. Supplier shall provide a warranty as per clause 6.9 of IRC 67-2012 for retro reflective sheeting & a certified copy of test reports including three year outdoor weathering test report for sheeting tested in India condition from an independent test laboratory conforming to clause 6.7 of IRC 67-2012	801					

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
34.4.1	**Using retro reflective Sheeting Class C as per IRC 67 2012**		each	450	110	4201	4761
34.4.2	**Using high intensity Microprisomatic grade retro reflective Sheeting Class B as per IRC 67 2012**		each	450	110	3396	3956
34.5	Cautionary sign board 600x600x600mm triangular as per IRC 67- 2012 with retro reflective Sheeting as per ASTM D 4956 09 and as per IRC 67 2012 fixed over 3 mm thick aluminium Composite material (ACM) sheeting having aluminium skin thickness of 0.4 to 0.5 mm on both sided and fixing the same with suitable size aluminium alloy rivets @ 200 mm c/c to back support frame of 25x25x3mm angle iron supported on a square hollow steel section post 60x60x3.2mm conforming to IS 4923 without cost of definition plate firmly fixed to ground in foundation concrete M-25 of size 0.45x0.45x0.75m for vertical post complete as per clause 801 of MORT&H specifications. Supplier shall provide a warranty as per clause 6.9 of IRC 67-2012 for retro reflective sheeting & a certified copy of test reports from an independent test laboratory including three year outdoor weathering test report for sheeting tested in India condition conforming to clause 6.7 of IRC 67-2012	801					
34.5.1	**Using retro reflective Sheeting Class C as per IRC 67 2012**		each	450	110	2825	3385
34.5.2	**Using high intensity Microprisomatic grade retro reflective Sheeting Class B as per IRC 67 2012**		each	450	110	2467	3027
34.6	Mandatory sign board 900 mm circular as per IRC 67- 2012 with retro reflective Sheeting as per ASTM D 4956 09 and as per IRC 67 2012 fixed over 4 mm thick aluminium Composite material (ACM) sheeting having aluminium skin thickness of 0.4 to 0.5 mm on both sided and fixing the same with suitable size aluminium alloy rivets @ 200 mm c/c to back support frame of 25x25x3mm angle iron supported on a square hollow steel section post 60x60x3.2mm conforming to IS 4923 without cost of definition plate firmly fixed to ground in foundation concrete M-25 of size 0.45x0.45x0.75m for vertical post complete as per clause 801 of MORT&H specifications. Supplier shall provide a warranty as per clause 6.9 of IRC 67-2012 for retro reflective sheeting & a certified copy of test reports from an independent test laboratory including three year outdoor weathering test report for sheeting tested in India condition conforming to clause 6.7 of IRC 67-2012	801					
34.6.1	**Using retro reflective Sheeting Class C as per IRC 67 2012**		each	450	110	5926	6485
34.6.2	**Using high intensity Microprisomatic grade retro reflective Sheeting Class B as per IRC 67 2012**		each	450	110	4467	5027

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
34.7	Mandatory sign board 600 mm circular as per IRC 67- 2012 with retro reflective Sheeting as per ASTM D 4956 09 and as per IRC 67 2012 fixed over 3 mm thick aluminium Composite material (ACM) sheeting having aluminium skin thickness of 0.4 to 0.5 mm on both sided and fixing the same with suitable size aluminium alloy rivets @ 200 mm c/c to back support frame of 25x25x3mm angle iron supported on a square hollow steel section post 60x60x3.2mm conforming to IS 4923 without cost of definition plate firmly fixed to ground in foundation concrete M-25 of size 0.45x0.45x0.75m for vertical post complete as per clause 801 of MORT&H specifications. Supplier shall provide a warranty as per clause 6.9 of IRC 67-2012 for retro reflective sheeting & a certified copy of test reports from an independent test laboratory including three year outdoor weathering test report for sheeting tested in India condition conforming to clause 6.7 of IRC 67-2012	801					
34.7.1	**Using retro reflective Sheeting Class C as per IRC 67 2012**		each	450	110	3557	4117
34.7.2	**Using high intensity Microprisomatic grade retro reflective Sheeting Class B as per IRC 67 2012**		each	450	110	2911	3471
34.8	Informatory sign board 800x600 rectangular as per IRC 67- 2012 with retro reflective Sheeting as per ASTM D 4956 09 and as per IRC 67 2012 fixed over 4 mm thick aluminium Composite material (ACM) sheeting having aluminium skin thickness of 0.4 to 0.5 mm on both sided and fixing the same with suitable size aluminium alloy rivets @ 200 mm c/c to back support frame of 25x25x3mm angle iron supported on a square hollow steel section post 60x60x3.2mm conforming to IS 4923 without cost of definition plate firmly fixed to ground in foundation concrete M-25 of size 0.45x0.45x0.75m for vertical post complete as per clause 801 of MORT&H specifications. Supplier shall provide a warranty as per clause 6.9 of IRC 67-2012 for retro reflective sheeting & a certified copy of test reports from an independent test laboratory including three year outdoor weathering test report for sheeting tested in India condition conforming to clause 6.7 of IRC 67-2012	801					
34.8.1	**Using retro reflective Sheeting Class C as per IRC 67 2012**		each	450	110	4888	5448
34.8.2	**Using high intensity Microprisomatic grade retro reflective Sheeting Class B as per IRC 67 2012**		each	450	110	3788	4347

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
34.9	Informatory sign board 600x450 rectangular as per IRC 67- 2012 with retro reflective Sheeting as per ASTM D 4956 09 and as per IRC 67 2012 fixed over 3 mm thick aluminium Composite material (ACM) sheeting having aluminium skin thickness of 0.4 to 0.5 mm on both sided and fixing the same with suitable size aluminium alloy rivets @ 200 mm c/c to back support frame of 25x25x3mm angle iron supported on a square hollow steel section post 60x60x3.2mm conforming to IS 4923 without cost of definition plate firmly fixed to ground in foundation concrete M-25 of size 0.45x0.45x0.75m for vertical post complete as per clause 801 of MORT&H specifications. Supplier shall provide a warranty as per clause 6.9 of IRC 67-2012 for retro reflective sheeting & a certified copy of test reports from an independent test laboratory including three year outdoor weathering test report for sheeting tested in India condition conforming to clause 6.7 of IRC 67-2012	801					
34.9.1	**Using retro reflective Sheeting Class C as per IRC 67 2012**		each	450	110	3415	3975
34.9.2	**Using high intensity Microprismatic grade retro reflective Sheeting Class B as per IRC 67 2012**		each	450	110	2799	3359
34.10	Informatory sign board 600x600 rectangular as per IRC 67- 2012 with retro reflective Sheeting as per ASTM D 4956 09 and as per IRC 67 2012 fixed over 3 mm thick aluminium Composite material (ACM) sheeting having aluminium skin thickness of 0.4 to 0.5 mm on both sided and fixing the same with suitable size aluminium alloy rivets @ 200 mm c/c to back support frame of 25x25x3mm angle iron supported on a square hollow steel section post 60x60x3.2mm conforming to IS 4923 without cost of definition plate firmly fixed to ground in foundation concrete M-25 of size 0.45x0.45x0.75m for vertical post complete as per clause 801 of MORT&H specifications. Supplier shall provide a warranty as per clause 6.9 of IRC 67-2012 for retro reflective sheeting & a certified copy of test reports from an independent test laboratory including three year outdoor weathering test report for sheeting tested in India condition conforming to clause 6.7 of IRC 67-2012	801					
34.10.1	**Using retro reflective Sheeting Class C as per IRC 67 2012**		each	450	110	4028	4588
34.10.2	**Using high intensity Microprismatic grade retro reflective Sheeting Class B as per IRC 67 2012**		each	450	110	3203	3763

