



सत्यमेव जयते



आत्मनिर्भर भारत



केंद्रीय लोक निर्माण विभाग
Central Public Works Department
दिल्ली दर अनुसूची
(भाग-2)
Delhi Schedule of Rates
Volume - II
2023





भारत सरकार

GOVERNMENT OF INDIA

केन्द्रीय लोक निर्माण विभाग

CENTRAL PUBLIC WORKS DEPARTMENT

दिल्ली दर अनुसूची

(भाग - 2)

DELHI SCHEDULE OF RATES

(Vol. 2)

2023



महानिदेशक, के.लो.नि.वि., नई दिल्ली के प्राधिकार के अधीन प्रकाशित
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The rates taken in Delhi Schedule of Rates 2023 are indicative and actual rates shall be governed by the market forces. Further its use by Govt. Departments, PSUs, private bodies & individuals shall be at their own risk and discretion. CPWD shall not be responsible for any ambiguity, discrepancy, dispute or financial loss, arising directly or indirectly by using or following items of DSR by such Govt./Private bodies or individuals.

For feedback and suggestions, please contact SE(TAS), CPWD, Room No. 418, "A" Wing, Nirman Bhawan, New Delhi- 110011. Tel. No. 011-23062339, Email: delsetascsq.cpwd@nic.in

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Rajesh Kumar Kaushal
Director General



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FOREWORD

Delhi Schedule of Rates published by Central Public Works Department is a comprehensive and useful technical document of various items used for execution of civil works. In addition to CPWD, the Schedule of Rates are used by many Central and State Government Departments, Institutions, Public Sector Undertakings, Architects and Contractors.

Delhi Schedule of Rates was first published in the year 1931, followed by numerous revisions/publications from time to time in order to bring it in line with the prevailing new building materials, current technologies, market rates and for implementation of revised tax regimes. It was revised in 1977, 1981, 1985, 1989, 1993, 1997, 2002, 2007, 2010 (Reprint), 2012, 2013, 2014, 2016, 2019 and 2021.

The last edition of Delhi Schedule of Rates was published in the year 2021 and its revision had become necessary owing to:

- Provision contained in CPWD Manual to revise it after every two years.
- Incorporating Corrections in items which issued through correction slip No.1 to 21.
- Revision of GST rates on works from 12% to 18% w.e.f 18.07.2022.

I wish to place on record the technical input and effective coordination provided by Shri Dharmesh Chandra Goel, ADG (Tech.), Shri Prem Mohan CE/CSQ (Civil), Shri Vinayak Rai and the sincere efforts put in by Shri D.K. Ujjainia SE (TAS), Shri M. Seetarama Rao, Shri S.N. Jaiswal EE(TAS), Shri Durga Ram Chowdhary AE(TAS), Shri Akhileshwar Shah, Chief Estimator and the entire team of officers in CSQ unit in preparing and finalizing the DSR 2023, in a short and time bound frame.

I am sure that **CPWD Delhi Schedule of Rates 2023** will be useful to all the engineers, architects and contractors in Building Construction Industry in general, and CPWD in particular.

Place: New Delhi
Date: July 12, 2023


(Rajesh Kumar Kaushal)
Director General



Dharmesh Chandra Goel
Addl. Director General (Tech)



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PREFACE

1. Delhi Schedule of Rates usually called as DSR is updated as DSR-2023 and includes existing items of DSR 2021 with deletion of few items which are not in use now a days & addition of some new items in line with emerging trends in the Construction Industry.
2. DSR 2023 is based on the prevailing market rates of materials in Delhi during the month of April 2023. The labour rates adopted are as per minimum rate of wages applicable with effect from 01.04.2023 issued by Chief Labour Commissioner, Govt. of India/ Commissioner (Labour), Govt. of Delhi, whichever is higher.
3. The cost index for DSR 2023 is 107 with reference to CPWD Delhi Plinth Area Rates 2021, having base 100 as on 01.04.2021
4. The technical sanctioning authority may decide rates of non-scheduled items judiciously, based on market rates without adding cost index. The description of such items along with analysis of rates and specifications may be shared with CSQ for inclusion in next DSR.
5. This DSR 2023 shall be read along with CPWD Specifications 2019 Vol.-I & II with up to date correction slips.
6. The salient Features of DSR 2023 are as follows:
 - 6.1 DSR 2023 is bilingual in two volumes. In case of any discrepancy between English and Hindi versions, the English version will prevail.
 - 6.2 The effect of GST @18% on works contract has been incorporated in all items.
7. Major modifications in the form of correction in nomenclature of items, deletion of misleading content etc. have been undertaken.
8. Wholehearted commitment and considerable efforts have been put for preparation of this edition of Delhi Schedule of Rates. I convey my deep appreciation and sincere thanks to: Shri Prem Mohan, CE, CSQ (Civil), Shri Vinayak Rai, Shri Dinesh Kumar Ujjainia, SE (TAS), Shri M. Seetarama Rao, Shri S.N. Jaiswal EE (TAS),

Shri Akhileshwar Sah Chief Estimator (TAS), Shri Durga Ram Chowdhary, AE (TAS), Shri Gian Chand Singla, AE (TAS), Shri Hemant Panrui, AE (TAS), Shri Raghvendra, AE (TAS) and Shri A.K. Jha AD (OL) and his team for the translation of DSR- 2023 in Hindi and Shri Kamal Passi, Assistant Architect for design of cover page and other officers and staff of CSQ unit whose names are not mentioned here for the sake brevity for their sincere efforts put in the preparation of this document in such a short time. CSQ unit is indebted for the support & immense contribution for their substantial inputs by various individuals and field units for providing suggestions.

9. I convey my gratitude to committees members under the chairmanship of CE (NDZ-I), CE (NDZ-II), CE (NDZ-III) & CE Flyover Zone at Delhi who provided the market rates of material to CSQ which enabled CSQ to come out with this edition of DSR 2023
10. Although, due care has been taken in bringing out DSR-2023, still there is possibility that some errors are left inadvertently. Errors & omission may be brought to the notice of Superintending Engineer (TAS), CPWD, Room No. 418, A-wing, Nirman Bhawan, New Delhi -110011 delsetascsq.cpwd@nic.in / cecsq.cpwd@nic.in

Suggestions from everyone who are using this document are welcome as these have scope for further improvement.

Dharmesh Chandra Goel
ADG(Tech) CPWD

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Note: For Sub Heads 1 to 12 refer Vol. 1

DELHI SCHEDULE OF RATES

(Vol. 2)

दिल्ली दर अनुसूची

(भाग - 2)

2023

SUB HEAD : 13.0

FINISHING

13.0 FINISHING

Code No	Description	Unit	Rate
	Note :- Rates for external plastic are for height upto 10m from ground level in less otherwise stated.		
	CEMENT PLASTER (IN FINE SAND)		
13.1	12 mm cement plaster of mix :		
13.1.1	1:4 (1 cement: 4 fine sand)	sqm	347.05
13.1.2	1:6 (1 cement: 6 fine sand)	sqm	333.35
13.2	15 mm cement plaster on the rough side of single or half brick wall of mix :		
13.2.1	1:4 (1 cement: 4 fine sand)	sqm	399.45
13.2.2	1:6 (1 cement: 6 fine sand)	sqm	383.00
13.3	20 mm cement plaster of mix :		
13.3.1	1:4 (1 cement: 4 fine sand)	sqm	471.35
13.3.2	1:6 (1 cement: 6 fine sand)	sqm	450.00
	CEMENT PLASTER (IN COARSE SAND)		
13.4	12 mm cement plaster of mix :		
13.4.1	1:4 (1 cement: 4 coarse sand)	sqm	357.35
13.4.2	1:6 (1 cement: 6 coarse sand)	sqm	343.65
13.5	15 mm cement plaster on rough side of single or half brick wall of mix:		
13.5.1	1:4 (1 cement: 4 coarse sand)	sqm	411.75
13.5.2	1:6 (1 cement: 6 coarse sand)	sqm	395.35
13.6	20 mm cement plaster of mix :		
13.6.1	1:4 (1 cement: 4 coarse sand)	sqm	487.40
13.6.2	1:6 (1 cement: 6 coarse sand)	sqm	466.05
	CEMENT PLASTER WITH A FLOATING COAT OF NEAT CEMENT		
13.7	12 mm cement plaster finished with a floating coat of neat cement of mix :		
13.7.1	1:3 (1 cement: 3 fine sand)	sqm	439.25
13.7.2	1:4 (1 cement: 4 fine sand)	sqm	425.55
13.8	15 mm cement plaster on rough side of single or half brick wall finished with a floating coat of neat cement of mix :		
13.8.1	1:3 (1 cement: 3 fine sand)	sqm	494.30
13.8.2	1:4 (1 cement: 4 fine sand)	sqm	477.90
13.9	Cement plaster 1:3 (1 cement: 3 coarse sand) finished with a floating coat of neat cement.		
13.9.1	12 mm cement plaster	sqm	449.55
13.9.2	20 mm cement plaster	sqm	587.20
13.10	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	506.60
	CEMENT PLASTER IN TWO COATS		
13.11	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	518.55
13.12	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	537.45

Code No	Description	Unit	Rate
13.13	12 mm cement plaster 1:2 (1 cement : 2 stone dust).	sqm	378.70
13.14	15 mm cement plaster 1:2 (1 cement : 2 stone dust) on the rough side of single or half brick wall.	sqm	437.20
13.15	20 mm cement plaster 1:2 (1 cement : 2 stone dust).	sqm	520.55
	6 mm CEMENT PLASTER		
13.16	6 mm cement plaster of mix :		
13.16.1	1:3 (1 cement : 3 fine sand)	sqm	300.45
13.17	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	396.65
13.18	Neat cement punning.	sqm	79.95
	ROUGH CAST PLASTER		
13.19	Rough cast plaster upto 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.		
13.19.1	Ordinary cement finish using ordinary cement	sqm	886.60
	PEBBLE DASH PLASTER		
13.20	Pebble dash plaster upto 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	829.95
13.21	Extra for providing and mixing water proofing material in cement plaster work in proportion recommended by the manufacturers.	per bag of 50kg cement used in the mix	22.10
13.22	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	87.10
13.23	Extra for plastering on circular work not exceeding 6 m in radius:		
13.23.1	In one coat	sqm	47.65
13.23.2	In two coats	sqm	72.30
13.24	Extra for plastering done on moulding, cornices or architraves including neat finish to line and level:		
13.24.1	In one coat	sqm	713.20
13.24.2	In two coats	sqm	1175.75
13.25	Extra for plastering:		
13.25.1	Spherical ceiling	sqm	177.60
13.25.2	Groined ceiling	sqm	192.30
13.25.3	Flewing soffits	sqm	117.65
13.26	Providing and applying plaster of paris putty of 2 mm thickness over plastered surface to prepare the surface even and smooth complete.	sqm	262.70
	ARTIFICIAL STONE PLASTER		
13.27	Extra for lining out plaster to imitate stone or concrete blocks walling.	sqm	113.90

Code No	Description	Unit	Rate
PLAIN CEMENT MORTAR BANDS			
13.28	12 mm thick plain cement mortar bands in cement mortar 1:4 (1 cement : 4 fine sand):		
13.28.1	Flush Band	cm per metre	7.50
13.28.2	Sunk Band	cm per metre	8.20
13.28.3	Raised Band	cm per metre	9.35
13.28.4	Moulded Band	cm per metre	16.10
13.29	18 mm thick plain cement mortar band in cement mortar 1:4 (1 cement : 4 fine sand):		
13.29.1	Flush Band	cm per metre	9.05
13.29.2	Sunk Band	cm per metre	10.00
13.29.3	Raised Band	cm per metre	11.40
13.29.4	Moulded Band	cm per metre	21.40
13.30	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	21.45
POINTING ON BRICK WORK			
13.31	Pointing on brick work or brick flooring with cement mortar 1:3 (1 cement : 3 fine sand):		
13.31.1	Flush / Ruled/ Struck or weathered pointing	sqm	257.35
13.31.2	Raised and cut pointing	sqm	419.90
POINTING ON TILE BRICK WORK			
13.32	Pointing on tile brick work with cement mortar 1:3 (1 cement : 3 fine sand):		
13.32.1	Flush/ Ruled/ Struck or weathered pointing	sqm	350.20
POINTING ON STONE WORK			
13.33	Pointing on stone work with cement mortar 1:3 (1 cement : 3 fine sand) :		
13.33.1	Flush/ Ruled pointing	sqm	385.40
13.33.2	Raised and cut pointing	sqm	701.05
13.34	Raised and cut pointing on stone work in white cement mortar 1:3 (1 white cement : 3 marble dust).	sqm	716.95
13.35	Pointing on stone slab ceiling with cement mortar 1:2 (1 cement : 2 fine sand):		
13.35.1	Flush/ Ruled pointing	sqm	214.20
13.36	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	8.65
INTERIOR FINISHING			
13.37	White washing with lime to give an even shade :		
13.37.1	New work (three or more coats)	sqm	39.05
13.38	Satna lime wash on walls with one coat.	sqm	15.75

Code No	Description	Unit	Rate
13.39	Colour washing such as green, blue or buff to give an even shade :		
13.39.1	New work (two or more coats) with a base coat of white washing with lime	sqm	53.30
13.39.2	New work (two or more coats) with a base coat of whitening	sqm	52.75
13.41	Distempering with 1st quality acrylic distemper (ready mixed) having VOC content less than 50 gram/litre, of approved manufacturer and of required shade and colour all complete to achieve even shade and colour :		
13.41.1	New work (two or more coats) over and including water thinnable priming coat with cement primer having VOC content less than 50 gram/litre	sqm	185.65
EXTERIOR FINISHING			
13.44	Finishing walls with water proofing cement paint of required shade :		
13.44.1	New work (Two or more coats applied @ 3.84 kg/10 sqm)	sqm	116.90
13.45	Finishing walls with textured exterior paint of required shade :		
13.45.1	New work (Two or more coats applied @ 3.28 ltr/10 sqm) over and including priming coat of exterior primer applied @ 2.20kg/10 sqm	sqm	223.60
13.46	Finishing walls with Acrylic Smooth exterior paint of required shade :		
13.46.1	New work (Two or more coat applied @ 1.67 ltr/10 sqm over and including priming coat of exterior primer applied @ 0.90 litre/10 sqm)	sqm	160.60
13.47	Finishing walls with Premium Acrylic Smooth exterior paint with Silicone additives of required shade:		
13.47.1	New work (Two or more coats applied @ 1.43 ltr/10 sqm over and including priming coat of exterior primer applied @ 0.90 litre/10 sqm)	sqm	171.10
13.48	Finishing with Deluxe Multi surface paint system for interiors and exteriors using Primer as per manufacturers specifications :		
13.48.1	Two or more coats applied on walls @ 1.25 ltr/10 sqm over and including one coat of Special primer applied @ 0.75 ltr /10 sqm	sqm	193.70
13.48.2	Painting wood work with Deluxe Multi Surface Paint of required shade. Two or more coat applied @ 0.90 ltr/10 sqm over an under coat of primer applied @0.75 ltr/10 sqm of approved brand and manufacture	sqm	176.25
13.48.3	Painting Steel work with Deluxe Multi Surface Paint to give an even shade. Two or more coat applied @ 0.90 ltr/10 sqm over an under coat of primer applied @ 0.80 ltr/10 sqm of approved brand and manufacture	sqm	170.70
13.48A	Finishing walls with ready mixed Premium acrylic emulsion paint (Company Depot Tinted) 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 with silicon additives.		
13.48A.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	181.25
13.50	Applying priming coat:		
13.50.2	With ready mixed aluminium primer of approved brand and manufacture on resinous wood and plywood	sqm	74.65

Code No	Description	Unit	Rate
13.50.3	With ready mixed red oxide zinc chromate primer of approved brand and manufacture on steel galvanised iron/ steel works	sqm	67.40
13.50.4	With ready mixed red oxide zinc chromate primer of approved brand and manufacture on steel work (second coat)	sqm	36.10
13.51	Painting with silicon & acrylic emulsion based water thinnable sealer of approved brand and manufacture on wet or patchy portion of plastered surfaces :		
13.51.1	One coat	sqm	101.70
13.51.2	Two coats	sqm	161.70
13.52	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.		
13.52.1	On steel work	sqm	241.75
13.52.2	On concrete work	sqm	235.15
13.53	Painting on G.S. sheet with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade :		
13.53.1	New work (two or more coats) including a coat of approved steel primer but excluding a coat of mordant solution	sqm	180.85
13.54	Applying a coat of mordant solution on G.S. sheet:		
13.54.1	With a solution of 38 gms of copper acetate in a litre of soft water	sqm	63.35
13.54.2	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	63.05
13.55	Painting (two or more coats) on 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:		
13.55.1	100 mm diameter pipes	metre	76.35
13.55.2	150 mm diameter pipes	metre	113.80
13.56	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.		
13.56.1	100 mm diameter pipes	metre	82.00
13.56.2	150 mm diameter pipes	metre	122.15
13.57	Painting with oil type wood preservative of approved brand and manufacture:		
13.57.1	New work (two or more coats)	sqm	54.40
13.58	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	334.50
13.59	Coal tarring two coats on new work using 0.16 Litre and 0.12 litre coal tar per sqm in the first coat and second coat respectively.	sqm	66.90
13.61	Factory made 50mmx47 mm with a wall thickness of 5 mm door frame PVC extruded sheet including carriage		
13.61.1	Two or more coats on new work	sqm	155.90

Code No	Description	Unit	Rate
13.62	Painting with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade :		
13.62.1	Two or more coats on new work over an under coat of suitable shade with ordinary paint of approved brand and manufacture	sqm	226.25
13.63	Painting with aluminium paint of approved brand and manufacture to give an even shade .		
13.63.1	Two or more coats on new work	sqm	146.80
13.64	Painting with acid proof paint of approved brand and manufacture of required colour to give an even shade :		
13.64.1	Two or more coats on new work	sqm	163.35
13.65	Painting with black anti-corrosive bitumastic paint of approved brand and manufacture to give an even shade :		
13.65.1	Two or more coats on new work	sqm	140.25
13.67	Varnishing with varnish of approved brand and manufacture :		
13.67.1	Two or more coats of glue sizing with copal varnish over an under coat of flatting varnish	sqm	233.80
13.67.2	Two or more coats glue sizing with spar varnish or an under coat of flatting varnish	sqm	236.90
13.68	French spirit polishing :		
13.68.1	Two or more coats on new works including a coat of wood filler	sqm	446.25
13.69	Polishing on wood work with ready mixed wax polish of approved brand and manufacture :		
13.69.1	New work	sqm	197.65
13.70	Floor polishing on masonry or concrete floors with wax polish of approved brand and manufacture.	sqm	96.10
13.71	Lettering with black Japan paint of approved brand and manufacture	per letter per cm height	6.15
13.72	Washed stone grit plaster on exterior walls height upto 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	1162.25
13.73	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 :		
13.73.1	15 mm wide and 15 mm deep groove	metre	75.15
13.73.2	20 mm wide and 15 mm deep groove	metre	75.80
13.74	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	165.85
13.75	Extra for washed stone grit plaster on circular work not exceeding 6 m in radius (in two coats).	sqm	133.55

Code No	Description	Unit	Rate
13.76	Forming groove of uniform size from 12x12 mm and upto 25x15 mm in the top layer of washed stone grit plastered surface as per approved pattern, including providing and fixing aluminum 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	100.60
13.77	Extra for using white cement in place of ordinary cement in the top layer of the item of washed stone grit plaster.	sqm	76.05
13.78	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	468.90
13.79	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 50kg of cement	78.35
13.80	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	156.05
13.81	Distempering with 1st quality acrylic distemper (ready mixed) having VOC (Volatile Organic Compound) content less than 50 gram/ litre, of approved brand and manufacturer including applying additional coats wherever required to achieve even shade and colour		
13.81.1	Old work (one or more coats)	sqm	62.70
13.82	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.		
13.82.1	One coat	sqm	92.00
13.82.2	Two coats	sqm	137.45
13.83	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.		
13.83.1	One coat	sqm	95.45
13.83.2	Two coats	sqm	142.80
13.85	Applying priming coats with primer of approved brand and manufacture, having low VOC (Volatile Organic Compound) content.		
13.85.1	With ready mixed pink or grey primer on wood work (hard and soft wood) having VOC content less than 50 grams/ litre	sqm	70.35
13.85.3	With water thinnable cement primer on wall surface having VOC content less than 50 grams/litre	sqm	73.95
13.86	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	269.15
13.87	White washing with lime to give an even shade :		
13.87.1	Old work (two or more coats)	sqm	22.85

Code No	Description	Unit	Rate
	13.87.2 Old work (one or more coats)	sqm	13.90
13.88	Removing white or colour wash by scrapping and sand papering and preparing the surface smooth including necessary repairs to scratches etc. complete	sqm	19.75
13.91	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	25.15
13.92	Painting on G.S. sheet with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade :	sqm	
	13.92.1 Old work (one or more coats)	sqm	93.30
13.93	Painting (two or more coats) on rain water, soil, waste and vent pipes and fittings with black anticorrosive bitumastic paint of approved brand and manufacture over and including a priming coat of ready mixed zinc chromate yellow primer on new work :		
	13.93.1 75 mm diameter pipes	metre	57.25
13.94	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 :		
	13.94.1 75 mm diameter pipes	metre	26.85
	13.94.2 100 mm diameter pipes	metre	35.50
	13.94.3 150 mm diameter pipes	metre	51.20
13.95	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 :		
	13.95.1 75 mm diameter pipes	metre	58.90
	13.95.2 100 mm diameter pipes	metre	81.45
	13.95.3 150 mm diameter pipes	metre	121.35
13.96	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 :		
	13.96.1 75 mm diameter pipes	metre	28.20
	13.96.2 100 mm diameter pipes	metre	36.25
	13.96.3 150 mm diameter pipes	metre	52.25
13.97	Painting with oil type wood preservative of approved brand and manufacture:		
	13.97.1 Old work (one or more coats)	sqm	41.20
13.99	Painting with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade :		
	13.99.1 One or more coats on old work	sqm	102.80
13.100	Painting with aluminium paint of approved brand and manufacture to give an even shade:		
	13.100.1 One or more coats on old work	sqm	96.00
13.101	Painting with acid proof paint of approved brand and manufacture of required colour to give an even shade :		
	13.101.1 One or more coats on old work	sqm	107.25

Code No	Description	Unit	Rate
13.102	Painting with black anti-corrosive bitumastic paint of approved brand and manufacture to give an even shade :		
13.102.1	One or more coats on old work	sqm	93.70
13.103	French spirit polishing :		
13.103.1	One or more coats on old work	sqm	224.80
13.104	Polishing on wood work with ready made wax polish of approved brand and manufacture :		
13.104.1	Old work	sqm	99.80
13.105	Re-lettering with black Japan paint of approved brand and manufacture.	per letter per cm height	3.85
13.106	Painting (one or more coats) with black Japan paint of approved brand and manufacture to give an even shade.	sqm	95.80
13.107	Providing and fixing C.P. brass chain and rubber plug complete for sink or wash basin:		
13.107.1	32 mm dia	each	80.10
13.107.2	40 mm dia	each	78.65
13.109	Finishing walls with water proofing cement paint of required shade :		
13.109.1	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	112.90
13.109.2	Old work (one or more coats @ 2.20 kg/10 sqm) complete.	sqm	75.80
13.110	Finishing walls with textured exterior paint of required shade :		
13.110.1	Old work (Two or more coats on existing cement paint surface applied @ 3.28 ltr/10 sqm.	sqm	169.20
13.110.2	Old work (One or more coats) applied @ 1.82 ltr/10 sqm.	sqm	109.10
13.111	Finishing walls with Acrylic Smooth exterior paint of required shade :		
13.111.1	Old work (Two or more coat applied @ 1.67 ltr/ 10 sqm) on existing cement paint surface	sqm	120.75
13.111.2	Old work (One or more coat applied @ 0.90 ltr/10 sqm).	sqm	80.65
13.112	Finishing walls with Premium Acrylic Smooth exterior paint with Silicone additives of required shade		
13.112.1	Old work (Two or more coats applied @ 1.43 ltr/ 10 sqm) over existing cement paint surface	sqm	131.30
13.112.2	Old work (one or more coats applied @ 0.83 ltr/10 sqm).	sqm	88.55
13.113	Varnishing with varnish of approved brand and manufacture:		
13.113.1	One or more coats with copal varnish	sqm	94.60
13.113.2	One or more coats with spar varnish	sqm	95.05
13.114	Melamine polishing on wood work (one or more coat).	sqm	1192.30
13.115	Varnishing with flatting varnish of approved brand and manufacture one or more coats on old work.	sqm	99.70

Code No	Description	Unit	Rate
13.116	Polishing in high gloss/matt finish melamine clear polish on wood work in required color/wooden shade texture with following process in the sequence as detailed below: 1. The surface to be polished is rubbed with sand paper 80/120 no. and then with sand paper of 160/180 nos. 2. Applying two coats of sealer with spray gun and allowing sufficient drying time for 1st coat and 2nd coat is allowed to dry for 8 to 12 hrs. 3. On drying of sealer coat, wet rubbing with emery cloth of finer grading with ample water to remove excess sealer layer and make the surface further smooth after this wet rubbing, then surface is applied with special grade melamine fillers to fill all the small and big holes/grooves etc. Filler coat to be allowed to dry for 4 to 6 hrs on which again a light wet rubbing is done this surface is further allowed to dry for 12 hrs. 4. On this, 1st coat of melamine polish is applied with spray gun using melamine clear polish and melamine thinner in required proportion. This 1st coat is allowed to dry for 24 hrs then this dry surface is again fine wet rubbed smooth, which is further allowed to dry for 12 hrs. The final melamine polish is applied with compressor pressure spray gun using melamine clear polish and melamine thinner mixed in required proportion complete as per direction of Engineer-in-Charge. (Final coat to be done in 1 or 2 layers without gap of time.)	sqm	3049.85

SUB HEAD : 14.0

REPAIRS TO BUILDING

14.0 REPAIRS TO BUILDING

Code No	Description	Unit	Rate
14.1	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.		
14.1.1	With cement mortar 1:4 (1 cement : 4 fine sand)	sqm	547.40
14.1.2	With cement mortar 1:4 (1cement: 4 coarse sand)	sqm	560.50
14.2	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), painting two coats of approved wood preservative to sides of chowkhats and 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.		
14.2.1	Door chowkhats	each	1782.55
14.2.2	Window chowkhats	each	1125.15
14.2.3	Clerestory window chowkhats	each	851.00
14.3	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	217.10
14.4	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 including disposal of mulba/ rubbish to the nearest municipal dumping ground, all complete as per direction of Engineer-in-Charge.		
14.4.1	For door/ window/ clerestory window	sqm	1264.35
14.5	Renewing glass panes, with putty and nails wherever necessary including racking out the old putty:		
14.5.1	Float glass panes of nominal thickness 4 mm (weight not less than 10kg/sqm)	sqm	1090.65
14.5.2	Float glass panes of nominal thickness 5 mm (weight not less than 12.5kg/sqm)	sqm	1416.15
14.6	Renewing glass panes, with wooden fillets wherever necessary:		
14.6.1	Float glass panes of nominal thickness 4 mm (weight not less than 10kg/sqm)	sqm	1580.90
14.6.2	Float glass panes of nominal thickness 5 mm (weight not less than 12.5kg/sqm)	sqm	1906.40
14.7	Renewing glass panes and refixing existing wooden fillets:		
14.7.1	Float glass panes of nominal thickness 4 mm (weight not less than 10kg/sqm)	sqm	1227.30
14.7.2	Float glass panes of nominal thickness 5 mm (weight not less than 12.5kg/sqm)	sqm	1552.75
14.8	Supplying and fixing new wooden fillets wherever necessary:		
14.8.1	2nd class teak wood fillets	metre	77.70
14.8.2	Hollock wood fillets	metre	70.75

Code No	Description	Unit	Rate
14.9	Renewal of old putty of glass panes (length)	metre	56.15
14.10	Refixing old glass panes with putty and nails	sqm	729.85
14.11	Fixing old glass panes with wooden fillets (excluding cost of fillets)	sqm	679.60
14.12	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	563.90
14.13	Regrading 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 gobi 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	696.05
14.14	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.		
14.14.1	Red/ white sand stone slabs 30 to 50 mm thick	sqm	1365.85
14.15	Renewing 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.		
14.15.1	Sal wood battens	cum	99120.65
14.16	Renewing 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.		
14.16.1	Not exceeding 4.00 metres in length.		
14.16.1.1	Sal wood beams	cum	104573.95
14.16.1.2	Hollock wood beams	cum	70271.70
14.16.2	Above 4.00 metres and upto 5.00 metres length.		
14.16.2.1	Sal wood beams	cum	107320.00
14.16.2.2	Hollock wood beams	cum	72987.25
14.17	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	72.45
14.18	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 flat tile bricks on top of mud phaska :		
14.18.1	With F.P.S. brick tiles	sqm	137.70
14.18.2	With modular brick tiles	sqm	139.05
14.19	Taking out wind ties from roof including cutting out rusted bolts, nuts etc. and removing materials to any distance within compound and stacking.	kg	5.40
14.20	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	126.00

Code No	Description	Unit	Rate
14.21	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	298.85
14.22	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.		
14.22.1	Wheel 50 mm dia and below	per wheel	123.70
14.22.2	Wheel above 50 mm dia	per wheel	304.55
	EARTH WORK		
14.23	Pumping out water caused by springs, tidal or river seepage, broken water mains or drains and the like.	kilo litre	231.05
	BRICK WORK		
14.25	Brick work with common burnt clay bricks of class designation 7.5 in mud mortar	cum	6207.25
	WOOD WORK		
14.26	Providing and fixing 25 mm thick shutters for cup board etc. :		
14.26.1	Panelled or panelled & glazed shutters :		
14.26.1.1	Superior class teak wood including nickel plated bright finished M.S. piano hinges with necessary screws.	sqm	5127.00
14.26.1.2	Ist class teak wood including nickel plated bright finished M.S. piano hinges with necessary screws.	sqm	4484.85
14.26.2	Glazed shutters :		
14.26.2.1	Superior class teak wood including nickel plated bright finished M.S. piano hinges with necessary screws.	sqm	5054.05
14.26.2.2	Ist class teak wood including nickel plated bright finished M.S. piano hinges with necessary screws.	sqm	4362.45
14.27	Providing 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 :		
14.27.1	Second class teak wood	sqm	4602.65
14.28	Providing 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.		
14.28.1	20 mm diameter.	metre	343.50
14.28.2	25 mm diameter.	metre	421.75
14.29	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	120.75
14.30	Providing joists (karries) including hoisting, fixing in position and applying wood preservative on unexposed surface etc. complete with :		
14.30.1	Sal wood	cum	97978.30
14.30.2	Hollock wood	cum	64022.85
14.31	Providing and fixing bright finished brass single acting spring hinges with necessary brass screws etc. complete :		

Code No	Description	Unit	Rate
	14.31.1 150 mm	each	765.05
	14.31.2 125 mm	each	546.00
	14.31.3 100 mm	each	485.65
14.32	Providing and fixing bright finished brass double acting spring hinges with necessary brass screws etc. complete :		
	14.32.1 150 mm	each	851.85
	14.32.2 125 mm	each	726.65
	14.32.3 100 mm	each	704.75
14.33	Providing and fixing bright finished brass flush bolts with necessary brass screws etc. complete :		
	14.33.1 250 mm	each	285.05
	14.33.2 150 mm	each	245.35
	14.33.3 100 mm	each	188.45
14.34	Providing and fixing 150 mm bright finished floor brass door stopper with rubber cushion, necessary brass screws etc. to suit shutter thickness complete	each	271.45
14.35	Providing and fixing bright finished brass hard drawn hooks and eyes :		
	14.35.1 300 mm	each	101.85
	14.35.2 250 mm	each	97.70
	14.35.3 200 mm	each	87.75
	14.35.4 150 mm	each	70.55
	14.35.5 100 mm	each	61.85
14.36	Providing and fixing bright finished brass fan light pivot with necessary brass screws etc. complete.	each	47.30
14.37	Providing and fixing 300 mm long bright finished brass chain with hook for fan light including necessary brass screws etc. complete.	each	74.80
14.38	Providing and fixing bright finished brass quadrant stay 300 mm long with necessary brass screws etc. complete.	each	191.45
14.39	Providing and fixing bright finished brass helical door spring (superior quality).	each	543.95
14.40	Providing and fixing chromium plated brass butt hinges with necessary chromium plated brass screws etc. complete.		
	14.40.1 125x70x4 mm (ordinary type)	each	171.05
	14.40.2 100x70x4 mm (ordinary type)	each	148.75
	14.40.3 75x65x4 mm (heavy type)	each	181.00
	14.40.4 75x40x2.5 mm (ordinary type)	each	102.60
	14.40.5 50x40x2.5 mm (ordinary type)	each	47.60
14.41	Providing and fixing 85x42 mm chromium plated brass pull bolt lock with necessary chromium plated brass screws, nuts, bolts and washers etc. complete.	each	278.60

FINISHING

Code No	Description	Unit	Rate
14.72	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 chaises, 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 judiciously, necessary deduction for scaffolding in the existing item to be done.	sqm	338.25
14.73	Providing and fixing bright finished brass casement window fasteners or peg stays to windows/ ventilators with necessary welding and machine screws etc. complete.	kg	557.20
14.74	Providing and fixing 14 mm bright finished brass spring catch to steel centre hung ventilators with necessary welding and machine screws etc. complete.	each	68.35
14.75	Repair to plaster of thickness 12 mm 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	670.95
ROUTINE MAINTENANCE WORK			
14.75A	Cleaning of terrace/loft water storage tank (inside surface area) upto 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)	litre	0.50
14.76	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	108.30
14.77	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 150 mm dia upto 300 mm	metre	340.75

Code No	Description	Unit	Rate
14.78	Cleaning of under ground sump, Over Head R.C.C. Tank (independent staging) including disposal of slit 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	422.70
14.79	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	433.75
14.80	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 including malba, all complete as per the direction of Engineer-in charge.		
	14.80.1 Long pattern W.C Pan of size 580x440 mm	each	3501.70
	14.80.2 Orissa pattern W.C Pan of size 580x440 mm	each	4478.75
14.81	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	288.10
14.82	Dismantling W.C. Pan of all sizes including disposal of dismantled materials including malba all complete as per directions of Engineer-in-Charge.	each	134.10
14.83	Hacking of CC flooring including cleaning for surface etc. complete as per direction of the Engineer-in-Charge.	sqm	3.45
14.84	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.		
	(a) Internal Work- Exposed on wall	metre	3.25
14.85	Taking out existing wooden door shutter, repair by cutting, painting etc. and refixing of repaired door 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	429.10
14.86	Providing and laying in situ seven course water proofing treatment with APP (Atactic poly-propylene) modified Polymeric memberane 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	730.55

Code No	Description	Unit	Rate
14.87	Providing and laying in situ five course water proofing treatment with APP (Atactic Polypropylene) modified Polymeric memberane 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	532.05
14.88	Providing and laying in situ seven course water proofing treatment with APP (Atactic Polypropylene) modified Polymeric memberane 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	855.70
14.89	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 viscocity 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 upto -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.		
	14.89.1 2 mm (for corrugated roof sheets)	sqm	498.35
14.90	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 viscocity 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.		

Code No	Description	Unit	Rate
	Softening point of membrane not less than 150°C. Cold flexibility shall be upto -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 :		
14.90.1	3 mm thick	sqm	537.45
14.91	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 upto -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 :		
14.91.1	3 mm thick	sqm	560.95
14.92	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	88.90
14.93	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).	each job	1308.40
14.94	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).	each job	1416.50

SUB HEAD : 15.0

**DISMANTLING AND
DEMOLISHING**

15.0 DISMANTLING AND DEMOLISHING

Code No	Description	Unit	Rate
15.1	Demolishing lime concrete manually/ by mechanical means and disposal of material within 50 metres lead as per direction of Engineer- in-charge.	cum	851.50
15.2	Demolishing cement concrete manually/ by mechanical means including disposal of material within 50 metres lead as per direction of Engineer - in - charge.		
15.2.1	Nominal concrete 1:3:6 or richer mix (including equivalent design mix)	cum	2434.25
15.2.2	Nominal concrete 1:4:8 or leaner mix (including equivalent design mix)	cum	1503.60
15.3	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	3551.25
15.4	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	3177.25
15.5	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.	sqm	1147.20
15.6	Extra for scrapping, cleaning and straightening reinforcement from R.C.C. or R.B. work.	kg	9.05
15.7	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.		
15.7.1	In mud mortar	cum	704.90
15.7.2	In lime mortar with old mughal bricks	cum	1783.35
15.7.3	In lime mortar	cum	851.50
15.7.4	In cement mortar	cum	2060.20
15.8	Removing mortar from bricks and cleaning bricks including stacking within a lead of 50 m (stacks of cleaned bricks shall be measured):		
15.8.1	From brick work in mud mortar	1000 Nos	4658.45
15.8.2	From brick work in lime mortar	1000 Nos	5355.30
15.8.3	From brick work in cement mortar	1000 Nos	6700.80
15.9	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 :		
15.9.1	In lime mortar	cum	1158.10
15.9.2	In cement mortar	cum	2458.95
15.10	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 :		
15.10.1	In lime mortar	cum	1464.25
15.10.2	In cement mortar	cum	2877.75
15.11	Removing mortar from and cleaning stones and concrete articles (net quantity of stacks of cleaned materials will be measured):		
15.11.1	In lime mortar	cum	478.55

Code No	Description	Unit	Rate
15.11.2	In cement mortar	cum	689.20
15.12	Dismantling doors, windows and clerestory windows (steel or wood) shutter including chowkhats, architrave, holdfasts etc. complete and stacking within 50 metres lead :		
15.12.1	Of area 3 sq. metres and below	each	367.20
15.12.2	Of area beyond 3 sq. metres	each	502.75
15.13	Taking out doors, windows and clerestory window shutters (steel or wood) including stacking within 50 metres lead :		
15.13.1	Of area 3 sq. metres and below	each	143.50
15.13.2	Of area beyond 3 sq. metres	each	188.90
15.14	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 :		
15.14.1	Of sectional area 40 square centimetres and above	cum	4459.10
15.14.2	Of sectional area below 40 square centimetres	metre	17.85
15.15	Extra for dismantling trusses, rafters, purlins etc. of wood work for every additional span of one metre or part thereof beyond 10 metres :		
15.15.1	Of sectional area 40 square centimetres and above	cum per metre span	589.55
15.15.2	Of sectional area below 40 square centimetres	metre per metre span	1.65
15.16	Extra for dismantling trusses, rafters, purlins etc. of wood work for every additional height of one metre or part thereof beyond 5 metres :		
15.16.1	Of sectional area 40 square centimetres and above	cum per metre height	857.00
15.16.2	Of sectional area below 40 square centimetres	metre per metre height	3.40
15.17	Dismantling steel work in single sections including dismembering and stacking within 50 metres lead in:		
15.17.1	R.S. Joists	kg	3.40
15.17.2	Channels, angles, tees and flats	kg	2.30
15.18	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	5.65
15.19	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	3.85
15.20	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	0.85
15.21	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	0.85
15.22	Extra for marking of structural steel work required to be re-erected.	kg	4.65

Code No	Description	Unit	Rate
15.23	Dismantling tile work in floors and roofs laid in cement mortar including stacking material within 50 metres lead.		
15.23.1	For thickness of tiles 10 mm to 25 mm	sqm	73.40
15.23.2	For thickness of tiles above 25 mm and up to 40 mm	sqm	113.35
15.24	Demolishing dry brick pitching in floors, drains etc. including stacking of serviceable material and disposal of unserviceable material within 50 metres lead :	cum	1317.65
15.25	Dismantling stone slab flooring laid in cement mortar including stacking of serviceable material and disposal of unserviceable material within 50 metres lead.	sqm	266.45
15.26	Demolishing brick tile covering in terracing including stacking of serviceable material and disposal of unserviceable material within 50 metres lead.	sqm	105.35
15.27	Demolishing mud phaska in terracing and disposal of material within 50 metres lead.	cum	914.30
15.28	Dismantling roofing including ridges, hips, valleys and gutters etc., and stacking the material within 50 metres lead of:		
15.28.1	G.S. Sheet	sqm	164.95
15.28.2	Asbestos Cement sheet	sqm	77.30
15.29	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	2664.65
15.30	Dismantling jack arch roofing and floors including stacking of serviceable material and disposal of unserviceable material within 50 metres lead.	sqm	253.90
15.31	Dismantling tiled roofing with battens, boarding etc. complete including stacking of serviceable material and disposal of unserviceable material within 50 metres lead.	sqm	209.90
15.32	Demolishing thatch roofing including mats, bamboo, jaffari etc. complete including stacking of serviceable material and disposal of unserviceable material within 50 metres lead.	sqm	57.70
15.33	Dismantling wooden ballies in posts and struts including stacking within 50metres lead.	metre	20.95
15.34	Dismantling and stacking within 50 metres lead, fencing posts or struts including all earth work and dismantling of concrete etc. in base of:		
15.34.1	T' or 'L' iron or pipe	each	230.90
15.34.2	R.C.C.	each	243.30
15.35	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	13.45
15.36	Dismantling barbed wire or flexible wire rope in fencing including making rolls and stacking within 50 metres lead.	kg	36.80
15.37	Dismantling wooden trellis work excluding frames but including stacking the serviceable material within 50 metres lead.	sqm	64.85
15.38	Dismantling expanded metal or I.R.C. fabrics with necessary battens and beading including stacking the serviceable material within 50 metres lead.	sqm	75.80
15.39	Dismantling wooden boardings in lining of walls and partitions, excluding supporting members but including stacking within 50 metres lead :		
15.39.1	Up to 10 mm thick	sqm	61.00
15.39.2	Thickness above 10 mm up to 25 mm	sqm	77.75