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
34.11	Informatory sign board 900x600 rectangular as per IRC 67- 2012 with retro reflective Sheeting as per ASTM D 4956 09 and as per IRC 67 2012 fixed over 4 mm thick aluminium Composite material (ACM) sheeting having aluminium skin thickness of 0.4 to 0.5 mm on both sided and fixing the same with suitable size aluminium alloy rivets @ 200 mm c/c to back support frame of 25x25x3mm angle iron supported on a square hollow steel section post 60x60x3.2mm conforming to IS 4923 without cost of definition plate firmly fixed to ground in foundation concrete M-25 of size 0.45x0.45x0.75m for vertical post complete as per clause 801 of MORT&H specifications. Supplier shall provide a warranty as per clause 6.9 of IRC 67-2012 for retro reflective sheeting & a certified copy of test reports from an independent test laboratory including three year outdoor weathering test report for sheeting tested in India condition conforming to clause 6.7 of IRC 67-2012	801					
34.11.1	**Using retro reflective Sheeting Class C as per IRC 67 2012**		each	471	110	6885	7465
34.11.2	**Using high intensity Microprismatic grade retro reflective Sheeting Class B as per IRC 67 2012**		each	471	110	5740	6321
34.12	Advance Direction sign board 900x900 square as per IRC 67- 2012 with retro reflective Sheeting as per ASTM D 4956 09 and as per IRC 67 2012 fixed over 4 mm thick aluminium Composite material (ACM) sheeting having aluminium skin thickness of 0.4 to 0.5 mm on both sided and fixing the same with suitable size aluminium alloy rivets @ 200 mm c/c to back support frame of 25x25x3mm angle iron supported on a square hollow steel section post 60x60x3.2mm conforming to IS 4923 without cost of definition plate firmly fixed to ground in foundation concrete M-25 of size 0.45x0.45x0.75m for vertical post complete as per clause 801 of MORT&H specifications. Supplier shall provide a warranty as per clause 6.9 of IRC 67-2012 for retro reflective sheeting & a certified copy of test reports from an independent test laboratory including three year outdoor weathering test report for sheeting tested in India condition conforming to clause 6.7 of IRC 67-2012	801					
34.12.1	**Using retro reflective Sheeting Class C as per IRC 67 2012**		each	522	110	10555	11187
34.12.2	**Using high intensity Microprismatic grade retro reflective Sheeting Class B as per IRC 67 2012**		each	582	110	8832	9524

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
34.13	Advance Direction signboard 1200x900 square as per IRC 67- 2012 with retro reflective Sheeting as per ASTM D 4956 09 and as per IRC 67 2012 fixed over 4 mm thick aluminium Composite material (ACM) sheeting having aluminium skin thickness of 0.4 to 0.5 mm on both sided and fixing the same with suitable size aluminium alloy rivets @ 200 mm c/c to back support frame of 25x25x3mm angle iron supported on a square hollow steel section post 60x60x3.2mm conforming to IS 4923 without cost of definition plate firmly fixed to ground in foundation concrete M-25 of size 0.45x0.45x0.75m for vertical post complete as per clause 801 of MORT&H specifications. Supplier shall provide a warranty as per clause 6.9 of IRC 67-2012 for retro reflective sheeting & a certified copy of test reports from an independent test laboratory including three year outdoor weathering test report for sheeting tested in India condition conforming to clause 6.7 of IRC 67-2012	801					
34.13.1	**Using retro reflective Sheeting Class C as per IRC 67 2012**		each	951	220	11980	13150
34.13.2	**Using high intensity Microprisomatic grade retro reflective Sheeting Class B as per IRC 67 2012**		each	951	220	9622	10792
34.14	Advance Direction signboard 1200x1200 square as per IRC 67- 2012 with retro reflective Sheeting as per ASTM D 4956 09 and as per IRC 67 2012 fixed over 4 mm thick aluminium Composite material (ACM) sheeting having aluminium skin thickness of 0.4 to 0.5 mm on both sided and fixing the same with suitable size aluminium alloy rivets @ 200 mm c/c to back support frame of 25x25x3mm angle iron supported on a square hollow steel section post 60x60x3.2mm conforming to IS 4923 without cost of definition plate firmly fixed to ground in foundation concrete M-25 of size 0.45x0.45x0.75m for vertical post complete as per clause 801 of MORT&H specifications. Supplier shall provide a warranty as per clause 6.9 of IRC 67-2012 for retro reflective sheeting & a certified copy of test reports from an independent test laboratory including three year outdoor weathering test report for sheeting tested in India condition conforming to clause 6.7 of IRC 67-2012	801					
34.14.1	**Using retro reflective Sheeting Class C as per IRC 67 2012**		each	951	220	14715	15885
34.14.2	**Using high intensity Microprisomatic grade retro reflective Sheeting Class B as per IRC 67 2012**		each	951	220	11409	12580

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
34.15	Advance Direction signboard 1200x1800 square as per IRC 67- 2012 with retro reflective Sheeting as per ASTM D 4956 09 and as per IRC 67 2012 fixed over 4 mm thick aluminium Composite material (ACM) sheeting having aluminium skin thickness of 0.4 to 0.5 mm on both sided and fixing the same with suitable size aluminium alloy rivets @ 200 mm c/c to back support frame of 25x25x3mm angle iron supported on a square hollow steel section post 60x60x3.2mm conforming to IS 4923 without cost of definition plate firmly fixed to ground in foundation concrete M-25 of size 0.45x0.45x0.75m for vertical post complete as per clause 801 of MORT&H specifications. Supplier shall provide a warranty as per clause 6.9 of IRC 67-2012 for retro reflective sheeting & a certified copy of test reports from an independent test laboratory conforming to clause 6.7 of IRC 67-2012	801					
34.15.1	**Using retro reflective Sheeting Class C as per IRC 67 2012**		each	1380	220	19638	21238
34.15.2	**Using high intensity Microprismatic grade retro reflective Sheeting Class B as per IRC 67 2012**		each	1380	220	14686	16286
34.16	Definition Plate 600x200mm rectangular as per as per IRC 67- 2012 with retro reflective Sheeting as per ASTM D 4956 – 09 and as per IRC 67 – 2012. specifications. Fixed over 3mm thick Aluminium Composite Material (ACM) sheeting having aluminium skin thickness of 0.25 to 0.3 mm on both sided and fixing the same with suitable size aluminium alloy rivets @ 200 mm c/c to back support frame of 25X25X3mm welded with vertical post of sign board complete as per clause 801 of MORT&H specifications. Supplier shall provide a warranty as per clause 6.9 of IRC 67-2012 for retro reflective sheeting & a certified copy of test reports from an independent test laboratory including three year outdoor weathering test report for sheeting tested in India condition conforming to clause 6.7 of IRC 67-2012 .						
34.16.1	**Using retro reflective Sheeting Class C as per IRC 67 2012** **Using high intensity Microprismatic grade retro reflective Sheeting Type IX as per ASTM D 4956 09 and as per IRC 67 2012**						

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
34.17	Direction/Diversion Plate 900x300mm rectangular as per IRC 67- 2012 with retro reflective Sheeting as per ASTM D 4956 – 09 and as per IRC 67 – 2012. specifications. fixed over 4mm thick Aluminium Composite Material (ACM) sheeting having aluminium skin thickness of 0.4 to 0.5 mm on both sided and fixing the same with suitable size aluminium alloy rivets @ 200 mm c/c to back support frame of 25X25X3 angle iron fixed in position complete as per clause 801 of MORT&H specifications. Supplier shall provide a warranty as per clause 6.9 of IRC 67-2012 for retro reflective sheeting & a certified copy of test reports from an independent test laboratory including three year outdoor weathering test report for sheeting tested in India condition conforming to clause 6.7 of IRC 67- 2012						
34.17.1	**Using retro reflective Sheeting Class C as per IRC 67 2012** Direction/Diversion Plate 900x300mm rectangular as per IRC 67- 2012 with retro reflective Sheeting as per ASTM D 4956 – 09 and as per IRC 67 – 2012. specifications. fixed over 4mm thick Aluminium Composite Material (ACM) sheeting having aluminium skin thickness of 0.4 to 0.5 mm on both sided and fixing the same with suitable size aluminium alloy rivets @ 200 mm c/c to back support frame of 25X25X3 angle iron fixed in position complete as per clause 801 of MORT&H specifications. Supplier shall provide a warranty as per clause 6.9 of IRC 67-2012 for retro reflective sheeting & a certified copy of test reports from an independent test laboratory including three year outdoor weathering test report for sheeting tested in India condition conforming to clause 6.7 of IRC 67- 2012		each	266	6	1880	2151
34.17.2	**Using high intensity Microprismatic grade retro reflective Sheeting Class B as per IRC 67 2012**		each	266	6	1298	1569
34.18	Direction/Diversion Plate 1800x300mm rectangular as per IRC 67- 2012 with retro reflective Sheeting as per ASTM D 4956 – 09 and as per IRC 67 – 2012. specifications. fixed over 4mm thick Aluminium Composite Material (ACM) sheeting having aluminium skin thickness of 0.4 to 0.5 mm on both sided and fixing the same with suitable size aluminium alloy rivets @ 200 mm c/c to back support frame of 25X25X3mm fixed in position complete as per clause 801 of MORT&H specifications. Supplier shall provide a warranty as per clause 6.9 of IRC 67-2012 for retro reflective sheeting & a certified copy of test reports from an independent test laboratory including three year outdoor weathering test report for sheeting tested in India condition conforming to clause 6.7 of IRC 67- 2012						