Code No	Description	Unit	Rate
15.39.3	Thickness above 25 mm up to 40 mm	sqm	90.35
15.40	Dismantling precast concrete or stone slabs in walls, partition walls etc. including stacking within 50 metres lead :		
15.40.1	Thickness up to 40 mm	sqm	289.30
15.40.2	Thickness above 40 mm up to 75 mm	sqm	433.55
15.41	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	56.35
15.42	Dismantling C.I. or asbestos rain water pipe with fittings and clamps including stacking the material within 50 metres lead :		
15.42.1	75 to 80 mm dia pipe	metre	75.70
15.42.2	100 mm dia pipe	metre	78.00
15.42.3	150 mm dia pipe	metre	80.25
15.43	Dismantling 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 :		
15.43.1	Water bound macadam road	sqm	217.45
15.43.2	bituminous road	sqm	428.50
15.44	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 :		
15.44.1	15 mm to 40 mm nominal bore	metre	149.80
15.44.2	Above 40 mm nominal bore	metre	161.40
15.45	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:		
15.45.1	Up to 150 mm diameter	metre	332.40
15.45.2	Above 150 mm dia up to 300 mm dia	metre	456.65
15.45.3	Above 300 mm diameter	metre	614.30
15.46	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 :		
15.46.1	Up to 600 mm diameter	metre	695.25
15.46.2	Above 600 mm diameter	metre	1752.45
15.47	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 :		
15.47.1	Up to 150 mm diameter	metre	332.15
15.47.2	Above 150 mm diameter	metre	403.05
15.48	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	697.40

Code No	Description	Unit	Rate
15.49	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	406.75
15.50	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	4623.70
15.51	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	958.75
15.52	Dismantling of flushing cistern of all types (C.I./PVC/Vitrious China) including stacking of useful materials near the site and disposal of unserviceable materials within 50 metres lead.	each	112.05
15.53	Dismantling of C.I. sluice valve including stacking of useful materials within a lead of 50 metres		
15.53.1	Up to 150 mm diameter	each	319.50
15.53.2	Above 150 mm diameter	each	1184.15
15.54	Dismantling of spindle fire hydrant including stacking of useful materials within 50 metres lead.	each	726.35
15.55	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 :		
15.55.1	120 x 120 cm (outside to outside)	each	1104.05
15.55.2	210 x 120 cm (outside to outside)	each	1693.35
15.55.3	320 x 120 cm (outside to outside)	each	2396.95
15.56	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	54.65
15.57	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	56.35
15.58	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	2818.90
15.59	Dismantling of flexible pavement (bituminous courses) by mechanical means and disposal of dismantled material up to a lead of 1 kilometre, as per direction of Engineer-in-charge.	cum	420.80
15.60	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	263.95

SUB HEAD : 16.0

ROAD WORK

16.0 ROAD WORK

Code No	Description	Unit	Rate
ROADS			
16.1	Preparation and consolidation of sub grade with power road roller of 8 to 12 tonne capacity after excavating earth to an average of 22.5 cm depth, dressing to camber and consolidating with road roller including making good the undulations etc. and re-rolling the sub grade and disposal of surplus earth with lead upto 50 metres.	sqm	218.90
16.2	Extra for compaction of earth work in embankment under optimum moisture conditions to give at least 95% of the maximum dry density (proctor density).	cum	24.85
16.3	Supplying and stacking at site.		
16.3.1	90 mm to 45 mm size stone aggregate	cum	2098.40
16.3.2	63 mm to 45 mm size stone aggregate	cum	1636.05
16.3.3	53 mm to 22.4 mm size stone aggregate	cum	1842.30
16.3.4	Over burnt (Jhama) brick aggregate 120 mm to 40 mm	cum	798.10
16.3.5	Over burnt (Jhama) brick aggregate 90 mm to 45 mm	cum	872.05
16.3.6	Stone screening 13.2 mm nominal size (Type A)	cum	2034.35
16.3.7	Stone screening 11.2 mm nominal size (Type B)	cum	2247.75
16.3.8	Red bajri	cum	1564.90
16.3.9	Good earth	cum	775.50
16.3.10	Moorum	cum	768.25
16.4	Laying, spreading and compacting stone aggregate of specified sizes to WBM specifications in uniform thickness, hand picking, rolling with 3 wheeled road/vibratory roller 8-10 tonne capacity in stages to proper grade and camber, applying and brooming requisite type of screening / binding material to fill up interstices of coarse aggregate, watering and compacting to the required density .	cum	1046.95
16.5	Laying water bound macadam sub-base with brick aggregate and binding material, earth etc. including screening, sorting and spreading to template and consolidation with light power road-roller etc. complete.(payment for brick aggregate and moorum etc. to be made separately)		
16.5.1	Over burnt (Jhama) brick aggregate 120 mm to 40 mm	cum	879.70
16.5.2	Over burnt (Jhama) brick aggregate 90 mm to 45 mm	cum	879.70
16.6	Supplying, stacking and Spreading 6 mm thick red bajri, watering and rolling complete including preparation of the surface and rolling.		
16.6.1	With road roller/ hand roller	sqm	24.45
16.7	Brick edging in full brick width and half brick depth including excavation, refilling and disposal of surplus earth lead upto 50 metres.		
16.7.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	metre	194.30
16.8	Brick edging laid lengthwise with half brick depth including excavation, refilling and disposal of surplus earth lead upto 50 metres :		
16.8.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	metre	53.45
16.9	Scarifying metalled (water-bound) road surface including disposal of rubbish, lead upto 50 m and consolidation of the aggregate received from scarifying with power road roller of 8 to 10 tonne capacity.	sqm	33.30

Code No	Description	Unit	Rate
16.10	Making bajri path including preparation of subgrade, supplying and laying brick aggregate of 50 mm nominal size 7.5 cm deep with blinding material consisting of 12 mm moorum and 12 mm red bajri consolidated with road roller.	sqm	191.25
16.11	Dry stone pitching 22.5 cm thick including supply of stones and preparing surface complete.	sqm	883.15
16.12	Dry brick pitching half brick thick in drains including supply of bricks and preparing the surface complete :		
16.12.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	sqm	644.05
16.13	Cutting road and making good the same including supply of extra quantities of materials i.e. aggregate, moorum screening, red bajri and labour required.		
16.13.1	bituminous portion	cum	5032.25
16.13.2	Water bound macadam	cum	3078.05
16.14	Cutting bajri paths and making good the same including supply of extra quantities of brick aggregate, moorum and red bajri required.	sqm	284.20
FENCING			
16.15	Supplying at site :		
16.15.1	R.C.C. Standards post/ struts/rails/ pales of mix 1:1.5:3 (1 cement : 1.5 coarsesand : 3 graded stone aggregate 12.5 mm nominal size) with wooden plugs or 6 mm bar nibs wherever required as per direction of Engineer-in- charge (cost of earth works in excavation, concrete works in foundation to be paid separately).	cum	32891.20
16.15.2	Welded steel wire fabric of required width having rectangular mesh painted with two or more coats of enamel paint of approved shade over a coat of primer (Priming & Painting to be paid for separately).	kg	78.95
16.16	Supplying and fixing turn buckles and straining bolts for barbed wire fencing.	each set	274.30
16.17	Fencing with R.C.C. post placed at required distance, embedded in cement concrete blocks, every 15th post, last but one end post and corner post shall be strutted on both sides and end post one side only, provided with horizontal lines and two diagonals of barbed wire weighing 9.38 kg per 100 metres (minimum), between the two posts fitted and fixed with G.I. staples on wooden plugs or G.I. binding wire tied to 6 mm bar nibs fixed while casting the post (cost of R.C.C. posts, struts, earth work and concrete to be paid for separately) :- Payment to be made per metre cost of total length of barbed wire used.		
16.17.1	With G.I. barbed wire	metre	14.00
16.18	Fencing with angle iron post placed at required distance embedded in cement concrete blocks, 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 horizontal lines and two diagonals interwoven with horizontal wires, of barbed wire weighing 9.38 kg per 100 m (minimum), between the two posts fitted and fixed with G.I. staples, turn buckles etc. complete. (Cost of posts, struts, earth work and concrete work to be paid for separately). Payment to be made per metre cost of total length of barbed wire used.		
16.18.1	With G.I. barbed wire	metre	22.10

Code No	Description	Unit	Rate
16.19	Supplying at site Angle iron post & strut of required size including bottom to be split and bent at right angle in opposite direction for 10 cm length and drilling holes upto 10 mm dia. etc. complete.	kg	125.75
16.20	Welded steel wire fabric fencing with posts of specified material and of standard design placed and embedded in cement concrete blocks 45x45x60 cm of mix 1:5:10 (1 cement:5 fine sand : 10 graded stone aggregate 40 mm nominal size), 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 struts embedded in cement concrete blocks 70x45x50 cm of the same mix, provided with welded steel wire fabric fixed between the posts fitted and fixed with G.I. staples on wooden plugs or tied to 6 mm bar nibs with G.I. binding wire (cost of posts, welded steel wire fabric, painting, earth work in excavation and concrete to be paid for separately).	sqm	66.15
ROAD SIGNS			
16.21	Engraving letters in hard stone	per cm height per letter	10.55
16.22	Providing and fixing 15x15x90 cm boundary stone of hard stone with top 30 cm chisel dressed on all four sides including top (cost of excavation, refilling and concrete etc. to be paid for separately).	each	252.90
16.23	Providing and fixing 15 cm dia at top, 20 cm at bottom and 90 cm high precast reinforced cement concrete 1:1.5:3 (1 cement : 1.5 coarse sand: 3 graded stone aggregate 20 mm nominal size) boundary stone as per standard design, including finishing smooth with cement mortar 1:3 (1 cement : 3 fine sand) (cost of excavation, refilling and concreting to be paid for separately).	each	852.40
16.24	Providing and fixing precast reinforced cement concrete 1:1.5:3 (1 cement: 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size) kilometre stone as per standard design, including finishing smooth in 1:3 cement mortar (1 cement : 3 fine sand) but excluding the cost of earth work, concrete in foundation, painting and lettering etc. which shall be paid for separately.		
16.24.1	35x111x25 cm size	each	2876.70
16.24.2	50x152.5x25 cm size	each	5170.25
16.24.3	35x93.5x18 cm size	each	1924.50
SURFACE DRESSING			
16.25	Surface dressing on new surface with paving bitumen of grade VG - 10 of approved quality using 2.25 kg of bitumen per sqm with 1.65 cum of stone chippings 13.2 mm nominal size per 100 sqm of road surface, including consolidation with road roller of 6 to 8 tonne capacity etc. complete:	sqm	225.35
16.26	Surface dressing on new surface in two coats with bitumen of grade VG -10 of approved quality using 1.8 kg of bitumen per sqm with 1.5 cum of stone chippings 13.2 mm nominal size per 100 sqm of road surface for first coat and 1.1 kg. of bitumen per sqm with 1.00 cu. metre of stone chippings 11.2 mm nominal size per 100 sqm of road surface for second coat, including consolidation of each coat separately with road roller of 6 to 8 tonne capacity etc. complete.	sqm	311.85
16.27	Surface dressing on old surface with hot bitumen of grade VG - 10 of approved quality using 1.95 kg of bitumen per sqm with 1.50 cum of stone chippings 11.2 mm nominal size per 100 sqm of road surface, including consolidation with road roller of 6 to 8 tonne capacity, etc. complete.	sqm	175.10

Code No	Description	Unit	Rate
16.28	Surface dressing one coat on new surface with bitumen of specified grade at a rate of 1.95 kg/sqm of surface area with 1.5 cum of stone chippings 13.2 mm nominal size per 100 sqm of road surface, including consolidation with road roller of 6 to 8 tonne capacity , etc. complete :		
16.28.1	Using bitumen emulsion (minimum 50% bitumen content- RS grade conforming to IS : 8887)	sqm	198.45
16.29	Surface dressing one coat on old surface with bitumen of specified grade at the rate of 1.22 kg/ sqm of surface area with 1.10 cum of stone chippings 11.2 mm nominal size per 100 sqm of road surface, including consolidation with road roller of 6 to 8 tonne capacity etc. complete :		
16.29.1	Using bitumen emulsion (minimum 50% bitumen content- RS grade conforming to IS : 8887)	sqm	125.30
PREMIX CARPET			
16.30	Providing and applying tack coat using hot straight run bitumen of grade VG - 10, including heating the bitumen, spraying the bitumen with mechanically operated spray unit fitted on bitumen boiler, cleaning and preparing the existing road surface as per specifications :		
16.30.1	On W.B.M. @ 0.75 Kg / sqm	sqm	60.50
16.30.2	On bituminous surface @ 0.50 Kg / sqm	sqm	48.20
16.31	Providing and applying tack coat using bitumen emulsion conforming to IS:8887, using emulsion pressure distributor including preparing the surface & cleaning with mechanical broom.		
16.31.1	With rapid setting bitumen emulsion		
16.31.1.1	On W.B.M / W.M.M. @ 0.4kg/sqm	sqm	13.45
16.31.1.2	On bituminous surface @ 0.25kg/sqm	sqm	9.20
16.31.2	With medium setting bitumen emulsion		
16.31.2.1	On W.B.M / W.M.M. @ 0.4kg/sqm	sqm	21.20
16.31.2.2	On bituminous surface @ 0.25kg/sqm	sqm	14.05
Note - Use of Item No. 16.81.1 shall be restricted only per site at sub zero temperature or for emergency application			
16.32	2 cm premix carpet surfacing with 1.8 cum and 0.90 cum of stone chippings of 13.2 mm size and 11.2 mm size respectively per 100 sqm and 52 kg and 56 kg of hot bitumen per cum of stone chippings of 13.2 mm and 11.2 mm size respectively, including a tack coat with hot straight run bitumen, including consolidation with road roller of 6 to 9 tonne capacity etc. complete (tack coat to be paid for separately).		
16.32.1	With paving Asphalt grade VG - 10 heated and then mixed with solvent at the rate of 70 grams per kg of asphalt	sqm	234.05
16.32.2	With paving Asphalt grade VG - 30 with no solvent	sqm	245.15
16.32.3	With Refinery Modified Bitumen CRMB 55 conforming to IRC: SP: 53	sqm	233.15
16.33	2.5 cm premix carpet surfacing with 2.25 cum and 1.12 cum of stone chippings of 13.2 mm and 11.2 mm size respectively per 100 sqm and 52 kg and 56 kg of hot bitumen per cum of stone chippings of 13.2 mm and 11.2 mm size respectively, including a tack coat with hot straight run bitumen, including consolidation with road roller of 6 to 9 tonne capacity etc. complete (tack coat to be paid for separately).		
16.33.1	With paving Asphalt grade VG - 10 heated and then mixed with solvent at the rate of 70 grams per kg of asphalt	sqm	281.00

Code No	Description	Unit	Rate
16.33.2	With paving Asphalt grade VG - 30 with no solvent	sqm	294.95
16.33.3	With Refinery Modified Bitumen CRMB 55 conforming to IRC: SP: 53	sqm	279.90
16.34	2 cm premix carpet surfacing with 2.4 cum of stone chippings 11.2 mm nominal size per 100 sqm and bitumen emulsion (medium setting min. 65% bitumen content) complying with IS : 8887, using 96 kg per cum of chippings, including consolidation with road roller of 6 to 9 tonne capacity etc. complete.	sqm	208.90
16.35	2.5 cm premix carpet surfacing with 3 cum of stone chippings 10 mm nominal size per 100 sqm and bitumen emulsion (medium setting min. 65% bitumen contents) complying with IS : 8887, using 96 kg per cum of chippings of road surface, including consolidation with road roller etc complete .	sqm	252.15
16.36	Providing and laying Bitumen Penetration Macadam with hard stone aggregate of quality, size and grading as specified, with bitumen of suitable penetration grade, including required key aggregate as specified, spreading coarse aggregate with the help of self propelled/ tipper tail mounted aggregate spreader and applying bitumen by a pressure distributor and then spreading key aggregate with the help of aggregate spreader complete, including consolidation with road roller of minimum 8 to 10 tonne capacity to achieve specified values of compaction and surface accuracy :		
16.36.1	For 50 mm compacted thickness using coarse aggregate of size 50-20 mm graded @ 0.60 cum per 10 sqm key aggregate of size 12.5 mm graded @ 0.15 cum per 10 sqm. With paving asphalt grade VG - 10 @ 50 kg/ 10 sqm.	sqm	505.65
16.36.2	For 75 mm compacted thickness in two layers using stone aggregate of size 63-41 mm graded @ 0.90 cum per 10 sqm key aggregate of size 20.0 mm graded @ 0.18 cum per 10 sqm. With paving asphalt grade VG - 10 @ 68 kg/10 sqm.	sqm	744.15
16.37	Providing and laying bitumen mastic wearing course (as per specifications) with industrial bitumen of grade 85/25 conforming to IS : 702, prepared by using mastic cooker and laid to required level and slope, including providing antiskid surface with bitumen precoated fine grained hard stone chipping of approved size at the rate of 0.005 cum per 10 sqm and at approximate spacing of 10 cm centre to centre in both directions, pressed into surface protruding 1 mm to 4 mm over mastic surface, including cleaning the surface, removal of debris etc. all complete. (Considering bitumen using 10.2% as per MORTH specification).		
16.37.1	25 mm thick	sqm	854.15
16.37.2	40 mm thick	sqm	1365.50
16.38	2.5 cm thick bitumastic sheet with hot bitumen of approved quality, using stone chippings (60% with 12.5 mm nominal size and 40% with 10 mm nominal size) @ 1.65 cum per 100 sqm and coarse sand @ 1.65 cum per 100 sqm of road surface and with bitumen @ 56 kg/cum of stone chippings and @ 128 kg/cum of sand over a tack coat with hot straight run bitumen, including consolidation with road roller of 8 to 10 tonne etc. complete. (tack coat to be paid separately) :		
16.38.1	With paving Asphalt grade VG - 10 heated and then mixed with solvent at the rate of 70 grams per kg of asphalt	sqm	353.65
16.38.2	With paving Asphalt grade VG - 30	sqm	377.05
16.38.3	With Refinery Modified Bitumen CRMB 55 conforming to IRC: SP : 53	sqm	351.80

Code No	Description	Unit	Rate
16.39	4 cm thick bitumastic sheet with hot bitumen of approved quality, using stone chippings (60% with 12.5 mm nominal size and 40% with 10 mm nominal size) @ 2.60 cum per 100 sqm and coarse sand @ 2.60 cum per 100 sqm of road surface and with bitumen @ 56 kg/cum of stone chippings and @ 128 kg/cum of sand over a tack coat with hot straight run bitumen, including consolidation with road roller of 8 to 10 tonne etc. complete. (tack coat to be paid separately) :		
16.39.1	With paving Asphalt grade VG - 10 heated and then mixed with solvent at the rate of 70 grams per kg of asphalt	sqm	531.60
16.39.2	With paving asphalt grade VG - 30 with no solvent	sqm	568.60
16.39.3	With Refinery Modified Bitumen CRMB 55 conforming to IRC: SP : 53	sqm	528.65
	SEAL COAT		
16.40	Providing and laying seal coat of premixed fine aggregate (passing 2.36 mm and retained on 180 micron sieve) with bitumen using 128 kg of bitumen of grade VG - 10 bitumen per cum of fine aggregate and 0.60 cum of fine aggregate per 100 sqm of road surface, including rolling and finishing with road roller all complete.	sqm	88.55
16.41	Providing and laying seal coat over prepared surface of road with bitumen heated in bitumen boiler fitted with the spray set spraying using 98 kg of bitumen of grade VG - 10 and blinding surface with 0.90 cum of stone aggregate of 6.7 mm size (Passing 11.2 mm sieve and retained on 2.36 mm sieve) per 100 sqm of road surface, including rolling and finishing with power road roller all complete. Note: Seal coat items to be operated only with the prior approval of chief Engineer concerned.	sqm	130.85
	CONCRETE PAVEMENTS		
16.42	Cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 40 mm nominal size) in pavements, laid to required slope and camber in panels as required including consolidation finishing and tamping complete.	cum	7993.80
16.43	Providing and laying design mix cement concrete of M-30 grade, in roads/ taxi tracks/ runways, using cement content as per design mix, using coarse sand and graded stone aggregate of 40 mm nominal size in appropriate proportions as per approved & specified design criteria, providing dowel bars with sleeve/ tie bars wherever required, laying at site, spreading and compacting mechanically by using needle and surface vibrators, levelling to required slope/ camber, finishing with required texture, including steel form work with sturdy M.S. channel sections, curing, making provision for contraction/ expansion, construction & longitudinal joints (10 mm wide x 50 mm deep) by groove cutting machine, providing and filling joints with approved joint filler and sealants, complete all as per direction of Engineer-in-charge (Item of joint fillers, sealants, dowel bars with sleeve/ tie bars to be paid separately). Note:- Cement content considered in M-30 is @ 340 kg/cum. Excess/ less cement used as per design mix is payable/ recoverable separately.		
16.43.1	Cement concrete prepared with batch mixing machine	cum	10529.35
16.43.2	Cement concrete manufactured in automatic batching plant (RMC plant) including transportation to site in transit mixer	cum	11098.45
16.44	Extra for providing and mixing hardening compound of approved quality as per manufacturer's specification in cement concrete.	litre	55.50

Code No	Description	Unit	Rate
16.45	Providing and fixing pre-moulded joint filler in expansion joints of RCC roads / CC pavements after making the joints dust free with high pressure air jet cleaners, all complete as per direction of the Engineer-in-Charge. (Pre-moulded joint fillers shall be made of bitumen hot sealing compound impregnated fibre board having impregnation more than 35%, conforming to IS:1838 for fibre board and IS: 1834 for hot sealing bitumen compound grade A.)	per cm depth per cm width per metre length	5.30
16.46	Providing and filling in position rubberized bitumen hot sealing compound for sealing of expansion joints in roads / pavements all complete as per direction of the Engineer-in-Charge.		
16.46.1	Providing and filling in position rubberized bitumen hot sealing compound for sealing of expansion joints in roads / pavements all complete as per direction of the Engineer-in-Charge.	per cm depth per cm width per metre length	8.65
PAINTING AREA/RUNWAY MARKING			
16.47	Painting runway/taxi track/apron marking with adequate nos of coats to give uniform finish with road marking paint of superior make as approved by the Engineer-in-charge, including cleaning the surface of all dirt, scales, oil, grease and other foreign material etc. and lining out complete.		
16.47.1	New work (Two or more coats)	sqm	188.20
16.47.2	Old work (One or more coats)	sqm	120.80
16.48	Painting road surface marking with adequate nos of coats to give uniform finish with ready mixed road marking paint conforming to IS : 164, on bituminous surface in white/yellow shade, including cleaning the surface of all dirt, scales, oil, grease and foreign material etc. complete.		
16.48.1	New work (Two or more coats)	sqm	288.90
16.48.2	Old work (One or more coats)	sqm	189.85
MISCELLANEOUS			
16.49	Making bell mouth opening/ entrance of size 100x50x50 cm for drainage pipe under footpath, including providing cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) for shape of bell mouth, including plastering providing and fixing precast R.C.C./ S.F.R.C. slab including plastering with cement mortar 1:3 (1 cement : 3 fine sand) of 6 mm thickness on exposed surface of the slab & bell mouth including centring, shuttering & neat cement punning inside the bell mouth etc. all complete.	each	3050.40
16.50	Providing and fixing Glow studs of size 100x20 mm made of heavy duty body shall be moulded ASA (Acrylic styrene Acryloretite) or HIP (High impact polystyrene) or ABS having electronically welded micro- prismatic lens with abrasion resistant coating as approved by Engineer in charge. The glow stud shall support a load of 13635 kg tested in accordance with ASTM D4280. The slope of retro- reflective surface shall be 35 (+/- 5) degrees to base .The reflective panels on both sides with at least 12 cm of reflective area up each side. The luminance intensity should be as per the specification and shall be tested as described in ASTM I: 809 as recommended in BS: 873 part 4 : 1973. The studs shall be fixed to the Road surface using the adhesive conforming to IS, as per procedure recommended by the manufacturer complete and as per direction of Engineer-in-charge.	each	206.30

Code No	Description	Unit	Rate
16.51	Preparation of sub-base road pavement with commercial dry lime (slaked), fly ash stabilised soil with a mix of 3% lime, 12% fly ash and 85% local suitable soil by weight, so as to achieve minimum field C.B.R. of 20, including mixing, rolling with road roller curing etc. all complete.		
16.51.1	Minimum thickness 15 cm	cum	1514.40
16.52	Providing and fixing precast lime fly ash concrete blocks 1:2:3:6 (1 lime: 2 fly ash : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size), including finishing with 10 mm thick cement mortar 1:3 (1 cement : 3 coarse sand) in foot paths, including preparation of sub grade with a hand rammer, laying 10 mm thick leveling course of fine sand (jamuna sand) and filling the joints with fine sand.	cum	13719.05
16.53	Providing and fixing concertina coil fencing with punched tape concertina coil 600 mm dia 10 metre openable length (total length 90 m), having 50 nos rounds per 6 metre length, upto 3 m height of wall with existing angle iron 'Y' shaped placed 2.4m or 3.00 m apart and with 9 horizontal R.B.T. reinforced barbed wire, stud tied with G.I. staples and G.I. clips to retain horizontal, including necessary bolts or G.I. barbed wire tied to angle iron, all complete as per direction of Engineer-in-charge, with reinforced barbed tape(R.B.T.) / Spring core (2.5 mm thick) wire of high tensile strength of 165 kg/ sq. mm with tape (0.52 mm thick) and weight 43.478 gm/ metre (cost of M.S. angle, C.C. blocks shall be paid separately)	metre	375.80
16.54	Providing and laying Dense Graded Bituminous Macadam using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equiped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers as per specifications to achieve the desired compaction and density, complete as per specifcatons and directions of Engineer-in-Charge.		
16.54.1	50 to 100 mm average compacted thickness with bitumen of grade VG-30 @ 5% (percentage by weight of total mix) and lime filler @ 2% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	cum	11129.55
16.54.2	50 to 100 mm average compacted thickness with bitumen of grade VG-30 @ 5% (percentage by weight of total mix) and lime filler @ 2% (percentage by weight of Aggregate) prepared in Drum Type Hot Mix Plant of 60-90 TPH capacity.	cum	11032.20
16.55	Providing and laying bituminous macadam using crushed stone aggregates of specified grading premixed with bituminous binder, transported to site by tippers, laid over a previously prepared surface with paver finisher equiped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers as per specifications to achieve the desired compaction and density, complete as per specifcatons and directions of Engineer-in-Charge.		
16.55.1	50 to 100 mm average compacted thickness with bitumen of grade VG-30 @ 3.50% (percentage by weight of total mix) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	cum	8505.65
16.55.2	50 to 100 mm average compacted thickness with bitumen of grade VG-30 @ 3.50% (percentage by weight of total mix) prepared in Drum Type Hot Mix Plant of 60-90 TPH capacity.	cum	8413.00

Code No	Description	Unit	Rate
16.56	Providing and laying semi- dense Bituminous concrete using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge.		
16.56.1	25 mm compacted thickness with bitumen of grade VG-30 @ 5% (percentage by weight of total mix) and lime filler @ 2% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	sqm	277.70
16.56.2	25 mm compacted thickness with bitumen of grade VG-30 @ 5% (percentage by weight of total mix) and lime filler @ 2% (percentage by weight of Aggregate) prepared in Drum Type Hot Mix Plant of 60-90 TPH capacity.	sqm	275.30
16.57	Providing and laying Bituminous concrete using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge.		
16.57.1	40/50 mm compacted thickness with bitumen of grade VG-30 @ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	cum	12126.20
16.57.2	40/50 mm compacted thickness with bitumen of grade VG-30 @ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) and waste plastic additive @ 8% (percentage by weight of bitumen) prepared in Batch Type Hot Mix Plant of 100- 120 TPH capacity.	cum	12708.75
16.57.3	40/50 mm compacted thickness with bitumen of grade PMB-40 @ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	cum	11204.10
16.57.4	40/50 mm compacted thickness with bitumen of grade CRMB-60 @ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	cum	10660.30
16.57.5	40/50 mm compacted thickness with bitumen of grade VG-30 @ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in drum Type Hot Mix Plant of 60-90 TPH capacity.	cum	12026.80
16.57.6	40/50 mm compacted thickness with bitumen of grade VG-30 @ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) and waste plastic additive @ 8% (percentage by weight of bitumen) prepared in drum Type Hot Mix Plant of 60-90 TPH capacity.	cum	12609.30
16.57.7	40/50 mm compacted thickness with bitumen of grade PMB-40 @ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in drum Type Hot Mix Plant of 60-90 TPH capacity.	cum	11104.65

Code No	Description	Unit	Rate
16.57.8	40/50 mm compacted thickness with bitumen of grade CRMB-60 @ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Drum Type Hot Mix Plant of 60-90 TPH capacity.	cum	10560.85
16.59	Manufacturing, supplying and fixing retro reflective sign boards made up of 2 mm thick aluminium sheet, face to be fully covered with high intensity encapsulated type heat activated retro reflective sheeting conforming to type - IV of ASTM-D 4956-01 in blue and silver white or other colour combination including subject matter, message (bi-lingual), symbols and borders etc. as per IRC ; 67:2001, pasted on substrate by an adhesive backing which shall be activated by applying heat and pressure conforming to class -2 of ASTM-D-4956-01 and fixing the same with suitable sized aluminium alloy rivets @ 20 cm c/c to back support frame of M.S. angle iron of size 25x25x3 mm along with theft resistant measures, mounted and fixed with 2 Nos. M.S. angles of size 35x35x5 mm to a vertical post made up to M.S. Tee section ISMT 50x50x6 mm welded with base plate of size 100x100x5 mm at the bottom end and including making holes in pipes, angles flats, providing & fixing M.S. message plate of required size, steel work to be painted with two or more coats of synthetic enamel paint of required shade and of approved brand & manufacture over priming coat of zinc chromate yellow primer (vertical MS-Tee support to be painted in black and white colours).Backside of aluminium sheet to be painted with two or more coats of epoxy paint over and including appropriate priming coat including all leads and lifts etc. complete as per drawing , specification and direction of Engineer-in-charge.		
16.59.1	Mandatory/ Regulatory sign boards of 900 mm diameter with support length of 3750 mm	each	7183.35
16.59.2	Cautionary /warning sign boards of equilateral triangular shape having each side of 900 mm with support length of 3650 mm	each	5559.75
16.60	Manufacturing, supplying and fixing retro reflective overhead signage boards made up of 2 mm thick aluminium sheet, face to be fully covered with high intensity and encapsulated lens type heat activated retro reflective sheeting conforming to type - III of ASTM-D-4956-01 as approved by Engineer-in-charge, letters, borders etc. as per IRC : 67-2001 in silver white with blue colour back ground and with high intensity grade, pasted on substrate by pressure sensitive adhesive backing which shall be activated by applying pressure conforming to class II of ASTM-D-4956-01 and fixing the same to the plate of structural frame work by means of suitable sized aluminium alloys, rivets or bolts & nuts @ 300 mm centre to centre all along the periphery as well as in two vertical rows along with theft resistant measures, including the cost of painting with two or more coats of epoxy paint in grey colour on the back side of aluminium sheet including appropriate priming coat. The rate includes the cost of rounding off the corners, lowering down the structural frame work from the gantry, fixing and erecting the same in position all complete as per drawings, specification and direction of the engineer-in-charge.(Structural frame work including M.S. plate to be provided separately. Rectangular area of the sheet only shall be measured for payment).		
16.60.1	Overhead informatory road signage	sqm	5879.90

Code No	Description	Unit	Rate
16.61	Providing Retro-reflective regulatory sign board of size 900 mm dia metre made out of 2 mm thick aluminium sheet, face to be fully covered with high intensity encapsulated lens type retro -reflective sheeting as approved by Engineer-in-charge . Letter, symbols, borders etc. will be as per IRC - 67 with required colour scheme on the boards and with the high intensity grade A. The aluminium sheet to be riveted to M.S. frame of angle iron of size 40x40x4 mm. The boards will be fixed to 1 No. 50x50 mm square post made of M.S. angle 50x50x4 mm, 4 m long welded to the frame with adequate anti-theft arrangement .Sheet work to be painted with two or more coats of synthetic enamel paint over an under coat (primer) and back side of aluminium sheet to be painted with two or more coats of epoxy paint including appropriate priming coat complete in all respects as per direction of Engineer-in-charge.	each	8154.35
16.62	Providing and applying 2.5 mm thick road marking strips (retro- reflective) of specified shade/ colour using hot thermoplastic material by fully/ semi automatic thermoplastic paint applicator machine fitted with profile shoe, glass beads dispenser, propane tank heater and profile shoe heater, driven by experienced operator on road surface including cost of material, labour, T&P, cleaning the road surface of all dirt, seals, oil, grease and foreign material etc. complete as per direction of Engineer-in-charge and accordance with applicable specifications.	sqm	747.80
16.63	Providing, laying and making kerb channel 30 cm wide and 50 mm thick with cement concrete 1:3:6 (1 cement: 3 coarse sand:6 graded stone aggregate 20 mm nominal size) over 75 mm bed of dry brick ballast 40 mm nominal size, well rammed and consolidated and grouted with fine sand, including finishing the top smooth etc. complete and as per direction of Engineer-in-charge.	sqm	558.30
16.64	Providing and laying 75 mm thick compacted bed of dry brick aggregate of 40 mm thick nominal size including spreading, well ramming, consolidating and grouting with jamuna sand, including finishing smooth etc. complete as per direction of Engineer-in-charge.	sqm	199.35
16.65	Providing and fixing post delineators made of ABS round body fitted with 2 nos 100 mm dia high reflective reflectors and mounted on MS pipe of 65 mm dia duly powder coated anti-rust and anti theft steel to be installed as per direction of Engineer-in-charge.	each	904.20
16.66	Excavating holes upto 0.10 cum, including getting out the excavated soil, then returning the soil as deported in layers not exceeding 20 cm in depth, including consolidating and deposited layer by ramming watering etc., disposing of surplus excavated soil as directed with in a lead of 50 mm and lift upto 1.5 m.		
16.66.1	All kind of soil	each	27.50
16.67	Providing and fixing at or near ground level factory made RCC pavement slab of M-30 grade of size 450x450x50 mm, including reinforcement with 6 mm dia M.S. bars 4 nos on each side, including setting in position in footpath to the required level and line over a bed of 20 mm average thick cement mortar 1:5 (1 cement : 5 coarse sand), having joint thickness not more than 5 mm except on curve, including filling of joints with same cement mortar and making grooves etc. complete as per direction of Engineer-in-charge.	sqm	1600.55
16.68	Providing and laying 60 mm thick facioy 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 and including 50 mm thick compacted bed of coarse sand, filling the joints with line sand etc. all complete as per the direction of Engineer-in-charge.	sqm	972.00

Code No	Description	Unit	Rate
16.69	Providing and laying at or near ground level factory made kerb stone of M-25 grade cement concrete in position to the required line, level and curvature, jointed with cement mortar 1:3 (1 cement: 3 coarse sand), including making joints with or without grooves (thickness of joints except at sharp curve shall not to more than 5 mm), including making drainage opening wherever required complete etc. as per direction of Engineer-in-charge (length of finished kerb edging shall be measured to calculate volume for payment). (Precast C.C. kerb stone shall be approved by Engineer-in-charge).	cum	10117.60
16.70	Providing and fixing G.I. chain link fabric fencing of required width in mesh size 50x50 mm including strengthening with 2 mm dia wire or nuts, bolts and washers as required complete as per the direction of Engineer-in-charge.		
16.70.1	Made of G.I. wire of dia 4 mm	sqm	1017.80
16.70.2	Made of G.I. wire of dia. 4 mm, PVC coated to achieve outer dia not less than 5 mm in required colour and shade	sqm	1067.10
16.71	Providing and fixing G.I. chain link fabric fencing of required width in mesh size 25x25 mm made of G.I. wire of dia 3 mm including strengthening with 2 mm dia wire or nuts, bolts and washers as required complete as per the direction of Engineer-in-charge.	sqm	1149.25
16.72	Supplying and stacking of hard stone (for stone pitching) 22.5 cm thick at site.	cum	995.85
16.73	Dry stone pitching 22.5 cm thick laid in courses and required profile with hammer dressed stones having no side less than 15 cm, with minimum depth of 20 cm including preparing the bedding surface etc. all complete. (Payment for Stone to be made separately).	sqm	659.05
16.74	75 mm thick back filling for pitching including supplying of required materials and consolidation etc. complete with :		
16.74.1	Moorum	sqm	76.30
16.74.2	Stone aggregate 20 mm nominal size	sqm	175.00
16.74.3	Stone aggregate 40 mm nominal size	sqm	172.35
16.75	Providing and laying C.C. pavement of mix M-25 with ready mixed concrete from batching plant. The ready mixed concrete shall be laid and finished with screed board vibrator , vacuum dewatering process and finally finished by floating, brooming with wire brush etc. complete as per specifications and directions of Engineer-in-charge. (The panel shuttering work shall be paid for separately). (Note:- Cement content considered in this item is @ 330 kg/cum. Excess/ less cement used as per design mix is payable/ recoverable separately).	cum	9823.80
16.76	Deduct for using of M-20 grade concrete instead of M-25 grade concrete in C.C. pavement.	cum	203.80
16.77	Scarifying the existing bituminous road surface to a depth of 50 mm and disposal of scarified material within all lifts and lead upto 1km (by mechanical means).	sqm	7.00
16.78	Construction of granular sub-base by providing close graded Material conforming to specifications, mixing in a mechanical mix plant at OMC, carriage of mixed material by tippers to work site, for all leads & lifts, spreading in uniform layers of specified thickness with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.		

Code No	Description	Unit	Rate
16.78.1	With material conforming to Grade-I (size range 75 mm to 0.075 mm) having CBR Value-30	cum	2784.00
16.78.2	With material conforming to Grade-II (size range 53 mm to 0.075 mm) having CBR Value-25	cum	2924.85
16.78.3	With material conforming to Grade-III (size range 26.5 mm to 0.075 mm) having CBR Value-20	cum	2808.55
16.79	Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to 0.075 mm) to wet mix macadam (WMM) specification including premixing the material with water at OMC in for all leads & lifts, laying in uniform layers with mechanical paver finisher in sub- base / base course on well prepared surface and compacting with vibratory roller of 8 to 10 tonne capacity to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.	cum	2914.30
16.80	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 specifications, 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, for all leads & lifts, laid with a mechanical paver, compacting with 8-10 tonne vibratory roller, finishing and curing etc. complete as per direction of Engineer-in- charge.	cum	4148.65
16.81	Providing and erecting 2.00 metre high temporary barricading at site; each panel of size 2.50 m x2.00 m made of 40x40x6 mm angle iron or 50x50x3 mm hollow MS tube posts/horizontal members/bracings covered with 1.63 mm thick MS sheet. The sheet shall be fixed with 30x5 mm MS flat by suitable welding/riveting. The panels shall be made so that gap of 50cm above the ground is available making overall height as 2.5 m. MS channel ISLC 75 @ 5.70 kg/m, 50 cm long shall be provided at the bottom having oval shaped holes of size 50x25 mm at both ends with 50 cm long MS angle 40x40x6 mm bracing. Suitable arrangement shall be made to fix the barricading to avoid from overturning by providing 250 mm long expansion fasteners at both ends. The work shall be executed as per drawing/direction of Engineer-in-Charge which includes writing and painting, arrangement for traffic diversion such as traffic signals during construction at site for day and night, glow lamps, reflective signs, marking, flags, caution tape as directed by the Engineer-in-Charge. The barricading provided shall be retained in position at site continuously including shifting of barricading from one location to another location as many times as required during the execution of the entire work till its completion. Rate include its maintenance for damages, painting, all incidentals, labour materials, equipments and works required to execute the job. The barricading shall not be removed without prior approval of Engineer-in-Charge. (Note :- One time payment shall be made for providing barricading from start of work till completion of work including shifting. The barricading provided shall remain to be the property of the contractor on completion of the work).	metre	3439.50
16.82	Taking out existing kerb stones of all types from footpath/ central verge, including removal of mortar etc., disposal of unserviceable material to the dumping ground, for which payment shall be made separately and stacking of serviceable material within 50 metre lead as per direction of Engineer-in-Charge.	metre	39.35

Code No	Description	Unit	Rate
16.83	Taking out existing CC interlocking paver blocks from footpath/ central verge, including removal of rubbish etc., disposal of unserviceable material to the dumping ground, for which payment shall be made separately and stacking of serviceable material within 50 metre lead as per direction of Engineer-in-Charge.	sqm	131.75
16.84	Laying old cement concrete interlocking paver blocks of any design/ shape laid in required line, level, curvature, colour and pattern over and including 50 mm thick compacted bed of coarse sand, filling the joints with fine sand etc. all complete as per the direction of Engineer-in-charge. (Old CC paver blocks shall be supplied by the department free of cost).	sqm	402.95
16.85	Laying at or near ground level old kerb stones of all types in position to the required line, level and curvature, jointed with cement mortar 1:3 (1 cement : 3 coarse sand), including making joints with or without grooves (thickness of joints, except at sharp curve, shall not be more than 5 mm), including making drainage opening wherever required etc. complete as per direction of Engineer-in-charge. (Length of finished kerb edging shall be measured for payment). (Old kerb stones shall be supplied by the department free of cost)	metre	109.45
16.86	Providing and laying gang saw cut 18 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 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 20 mm thick base of cement mortar 1:4 (1cement : 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.		
	16.86.1 With granite stone of area less than 0.50 sqm.	sqm	4746.20
16.87	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 20 mm 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.		
	16.87.1 With granite stone of colour black, cherry/ruby red of area less than 0.50 sqm.	sqm	4950.90
	16.87.2 With granite stone of all colour except black, cherry/ruby red of area less than 0.50 sqm.	sqm	5272.05
16.88	Providing and laying matt finished vitrified tile of size 100x100x16 mm 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 20 mm 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	2159.85
16.89	Providing and laying matt finished vitrified tile of size 300x300x9.8 mm 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 20 mm 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	1455.65