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
34.18.1	**Using retro reflective Sheeting Class C as per IRC 67 2012** Direction/Diversion Plate 1800x300mm rectangular as per IRC 67- 2012 with retro reflective Sheeting as per ASTM D 4956 – 09 and as per IRC 67 – 2012. specifications. fixed over 4mm thick Aluminium Composite Material (ACM) sheeting having aluminium skin thickness of 0.4 to 0.5 mm on both sided and fixing the same with suitable size aluminium alloy rivets @ 200 mm c/c to back support frame of 25X25X3mm fixed in position complete as per clause 801 of MORT&H specifications. Supplier shall provide a warranty as per clause 6.9 of IRC 67-2012 for retro reflective sheeting & a certified copy of test reports from an independent test laboratory including three year outdoor weathering test report for sheeting tested in India condition conforming to clause 6.7 of IRC 67- 2012		each	453	11	3716	4180
34.18.2	**Using high intensity Microprismatic grade retro reflective Sheeting Class B as per IRC 67 2012**		each	454	8	2542	3005
34.19	Hazard Marker sign board 300x900mm rectangular as per IRC 67- 2012 with retro reflective Sheeting as per ASTM D 4956 09 and IRC 67 2012, fixed over 4mm thick Aluminium Composite Material (ACM) sheeting having skin thickness of 0.4 to 0.5 mm on both sided and fixing the same with suitable size aluminium alloy rivets @ 200 mm c/c to back support frame of 25x25x3mm angle iron supported on a square hollow steel section post 60x60x3.2mm conforming to IS 4923 firmly fixed to ground including foundation concrete M-25 of size 0.45x0.45x0.60m for vertical post complete as per clause 801 of MORT&H specifications. Supplier shall provide a warranty as per clause 6.9 of IRC 67-2012 for retro reflective sheeting & a certified copy of test reports from an independent test laboratory including three year outdoor weathering test report for sheeting tested in India condition conforming to clause 6.7 of IRC 67- 2012.						
34.19.1	**Using retro reflective Sheeting Class C as per IRC 67 2012**		each	452	441	3144	4038

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	Hazard Marker sign board 300x900mm rectangular as per IRC 67- 2012 with retro reflective Sheeting as per ASTM D 4956 09 and IRC 67 2012, fixed over 4mm thick Aluminium Composite Material (ACM) sheeting having skin thickness of 0.4 to 0.5 mm on both sided and fixing the same with suitable size aluminium alloy rivets @ 200 mm c/c to back support frame of 25x25x3mm angle iron supported on a square hollow steel section post 60x60x3.2mm conforming to IS 4923 firmly fixed to ground including foundation concrete M-25 of size 0.45x0.45x0.60m for vertical post complete as per clause 801 of MORT&H specifications. Supplier shall provide a warranty as per clause 6.9 of IRC 67-2012 for retro reflective sheeting & a certified copy of test reports from an independent test laboratory including three year outdoor weathering test report for sheeting tested in India condition conforming to clause 6.7 of IRC 67- 2012.						
34.19.2	**Using high intensity Microprismatic grade retro reflective Sheeting Class B as per IRC 67 2012**		each	450	439	2712	3601
34.20	Overhead sign board 6000x1500mm cantilever type single sided as per IRC 67-2012 with retro reflective Sheeting as per ASTM D 4956 – 09 and as per IRC 67 – 2012 fixed over 4mm thick Aluminium Composite Material (ACM) sheeting having aluminium skin thickness of 0.4 to 0.5 mm on both sided and fixing the same with suitable size aluminium alloy rivets @ 200 mm c/c to back support frame of 40x40x6mm angle iron supported on designed single support system of MS pipe and plates in the form of a cantilever type truss made with 350NB pipe @50kg per metre as vertical support, 50NB pipe @ 4.50kg per metre and 40NB pipe @ 3.61kg per metre for truss including base plates, gusset plates, designed RCC foundation for fixing in ground complete as per clause 802 of MORT&H specifications. Supplier shall provide a warranty as per clause 6.9 of IRC 67-2012 for retro reflective sheeting & a certified copy of test reports from an independent test laboratory including three year outdoor weathering test report for sheeting tested in India condition conforming to clause 6.7 of IRC 67-2012 .						
34.20.1	**Using retro reflective Sheeting Type XI as per ASTM D 4956 09 and as per IRC 67 2012**	(a)	each	17883	13317	197139	228338
34.20.2	**Using high intensity Microprismatic grade retro reflective Sheeting Type IV as per ASTM D 4956 09 and as per IRC 67 2012**		each	17883	13317	176402	207602

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	Overhead sign board 6000x1500mm cantilever type single sided as per IRC 67-2012 with retro reflective Sheeting as per ASTM D 4956 – 09 and as per IRC 67 – 2012 fixed over 4mm thick Aluminium Composite Material (ACM) sheeting having aluminium skin thickness of 0.4 to 0.5 mm on both sided and fixing the same with suitable size aluminium alloy rivets @ 200 mm c/c to back support frame of 40x40x6mm angle iron supported on designed single support system of MS pipe and plates in the form of a cantilever type truss made with 350NB pipe @50kg per metre as vertical support, 50NB pipe @ 4.50kg per metre and 40NB pipe @ 3.61kg per metre for truss including base plates, gusset plates, designed RCC foundation for fixing in ground complete as per clause 802 of MORT&H specifications. Supplier shall provide a warranty as per clause 6.9 of IRC 67-2012 for retro reflective sheeting & a certified copy of test reports from an independent test laboratory including three year outdoor weathering test report for sheeting tested in India condition conforming to clause 6.7 of IRC 67-2012 .						
34.20.3	**Using retro reflective Sheeting Type XI as per ASTM D 4956 09 and as per IRC 67 2012**	(b)	each	19045	13317	262055	294417
34.20.4	**Using high intensity Microprismatic grade retro reflective Sheeting Type IV as per ASTM D 4956 09 and as per IRC 67 2012**	b (i)	each	19045	13317	220582	252944
34.21	Overhead sign board 9000x1500mm simply supported type double sided as per IRC 67-2012 with retro reflective Sheeting as per ASTM D 4956 – 09 and as per IRC 67 – 2012 fixed over 4mm thick aluminium Composite material (ACM) sheeting having aluminium skin thickness of 0.4 to 0.5 mm on both sided and fixing the same with suitable size aluminium alloy rivets @ 200 mm c/c to back support frame of 40x40x6mm angle iron supported on designed double support system of MS pipe and plates in the form of a simply supported type truss made with 350NB pipe @50kgper metre as vertical support, 50NB pipe @ 4.50kg per metre and 40NB pipe @ 3.61kg per metre for truss including base plates, gusset plates, designed RCC foundation for fixing in ground complete as per clause 802 of MORT&H specifications. Supplier shall provide a warranty as per clause 6.9 of IRC 67-2012 for retro reflective sheeting & a certified copy of test reports from an independent test laboratory including three year outdoor weathering test report for sheeting tested in India condition conforming to clause 6.7 of IRC 67-2012 .	24.53					
34.21.1	**Using retro reflective Sheeting Type XI as per ASTM D 4956 09 and as per IRC 67 2012**	(a)	each	28568	18677	425411	472656