Code No	Description	Unit	Rate
16.90	Providing and laying tactile tile (for vision impaired persons as per standards) of size 300x300x9.8 mm 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 20 mm 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	2017.60
16.91	Providing and laying factory made chamfered edge Cement Concrete paver blocks in footpath, parks, lawns, drive ways or light traffic parking etc, of required strength, thickness & size/ shape, made by table vibratory method using PU mould, laid in required colour & pattern over 50 mm thick compacted bed of sand, compacting and proper embedding/laying of inter locking paver blocks into the sand bedding layer through vibratory compaction by using plate vibrator, filling the joints with sand and cutting of paver blocks as per required size and pattern, finishing and sweeping extra sand. complete all as per direction of Engineer-in-Charge.		
16.91.1	60 mm thick cement concrete paver block of M-35 grade with approved colour, design & pattern.	sqm	1045.65
16.91.2	80 mm thick C.C. paver block of M-35 grade with approved colour design and pattern.	sqm	1091.50
16.92	Providing and fixing 10x10x7.50 cm Granite stone block hand cut and chisel dressed on top, for paving in floors, drains etc. laid over 20 mm thick base mortar 1:4 (1 cement : 4 coarse sand) with joints 10 mm wide filled with same mortar including ruled pointing etc. complete as per direction of engineer-in-charge.	sqm	2189.15
16.93	Providing and placing in position 100 mm thick factory made machine batched & machine mixed Precast RCC Rectangular Covers on drains of footpath of various sizes, of M-25 grade cement concrete for RCC work, including cost of centering, shuttering, reinforcement of 8 mm dia TMT bars of Fe 500 grade @ maximum 100 mm c/c on both ways, neat cement punning on finished surface, properly encased on all edges with 1.6 mm thick, 100 mm wide MS sheet duly painted over priming coat, reinforcement to be welded at edges with MS sheet and providing 2 Nos. 12 mm dia bar for hooks etc including cost of cartage, all leads & lift, handling at site etc. all complete as per direction of Engineer-in-Charge.	sqm	3081.95
16.94	Providing & making Gabion structure with Mechanically Woven Double Twisted Hexagonal Shaped Wire mesh Gabion Boxes as per IS 16014:2012,MORTH Clause 2500, of required size, Mesh Type 10x12 (D=100 mm with tolerance of $\pm 2\%$) Zinc coated, Mesh wire diameter 3.0 mm, mechanically edged/selvedged with partitions at every 1m interval and shall have minimum 10 numbers of openings per meter of mesh perpendicular to twist, tying with lacing wire of diameter 2.2 mm, supplied @ 3% by weight of Gabion boxes, filled with boulders with least dimension of 200 mm, as per drawing, all complete as per direction of Engineer-in-charge.	cum	4178.00
16.95	Providing & making Gabion structure with Mechanically Woven Double Twisted Hexagonal Shaped Wire mesh Gabion Boxes as per IS 16014:2012,MORTH Clause 2500, of required size, Mesh Type 10x12 (D=100 mm with tolerance of $\pm 2\%$) Zinic+PVC coated, Mesh wire diameter 2.7/3.7 mm, mechanically edged/selvedged with partitions at every 1m interval and shall have minimum 10 numbers of openings per meter of mesh perpendicular to twist, tying with lacing wire of diameter 2.2/3.2mm(ID/OD), supplied @3% by weight of Gabion boxes, filled with boulders with least dimension of 200 mm, as per drawing, all complete as per directions of Engineer-in-charge.	cum	4569.25

Code No	Description	Unit	Rate
16.96	Providing & making Gabion structure with Mechanically Woven Double Twisted Hexagonal Shaped Wire mesh Gabion Boxes as per IS 16014:2012, MORTH Clause 2500, of required size, Mesh Type 10x12 (D=100 mm with tolerance of $\pm 2\%$), Zinc+10% Al alloy+PVC coated, Mesh wire diameter 2.7/3.7 mm (ID/OD), mechanically edged/selvedged with partitions at every 1m interval and shall have minimum 10 numbers of openings per meter of mesh perpendicular to twist, tying with lacing wire of diameter 2.2/3.2 mm (ID/OD), supplied @3% by weight of Gabion boxes, filled with boulders with least dimension of 200 mm, as per drawing, all complete as per directions of Engineer-in-charge.	cum	4882.20

SUB HEAD : 17.0

SANITARY INSTALLATIONS

17.0 SANITARY INSTALLATIONS

Code No	Description	Unit	Rate
17.1	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:		
17.1.1	White Vitreous china Orissa pattern W.C. pan of size 580x440 mm with integral type foot rests	each	6767.40
17.1.2	Stainless Steel AISI-304(18/8) Orissa pattern W.C. pan of size 585x480 mm with flush pipe and integrated type foot rests	each	11390.95
17.2	Providing and fixing white vitreous china 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 :		
17.2.1	W.C. pan with ISI marked white solid plastic seat and lid	each	6515.55
17.2.2	W.C. pan with ISI marked black solid plastic seat and lid	each	6383.25
17.3	Providing and fixing white vitreous china pedestal type water closet (European type) with seat and lid, 10 litre low level white vitreous china 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 :		
17.3.1	W.C. pan with ISI marked white solid plastic seat and lid	each	8006.60
17.3.2	W.C. pan with ISI marked black solid plastic seat and lid	each	7874.30
17.4	Providing and fixing white vitreous china flat back or wall corner type lipped front urinal basin of 430x260x350 mm and 340x410x265 mm sizes respectively with automatic 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 :		
17.4.1	One urinal basin with 5 litre white P.V.C. automatic flushing cistern	each	6258.75
17.4.2	Range of two urinal basins with 5 litre white P.V.C. automatic flushing cistern	each	9612.40
17.4.3	Range of three urinal basins with 10litre white P.V.C. automatic flushing cistern	each	13417.30
17.4.4	Range of four urinal basins with 10 litre white P.V.C. automatic flushing cistern	each	18579.95
17.5	Providing and fixing white vitreous china flat back half stall urinal of size 580x380x350 mm with white PVC automatic 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 :		
17.5.1	Single half stall urinal with 5 litre P.V.C. automatic flushing cistern	each	12071.75

Code No	Description	Unit	Rate
17.5.2	Range of two half stall urinals with 5 litre P.V.C. automatic flushing cistern	each	18008.75
17.5.3	Range of three half stall urinals with 10 litre P.V.C. automatic flushing cistern	each	22058.25
17.5.4	Range of four half stall urinals with 10 litre P.V.C. automatic flushing cistern	each	25969.45
17.6	Providing and fixing one piece construction white vitreous china squatting plate with an integral longitudinal flushing pipe, white P.V.C. automatic 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 :		
17.6.1	Single squatting plate with 5 litre P.V.C. automatic flushing cistern	each	9256.45
17.6.2	Range of two squatting plates with 5 litre P.V.C. automatic flushing cistern	each	13476.35
17.6.3	Range of three squatting plates with 10 litre P.V.C. automatic flushing cistern	each	17702.20
17.6.4	Range of four squatting plates with 10 litre P.V.C. automatic flushing cistern	each	21203.20
17.7	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:		
17.7.1	White Vitreous China Wash basin size 630x450 mm with a pair of 15 mm C.P. brass pillar taps	each	2648.85
17.7.2	White Vitreous China Wash basin size 630x450 mm with a single 15 mm C.P. brass pillar tap	each	2226.35
17.7.3	White Vitreous China Wash basin size 550x400 mm with a pair of 15 mm C.P. brass pillar taps	each	2301.75
17.7.4	White Vitreous China Flat back wash basin size 550x 400 mm with single 15 mm C.P. brass pillar tap	each	1879.20
17.7.5	White Vitreous China Angle back wash basin size 600 x 480 mm with single 15 mm C.P. brass pillar tap	each	2226.35
17.7.6	White Vitreous China Angle back wash basin size 400 x 400 mm with single 15 mm C.P. brass pillar tap	each	1756.85
17.7.7	White Vitreous China Flat back wash basin size 450x 300 mm with single 15 mm C.P. brass pillar tap	each	1513.60
17.7.8	White Vitreous China 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	3600.60
17.7.9	White Vitreous China Surgeon type wash basin of size 660x460 mm with single 15 mm C.P. brass pillar taps with elbow operated levers ISI Marked	each	2940.50
17.7.10	Stainless Steel AISI-304(18/8) Round basin 405x355 mm with single 15 mm C.P. brass pillar tap	each	3438.40
17.7.11	Stainless Steel AISI-304(18/8) Wash basin 530x345 mm with single 15 mm C.P. brass pillar tap	each	4149.75
17.7A	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:-		

Code No	Description	Unit	Rate
	(a) White Vitreous China Wash basin size 550x400 mm with a 15 mm CP Brass single hole basin mixer	each	3960.55
17.7B	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 China Flat back wash basin size 550x400 mm with single 15 mm PTMT pillar cock.	each	1550.60
17.8	Providing and fixing white vitreous china pedestal for wash basin completely recessed at the back for the reception of pipes and fittings.	each	1683.35
17.9	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:		
17.9.1	White glazed fire clay kitchen sink of size 600x450x 250 mm	each	3892.75
17.10	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 :		
17.10.1	Kitchen sink with drain board		
17.10.1.1	510x1040 mm bowl depth 250 mm	each	6945.60
17.10.1.2	510x1040 mm bowl depth 225 mm	each	7514.65
17.10.1.3	510x1040 mm bowl depth 200 mm	each	7159.00
17.10.1.4	510x1040 mm bowl depth 178 mm	each	6917.20
17.10.2	Kitchen sink without drain board		
17.10.2.1	610x510 mm bowl depth 200 mm	each	4940.80
17.10.2.2	610x460 mm bowl depth 200 mm	each	3873.80
17.10.2.3	470x420 mm bowl depth 178 mm	each	3407.20
17.11	Providing and fixing white vitreous china laboratory sink with C.I. brackets, C.P. brass chain with rubber plug, 40 mm C.P. brass waste and 40 mm 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 :		
17.11.1	Size 450x300x150 mm	each	5020.85
17.11.2	Size 600x450x200 mm	each	6585.80
17.12	Providing and fixing draining board with C.I. brackets including painting of brackets, cutting and making good the walls wherever required :		
17.12.1	White glazed fire clay draining board of size 600x450x 25 mm	each	1579.65
17.13	Providing and fixing white vitreous china water closet squatting pan (Indian type) :		
17.13.1	Long pattern W.C. pan of size 580 mm	each	1959.80
17.13.2	Orissa pattern W.C. pan of size 580x440 mm	each	3169.05
17.14	Extra for using coloured W.C. pan instead of white W.C. pan :		
17.14.1	Orissa pattern W.C. pan 580x440 mm	each	426.80
17.15	Providing and fixing white vitreous china pedestal type (European type/ wash down type) water closet pan.	each	2784.95
17.16	Extra for using coloured pedestal type W.C pan (European type) with low level cistern of same colour instead of white vitreous china W.C pan and cistern.	each	170.70

Code No	Description	Unit	Rate
17.16A	Providing and fixing 8 mm dia C.P. / S.S. Jet with flexible tube upto 1 metre long with S.S. triangular plate to European type W.C. of quality and make as approved by Engineer - in - charge.	each	349.15
17.17	Providing and fixing a pair of white vitreous china foot rests of standard pattern for squatting pan water closet :		
17.17.1	250x130x30 mm	pair	244.85
17.17.2	250x125x25 mm	pair	256.25
17.18	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.		
17.18.1	10 litre capacity - White	each	1190.65
17.18.2	10 litre capacity - coloured	each	1136.60
17.19	Providing and fixing controlled flush, low level cistern made of vitreous china with all fittings complete.		
17.19.1	10 litre (full flush) capacity-white	each	2243.75
17.19.2	10 litre (full flush) capacity-coloured	each	2912.40
17.20	Providing and fixing solid plastic seat with lid for pedestal type W.C. pan complete :		
17.20.1	White solid plastic seat with lid	each	684.85
17.20.2	Black solid plastic seat with lid	each	552.55
17.20.3	Coloured (other than black & white) solid plastic seat with lid	each	590.95
17.22	Providing and fixing G.I. inlet connection for flush pipe connecting with W.C. pan.	each	142.85
17.22A	Providing and fixing CP Brass 32 mm size Bottle Trap of approved quality & make and as per the direction of Engineer-in-charge.	each	1034.80
17.22B	Providing and fixing CP Brass Single lever telephonic wall mixer of quality & make as approved by Engineer in charge.		
	(a) 15 mm nominal dia	each	6940.75
17.23	Providing and fixing white vitreous china flat back or wall corner type lipped front urinal basin of 430x260x350 mm or 340x410x265 mm sizes respectively.	each	1648.95
17.24	Providing and fixing white vitreous china squatting plate urinal with integral rim longitudinal flush pipe.	each	4048.65
17.25	Providing and fixing white vitreous china wash basin including making all connections but excluding the cost of fittings :		
17.25.1	Flat back wash basin of size 630x450 mm	each	1339.70
17.25.2	Flat back wash basin of size 550x400 mm	each	992.60
17.25.3	Angle back wash basin of size 600x480 mm	each	1339.70
17.25.4	Angle back wash basin of size 400x400 mm	each	870.25
17.25.5	Flat back wash basin of size 450x300 mm	each	627.00
17.25.6	Surgeon type wash basin of size 660x460 mm	each	1816.30
17.26	Providing and fixing kitchen sink including making all connections excluding cost of fittings.		
17.26.1	White glazed fire clay sink of size 600x450x250 mm	each	2199.80
17.27	Providing and fixing white vitreous china laboratory sink including making all connections excluding cost of fittings :		
17.27.1	Size 450x300x150 mm	each	2512.75

Code No	Description	Unit	Rate
17.27.2	Size 600x450x200 mm	each	4077.65
17.28	Providing and fixing P.V.C. waste pipe for sink or wash basin including P.V.C. waste fittings complete.		
17.28.1	Semi rigid pipe		
17.28.1.1	32 mm dia	each	103.90
17.28.1.2	40 mm dia	each	116.70
17.28.2	Flexible pipe		
17.28.2.1	32 mm dia	each	119.55
17.28.2.2	40 mm dia	each	119.55
17.29	Providing and fixing 100 mm sand cast Iron grating for gully trap.	each	53.25
17.30	Providing and fixing in position 25 mm diameter mosquito proof coupling of approved municipal design.	each	55.65
17.31	Providing and fixing 600x450 mm beveled 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	1607.95
17.32	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 :		
17.32.1	Circular shape 450 mm dia	each	1479.05
17.32.2	Rectangular shape 453x357 mm	each	1361.80
17.32.3	Oval shape 450x350 mm (outer dimensions)	each	1377.10
17.32.4	Rectangular shape 1500x450 mm	each	2093.00
17.33	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	1083.50
17.34	Providing and fixing toilet paper holder :		
17.34.1	C.P. brass	each	803.70
17.34.2	Vitreous china	each	546.35
17.35	Providing and fixing soil, waste and vent pipes :		
17.35.1	100 mm dia		
17.35.1.1	Sand cast iron S&S pipe as per IS: 1729	metre	1151.90
17.35.1.2	Centrifugally cast (spun) iron socket & spigot (S&S) pipe as per IS: 3989	metre	1180.75
17.35.1.3	Hubless centrifugally cast (spun) iron pipes epoxy coated inside & outside IS:15905	metre	1169.30
17.35.2	75 mm diameter :		
17.35.2.1	Sand cast iron S&S pipe as per IS: 1729	metre	1044.75
17.35.2.2	Centrifugally cast (spun) iron socketed pipe as per IS: 3989	metre	1186.00
17.35.2.3	Hubless centrifugally cast (spun) iron pipes epoxy coated inside & outside IS:15905	metre	964.25
17.36	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 :		
17.36.1	75 mm dia pipe	each	168.20
17.36.2	100 mm dia pipe	each	198.15

Code No	Description	Unit	Rate
17.37	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. :		
17.37.1	For 100 mm dia pipe	each	362.85
17.37.2	For 75 mm dia pipe	each	360.00
17.38	Providing and fixing bend of required degree with access door, insertion rubber washer 3 mm thick, bolts and nuts complete.		
17.38.1	100 mm dia		
17.38.1.1	Sand cast iron S&S as per IS - 1729	each	598.50
17.38.1.2	Sand cast iron S&S as per IS - 3989	each	705.20
17.38.1.3	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	each	567.20
17.38.2	75 mm dia		
17.38.2.1	Sand cast iron S&S as per IS - 1729	each	501.45
17.38.2.2	Sand cast iron S&S as per IS- 3989	each	522.80
17.38.2.3	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	each	418.95
17.39	Providing and fixing plain bend of required degree.		
17.39.1	100 mm dia		
17.39.1.1	Sand cast iron S&S as per IS - 1729	each	470.45
17.39.1.2	Sand cast iron S&S as per IS : 3989	each	570.05
17.39.1.3	Hubless centrifugally cast (spun) iron pipes epoxy coated inside & outside IS:15905	each	368.00
17.39.2	75 mm dia		
17.39.2.1	Sand cast iron S&S as per IS -1729	each	376.25
17.39.2.2	Sand cast iron S&S as per IS - 3989	each	390.50
17.39.2.3	Hubless centrifugally cast (spun) iron pipes epoxy coated inside & outside IS:15905	each	252.50
17.40	Providing and fixing heel rest sanitary bend		
17.40.1	100 mm dia		
17.40.1.1	Sand cast iron S&S as per IS - 1729	each	584.25
17.40.1.2	Sand cast iron S&S as per IS - 3989	each	548.70
17.40.2	75 mm dia		
17.40.2.1	Sand cast iron S&S as per IS - 1729	each	490.05
17.40.2.2	Sand cast iron S&S as per IS - 3989	each	504.30
17.41	Providing and fixing double equal junction of required degree with access door, insertion rubber washer 3 mm thick, bolts and nuts complete :		
17.41.1	100x100x100x100 mm		
17.41.1.1	Sand cast iron S&S as per IS - 1729	each	1138.65
17.41.1.2	Sand cast iron S&S as per IS - 3989	each	1103.10
17.41.2	75x75x75x75 mm		
17.41.2.1	Sand cast iron S&S as per IS - 1729	each	842.90
17.41.2.2	Sand cast iron S&S as per IS - 3989	each	885.60

Code No	Description	Unit	Rate
17.42	Providing and fixing double equal plain junction of required degree.		
17.42.1	100x100x100x100 mm		
17.42.1.1	Sand cast iron S&S as per IS - 1729	each	939.90
17.42.1.2	Sand cast iron S&S as per IS - 3989	each	1075.05
17.42.1.3	Hubless centrifugally cast (spun) iron pipes epoxy coated inside & outside IS:15905	each	760.70
17.42.2	75x75x75x75 mm		
17.42.2.1	Sand cast iron S&S as per IS - 1729	each	625.20
17.42.2.2	Sand cast iron S&S as per IS - 3989	each	803.05
17.42.2.3	Hubless centrifugally cast (spun) iron pipes epoxy coated inside & outside IS:15905	each	418.95
17.43	Providing and fixing single equal plain junction of required degree with access door, insertion rubber washer 3 mm thick, bolts and nuts complete.		
17.43.1	100x100x100 mm		
17.43.1.1	Sand cast iron S&S as per IS - 1729	each	726.55
17.43.1.2	Sand cast iron S&S as per IS - 3989	each	925.70
17.43.2	75x75x75 mm		
17.43.2.1	Sand cast iron S&S as per IS - 1729	each	629.50
17.43.2.2	Sand cast iron S&S as per IS - 3989	each	665.05
17.44	Providing and fixing single equal plain junction of required degree :		
17.44.1	100x100x100 mm		
17.44.1.1	Sand cast iron S&S as per IS - 1729	each	626.95
17.44.1.2	Sand cast iron S&S as per IS - 3989	each	811.90
17.44.1.3	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	each	581.45
17.44.2	75x75x75 mm		
17.44.2.1	Sand cast iron S&S as per IS - 1729	each	504.30
17.44.2.2	Sand cast iron S&S as per IS - 3989	each	561.20
17.44.2.3	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	each	337.85
17.45	Providing and fixing double unequal junction of required degree with access door, insertion rubber washer 3 mm thick, bolts and nuts complete:		
17.45.1	100x100x75x75 mm		
17.45.1.1	Sand cast iron S&S as per IS - 1729	each	1153.30
17.45.1.2	Sand cast iron S&S as per IS - 3989	each	1601.45
17.46	Providing and fixing double unequal plain junction of required degree :		
17.46.1	100x100x75x75 mm		
17.46.1.1	Sand cast iron S&S as per IS - 1729	each	954.15
17.46.1.2	Sand cast iron S&S as per IS - 3989	each	1402.30
17.46.1.3	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	each	607.05
17.47	Providing and fixing single unequal junction of required degree with access door, insertion rubber washer 3 mm thick, bolts and nuts complete :		
17.47.1	100x100x75 mm		
17.47.1.1	Sand cast iron S&S as per IS - 1729	each	911.45