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
34.21.2	**Using high intensity Microprismatic grade retro reflective Sheeting Type IV as per ASTM D 4956 09 and as per IRC 67 2012**	(b)	each	28568	18677	363201	410446
34.22	Overhead sign board 12000x1500mm simply supported type double sided as per IRC 67-2012 with retro reflective Sheeting as per ASTM D 4956 – 09 and as per IRC 67 . fixed over 4mm thick aluminium Composite material (ACM) sheeting having aluminium skin thickness of 0.4 to 0.5 mm on both sided and fixing the same with suitable size aluminium alloy rivets @ 200 mm c/c to back support frame of 40x40x6mm angle iron supported on designed double support system of MS pipe and plates in the form of a simply supported type truss made with 350NB pipe @50kg per metre as vertical support, 50NB pipe @ 4.50kg per metre and 40NB pipe @ 3.61kg per metre for truss including base plates, gusset plates, designed RCC foundation for fixing in ground complete as per clause 802 of MORT&H specifications. Supplier shall provide a warranty as per clause 6.9 of IRC 67-2012 for retro reflective sheeting & a certified copy of test reports from an independent test laboratory including three year outdoor weathering test report for sheeting tested in India condition conforming to clause 6.7 of IRC 67-2012.						
34.22.1	**Using retro reflective Sheeting Type XI as per ASTM D 4956 09 and as per IRC 67 2012**	(a)	each	38091	22006	517028	577125
34.22.2	**Using high intensity Microprismatic grade retro reflective Sheeting Type IV as per ASTM D 4956 09 and as per IRC 67 2012**		each	38091	22006	434082	494178
34.23	Hume pipe road indicator of 350mm dia NP-2 hume pipe 1200mm high, 900mm above ground level, 300mm embedded in ground in cement concrete 1:4:8 of size 0.75x0.75x0.60m, filled with earth and plugged from top with 300mm thick cement concrete 1:2:4, painted with two coats ready mixed exterior paint in black and white strips fixed in position complete as per PWD specifications		each	84	44	1214	1343
34.24	**Painting Lines, Dashes, Arrows etc on Roads in Two Coats on New Work** Painting lines, dashes, arrows etc on roads in two coats on new work with ready mixed road marking paint conforming to IS:164 on bituminous surface, including cleaning the surface of all dirt, dust and other foreign matter, demarcation at site and traffic control	803					
34.24.1	**Over 10 cm in width**		sqm	104	-	23	127
34.24.2	**Up to 10 cm in width**		sqm	84	-	23	107
34.25	**Painting Lines, Dashes, Arrows etc on Roads in Two Coats on Old Work**	803					

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	Painting lines, dashes, arrows etc on roads in two coats on old work with ready mixed road marking paint conforming to IS: 164 on bituminous surface, including cleaning the surface of all dirt, dust and other foreign matter, demarcation at site and traffic control						
34.25.1	**Over 10 cm in width**		sqm	76	-	14	90
34.25.2	**Up to 10 cm in width**		sqm	84	-	14	98
34.26	**Road Marking with Hot Applied Thermoplastic Compound with Reflectorising Glass Beads on Bituminous Surface**	803					
	Providing and laying of hot applied thermoplastic compound 2.5 mm thick including Reflectorising glass beads @ 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35 .The finished surface to be level, uniform and free from streaks and holes.		sqm	13	22	572	607
	Note:- 1. A sealing primer may be applied in advance on cement concrete pavement to ensure proper bonding. Any laitance and/or curing compound to be removed where paint is required to be applied on concrete surface.						
	2.Cost of painter is already included in hire charges of road marking machine.						
34.27	**Kilometre Stone**	804					
	Reinforced cement concrete M25 grade kilometre stone of standard design as per IRC:8-1980, fixing in position including painting and printing etc complete as per technical clause 804 of MORTH Specifications						
34.27.1	**5th kilometre stone (precast)**		nos.	550	220	3206	3975
34.27.2	**Ordinary kilometre stone (precast)**		nos.	288	94	1945	2327
34.27.3	**Kilometre Stone for Village Roads**		nos.	255	94	1546	1894
34.27.4	**200 meter stone**		nos.	131	40	526	697
	The rate for excavation, cement concrete, steel reinforcement, painting and lettering may be taken from respective chapters.						
34.28	**Boundary pillar**	806					
	Reinforced cement concrete M15 grade boundary pillars of standard design as per IRC:25-1967, fixed in position including finishing and lettering but excluding painting		nos.	122	23	920	1066
	In case of soft ground, a proper foundation may be provided as per approved design. In case foundation is required to be provided, the items of excavation and foundation concrete are required to be measured and paid separately.						
34.29	**GI barbed wire fencing**						
34.29.1	**G.I Barbed Wire Fencing 1.2 Metre High**	807					

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	Providing and fixing 1.2 metres high GI barbed wire fencing with 1.8 m angle iron posts 40 mm x 40 mm x 6 mm placed every 3 metres centre to centre founded in M15 grade cement concrete, 0.6 metre below ground level, every 15th post, last but one end post and corner post shall be strutted on both sides and end post on one side only and provided with 9 horizontal lines and 2 diagonals interwoven with horizontal wires, fixed with GI staples, turn buckles etc complete as per clause 807		per metre	37	-	257	294
	Cost of excavation for foundation and foundation concrete to be added separately in the cost estimate as per approved design. The rate for these items may be taken from respective chapters.						
34.29.2	**G.I Barbed Wire Fencing 1.8 Metre High**	807					
	Providing and fixing 1.8 metres high GI barbed wire fencing with 2.4 m angle iron posts 50 mm x 50 mm x 6 mm placed every 3 metres centre to centre founded in M15 grade cement concrete, 0.6 metre below ground level, every 15th post, last but one end post and corner post shall be strutted on both sides and end post on one side only and provided with 12 horizontal lines and 2 diagonals interwoven with horizontal wires, fixed with GI staples, turn buckles etc complete as per clause 807		per metre	48	-	439	487
	Cost of excavation for foundation and foundation concrete to be added separately in the cost estimate as per approved design. The rate for these items may be taken from respective chapters.						
34.29.3	**Fencing With Welded Steel Wire Fabric 75 mm x 50 mm**	Suggestive					
	Providing 1.20 metre high fencing with angle iron posts 50 mm x 50 mm x 6 mm at 3 metre centre to centre with 0.40 metre embedded in M15 grade cement concrete, corner, end and every 10th post to be strutted, provided with welded steel wire fabric of 75 mm x 50 mm mesh or 75 mm x 25 mm mesh and fixed to iron posts by flat iron 50 x 5 mm and bolts etc. complete in all respects.		per metre	49	1	691	741
	i) Adopt any one type of welded steel wire fabric 75 x 50 mm or 75 x 25 mm as per approved design.						
	ii) The item of excavation and cement concrete in foundation shall be measured and paid separately						
34.30	**Tubular Steel Railing on Medium Weight Steel Channel (ISMC series) 100 mm x 50 mm**	808					

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
34.30.1	Providing, fixing and erecting 50 mm dia steel pipe railing in 3 rows duly painted on medium weight steel channels (ISMC series) 100 mm x 50 mm, 1.2 metres high above ground, 2 m centre to centre, complete as per approved drawings		per metre	13	1	1492	1505
	Tubular Steel Railing on Precast RCC Posts, 1.2 m High Above Ground Level	808					
34.30.2	Providing, fencing and erecting 50 mm dia painted steel pipe railing in 3 rows on precast M20 grade RCC vertical posts1.8 metres high (1.2 m above GL) with 3 holes 50 mm dia for pipe, fixed 2 metres centre to, complete as per approved drawing		per metre	18	5	1314	1337
34.31	**Reinforced Cement Concrete Crash Barrier**	809					
	Provision of an Reinforced cement concrete crash barrier at the edges of the road, approaches to bridge structures and medians, constructed with M-20 grade concrete with HYSD reinforcement conforming to IRC:21 and dowel bars 25 mm dia, 450 mm long at expansion joints filled with pre-moulded asphalt filler board, keyed to the structure on which it is built and installed as per design given in the enclosure to MOST circular No. RW/NH - 33022/1/94-DO III dated 24 June 1994 as per dimensions in the approved drawing and at locations directed by the Engineer, all as specified **i) Excavation and backfilling are incidental to work and not to be measured separately.** **ii) Rate for RCC M 20 may be taken from chapter on super structure.**		per metre	49	-	3307	3356
34.32	**Metal Beam Crash Barrier**	810					
34.32.1	**Type - A, "W" : Metal Beam Crash Barrier**						
	Providing and erecting a "W" metal beam crash barrier comprising of 3 mm thick corrugated sheet metal beam rail, 70 cm above road/ground level, fixed on ISMC series channel vertical post, 150 x 75 x 5 mm spaced 2 m centre to centre, 1.8 m high, 1.1 m below ground/road level, all steel parts and fitments to be galvanised by hot dip process, all fittings to conform to IS:1367 and IS:1364, metal beam rail to be fixed on the vertical post with a spacer of channel section 150 x 75 x 5 mm, 330 mm long complete as per clause 810		per metre	165	5	3051	3220
34.32.2	**Type - B, "THRIE" : Metal Beam Crash Barrier**						

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	Providing and erecting a "Thrie" metal beam crash barrier comprising of 3 mm thick corrugated sheet metal beam rail, 85 cm above road/ground level, fixed on ISMC series channel vertical post, 150 x 75 x 5 mm spaced 2 m centre to centre, 2 m high with 1.15 m below ground level, all steel parts and fitments to be galvanised by hot dip process, all fittings to conform to IS:1367 and IS:1364, metal beam rail to be fixed on the vertical post with a space of channel section 150 x 75 x 5 mm, 546 mm long complete as per clause 810		per metre	165	5	4011	4180
	In the case of median crash barrier, 'W' metal beam or three beam section should be provided on both sides of the vertical posts fixed in the median. Extra provision for metal beam railing and spacer is required to be made when fixed in the median depending on approved design.						
34.33	**Road Markers/Road Stud with Lense Reflector**						
	Providing and fixing of road stud 100x 100 mm, die-cast in aluminium, resistant to corrosive effect of salt and grit, fitted with lense reflectors, installed in concrete or asphaltic surface by drilling hole 30 mm up to a depth of 60 mm and bedded in a suitable bituminous grout or epoxy mortar, all as per BS 873 part 4:1973		nos.	10	-	349	359
34.34	**Moulded Shank Road Stud**						
	Supplying and fixing of single mould twin shank reflective road studs made out of poly carbonate/ABS moulded body and reflective panels with micro prismatic lens capable of providing total internal reflection of the light entering the lens face with retro reflectance and chromaticity values @ ASTM E 809 & ASTM D 4280. The detailed specifications and the product shall conform to ASTM D4280 and ASTM E 809. The raised pavement marker shall also meet all the testing conditions of ASTM D4280 like abrasion resistance and fixed to the road surface using the epoxy adhesive. Two cylinderical polymer shanks of not less than 20 mm diameter and not less than 30 mm length shall be moulded in the RPM body. The marker shall support a load of 13635 Kg tested in accordance with ASTM D4280. The marker shall withstand flexural strength of 909 kgf force in accordance with ASTM D4280. Marker lenses shall be moulded of Polycarbonate or methyl Methacrylate conforming to ASTM D788. The supplier shall provide a 2 years warranty for satisfactory field performance as per clause 804.7.3 of MORT&H 5th revision specifications.		nos.	28	-	242	270
34.35	**Flexible Median Marker**						

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	Providing and Fixing of Flexible Median Markers as per IRC 79:2019 which shall be made of combination of tough, high impact resistant molded thermoplastic body along with floroscent yellow colour retro-reflective Class C sheeting with minimum exposed reflective area 285 square mm and with rebound property. The reflective sheeting should confirm to Class C Yellow sheeting as per IRC 67-2012 . The flexible median marker shall have overall height of minimum 180 mm, width of minimum 120 mm, body thickness of minimum 2.0 mm and shank depth of minimum 30mm. The retro-reflective sheeting shall be on both sides of the Flexible Median Marker and shall be edge protected with no exposed edges which will prevent edge lifting, vandalism, sheeting damage, etc. The edge of sheeting should not come out easily by putting nails, sharp objects etc. The logo of the manufacturer shall be embossed on either side of the body. The product design has to with stand all natural impacts and should not get damaged if any pedestrian stamp on top of it intentionally or unintentionally. The product should bend up to 90 degree on both sides without breakage or damage. The Flexible Median Marker shall be tested from Government Lab for reboundability and tensile test as per IRC 79 :2019.		nos.	113	-	277	390
34.36	**Solar RPM/ Stud**						
	Providing and installation of solar cat eye produced from an engineered polymer selected for superior impact resistance and weather-ability. The top of the solar stud should be transparent for solar charging and light output in active mode. The base of the body shall be yellow or neutral white as approved by Engineer In-charge. The marker shall incorporate a solar panel (comprising of solar cells) for converting solar energy into electricity, a storage device for storing the energy, LEDs for illumination and a design for providing 360 degree smooth illumination. The Solar stud shall be round in shape for providing illumination in all directions. The solar stud shall also have high reflective polycarbonate/ methyl methecrylate lenses for conspicuity in passive mode and dual shanks for improved road presence. The solar studs are intended for application directly onto pavement surfaces and shall be applied with epoxy resin adhesives designed for use with raised pavement markers and as supplied by the marker manufacturer separately. The solar cat eye shall be of height: 65 ± 2 mm & Maximum Diameter: 136 ± 5 mm. The body of the solar cat eye shall be resistant to dust and water ingress as per IP 65 standards. The marker shall support a load of 13635 Kg tested in accordance with ASTM D4280.		nos.	0	-	2893	2893
34.37	**Road Delineators**	805					

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	Providing and fixing of standard Metal Delineator as per IRC 79:2019 consisting of retro reflective area in white colour using Microprismatic retro reflective sheeting on each side conforming with IRC 67-2012 and meeting the coefficient of retro reflection values as per Class C table specification. The delineator shall be painted with only black colour powder coat of minimum 40 microns thickness, on top of retro reflective sheeting only in white colour shall be pasted on both sides. The structure shall have height not less than 800 mm above ground, width not less than 100 mm and shall extend not more than 300 mm below ground while being installed. The delineator shall have grooves across the length to make the reflective sheet vandal proof. The delineator is meant for application on gaps in median, traffic islands, dangerous bends, roundabouts, narrow bridges etc or as desired by site engineer. The product shall be provided with 3 year outdoor warranty report tested in India condition as per IRC 67: 2012 requirement.		nos.	784	-	1614	2398
	In case of soft ground, a proper foundation may be provided as per approved design. In case foundation is required to be provided, the items of excavation and foundation concrete are required to be measured and paid separately.						
34.39	**Rumble Strips**						
34.39.1	Providing and making rumble strips 15-20mm high at centre, 250mm wide placed at 1m centre to centre over freshly laid bituminous layer by using close graded premix surfacing material at approved locations to control speed. The close graded premix surfacing material type B shall conform to technical clause 512 of MORT&H specifications **The rate per sqm of premix carpet and road marking may be adopted from chapter 5 & 8 respectively for the quantities calculated from approved drawings**						
	Rumble Strips with thermoplastic road marking						
34.39.2	Providing and making rumble strips 15-20mm high at centre, 250mm wide placed at 1m centre to centre over freshly laid bituminous layer by using close graded premix surfacing material at approved locations to control speed and marked with 100mm wide white strips of thermoplastic road marking paint. The close graded premix surfacing material type B shall conform to technical clause 512 and thermoplastic road marking paint shall conform to technical clause 803 of MORT&H specifications		sqm	15	-	77	92

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	This is a specialised work and is generally done by firms who specialise in such jobs. The detailed designs and estimates are submitted by the firms along with their tender for checks by the Department. The cost of this work is required to be worked out based on approved design, drawings and estimate of the lowest tender. A separate contract for this work is concluded as the contractors for road and bridge works generally do not undertake such jobs.						
34.40	**Portable Barricade in Construction Zone**						
	Installation of a steel portable barricade with horizontal rail 300 mm wide, 2.5 m in length fitted on a 'A' frame made with 45 x 45 x 5 mm angle iron section, 1.5 m in height, horizontal rail painted (2 coats) with yellow and white stripes, 150 mm in width at an angle of 450, 'A' frame painted with 2 coats of yellow paint, complete as per IRC:SP:55-2001		each	491	-	2742	3234
34.41	**Permanent Type Barricade in Construction Zone**	suggestive					
34.41.1	**With steel components**						
	Construction of a permanent type barricade made of steel components, 1.5 m high from road level, fitted with 3 horizontal rails 200 mm wide and 4 m long on 50 x 50 x 5 mm angle iron vertical support, painted with yellow and white strips, 150 mm in width at an angle of450, complete as per IRC:SP:55-2001		each	602	-	4496	5098
34.41.2	**With wooden components**						
	Construction of a permanent type barricade made of wooden components, 1.5 m high from road level, fitted with 3 horizontal planks 200 mm wide and 3.66 m long on 100 x 100mm wooden vertical post, painted with yellow and white strips, 150 mm in width at an angle of450, complete as per IRC:SP:55-2001		each	748	-	6107	6854
34.41.3	**With bricks**						
	Construction of a permanent type barricade made with brick work in mud mortar, 1.5 m high, 4 m long, 600 mm thick, plastered with cement mortar 1:6, painted with yellow and white strips		each	3193	-	12110	15303
34.42	**Drum Delineator in Construction Zone**	suggestive					
	Provision of metal drum/empty bitumen drum delineator, 300 mm in diameter, 800 mm high, filled with earth for stability, painted in circumferential strips of alternate black and white 100 mm wide fitted with reflectors 3 Nos of 7.5 cm dia, all as per IRC:SP:55-2001		each	248	-	753	1001
34.43	**Traffic Cone**	Suggestive					