Code No	Description	Unit	Rate
17.47.1.2	Sand cast iron S&S as per IS - 3989	each	1146.20
17.48	Providing and fixing single unequal plain junction of required degree :		
17.48.1	100x100x75 mm		
17.48.1.1	Sand cast iron S&S as per IS - 1729	each	811.90
17.48.1.2	Sand cast iron S&S as per IS - 3989	each	1032.40
17.48.1.3	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	each	551.55
17.49	Providing and fixing double equal plain invert branch of required degree:		
17.49.1	100x100x100x100 mm		
17.49.1.1	Sand cast iron S&S as per IS - 1729	each	883.00
17.49.1.2	Sand cast iron S&S as per IS 3989	each	989.70
17.49.1.3	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	each	1106.35
17.49.2	75x75x75x75 mm		
17.49.2.1	Sand cast iron S&S as per IS - 1729	each	660.80
17.49.2.2	Sand cast iron S&S as per IS - 3989	each	803.05
17.50	Providing and fixing single equal plain invert branch of required degree :		
17.50.1	100x100x100 mm		
17.50.1.1	Sand cast iron S&S as per iron 1729	each	698.05
17.50.1.2	Sand cast iron S&S as per IS - 3989	each	747.85
17.50.1.3	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	each	645.45
17.50.2	75x75x75 mm		
17.50.2.1	Sand cast iron S&S as per IS - 1729	each	575.45
17.50.2.2	Sand cast iron S&S as per IS - 3989	each	575.45
17.50.2.3	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	each	401.90
17.51	Providing and fixing double unequal invert branch of required degree :		
17.51.1	100x100x75x75 mm		
17.51.1.1	Sand cast iron S&S as per IS - 1729	each	1011.05
17.51.1.2	Sand cast iron S&S as per IS - 3989	each	1274.25
17.52	Providing and fixing single unequal plain invert branch of required degree:		
17.52.1	100x100x75 mm		
17.52.1.1	Sand cast iron S&S as per IS - 1729	each	804.80
17.52.1.2	Sand cast iron S&S as per IS - 3989	each	996.85
17.52.1.3	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	each	658.25
17.53	Providing and fixing sand cast iron S&S off sets as per IS: 1729		
17.53.1	76 mm off sets		
17.53.1.1	With 75 mm dia pipe	each	376.25
17.53.1.2	With 100 mm dia pipe	each	603.90
17.53.2	114 mm off sets		
17.53.2.1	With 75 mm dia pipe	each	527.35
17.53.2.2	With 100 mm dia pipe	each	648.30

Code No	Description	Unit	Rate
17.53.3	152 mm off sets		
	17.53.3.1 With 75 mm dia pipe	each	619.90
	17.53.3.2 With 100 mm dia pipe	each	769.25
17.53A	Providing and fixing Hubless centrifugally cast iron offsets epoxy coated inside & outside as per IS:15905		
17.53A.1	65 mm offsets		
	17.53A.1.1 With 100 mm dia pipe	each	547.00
	17.53A.1.2 With 75 mm dia pipe	each	454.50
17.54	Providing and fixing sand cast iron S&S off sets as per IS: 3989 :		
17.54.1	75 mm off sets		
	17.54.1.1 With 75 mm dia pipe	each	418.95
17.54.2	150 mm off sets		
	17.54.2.1 With 75 mm dia pipe	each	585.55
	17.54.2.2 With 100 mm dia pipe	each	734.95
17.54A	Providing and fixing Hubless centrifugally cast iron offsets epoxy coated inside & outside as per IS:15905		
17.54A.1	130 mm offsets		
	17.54A.1.1 With 100 mm dia	each	632.65
	17.54A.1.2 With 75 mm dia	each	465.90
17.55	Providing and fixing door piece, insertion rubber washer 3 mm thick, bolts & nuts complete :		
17.55.1	100 mm		
	17.55.1.1 Sand cast iron S&S as per IS - 1729	each	783.45
	17.55.1.2 Sand cast iron S&S as per IS - 3989	each	683.85
17.55.2	75 mm		
	17.55.2.1 Sand cast iron S&S as per IS - 1729	each	501.45
	17.55.2.2 Sand cast iron S&S as per IS - 3989	each	537.00
17.56	Providing and fixing terminal guard :		
17.56.1	100 mm		
	17.56.1.1 Sand cast iron S&S as per IS - 1729	each	442.00
	17.56.1.2 Sand cast iron S&S as per IS - 3989	each	506.00
	17.56.1.3 Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	each	427.80
17.56.2	75 mm		
	17.56.2.1 Sand cast iron S&S as per IS - 1729	each	340.70
	17.56.2.2 Sand cast iron S&S as per IS - 3989	each	404.75
17.57	Providing and fixing collar :		
17.57.1	100 mm		
	17.57.1.1 Sand cast iron S&S as per IS - 1729	each	463.35
	17.57.1.2 Sand cast iron S&S as per IS - 3989	each	513.15
17.57.2	75 mm		
	17.57.2.1 Sand cast iron S&S as per IS - 1729	each	305.15
	17.57.2.2 Sand cast iron S&S as per IS - 3989	each	362.05

Code No	Description	Unit	Rate
17.57A	Providing and fixing shielded coupling for Hubless centrifugally cast iron pipe		
17.57A.1	100 mm dia		
17.57A.1.1	SS 304 grade coupling with EPDM rubber gasket	each	432.05
17.57A.2	75 mm dia		
17.57A.2.1	SS 304 grade coupling with EPDM rubber gasket	each	389.05
17.58	Providing lead caulked joints to sand cast iron/centrifugally cast (spun) iron pipes and fittings of diameter :		
17.58.1	100 mm	each	622.50
17.58.2	75 mm	each	526.25
17.58.3	50 mm	each	423.15
17.59	Providing and fixing M.S. stays and clamps for sand cast iron/ centrifugally cast (spun) iron pipes of diameter :		
17.59.1	100 mm	each	139.70
17.59.2	75 mm	each	90.30
17.59.3	50 mm	each	81.85
17.60	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 :		
17.60.1	100 mm inlet and 100 mm outlet		
17.60.1.1	Sand cast iron S&S as per IS: 3989	each	1996.50
17.60.1.2	Sand Cast Iron S&S as per IS: 1729	each	1683.55
17.60.1.3	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	each	854.55
17.60.2	100 mm inlet and 75 mm outlet		
17.60.2.1	Sand cast iron S&S as per IS - 3989	each	1975.15
17.60.2.2	Sand Cast Iron S&S as per IS- 1729	each	1558.35
17.60.2.3	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	each	591.40
17.61	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) :		
17.61.1	100 mm dia	metre	713.20
17.61.2	75 mm dia	metre	513.25
17.61.3	50 mm dia	metre	336.00
17.62	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	1020.60
17.63	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	673.70

Code No	Description	Unit	Rate
17.64	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	292.55
17.65	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 :		
17.65.1	100 mm diameter pipe	metre	82.80
17.65.2	75 mm diameter pipe	metre	62.95
17.66	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 :		
17.66.1	100 mm diameter pipe	metre	39.50
17.66.2	75 mm diameter pipe	metre	29.55
17.67	Repainting bath tub of size 1700x730x430 mm with enamel paint.	each	804.30
17.68	Providing and fixing vitreous china 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:		
17.68.1	White vitreous china dual purpose WC pan with white solid plastic seat and lid with white vitreous china flushing cistern and C.P. flush bend.	each	11847.65
17.69	Providing and fixing PTMT Waste Coupling for wash basin and sink, of approved quality and colour.		
17.69.1	Waste coupling 31 mm dia of 79 mm length and 62 mm breadth weighing not less than 45 gms	each	115.30
17.69.2	Waste coupling 38 mm dia of 83 mm length and 77 mm breadth, weighing not less than 60 gms	each	122.40
17.70	Providing and fixing PTMT Bottle Trap for Wash basin and sink.		
17.70.1	Bottle trap 31 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 260 gms	each	367.10
17.70.2	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	375.65
17.71	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	168.35
17.72	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	231.95
17.73	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.		

Code No	Description	Unit	Rate
17.73.1	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	673.40
17.73.2	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	708.95
17.74	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	713.20
17.75	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	107.20
17.76	Providing and fixing PTMT urinal cock of approved quality and colour.		
17.76.1	15 mm nominal bore, 80 mm long, 42 mm high and 30 mm wide with BSP female threads weighing not less than 48 gms	each	175.40
17.77	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, 6 mm 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.		
17.77.1	Total bracket length 580 mm of approved shape and design (for single 100 mm dia pipe)	each	304.05
17.77.2	Total bracket length 810 mm of approved shape and design (for two 100 mm dia pipes)	each	378.10
17.77.3	Total bracket length 1040 mm of approved shape and design (for three 100 mm dia pipes)	each	451.90
17.78	Providing and fixing white vitreous china extended wall mounting water closet of size 780x370x690 mm of approved shape including providing & fixing white vitreous china cistern 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	14999.15
17.79	Providing & fixing white vitreous china 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	18088.45
17.80	Providing and fixing white vitreous china 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	7979.20
17.81	Providing and fixing floor mounted, white vitreous china single piece, double traps syphonic water closet of approved brand/make, shape, size and pattern including integrated white vitreous china cistern of capacity 10 litre 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	18212.90

SUB HEAD : 18.0
WATER SUPPLY

18.0 WATER SUPPLY

Code No	Description	Unit	Rate
PE-AL-PE COMPOSITE PRESSURE PIPE			
18.1	Providing and fixing Polyethelene-Aluminium-Polyethelene 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			
18.1.1	1216 (16 mm OD) pipe	metre	286.75
18.1.2	1620 (20 mm OD) pipe	metre	331.20
18.1.3	2025 (25 mm OD) pipe	metre	401.55
18.1.4	2532 (32 mm OD) pipe	metre	529.85
18.1.5	3240 (40 mm OD) pipe	metre	684.45
18.1.6	4050 (50 mm OD) pipe	metre	939.70
18.2	Providing and fixing Polyethelene-Aluminium- Polyethelene 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 the wall etc.		
18.2.1	1216 (16 mm OD) pipe	metre	522.70
18.2.2	1620 (20 mm OD) pipe	metre	557.55
18.2.3	2025 (25 mm OD) pipe	metre	627.25
18.2.4	2532 (32 mm OD) pipe	metre	754.20
18.3	Providing and fixing Polyethelene-Aluminium- Polyethelene 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			
18.3.1	1216 (16 mm OD) pipe	metre	263.20
18.3.2	1620 (20 mm OD) pipe	metre	289.10
18.3.3	2025 (25 mm OD) pipe	metre	340.85
18.3.4	2532 (32 mm OD) pipe	metre	435.20
18.3.5	3240 (40 mm OD) pipe	metre	544.55
18.3.6	4050 (50 mm OD) pipe	metre	799.80

Code No	Description	Unit	Rate
PP-R PIPES			
18.4	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 and 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		
18.4.1	PN - 16 Pipe, 20 mm OD (SDR-7.4)	metre	272.00
18.4.2	PN - 16 Pipe, 25 mm OD (SDR-7.4)	metre	318.35
18.4.3	PN - 16 Pipe, 32 mm OD (SDR-7.4)	metre	362.90
18.4.4	PN - 16 Pipe, 40 mm OD (SDR-7.4)	metre	545.75
18.4.5	PN - 10 Pipe, 50 mm OD (SDR-11)	metre	580.10
18.5	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 and 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.		
18.5.1	PN - 16 Pipe, 20 mm OD (SDR-7.4)	metre	477.85
18.5.2	PN - 16 Pipe, 25 mm OD (SDR-7.4)	metre	515.20
18.5.3	PN - 16 Pipe, 32 mm OD (SDR-7.4)	metre	561.45
18.6	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		
18.6.1	PN - 16 Pipe, 20 mm OD (SDR-7.4)	metre	224.95
18.6.2	PN - 16 Pipe, 25 mm OD (SDR-7.4)	metre	265.05
18.6.3	PN - 16 Pipe, 32 mm OD (SDR-7.4)	metre	316.25
18.6.4	PN - 16 Pipe, 40 mm OD (SDR-7.4)	metre	415.10
18.6.5	PN - 10 Pipe, 50 mm OD (SDR-11)	metre	450.95
18.6.6	PN - 10 Pipe, 63 mm OD (SDR-11)	metre	597.75
18.6.7	PN - 10 Pipe, 75 mm OD (SDR-11)	metre	696.75
18.6.8	PN - 10 Pipe, 90 mm OD (SDR-11)	metre	975.30
18.6.9	PN - 10 Pipe, 110 mm OD (SDR-11)	metre	1301.35
18.6.10	PN - 10 Pipe, 160 mm OD (SDR-11)	metre	2746.85
18.6A	Providing and fixing PPR Unions		
18.6A.1	PPR Union 20mm	each	315.50
18.6A.2	PPR Union 25mm	each	334.00
18.6A.3	PPR Union 32mm	each	403.70
18.6A.4	PPR Union 40mm	each	543.10
18.6A.5	PPR Union 50mm	each	782.10

Code No	Description	Unit	Rate
18.6A.6	PPR Union 63mm	each	913.00
18.6A.7	PPR Union 75mm	each	1684.05
C.P.V.C. PIPES			
18.7	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply and 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		
18.7.1	15 mm nominal dia Pipes	metre	286.80
18.7.2	20 mm nominal dia Pipes	metre	335.00
18.7.3	25 mm nominal dia Pipes	metre	401.55
18.7.4	32 mm nominal dia Pipes	metre	518.75
18.7.5	40 mm nominal dia Pipes	metre	702.95
18.7.6	50 mm nominal dia Pipes	metre	934.15
18.8	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings and 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.		
18.8.1	15 mm nominal dia Pipes	metre	497.80
18.8.2	20 mm nominal dia Pipes	metre	537.60
18.8.3	25 mm nominal dia Pipes	metre	627.25
18.8.4	32 mm nominal dia Pipes	metre	739.30
18.9	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		
18.9.1	15 mm nominal dia Pipes	metre	244.70
18.9.2	20 mm nominal dia Pipes	metre	274.30
18.9.3	25 mm nominal dia Pipes	metre	355.40
18.9.4	32 mm nominal dia Pipes	metre	438.60
18.9.5	40 mm nominal dia Pipes	metre	563.05
18.9.6	50 mm nominal dia Pipes	metre	794.25
18.9.7	65 mm nominal dia Pipes	metre	1674.40
18.9.8	80 mm nominal dia Pipes	metre	2166.35
18.9.9	100 mm nominal dia Pipes	metre	3271.70
18.9.10	150 mm nominal dia Pipes	metre	6822.70
18.10	Providing and fixing G.I. pipes complete with G.I. fittings and clamps, including cutting and making good the walls etc. Internal work - Exposed on wall		

Code No	Description	Unit	Rate
18.10.1	15 mm dia nominal bore	metre	366.40
18.10.2	20 mm dia nominal bore	metre	437.30
18.10.3	25 mm dia nominal bore	metre	551.70
18.10.4	32 mm dia nominal bore	metre	667.00
18.10.5	40 mm dia nominal bore	metre	811.90
18.10.6	50 mm dia nominal bore	metre	1048.35
18.11	Providing and fixing G.I. Pipes complete with G.I. fittings and clamps, including making good the walls etc. concealed pipe, including painting with anti corrosive bitumastic paint, cutting chases and making good the wall :		
18.11.1	15 mm dia nominal bore	metre	580.45
18.11.2	20 mm dia nominal bore	metre	635.20
18.12	Providing and fixing G.I. pipes complete with G.I. fittings including trenching and refilling etc.		
	External work		
18.12.1	15 mm dia nominal bore	metre	322.15
18.12.2	20 mm dia nominal bore	metre	368.60
18.12.3	25 mm dia nominal bore	metre	467.75
18.12.4	32 mm dia nominal bore	metre	540.30
18.12.5	40 mm dia nominal bore	metre	617.05
18.12.6	50 mm dia nominal bore	metre	762.15
18.12.7	65 mm dia nominal bore	metre	896.60
18.12.8	80 mm dia nominal bore	metre	1041.70
18.13	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 :		
18.13.1	25 to 40 mm nominal bore	each	911.90
18.13.2	50 to 80 mm nominal bore	each	1785.35
18.14	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	812.30
	BRASS FITTINGS		
18.15	Providing and fixing brass bib cock of approved quality :		
18.15.1	15 mm nominal bore	each	353.25
18.15.2	20 mm nominal bore	each	379.20
18.16	Providing and fixing brass stop cock of approved quality :		
18.16.1	15 mm nominal bore	each	353.25
18.16.2	20 mm nominal bore	each	379.20
18.17	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end) :		
18.17.1	25 mm nominal bore	each	622.40
18.17.1A	20 mm nominal bore	each	539.95
18.17.2	32 mm nominal bore.	each	689.60
18.17.3	40 mm nominal bore	each	826.10
18.17.4	50 mm nominal bore	each	1026.65

Code No	Description	Unit	Rate
18.17.5	65 mm nominal bore	each	1742.15
18.17.6	80 mm nominal bore	each	2604.55
18.18	Providing and fixing ball valve (brass) of approved quality, High or low pressure, with plastic floats complete :		
18.18.1	15 mm nominal bore	each	406.85
18.18.2	20 mm nominal bore	each	462.50
18.18.3	25 mm nominal bore	each	464.05
18.19	Providing and fixing gun metal non- return valve of approved quality (screwed end) :		
18.19.1	25 mm nominal bore		
	18.19.1.1 Horizontal	each	591.40
	18.19.1.2 Vertical	each	624.10
18.19.2	32 mm nominal bore		
	18.19.2.1 Horizontal	each	791.90
	18.19.2.2 Vertical	each	850.25
18.19.3	40 mm nominal bore		
	18.19.3.1 Horizontal	each	952.60
	18.19.3.2 Vertical	each	1134.70
18.19.4	50 mm nominal bore		
	18.19.4.1 Horizontal	each	1371.20
	18.19.4.2 Vertical	each	1445.15
18.19.5	65 mm nominal bore		
	18.19.5.1 Horizontal	each	2448.05
	18.19.5.2 Vertical	each	2291.55
18.19.6	80 mm nominal bore		
	18.19.6.1 Horizontal	each	3664.75
	18.19.6.2 Vertical	each	3855.40
18.20	Providing and fixing brass ferrule with C.I. mouth cover including boring and tapping the main :		
18.20.1	15 mm nominal bore	each	329.30
18.20.2	20 mm nominal bore	each	380.00
18.20.3	25 mm nominal bore	each	486.80
18.21	Providing and fixing uplasticised PVC connection pipe with brass unions :		
18.21.1	30 cm length		
	18.21.1.1 15 mm nominal bore	each	85.00
	18.21.1.2 20 mm nominal bore	each	93.55
18.21.2	45 cm length		
	18.21.2.1 15 mm nominal bore	each	97.75
	18.21.2.2 20 mm nominal bore	each	119.05
18.22	Providing and fixing C.P. brass shower rose with 15 or 20 mm inlet :		
18.22.1	100 mm diameter	each	193.95
18.22.2	150 mm diameter	each	222.35

Code No	Description	Unit	Rate
C.I./DUCTILE IRON PIPES & SPECIALS			
18.23	Laying in position centrifugally cast (spun) iron S&S or flanged pipes (excluding cost of pipe).	quintal	361.65
18.24	Laying in position S&S or flanged C.I. special such as tees, bends, collars, tapers and caps etc.(excluding cost of specials).	quintal	661.85
18.25	Providing and laying S&S C.I. standard specials such as tees, bends, collars, tapers, caps etc. (Heavy class):		
18.25.1	Up to 300 mm dia	quintal	6352.40
18.25.2	Over 300 mm dia	quintal	6352.40
18.26	Providing and laying flanged C.I. standard specials such as tees, bends, collars, tapers, caps etc., suitable for flanged jointing as per IS : 1538 :		
18.26.1	Up to 300 mm dia	quintal	8913.15
18.26.2	Over 300 mm dia	quintal	8486.35
18.27	Providing and laying S&S centrifugally cast (spun) iron pipes (Class LA) conforming to IS :1536 :		
18.27.1	100 mm dia pipe	metre	1423.10
18.27.2	125 mm dia pipe	metre	1729.35
18.27.3	150 mm dia pipe	metre	2037.00
18.27.4	200 mm dia pipe	metre	3406.85
18.27.5	250 mm dia pipe	metre	4639.80
18.27.6	300 mm dia pipe	metre	6128.65
18.27.7	350 mm dia pipe	metre	7343.80
18.27.8	400 mm dia pipe	metre	9701.00
18.27.9	450 mm dia pipe	metre	11714.85
18.27.10	500 mm dia pipe	metre	13728.75
18.27.11	600 mm dia pipe	metre	18636.45
18.28	Providing lead caulked joints to spun iron or C.I. pipes and specials, including testing of joints but excluding the cost of pig lead :		
18.28.1	100 mm diameter pipe	each	496.40
18.28.2	125 mm diameter pipe	each	737.50
18.28.3	150 mm diameter pipe	each	744.85
18.28.4	200 mm diameter pipe	each	990.20
18.28.5	250 mm diameter pipe	each	1237.80
18.28.6	300 mm diameter pipe	each	1488.80
18.28.7	350 mm diameter pipe	each	1513.60
18.28.8	400 mm diameter pipe	each	1993.75
18.28.9	450 mm diameter pipe	each	2238.45
18.28.10	500 mm diameter pipe	each	2366.45
18.28.11	600 mm diameter pipe	each	3211.40
18.29	Supplying pig lead at site of work.	quintal	29875.40
18.30	Providing flanged joints to double flanged C.I./ D.I. pipes and specials, including testing of joints :		
18.30.1	80 mm diameter pipe	each	215.10