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	Provision of red fluorescent with white reflective sleeve of Class B retro reflective sheeting as per IRC- 67-2012 traffic cone made of low density polyethylene (LDPE) material with a square base of 390 x 390 x 35 mm and a height of 770 mm, 3.4 kg in weight, placed at 1.5 m interval, all as per BS 873		per metre	4	-	452	456
34.44	**Flagman**						
	Positioning of a smart flagman with a yellow vest and a yellow cap and a red flag 600 x 600 mm securely fastened to a staff 1 m in length for guiding the traffic		each	489	-	39	528
34.45	**Flexible Crash Barrier, Wire Rope Safety Barrier**						
	Providing and erecting a wire rope safety barrier with vertical posts of medium weight RS Joist (ISMB series) 100 mm x 75 mm (11.50 kg/m), 1.50 m long 0.85 m above ground and 0.65 m below ground level, split at the bottom for better grip, embedded in M 15 grade cement concrete 450 x 450 x 450 mm, 1.50 m centre to centre and with 4 horizontal steel wire rope 40 mm dia and anchored at terminal posts 15 m apart. Terminal post to be embedded in M 15 grade cement concrete foundation 2400 x 450 x 900 mm (depth), strengthened by a strut of RS joist 100 x 75 mm, 2 m long at 450 inclination and a tie 100 x 8 mm, 1.50 m long at the bottom, all embedded in foundation concrete as per approved design and drawing, rate excluding excavation and cement concrete.		per metre	99	4	2340	2442
34.46	**Anti-Glare Devices in Median**						
34.46.1	**Anti-glare screen with 25 mm steel pipe framework fixed with circular and rectangular vans**						
	Providing and erecting an anti - glare screen with 25 mm dia vertical pipes fabricated and framed in the form of panels of one metre length and 1.75 metre height fixed with circular vane 250 mm dia at top and rectangular vane 600 x 300 mm at the middle, made out of steel sheet of 3 mm thickness, end vertical pipes of the panel made larger for embedding in foundation concrete, applying 2 coats of paint on all exposed surfaces, all as per approved design and drawings.		per metre	49	-	113	162
	The items of excavation and cement concrete as per approved design to be measured and paid separately						
34.46	**Anti-glare screen with rectangular vane of MS sheet**						

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
34.46.2	Providing and erecting anti - glare screen with rectangular vanes of size 750 x 500 mm made from MS sheet, 3 mm thick and fixed on MS angle 50 x 50 x 6 mm at an angle of 450 to the direction of flow of traffic, 1.5 m centre to centre, top edge of the screen 1.75 m above ground level, vertical post firmly embedded in M-15 cement concrete foundation 0.60 m below ground level, applying 2 coats of paint on exposed faces, all complete as per approved design and drawings **The items of excavation and cement concrete as per approved design to be measured and paid separately. Rate of painting has been analysed separately in this chapter.**		per metre	33	15	920	968
34.47	**Cable Duct Across the Road** Providing and laying of a reinforced cement concrete pipe duct, 300 mm dia, across the road (new construction), extending from drain to drain in cuts and toe of slope to toe of slope in fills, constructing head walls at both ends, providing a minimum fill of granular material over top and sides of RCC pipe as per IRC:98-1997, bedded on a 0.3 m thick layer of granular material free of rock pieces, outer to outer distance of pipe at least half dia of pipe subject to minimum 450 mm in case of double and triple row ducts, joints to be made leak proof, invert level of duct to be above higher than ground level to prevent entry of water and dirt, all as per IRC: 98 - 1997 and approved drawings.						
34.47.1	**Single row for one utility service**		per metre	31	5	2327	2363
34.47.2	**Double row for two utility services**		per metre	54	11	4314	4379
34.47.3	**Triple Row for three utility services**		per metre	98	16	6300	6414
	1.Inspection chamber at both ends is the responsibility of the agency who is laying the duct. Hence not included. **2.The rates for stone masonry / brick masonry and cement mortar to be adopted from respective clauses.**						
34.48	**Traffic Impact Attenuators at Abutments and Piers**						
34.48.1	**With Scrap Tyres**		sqm	43	33	5238	5315
34.48.2	**Using Plastic/Steel Barrel, Filled with Sand**						
	Provision and installation of traffic impact attenuator at abutment/pier of flyovers bridges using plastic/steel barrels 0.60 m dia and 1.0 m in height, filled with sand in three rows and tied with20 mm steel wire rope as per approved design and drawings		sqm	80	22	2010	2111
34.49	**Painting Two Coats on New Concrete Surfaces**	803					
	Painting two coats after filling the surface with synthetic enamel paint in all shades on new plastered concrete surfaces		sqm	37	-	28	66

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
34.50	**Painting on Steel Surfaces**	803					
	Providing and applying two coats of ready mix paint of approved brand on steel surface after through cleaning of surface to give an even shade		sqm	35	-	32	67
34.51	**Painting on Wood Surfaces**	803					
	Providing and applying two coats of ready mix paint of approved brand on wood surface after thorough cleaning of surface to give an even shade		sqm	35	-	38	73
34.52	**Gantry Mounted Variable Message Sign Board**						
	Providing and erecting gantry mounted variable message sign board electronically operated capable of flashing the desired message over a designed support system of aluminium alloy or galvanised steel, erected as per approved design and drawings and with lateral clearance as per clause 802.3						
	Gantry Support System		tonne	1483	323	86550	88355
	Overhead Gantry Sign Board (12 metre Width)						
34.53	Providing and erecting 12 m wide overhead signs with a corrosion resistant aluminium alloy sheet reflected with high intensity retro-reflective sheeting with vertical and lateral clearance given in clause 802.2 and 802.3 and installed as per clause 802.7 over a designed support system of galvanized steel trusses of section and type to be mounted by bolts and nuts over RCC structure as per drawing		nos.	28426	18584	487783	534793
34.54	Providing and erecting overhead signs with a corrosion resistant aluminium alloy sheet reflected with high intensity retro-reflective sheeting with vertical and lateral clearance given in clause 802.2 and 802.3 and installed as per clause 802.7 over a designed support system of galvanized steel trusses of section and type to be mounted by bolts and nuts over RCC structure as per drawing		nos.	11217	7636	102296	121149
34.55	Providing and erecting overhead signs with a corrosion resistant aluminium alloy sheet reflected with high intensity retro-reflective sheeting with vertical and lateral clearance given in clause 802.2 and 802.3 and installed as per clause 802.7 over a designed support system of galvanized steel trusses of section and type to be mounted by bolts and nuts over RCC structure as per drawing		nos.	12894	6969	179697	199560
34.56	**Aluminium Flexible Prismatic Sheeting as per IRC 79-2019**						

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	Providing and fixing Aluminium-backed flexible prismatic sheeting consisting of yellow colored flexible prismatic sheeting with non-metallic prismatic lens as retro reflective elements and conforming to Class C sheeting as per IRC 67-2012 specification values for rebound able sheeting. AFP sheeting shall be of 1ft width with a 50 micron thick Aluminium (Al) foil with pressure sensitive adhesive and liner. AFP sheeting shall have screen printed arrow/slant line pattern in black colour on top & shall not crack when tested for flexibility as per section S2.2.2 of ASTM D 4956-09. The AFP sheeting shall be applied with a neoprene contact adhesive with Polychloroprene as base & the edges of the product shall be sealed all around with a two-part epoxy based structural adhesive and shall be extremely resistant to peel-off & shall confirm to IRC 79-2019. The AFP shall be provided with govt test report from ARAI/ CRRI/ ICAT and report confirming to coefficient of retro reflection, Flexibility and impact resistance test as per ASTM which shall be submitted to engineer-in-charge before installation/ award of work.		sqm	70	-	10843	10913
34.57	**Retro Reflective Printed Sign Board Facia with 10 year warranty**						
	Design, manufacturing and assembly of retro reflective sign face (measured in Sq. or rectangular shape) made from micro prismatic Type XI sheeting as per ASTM D-4956-09 pasted on 4mm thick ACP/ ACM. Special Inks used for printing letters/ legends/ directions/ theme shall be certified for low volatile organic compound emission & shall be water based ink (non solvent & non eco solvent ink) with durability of 10 years atleast. The reflective sheeting signage facia shall be covered with ultra voilet overlaminate transparant film. The signage facia shall be warranted for 10 years as per IRC 67 and shall be supplied with government test report of 3 year outdoor weathering test conducted in India condition on base reflective sheeting as per IRC 67-2012.		sqm	47	1182	6950	8179
34.58	**Pre-formed patterned pavement marking tapes for dry and wet reflectivity as per IRC 35 with 4 year warranty**						