Code No	Description	Unit	Rate
18.30.2	100 mm diameter pipe	each	332.00
18.30.3	125 mm diameter pipe	each	351.90
18.30.4	150 mm diameter pipe	each	387.40
18.30.5	200 mm diameter pipe	each	428.65
18.30.6	250 mm diameter pipe	each	596.65
18.30.7	300 mm diameter pipe	each	599.50
18.30.8	350 mm diameter pipe	each	762.90
18.30.9	400 mm diameter pipe	each	1066.80
18.30.10	450 mm diameter pipe	each	1305.60
18.30.11	500 mm diameter pipe	each	1437.80
18.30.12	600 mm diameter pipe	each	1704.10
C.I. SLUICE VALVES/ FIRE HYDRANTS & FIXTURES			
18.31	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) :		
18.31.1	100 mm diameter		
	18.31.1.1 Class I	each	4791.20
	18.31.1.2 Class II	each	4985.85
18.31.2	125 mm diameter		
	18.31.2.1 Class I	each	5160.80
	18.31.2.2 Class II	each	5943.00
18.31.3	150 mm diameter		
	18.31.3.1 Class I	each	6966.55
	18.31.3.2 Class II	each	7312.40
18.31.4	200 mm diameter		
	18.31.4.1 Class I	each	13554.70
	18.31.4.2 Class II	each	14622.95
18.31.5	250 mm diameter		
	18.31.5.1 Class I	each	19566.55
	18.31.5.2 Class II	each	24623.50
18.31.6	300 mm diameter		
	18.31.6.1 Class I	each	27059.30
	18.31.6.2 Class II	each	30203.00
18.32	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 reinforced cement concrete slab 1:1.5:3 mix (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size), including 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 :		
18.32.1	With common burnt clay F.P.S.(non modular) bricks of class designation 7.5	each	1992.60

Code No	Description	Unit	Rate
18.33	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 100 mm top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chained lid and RCC top slab 1:1.5:3 mix (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size), including 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 :		
18.33.1	With common burnt clay F.P.S.(non modular) bricks of class designation 7.5	each	10862.40
18.34	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 1:1.5:3 mix (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size), including 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 :		
18.34.1	With common burnt clay F.P.S.(non modular) bricks of class designation 7.5	each	18896.70
18.35	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 1:1.5:3 mix (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size), including 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 :		
18.35.1	With common burnt clay F.P.S.(non modular) bricks of class designation 7.5	each	26163.40
18.36	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 1:1.5:3 mix (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size), including 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 :		
18.36.1	With common burnt clay F.P.S.(non modular) bricks of class designation 7.5	each	10354.95
18.37	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 1:1.5:3 mix (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size), including 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 :		
18.37.1	With common burnt clay F.P.S.(non modular) bricks of class designation 7.5	each	9698.55

Code No	Description	Unit	Rate
18.38	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 :		
18.38.1	15 mm diameter pipe	metre	19.40
18.38.2	20 mm diameter pipe	metre	23.25
18.38.3	25 mm diameter pipe	metre	30.25
18.38.4	32 mm diameter pipe	metre	36.35
18.38.5	40 mm diameter pipe	metre	42.65
18.38.6	50 mm diameter pipe	metre	51.00
18.39	Repainting G.I. pipes and fittings with synthetic enamel white paint with one coat of approved quality :		
18.39.1	15 mm diameter pipe	metre	9.50
18.39.2	20 mm diameter pipe	metre	11.30
18.39.3	25 mm diameter pipe	metre	14.40
18.39.4	32 mm diameter pipe	metre	17.25
18.39.5	40 mm diameter pipe	metre	20.00
18.39.6	50 mm diameter pipe	metre	23.85
18.40	Painting G.I. pipes and fittings with two coats of anti-corrosive bitumastic paint of approved quality :		
18.40.1	15 mm diameter pipe	metre	12.05
18.40.2	20 mm diameter pipe	metre	14.45
18.40.3	25 mm diameter pipe	metre	18.35
18.40.4	32 mm diameter pipe	metre	22.20
18.40.5	40 mm diameter pipe	metre	25.25
18.40.6	50 mm diameter pipe	metre	30.50
18.40.7	65 mm diameter pipe	metre	37.85
18.40.8	80 mm diameter pipe	metre	44.00
18.41	Providing and filling sand of grading zone V or coarser grade, allround the G.I. pipes in external work :		
18.41.1	15 mm diameter pipe	metre	154.45
18.41.2	20 mm diameter pipe	metre	156.55
18.41.3	25 mm diameter pipe	metre	160.70
18.41.4	32 mm diameter pipe	metre	164.90
18.41.5	40 mm diameter pipe	metre	167.00
18.41.6	50 mm diameter pipe	metre	173.25
18.41.7	65 mm diameter pipe	metre	273.45
18.41.8	80 mm diameter pipe	metre	281.80
18.41.9	100 mm diameter pipe	metre	298.50
18.41.10	150 mm diameter pipe	metre	444.60
18.42	Boring with 100 mm diameter casing pipe for hand pump / tubewell, in all soils except ordinary hard rocks requiring blasting, including removing the casing pipe after the hand pump / tube well is lowered and tested :		
18.42.1	Up to 6 metres depth	metre	747.90
18.42.2	Beyond 6 m and up to 12 m depth	metre	884.85
18.42.3	Beyond 12 m and up to 18 m depth	metre	1025.95

Code No	Description	Unit	Rate
18.43	Providing and placing in position filters of 40 mm diameter G.I. pipe with brass strainer of approved quality.	metre	960.30
18.44	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	546.00
18.45	Providing and placing in position hand pump of approved quality for 40 mm diameter G.I. pipe complete with all accessories.	each	1321.65
18.46	Providing and fixing G.I. Union in G.I. pipe including cutting and threading the pipe and making long screws etc. complete (New work) :		
18.46.1	15 mm nominal bore	each	318.35
18.46.2	20 mm nominal bore	each	346.80
18.46.3	25 mm nominal bore	each	439.25
18.46.4	32 mm nominal bore	each	489.05
18.46.5	40 mm nominal bore	each	631.30
18.46.6	50 mm nominal bore	each	823.80
18.46.7	65 mm nominal bore	each	1136.80
18.46.8	80 mm nominal bore	each	1207.95
18.47	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 :		
18.47.1	15 mm nominal bore	each	829.45
18.47.2	20 mm nominal bore	each	857.85
18.47.3	25 mm nominal bore	each	950.35
18.47.4	32 mm nominal bore	each	1000.15
18.47.5	40 mm nominal bore	each	1142.40
18.47.6	50 mm nominal bore	each	1520.80
18.47.7	65 mm nominal bore	each	1833.75
18.47.8	80 mm nominal bore	each	1904.90
18.48	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.	per litre	11.00
18.48A	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 Including fittings & fixtures for tank shall be paid separately.	per litre	11.00
C.P. BRASS FITTINGS			
18.49	Providing and fixing C.P. brass bib cock of approved quality conforming to IS:8931 :		
18.49.1	15 mm nominal bore	each	506.80
18.50	Providing and fixing C.P. brass long nose bib cock of approved quality conforming to IS standards and weighing not less than 810 gms.		
18.50.1	15 mm nominal bore	each	820.70

Code No	Description	Unit	Rate
18.51	Providing and fixing C.P. brass long body bib cock of approved quality conforming to IS standards and weighing not less than 690 gms.		
18.51.1	15 mm nominal bore	each	798.95
18.52	Providing and fixing C.P. brass stop cock (concealed) of standard design and of approved make conforming to IS:8931.		
18.52.1	15 mm nominal bore	each	670.45
18.53	Providing and fixing C.P. brass angle valve for basin mixer and geyser points of approved quality conforming to IS:8931		
18.53.1	15 mm nominal bore	each	574.30
18.53A	Providing and fixing C.P. Brass extension nipple (size 15 mm x 50 mm) of approved make and quality as per direction of Engineer-in-charge.	each	74.80
PTMT FITTINGS			
18.54	Providing and fixing PTMT bib cock of approved quality and colour.		
18.54.1	15 mm nominal bore, 86 mm long, weighing not less than 88 gms	each	125.60
18.54.2	15 mm nominal bore, 122 mm long, weighing not less than 99 gms	each	161.20
18.54.3	15 mm nominal bore, 165 mm long, weighing not less than 110 gms	each	176.85
18.54.4	15 mm nominal bore, 90 mm long, weighing not less than 93 gms	each	196.75
18.55	Providing and fixing PTMT stop cock of approved quality and colour.		
18.55.1	15 mm nominal bore, 86 mm long, weighing not less than 88 gms	each	118.50
18.55.2	20 mm nominal bore, 89 mm long, weighing not less than 88 gms	each	129.90
18.55.3	Concealed stop cock, 15 mm nominal bore, 108 mm long, weighing not less than 108 gms	each	218.10
18.56	Providing and fixing PTMT pillar cock of approved quality and colour.		
18.56.1	15 mm nominal bore, 107 mm long, weighing not less than 110 gms	each	208.45
18.56.2	15 mm nominal bore, 125 mm long foam flow, weighing not less than 120 gms	each	224.10
18.57	Providing and fixing PTMT, push cock of approved quality and colour.		
18.57.1	15 mm nominal bore, 98 mm long, weighing not less than 75 gms	each	112.80
18.57.2	15 mm nominal bore, 80 mm long, weighing not less than 46 gms	each	95.75
18.58	Providing and fixing PTMT grating of approved quality and colour.		
18.58.1	Circular type		
18.58.1.1	100 mm nominal dia	each	37.60
18.58.1.2	125 mm nominal dia with 25 mm waste hole	each	51.85
18.58.2	Rectangular type with openable circular lid		
18.58.2.1	150 mm nominal size square 100 mm diameter of the inner hinged round grating	each	196.95

Code No	Description	Unit	Rate
AIR VALVE & WATER METER (BULK TYPE)			
18.59	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) :		
18.59.1	50 mm dia	each	5748.80
18.59.2	80 mm dia	each	6993.60
18.59.3	100 mm dia	each	8893.00
18.60	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) :		
18.60.1	80 mm dia nominal bore	each	3627.65
18.60.2	100 mm dia nominal bore	each	5468.35
18.60.3	150 mm dia nominal bore	each	8408.80
18.60.4	200 mm dia nominal bore	each	9043.30
18.61	Providing and fixing C.I. dirt box strainer for bulk type water meter with nuts, bolts, rubber insertions etc. complete conforming to IS : 2373 :		
18.61.1	80 mm dia	each	4623.50
18.61.2	100 mm dia	each	7460.00
18.61.3	150 mm dia	each	9433.10
18.61.4	200 mm dia	each	12927.10
18.62	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.		
18.62.1	15 mm nominal bore, 105 mm long, weighing not less than 138 gms	each	182.10
18.62.2	20 mm nominal bore, 120 mm long, weighing not less than 198 gms	each	257.60
18.62.3	25 mm nominal bore, 152 mm long, weighing not less than 440 gms	each	523.80
18.62.4	40 mm nominal bore, 206 mm long, weighing not less than 690 gms	each	737.20
18.62.5	50 mm nominal bore, 242 mm long, weighing not less than 1240 gms	each	1375.95
18.63	Providing and fixing PTMT angle stop cock 15 mm nominal bore, weighing not less than 85 gms	each	156.90
18.64	Providing and fixing PTMT swivelling shower, 15 mm nominal bore, weighing not less than 40 gms	each	121.40
18.65	Providing and fixing PTMT soap Dish Holder having length of 138 mm, breadth 102 mm, height of 75 mm with concealed fitting arrangements, weighing not less than 106 gms.	each	111.45
18.66	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 :		
18.66.1	Up to 300 mm dia	quintal	8628.60
18.66.2	Above 300 mm dia	quintal	10157.95
18.67	Providing and laying S&S C.I. Standard specials suitable for mechanical jointing as per IS : 13382 :		
18.67.1	Up to 300 mm dia	quintal	13764.35
18.67.2	Above 300 mm dia	quintal	14532.55

Code No	Description	Unit	Rate
18.68	Providing and laying D.I. specials of class K-12 suitable for push-on jointing as per IS : 9523 :		
18.68.1	Up to 600 mm dia	quintal	20009.70
18.68.2	Above 600 mm dia	quintal	26696.10
18.68A	Providing and laying Class K-12 Ductile Iron double chamber restrained joint (bolt less) specials such as tees, bends, collars, tapers and caps etc. conforming to IS : 9523 including testing of joints all complete.		
18.68A.1	Up to 600 mm nominal dia	quintal	30394.95
18.68A.2	Above 600 mm nominal dia	quintal	39073.05
18.69	Providing and laying D.I. Specials of Class K - 12 suitable for mechanical jointing as per IS : 9523 :		
18.69.1	Up to 600 mm dia	quintal	21290.10
18.69.2	Above 600 mm dia	quintal	28403.25
18.70	Providing push-on-joints to Centrifugally (Spun) Cast Iron Pipes or Ductile Iron Pipes including testing of joints and the cost of rubber gasket :		
18.70.1	100 mm dia pipes	joint	119.45
18.70.2	150 mm dia pipes	joint	192.85
18.70.3	200 mm dia pipes	joint	280.85
18.70.4	250 mm dia pipes	joint	340.35
18.70.5	300 mm dia pipes	joint	435.45
18.70.6	350 mm dia pipes	joint	495.00
18.70.7	400 mm dia pipes	joint	696.80
18.70.8	450 mm dia pipes	joint	820.35
18.70.9	500 mm dia pipes	joint	871.45
18.70.10	600 mm dia pipes	joint	1207.90
18.70.11	700 mm dia pipes	joint	1572.70
18.70.12	750 mm dia pipes	joint	1693.65
18.70.13	800 mm dia pipes	joint	1844.40
18.70.14	900 mm dia pipes	joint	2314.65
18.70.15	1000 mm dia pipes	joint	2604.40
18.71	Providing and laying Double Flanged (screwed / welded) Centrifugally (Spun) Cast Iron, Class B (IS : 1536) :		
18.71.1	100 mm dia C.I. Double Flanged Pipe	metre	2089.35
18.71.2	150 mm dia C.I. Double Flanged Pipe	metre	3218.50
18.71.3	200 mm dia C.I. Double Flanged Pipe	metre	4995.85
18.71.4	250 mm dia C.I. Double Flanged Pipe	metre	6227.00
18.71.5	300 mm dia C.I. Double Flanged Pipe	metre	8094.30
18.71.6	350 mm dia C.I. Double Flanged Pipe	metre	10093.90
18.71.7	400 mm dia C.I. Double Flanged Pipe	metre	13136.65
18.71.8	450 mm dia C.I. Double Flanged Pipe	metre	16769.30
18.71.9	500 mm dia C.I. Double Flanged Pipe	metre	21619.65
18.71.10	600 mm dia C.I. Double Flanged Pipe	metre	27459.40
18.72	Providing and laying S&S Centrifugally Cast (Spun) / Ductile Iron Pipes conforming to IS : 8329 :		
18.72.1	100 mm dia Ductile Iron Class K-7 pipes	metre	1257.80

Code No	Description	Unit	Rate
18.72.2	150 mm dia Ductile Iron Class K-7 pipes	metre	1789.60
18.72.3	200 mm dia Ductile Iron Class K-7 pipes	metre	2328.15
18.72.4	250 mm dia Ductile Iron Class K-7 pipes	metre	2880.70
18.72.5	300 mm dia Ductile Iron Class K-7 pipes	metre	3518.25
18.72.6	350 mm dia Ductile Iron Class K-7 pipes	metre	4186.50
18.72.7	400 mm dia Ductile Iron Class K-7 pipes	metre	5084.55
18.72.8	450 mm dia Ductile Iron Class K-7 pipes	metre	6163.35
18.72.9	500 mm dia Ductile Iron Class K-7 pipes	metre	6787.40
18.72.10	600 mm dia Ductile Iron Class K-7 pipes	metre	8965.95
18.72.11	700 mm dia Ductile Iron Class K-7 pipes	metre	11566.35
18.72.12	800 mm dia Ductile Iron Class K-7 pipes	metre	14609.05
18.72.13	900 mm dia Ductile Iron Class K-7 pipes	metre	18734.20
18.72.14	1000 mm dia Ductile Iron Class K-7 pipes	metre	19895.80
18.72.15	100 mm dia Ductile Iron Class K-9 pipes	metre	1344.60
18.72.16	150 mm dia Ductile Iron Class K-9 pipes	metre	1837.75
18.72.17	200 mm dia Ductile Iron Class K-9 pipes	metre	2478.10
18.72.18	250 mm dia Ductile Iron Class K-9 pipes	metre	3516.80
18.72.19	300 mm dia Ductile Iron Class K-9 pipes	metre	4344.40
18.72.20	350 mm dia Ductile Iron Class K-9 pipes	metre	5409.85
18.72.21	400 mm dia Ductile Iron Class K-9 pipes	metre	6844.30
18.72.22	450 mm dia Ductile Iron Class K-9 pipes	metre	7976.85
18.72.23	500 mm dia Ductile Iron Class K-9 pipes	metre	9679.85
18.72.24	600 mm dia Ductile Iron Class K-9 pipes	metre	12986.95
18.72.25	700 mm dia Ductile Iron Class K-9 pipes	metre	17431.60
18.72.26	750 mm dia Ductile Iron Class K-9 pipes	metre	18567.85
18.72.27	800 mm dia Ductile Iron Class K-9 pipes	metre	18891.20
18.72.28	900 mm dia Ductile Iron Class K-9 pipes	metre	23163.00
18.72.29	1000 mm dia Ductile Iron Class K-9 pipes	metre	25133.00
18.72A	Providing, laying, jointing and testing S&S Centrifugally Cast Ductile Iron double chamber Class K-9 pressure pipes conforming to IS : 8329:2000 with restrained joints (bolt less), all complete.		
18.72A.1	100 mm nominal dia pipe	metre	1870.75
18.72A.2	150 mm nominal dia pipe	metre	2590.90
18.72A.3	200 mm nominal dia pipe	metre	3260.55
18.72A.4	250 mm nominal dia pipe	metre	4357.60
18.72A.5	300 mm nominal dia pipe	metre	5452.95
18.72A.6	350 mm nominal dia pipe	metre	6636.80
18.72A.7	400 mm nominal dia pipe	metre	8279.45
18.72A.8	450 mm nominal dia pipe	metre	9861.20
18.72A.9	500 mm nominal dia pipe	metre	11628.30
18.72A.10	600 mm nominal dia pipe	metre	15202.60
18.72A.11	700 mm nominal dia pipe	metre	19217.15
18.72A.12	750 mm nominal dia pipe	metre	21627.85

Code No	Description	Unit	Rate
	18.72A.13 800 mm nominal dia pipe	metre	23932.65
	18.72A.14 900 mm nominal dia pipe	metre	29836.95
	18.72A.15 1000 mm nominal dia pipe	metre	36164.10
18.73	Providing and laying Double Flanged (Screwed/ Welded) Centrifugally (Spun) Ductile Iron Pipes of Class K - 9 conforming to IS : 8329 :		
	18.73.1 100 mm dia Ductile Iron Double Flanged	metre	1821.55
	18.73.2 150 mm dia Ductile Iron Double Flanged	metre	2607.50
	18.73.3 200 mm dia Ductile Iron Double Flanged	metre	3360.80
	18.73.4 250 mm dia Ductile Iron Double Flanged	metre	4696.15
	18.73.5 300 mm dia Ductile Iron Double Flanged	metre	5895.70
	18.73.6 350 mm dia Ductile Iron Double Flanged	metre	7550.45
	18.73.7 400 mm dia Ductile Iron Double Flanged	metre	9744.40
	18.73.8 450 mm dia Ductile Iron Double Flanged	metre	10136.10
	18.73.9 500 mm dia Ductile Iron Double Flanged	metre	15472.95
	18.73.10 600 mm dia Ductile Iron Double Flanged	metre	19925.30
	18.73.11 700 mm dia Ductile Iron Double Flanged	metre	22830.80
18.74	Providing and fixing unplasticised P.V.C. connection pipe with PTMT Nuts, collar and bush of approved quality and colour.		
	18.74.1 15 mm nominal bore with 30 cm length	each	96.35
	18.74.2 15 mm nominal bore with 45 cm length	each	121.90
18.75	Providing and fixing PTMT extension nipple for water tank pipe, fittings of approved quality and colour.		
	18.75.1 15 mm nominal bore, weighing not less than 32 gms	each	53.60
	18.75.2 20 mm nominal bore, weighing not less than 40 gms	each	93.45
	18.75.3 25 mm nominal bore, weighing not less than 62 gms	each	113.35
18.76	Cutting holes up to 30x30 cm in walls including making good the same:		
	18.76.1 With common burnt clay F.P.S. (non modular) bricks	each	416.80
18.77	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	452.00
18.78	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	202.90
18.79	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	209.20
18.80	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.		
	18.80.1 80 mm diameter C.I. pipe	100 metre	1844.00
	18.80.2 100 mm diameter C.I. pipe	100 metre	2415.15
	18.80.3 125 mm diameter C.I. pipe	100 metre	3006.40
	18.80.4 150 mm diameter C.I. pipe	100 metre	3593.85