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	Providing and laying of pre-formed patterned pavement marking tapes, with pre-coated self-adhesive, having abrasion-resistant high refractive index microcrystalline ceramic beads bonded to a highly durable top coat, having a nominal thickness of 2.0 mm at pattern heights, meeting the requirements specified in ASTM D4505-12. The patterned surface shall have approximately 50% ± 15% of the surface area raised and presenting a near vertical face, angled from 0 degree to 60 degree, to traffic from any direction. All microcrystalline ceramic beads shall have a minimum index of refraction of 1.85 and/or 2.4 and ceramic beads shall show resistance to corrosion on exposure to a 1% solution of sulphuric acid. The applied marking surface to be level, uniform and free from streaks, cracks and holes. Markings shall have initial average skid resistance value of at least 45 BPN when tested according to ASTM E303 and meet the initial retro reflectance average values. The product shall be warranted for 4 years.		sqm	6	33	9955	9994
34.59	**Flexible Spring Post**						
	Providing and fixing of Flexible spring post wherein post and base shall be made from Poly urethane. The post shall be semi flat and semi circular in construction. The flat surface of the post shall be used for displaying department name/ logo. The product shall be flexible which help in returning the post to its original position without damaging the product or vehicle. The retro reflective tape applied on the post shall be as per ASTM D 4956 and shall be tested as per clause S2 of ASTM 4956 for flexibility, adhesion and impact resistance of rebound able sheeting. The message area for printing retro reflective area shall be 100 X 400 mm. The height of the post shall be 750 mm, the width of the post shall be 120 mm. The flexible spring post shall be applied in gaps in median, traffic islands, dangerous bends, roundabouts, narrow bridges etc. or as desired by site engineer.		nos.	5	-	1747	1752

CHAPTER NO. 35

MISCELLANEOUS (ROADS)

CHAPTER 35.0 - MISCELLANEOUS (ROADS)

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
35.1	**Sub-Surface Drain with Geotextiles**	702					
	Construction of sub surface drain 200 mm dia using geotextiles treated with carbon black with physical properties as given in clause 702.2.3 formed in to a stable network and a planar Geocomposite structure, joints wrapped with geotextile to prevent ingress of soil, all as per clause 702 and approved drawings including excavation and backfilling		running metre	372	-	290	661
	Surplus excavated material to be used at site. Hence separate cost for disposal not added.						
35.2	**Narrow Filter Sub-Surface Drain**	702.4					
	Construction of a narrow filter sub- surface drain consisting of porous or perforated pipe laid in narrow trench surrounded by a geotextile filter fabric, with a minimum of 450 mm overlap of fabric and installed as per clause 702.3 and 309.3.5 including excavation and backfilling		running metre	372	-	288	660
	Surplus excavated material to be used at site. Hence Separate cost for disposal not added.						
35.3	**Laying Paving Fabric Beneath a Pavement Overlay**	703					
35.3.1	Providing and laying paving fabric with physical requirements as per table 704-2 over a tack coat of paving grade Bitumen VG - 10, laid at the rate of 1 kg per sqm over thoroughly cleaned and repaired surface to provide a water resistant membrane and crack retarding layer. Paving fabric to be free of wrinkling and folding and to be laid before cooling of tack coat, brooming and rolling of surface with pneumatic roller to maximise paving fabric contact with pavement surface		sqm	3	4	128	136
35.3.2	Supply of Hybrid Geo Synthetic Non-Woven Glass Fibre Engineering Paving Mat Weight 136 GSM, Melting Temperature 200 °C Meeting MoRTH Specification for Roads and Bridges Works.		sqm	3	-	260	263
	Specifications: Laid over Tack coat under final top Asphalt/Bituminous layer on Roads						
35.4	**Laying Boulder Apron in Crates of Synthetic GeoGrids**	704					

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	Providing, preparing and laying of GeoGrids crated apron 1 m x 5 m, 600 mm thick including excavation and backfilling with baffles at 1 metre interval, made with GeoGrids having characteristics as per clause 704.2, joining sides with connectors/ring staples, top corners to be tie tensioned, placing of suitable cross interval ties in layers of 300 mm connecting opposite side with lateral braces and tied with polymer braids to avoid bulging, constructed as per clause 704.3. filled with stone with minimum size of 200 mm and specific gravity not less than 2.65, packed with stone spalls, keyed to the foundation recess in case of sloping ground and laid over a layer of geotextile to prevent migration of fines, all as per clause 704 and laid as per clause 2503.3 and approved design.		cum	323	-	3195	3518
35.5	**Reinforced Earth Structures**	3100					
	Assembling, joining and laying of reinforcing elements.	3102					
35.5.1	With reinforcing element of steel / polymeric strips.		running metre	10	-	256	266
35.5.2	With reinforcing elements of synthetic GeoGrids		sqm	15	-	131	145
35.5.4	**Facing elements of RCC as per clause 3104 of MORT&H specifications** 1.The specification and construction details to be adopted shall be as per section 3100 of MoRTH Specification. 2.Drainage arrangement shall be made as per approved design and drawings. 3.The quantity of filler media shall be calculated as per approved design and specifications and shall be priced separately: Graded stone aggregates Item 27.10 (MORTH 13.10) 4.Excavation for foundation including foundation concrete and groove in the foundation for seating of bottom most facia panel and capping beam to be calculated as per design and priced separately. 5.The earth fill to be retained is not included in this analysis. The same is to be worked out and provided separately complete as per clause 305. 6.For compaction of Earthwork, attention is invited to clause 3105.5 of MoRTH Specification. 7.Length of reinforcing strips will vary with the height of wall and will be as per approved design and drawings. 8.The type of reinforcing elements to be adopted shall be as per approved design and specifications.	3104	sqm	29	107	1322	1458

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	9.The market rate for supply of reinforcing elements and their accessories are to be ascertained from reputed firms in the field of earth reinforcement. 10.The earth fill material shall be clean, free draining, granular with high friction and low cohesion, non-corrosive, coarse grained with not 10 per cent of particles passing 75 micron sieve, free of any deleterious matter, chlorides, salts, acids, alkalies, mineral oil, fungus and microbes and shall be of specified PH value. 11.Capping beam is to be priced separately as per approved design. The rate for cement concrete shall be taken from the chapter of sub-structure in bridge section. 12.The cost of reinforced earth retaining wall shall include following: (I) Excavation for foundation including backfilling. (ii) Foundation concrete as per approved design. (iii) Cost of facial panels and their erection . (iv) Cost of reinforcing elements including their fixing and joining with the facial panels. (v) Drainage arrangement including filter media as per approved design and drawings. 13. The compacted earth filling to be retained shall form part of embankment.						
	PIPE CULVERTS						
35.6	**Providing and laying boulders apron on river bed for protection against scour with stone boulders weighing not less than 40 kg each complete as per drawing and Technical specification.**	2503					
	Boulder Laid Dry Without Wire Crates.		cum	579	-	543	1121
	Including excavation for trimming for preparation of bed. **Nominal excavation required for preparation of bed has been taken into account while making provision for labour.**						
35.7	**Boulder Apron Laid in Wire Crates**	2503					
	Providing and laying of boulder apron laid in wire crates made with 4mm dia GI wire conforming to IS: 280 & IS:4826 in 100mm x 100mm mesh (weaved diagonally) including 10 per cent extra for laps and joints laid with stone boulders weighing not less than 40 kg each. **Including excavation for trimming for preparation of bed.**		cum	391	-	1553	1944

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	Readymade woven wire crate rolls have been considered in the rate analysis. In case readymade rolls are not available, GI wire 4mm dia. @ 32 kg per 10 sqm may be provided. In that case 2 per cent of the cost of GI wire may be added for weaving the wire crates.						
35.8	**Cement Concrete Blocks (size 0.5 x 0.5 x 0.5 m)**	2503					
	Providing and laying of apron with cement concrete blocks of size 0.5x0.5x0.5 m cast in-situ and made with nominal mix of M-15 grade cement concrete with a minimum cement content of 250 kg/cum as per IRC: 21-2000.		cum	0	-	4303	4303
35.9	Providing and laying Pitching on slopes laid over prepared filter media including boulder apron laid dry in front of toe of embankment complete as per drawing and Technical specifications	2504					
35.9.1	**Stone/Boulder**		cum	579	-	543	1121
35.9.2	**Cement Concrete Blocks of size 0.3x0.3 x0.3 m cast in cement concrete of Grade M15**		cum	0	-	4303	4303
35.10	Providing and laying Filter material underneath pitching in slopes complete as per drawing and Technical specification	2504	cum	611	-	1581	2193
	Includes Mazdoor required for trimming of slope to proper profile and preparation of bed.						
35.11	**Geotextile Filter**	700 & 2504					
	Laying of a geotextile filter between pitching and embankment slopes on which pitching is laid to prevent escape of the embankment material through the voids of the stone pitching/cement concrete blocks as well as to allow free movement of water without creating any uplift head on the pitching.		sqm	20	-	131	151
	Readymade woven wire crate rolls have been considered in the rate analysis. In case readymade rolls are not available, GI wire 4mm dia. @ 32 kg per 10 sqm may be provided. In that case 2 per cent of the cost of GI wire may be added for weaving the wire crates.						
35.12	**Gabian Structure for Retaining Earth**	2503.3					

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	Providing and construction of a gabian structure for retaining earth with segments of wire crates of size 7 m x 3 m x 0.6 m each divided into 1.5 m compartments by cross netting, made from 4 mm galvanised steel wire @ 32 kg per 10 sqm having minimum tensile strength of 300 Mpa conforming to IS:280 and galvanizing coating conforming to IS:4826, woven into mesh with double twist, mesh size not exceeding 100 x 100 mm, filled with boulders with least dimension of 200 mm, all loose ends to be tied with 4 mm galvanised steel wire		cum	272	-	1794	2065
35.13	**Gabian Structure for Erosion Control, River Training Works and Protection works**	2503.3					
	Providing and constructing gabian structures for erosion control, river training works and protection works with wire crates of size 2 m x 1 m x 0.3 m each divided into 1m compartments by cross netting, made from 4 mm galvanised steel wire @ 32 kg per 10 sqm having minimum tensile strength of 300 Mpa conforming to IS:280 and galvanizing coating conforming to IS:4826, woven into mesh with double twist, mesh size not exceeding 100 mm x 100 mm, filled with boulders with least dimension of 200 mm, all loose ends to be securely tied with 4 mm galvanised steel wire. **Readymade woven wire crate rolls have been considered in the rate analysis. In case readymade rolls are not available, GI wire 4mm dia. @ 32 kg per 10 sqm may be provided. In that case 2 per cent of the cost of GI wire may be added for weaving the wire crates.**		cum	285	-	3342	3627
	REPAIR AND REHABILITATION						
35.14	Removal of existing cement concrete wearing coat including its disposal complete as per Technical Specification without causing any detrimental effect to any part of the bridge structure and removal of dismantled material with all lifts and lead up to 1000 m	2809	sqm	50	65	-	115
35.15	Removal of existing asphaltic wearing coat comprising of 50 mm thick asphaltic concert laid over 12 mm thick mastic asphalt including disposal with all lift and lead up to 1000 m.	2809	sqm	37	49	-	86
35.16	Guniting concrete surface with cement mortar applied with compressor after cleaning surface and spraying with epoxy complete as per Technical Specification	2807	sqm	94	54	659	807
35.17	Providing and inserting nipples with approved fixing compound after drilling holes for grouting as per Technical Specifications including subsequent cutting/removal and sealing of the hole as necessary of nipples after completion of grouting with Cement/Epoxy	2800	no.	109	-	74	183

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
35.18	Sealing of cracks/porous concrete by injection process through nipples/Grouting complete as per Technical Specification.	2806					
35.18.1	**Cement Grout**		kg	132	26	8	166
35.18.2	**Cement Mortar (1:1) Grouting**		kg	132	26	5	162
35.19	Patching of damaged concrete surface with polymer concrete and curing compounds, initiator and promoter, available in present formulations, to be applied as per instructions of manufacturer and as approved by the Engineer. **This item is a proprietary item available in market as pre-packed polymer concrete and is required to be applied as per instructions of the manufacturer.**	2800	sqm	73	52	733	858
35.20	Sealing of crack / porous concrete with Epoxy Grout by injection through nipples complete as per clause 2803.1.	2803	kg	132	47	527	706
35.21	Applying epoxy mortar over leached, honey combed and spalled concrete surface and exposed steel reinforcement complete as per Technical Specification	2804	sqm	49	-	450	498
35.22	Removal of defective concrete, cleaning the surface thoroughly, applying the shotcrete mixture mechanically with compressed air under pressure, comprising of cement, sand, coarse aggregates, water and quick setting compound in the proportion as per clause 2807.1., sand and coarse aggregates conforming to IS: 383 and table 1 of IS: 9012 respectively, water cement ratio ranging from 0.35 to 0.50, density of gunite not less than 2000 kg/cum, strength not less than 25 Mpa and workmanship conforming to clause 2807.6.	2807	sqm	49	110	120	279
35.23	Applying pre-packed cement based polymer mortar of strength 45 Mpa at 28 days for replacement of spalled concrete	2800.00	sqm	49	-	575	624
35.24	Epoxy bonding of new concrete to old concrete	2805.00	sqm	49	-	160	209
35.25	Providing external prestressing with high tensile steel wires/strands including drilling for passage of prestessing steel, all accessories for stressing and stressing operation and grouting complete as per drawing and Technical Specification Span assumed: 25 m No. of cables: 4 no. No. of anchorages : 8 no.	2810.00	tonne	11730	3768	301635	317133
35.26	Providing external prestressing with high tensile steel wires/strands including drilling for passage of prestessing steel, all accessories for stressing and stressing operation and grouting complete as per drawing and Technical Specification Span assumed: 50 m No. of cables: 4 no.	2810	tonne	9401	1896	295723	307021

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
35.27	Providing external prestressing with high tensile steel wires/strands including drilling for passage of prestessing steel, all accessories for stressing and stressing operation and grouting complete as per drawing and Technical Specification Span assumed: 100 m No. of cables: 6 no. No. of anchorages : 12 no.	2810	tonne	9351	1158	284401	294910
35.28	**Replacement of Bearings complete as per Technical Specification**	2808					
	Lifting of superstructure span by jacking up from below i.e. by placing the jacks on pier/abutment caps for span length of 30m. **The work entails replacement of all the bearings on one side of the span.**		no.	10205	-	161497	171703
35.29	Rectification of Bearings (excluding materials) as per Technical Specifications **The rectification of 3 bearings included in this analysis are on the same side of the span.**	2808	no.	10205	-	-	10205
35.30	Replacement of Expansion Joints complete as per drawings **The rate for the installation of new expansion joints may be taken from the chapter on superstructure. Broken concrete will have to be replaced which has been included in this analysis.**		running metre	265	-	1696	1961
35.31	Replacement of Damaged Concrete Railing - Dismantling cost **The rate for the provision of new railing may be adopted from the chapter on superstructure.**		running metre	245	22	-	267
35.32	Replacement of Crash Barrier. **The rate for the construction of new crash barrier may be adopted from chapter 8 on Traffic and Transportation.**		running metre	489	22	-	511
35.33	Replacement of Damaged Mild Steel Railing		running metre	196	22	-	218
35.34	Repair of Crash Barrier **Repair of concrete crash barrier with cement concert of M-30 grade by cutting and trimming the damaged portion to a regular shape, cleaning the area to be repaired thoroughly, applying cement concert after erection of proper form work.** **It is assumed that damage is to the extent of 10 per cent of the volume of concrete .This will require 0.30 cum of concrete.**		running metre	49	-	131	180
35.35	**Repair of RCC Railing** **Carrying out repair of RCC M30 railing to bring it to the original shape.**		running metre	10	-	140	150

Item No.	Description	Reference MORTH (Specs)	Unit	Labour Rate	Machinery Rate	Material Rate	Through Rate
	It is assumed that damage is to the extent of 10 per cent .						
35.36	**Repair of Steel Railing**		running metre	20	-	293	313
	Repair of steel railing to bring it to the original shape **It is assumed that the damage to the steel railing is to the extent of 10 per cent .**						