Code No	Description	Unit	Rate
18.80.5	200 mm diameter C.I. pipe	100 metre	4771.60
18.80.6	250 mm diameter C.I. pipe	100 metre	5977.65
18.80.7	300 mm diameter C.I. pipe	100 metre	6618.15
18.80.8	350 mm diameter C.I. pipe	100 metre	7272.35
18.80.9	400 mm diameter C.I. pipe	100 metre	7950.85
18.80.10	450 mm diameter C.I. pipe	100 metre	8635.75
18.80.11	500 mm diameter C.I. pipe	100 metre	9351.25
18.80.12	600 mm diameter C.I. pipe	100 metre	10787.45
18.81	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 :		
18.81.1	80 mm diameter C.I. pipe	100 metre	674.95
18.81.2	100 mm diameter C.I. pipe	100 metre	824.95
18.81.3	125 mm diameter C.I. pipe	100 metre	1003.95
18.81.4	150 mm diameter C.I. pipe	100 metre	1164.25
18.81.5	200 mm diameter C.I. pipe	100 metre	1753.10
18.81.6	250 mm diameter C.I. pipe	100 metre	2012.75
18.81.7	300 mm diameter C.I. pipe	100 metre	2255.15
18.81.8	350 mm diameter C.I. pipe	100 metre	2632.00
18.81.9	400 mm diameter C.I. pipe	100 metre	3011.20
18.81.10	450 mm diameter C.I. pipe	100 metre	3398.15
18.81.11	500 mm diameter C.I. pipe	100 metre	3787.10
18.81.12	600 mm diameter C.I. pipe	100 metre	4573.95
18.82	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:		
18.82.1	80 mm diameter C.I. pipe	metre	315.55
18.82.2	100 mm diameter C.I. pipe	metre	332.50
18.82.3	125 mm diameter C.I. pipe	metre	348.75
18.82.4	150 mm diameter C.I. pipe	metre	365.45
18.82.5	200 mm diameter C.I. pipe	metre	411.50
18.82.6	250 mm diameter C.I. pipe	metre	456.60
18.82.7	300 mm diameter C.I. pipe	metre	497.80
18.82.8	350 mm diameter C.I. pipe	metre	538.00
18.82.9	400 mm diameter C.I. pipe	metre	575.80
18.82.10	450 mm diameter C.I. pipe	metre	614.30
18.82.11	500 mm diameter C.I. pipe	metre	649.45
18.82.12	600 mm diameter C.I. pipe	metre	713.95
18.83	Labour for cutting C.I. pipe with steel saw.		
18.83.1	80 mm diameter C.I. pipe	each cut	145.25
18.83.2	100 mm diameter C.I. pipe	each cut	194.70
18.83.3	125 mm diameter C.I. pipe	each cut	269.80
18.83.4	150 mm diameter C.I. pipe	each cut	365.70

Code No	Description	Unit	Rate
18.83.5	200 mm diameter C.I. pipe	each cut	487.75
18.83.6	250 mm diameter C.I. pipe	each cut	606.85
18.83.7	300 mm diameter C.I. pipe	each cut	728.85
18.83.8	350 mm diameter C.I. pipe	each cut	847.95
18.83.9	400 mm diameter C.I. pipe	each cut	969.55
18.83.10	450 mm diameter C.I. pipe	each cut	1089.10
18.83.11	500 mm diameter C.I. pipe	each cut	1210.70
18.83.12	600 mm diameter C.I. pipe	each cut	1445.95
18.84	Providing & fixing chrome plated brass battery based infrared sensor operated pillar cock, having foam flow technology.		
18.84.1	15 mm nominal bore	each	8803.70
18.85	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) including 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 direction of Engineer-in-charge. (The pipe length inserted in the fitting shall not be measured for payment)		
	Internal work - Exposed on wall		
18.85.1	15.88 mm outer dia pipe	metre	420.25
18.85.2	22.22 mm outer dia Pipe	metre	599.50
18.85.3	28.58 mm outer dia Pipe	metre	704.55
18.85.4	34.00 mm outer dia Pipe	metre	913.65
18.85.5	42.70 mm outer dia Pipe	metre	943.90
18.85.6	48.60 mm outer dia Pipe	metre	1202.35
18.85A	Providing and fixing Stainless Steel pipe and fitting of grade 316L as per IS : 6911:2017 and conforming to EN-10312 standards complete with press type fitting (fitting shall be paid for separately) including 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 direction of Engineer-in-charge. (The pipe length inserted in the fitting shall not be measured for payment)		
	Internal work - Exposed on wall		
18.85A.1	15 mm outer dia pipe	metre	704.05
18.85A.2	22 mm outer dia Pipe	metre	1025.25
18.85A.3	28 mm outer dia Pipe	metre	1272.15
18.85A.4	35 mm outer dia Pipe	metre	1765.10
18.85A.5	42 mm outer dia Pipe	metre	2124.00
18.85A.6	54 mm outer dia Pipe	metre	2699.10
18.86	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) including fixing of the pipe with clamps at 1.00m spacing and also including cutting of chases and making good the walls including testing of joints complete as per direction of Engineer -in-charge. (The pipe length inserted in the fitting shall not be measured for payment)		
	Internal work - Concealed Pipe		
18.86.1	15.88 mm outer dia Pipe.	metre	622.25
18.86.2	22.22 mm Outer dia pipe	metre	801.50

Code No	Description	Unit	Rate
18.86A	Providing and fixing Stainless Steel pipe and fitting of grade 316L as per IS : 6911:2017 and conforming to EN-10312 standards complete with press type fitting (fitting shall be paid for separately) including fixing of the pipe with clamps at 1.00m spacing and also including cutting of chases and making good the walls including testing of joints complete as per direction of Engineer -in-charge. (The pipe length inserted in the fitting shall not be measured for payment) Internal work - Concealed Pipe		
18.86A.1	15 mm outer dia Pipe.	metre	906.10
18.86A.2	22 mm Outer dia pipes	metre	1227.25
18.87	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		
18.87.1	For 15.88 mm outer dia pipe	each	93.90
18.87.2	For 22.22 mm outer dia pipe	each	113.80
18.87.3	For 28.58 mm outer dia pipe	each	156.50
18.87.4	For 34.00 mm outer dia pipe	each	213.40
18.87.5	For 42.70 mm outer dia pipe	each	256.10
18.87.6	For 48.60 mm outer dia pipe	each	291.65
18.87A	Providing and fixing required Stainless Steel Fitting of press fit design of grade 316L as per IS : 6911:2017 and conforming to EN-10312 standards with V-profile and with O-ring sealing gasket of EPDM material of required dia as per direction of Engineer-in-charge. Coupling/Socket		
18.87A.1	For 15 mm outer dia pipe	each	341.45
18.87A.2	For 22 mm outer dia pipe	each	426.80
18.87A.3	For 28 mm outer dia pipe	each	497.90
18.87A.4	For 35 mm outer dia pipe	each	625.95
18.87A.5	For 42 mm outer dia pipe	each	846.45
18.87A.6	For 54 mm outer dia pipe	each	1017.20
18.88	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		
18.88.1	For 22.22 mm x 15.88 mm outer dia pipe	each	139.40
18.88.2	For 28.58 mm x 15.88 mm outer dia pipe	each	186.35
18.88.3	For 28.58 mm x 22.22 mm outer dia pipe	each	189.20
18.88.4	For 34.00 mm x 15.88 mm outer dia pipe	each	313.00
18.88.5	For 34.00 mm x 22.22 mm outer dia pipe	each	327.20
18.88.6	For 34.00 mm x 28.58 mm outer dia pipe	each	327.20
18.88.7	For 42.70 mm x 15.88 mm outer dia pipe	each	517.85

Code No	Description	Unit	Rate
	18.88.8 For 42.70 mm x 22.22 mm outer dia pipe	each	529.25
	18.88.9 For 42.70 mm x 28.58 mm outer dia pipe	each	606.05
	18.88.10 For 42.70 mm x 34.00 mm outer dia pipe	each	643.05
	18.88.11 For 48.60 mm x 15.88 mm outer dia pipe	each	643.05
	18.88.12 For 48.60 mm x 22.22 mm outer dia pipe	each	643.05
	18.88.13 For 48.60 mm x 28.58 mm outer dia pipe	each	643.05
	18.88.14 For 48.60 mm x 34.00 mm outer dia pipe	each	664.35
	18.88.15 For 48.60 mm x 42.70 mm outer dia pipe	each	667.20
18.88A	Providing and fixing required Stainless Steel Fitting of press fit design of grade 316L as per IS : 6911:2017 and conforming to EN-10312 standards with V-profile and with O-ring sealing gasket of EPDM material of required dia as per direction of Engineer-in-charge. Reducer		
	18.88A.1 For 22 mm x 15 mm outer dia pipe	each	405.45
	18.88A.2 For 28 mm x 15 mm outer dia pipe	each	490.80
	18.88A.3 For 28 mm x 22 mm outer dia pipe	each	597.50
	18.88A.4 For 35 mm x 22 mm outer dia pipe	each	604.60
	18.88A.5 For 35 mm x 28 mm outer dia pipe	each	746.85
	18.88A.6 For 42 mm x 22 mm outer dia pipe	each	960.30
	18.88A.7 For 42 mm x 28 mm outer dia pipe	each	1095.45
	18.88A.8 For 42 mm x 35 mm outer dia pipe	each	1145.25
	18.88A.9 For 54 mm x 28 mm outer dia pipe	each	1330.15
	18.88A.10 For 54 mm x 35 mm outer dia pipe	each	1572.00
	18.88A.11 For 54 mm x 42 mm outer dia pipe	each	1636.05
18.89	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		
	18.89.1 For 15.88 mm outer dia pipe	each	92.45
	18.89.2 For 22.22 mm outer dia pipe	each	113.80
	18.89.3 For 28.58 mm outer dia pipe	each	156.50
	18.89.4 For 34.00 mm outer dia pipe	each	220.50
	18.89.5 For 42.70 mm outer dia pipe	each	256.10
	18.89.6 For 48.60 mm outer dia pipe	each	277.40
18.89A	Providing and fixing required Stainless Steel Fitting of press fit design of grade 316L as per IS : 6911:2017 and conforming to EN-10312 standards with V-profile and with O-ring sealing gasket of EPDM material of required dia as per direction of Engineer-in-charge. Sleeve/Slip Coupling/ Socket		
	18.89A.1 For 15 mm outer dia pipe	each	597.50
	18.89A.2 For 22 mm outer dia pipe	each	711.30
	18.89A.3 For 28 mm outer dia pipe	each	825.15
	18.89A.4 For 35 mm outer dia pipe	each	917.60
	18.89A.5 For 42 mm outer dia pipe	each	1066.95

Code No	Description	Unit	Rate
18.89A.6	For 54 mm outer dia pipe	each	1515.10
18.90	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°		
18.90.1	For 15.88 mm outer dia pipe	each	99.60
18.90.2	For 22.22 mm outer dia pipe	each	113.80
18.90.3	For 28.58 mm outer dia pipe	each	163.60
18.90.4	For 34.00 mm outer dia pipe	each	204.85
18.90.5	For 42.70 mm outer dia pipe	each	221.95
18.90.6	For 48.60 mm outer dia pipe	each	273.15
18.90A	Providing and fixing required Stainless Steel Fitting of press fit design of grade 316L as per IS : 6911:2017 and conforming to EN-10312 standards with V-profile and with O-ring sealing gasket of EPDM material of required dia as per direction of Engineer-in-charge. Elbow 90°		
18.90A.1	For 15 mm outer dia pipe	each	483.70
18.90A.2	For 22 mm outer dia pipe	each	682.85
18.90A.3	For 28 mm outer dia pipe	each	910.50
18.90A.4	For 35 mm outer dia pipe	each	1493.75
18.90A.5	For 42 mm outer dia pipe	each	2418.50
18.90A.6	For 54 mm outer dia pipe	each	3200.95
18.91	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°		
18.91.1	For 22.22 mm x 15.88 mm outer dia pipe	each	223.35
18.91.2	For 28.58 mm x 15.88 mm outer dia pipe	each	304.45
18.91.3	For 28.58 mm x 22.22 mm outer dia pipe	each	318.65
18.91.4	For 34.00 mm x 22.22 mm outer dia pipe	each	426.80
18.91.5	For 34.00 mm x 28.58 mm outer dia pipe	each	512.15
18.91.6	For 42.70 mm x 34.00 mm outer dia pipe	each	554.80
18.92	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		
18.92.1	For 15.88 mm outer dia pipe	each	197.75
18.92.2	For 22.22 mm outer dia pipe	each	300.20
18.92.3	For 28.58 mm outer dia pipe	each	466.60
18.92.4	For 34.00 mm outer dia pipe	each	688.55
18.92.5	For 42.70 mm outer dia pipe	each	1088.30
18.92.6	For 48.60 mm outer dia pipe	each	1429.75

Code No	Description	Unit	Rate
18.92A	Providing and fixing required Stainless Steel Fitting of press fit design of grade 316L as per IS : 6911:2017 and conforming to EN-10312 standards with V-profile and with O-ring sealing gasket of EPDM material of required dia as per direction of Engineer-in-charge. Equal Tee		
18.92A.1	For 15 mm outer dia pipe	each	796.70
18.92A.2	For 22 mm outer dia pipe	each	931.85
18.92A.3	For 28 mm outer dia pipe	each	1145.25
18.92A.4	For 35 mm outer dia pipe	each	1422.65
18.92A.5	For 42 mm outer dia pipe	each	1991.70
18.92A.6	For 54 mm outer dia pipe	each	2390.05
18.93	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		
18.93.1	For 22.22 mm x 15.88 mm outer dia pipe	each	268.85
18.93.2	For 28.58 mm x 15.88 mm outer dia pipe	each	357.10
18.93.3	For 28.58 mm x 22.22 mm outer dia pipe	each	362.75
18.93.4	For 34.00 mm x 15.88 mm outer dia pipe	each	633.10
18.93.5	For 34.00 mm x 22.22 mm outer dia pipe	each	654.40
18.93.6	For 34.00 mm x 28.58 mm outer dia pipe	each	675.75
18.93.7	For 42.70 mm x 15.88 mm outer dia pipe	each	1045.65
18.93.8	For 42.70 mm x 22.22 mm outer dia pipe	each	1066.95
18.93.9	For 42.70 mm x 28.58 mm outer dia pipe	each	1095.45
18.93.10	For 42.70 mm x 34.00 mm outer dia pipe	each	1123.90
18.93.11	For 48.60 mm x 15.88 mm outer dia pipe	each	1280.35
18.93.12	For 48.60 mm x 22.22 mm outer dia pipe	each	1296.00
18.93.13	For 48.60 mm x 28.58 mm outer dia pipe	each	1320.20
18.93.14	For 48.60 mm x 34.00 mm outer dia pipe	each	1372.85
18.93.15	For 48.60 mm x 42.70 mm outer dia pipe	each	1401.30
18.93A	Providing and fixing required Stainless Steel Fitting of press fit design of grade 316L as per IS : 6911:2017 and conforming to EN-10312 standards with V-profile and with O-ring sealing gasket of EPDM material of required dia as per direction of Engineer-in-charge. Reducing Tee		
18.93A.1	For 22 mm x 15 mm outer dia pipe	each	910.50
18.93A.2	For 28 mm x 15 mm outer dia pipe	each	1131.00
18.93A.3	For 28 mm x 22 mm outer dia pipe	each	1138.10
18.93A.4	For 35 mm x 15 mm outer dia pipe	each	1429.75
18.93A.5	For 35 mm x 22 mm outer dia pipe	each	1436.85
18.93A.6	For 35 mm x 28 mm outer dia pipe	each	1451.10
18.93A.7	For 42 mm x 22 mm outer dia pipe	each	2013.05
18.93A.8	For 42 mm x 28 mm outer dia pipe	each	2034.35
18.93A.9	For 42 mm x 35 mm outer dia pipe	each	2048.60

Code No	Description	Unit	Rate
	18.93A.10 For 54 mm x 22 mm outer dia pipe	each	2390.05
	18.93A.11 For 54 mm x 28 mm outer dia pipe	each	2446.95
	18.93A.12 For 54 mm x 35 mm outer dia pipe	each	2468.25
	18.93A.13 For 54 mm x 42 mm outer dia pipe	each	2496.75
18.94	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		
	18.94.1 For 15.88 mm outer dia x 15 mm nominal dia threaded	each	291.65
	18.94.2 For 22.22 mm outer dia x 15 mm nominal dia threaded	each	334.30
	18.94.3 For 22.22 mm outer dia x 20 mm nominal dia threaded	each	355.65
	18.94.4 For 28.58 mm outer dia x 15 mm nominal dia threaded	each	448.15
	18.94.5 For 28.58 mm outer dia x 20 mm nominal dia threaded	each	462.35
	18.94.6 For 28.58 mm outer dia x 25 mm nominal dia threaded	each	476.60
	18.94.7 For 34.00 mm outer dia x 15 mm nominal dia threaded	each	661.50
	18.94.8 For 34.00 mm outer dia x 20 mm nominal dia threaded	each	675.75
	18.94.9 For 34.00 mm outer dia x 25 mm nominal dia threaded	each	704.20
	18.94.10 For 34.00 mm outer dia x 32 mm nominal dia threaded	each	732.65
	18.94.11 For 42.70 mm outer dia x 15 mm nominal dia threaded	each	1010.05
	18.94.12 For 42.70 mm outer dia x 20 mm nominal dia threaded	each	1031.40
	18.94.13 For 42.70 mm outer dia x 25 mm nominal dia threaded	each	1088.30
	18.94.14 For 42.70 mm outer dia x 32 mm nominal dia threaded	each	1131.00
	18.94.15 For 42.70 mm outer dia x 40 mm nominal dia threaded	each	1173.65
	18.94.16 For 48.60 mm outer dia x 15 mm nominal dia threaded	each	1415.55
	18.94.17 For 48.60 mm outer dia x 20 mm nominal dia threaded	each	1442.55
	18.94.18 For 48.60 mm outer dia x 25 mm nominal dia threaded	each	1458.20
	18.94.19 For 48.60 mm outer dia x 32 mm nominal dia threaded	each	1493.75
	18.94.20 For 48.60 mm outer dia x 40 mm nominal dia threaded	each	1536.45
	18.94.21 For 48.60 mm outer dia x 50 mm nominal dia threaded	each	1586.25
18.95	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		
	18.95.1 For 15.88 mm outer dia x15 mm nominal dia threaded	each	277.40
	18.95.2 For 22.22 mm outer dia x 15 mm nominal dia threaded	each	305.85
	18.95.3 For 22.22 mm outer dia x 20 mm nominal dia threaded	each	320.10
	18.95.4 For 28.58 mm outer dia x 15 mm nominal dia threaded	each	405.45
	18.95.5 For 28.58 mm outer dia x 20 mm nominal dia threaded	each	419.70
	18.95.6 For 28.58 mm outer dia x 25 mm nominal dia threaded	each	433.90
	18.95.7 For 34.00 mm outer dia x 15 mm nominal dia threaded	each	647.30
	18.95.8 For 34.00 mm outer dia x 20 mm nominal dia threaded	each	690.00
	18.95.9 For 34.00 mm outer dia x 25 mm nominal dia threaded	each	732.65

Code No	Description	Unit	Rate
18.95.10	For 34.00 mm outer dia x 32 mm nominal dia threaded	each	775.35
18.95.11	For 42.70 mm outer dia x 15 mm nominal dia threaded	each	995.85
18.95.12	For 42.70 mm outer dia x 20 mm nominal dia threaded	each	1010.05
18.95.13	For 42.70 mm outer dia x 25 mm nominal dia threaded	each	1038.50
18.95.14	For 42.70 mm outer dia x 32 mm nominal dia threaded	each	1066.95
18.95.15	For 42.70 mm outer dia x 40 mm nominal dia threaded	each	1145.25
18.95.16	For 48.60 mm outer dia x 15 mm nominal dia threaded	each	1287.50
18.95.17	For 48.60 mm outer dia x 20 mm nominal dia threaded	each	1301.70
18.95.18	For 48.60 mm outer dia x 25 mm nominal dia threaded	each	1323.05
18.95.19	For 48.60 mm outer dia x 32 mm nominal dia threaded	each	1394.20
18.95.20	For 48.60 mm outer dia x 40 mm nominal dia threaded	each	1429.75
18.95.21	For 48.60 mm outer dia x 50 mm nominal dia threaded	each	1543.55
18.95A	Providing and fixing required Stainless Steel Fitting of press fit design of grade 316L as per IS : 6911:2017 and conforming to EN-10312 standards with V-profile and with O-ring sealing gasket of EPDM material of required dia as per direction of Engineer-in-charge. Female Thread Tee		
18.95A.1	For 15 mm outer dia x 1/2" nominal dia threaded	each	889.15
18.95A.2	For 22 mm outer dia x 1/2" nominal dia threaded	each	967.40
18.95A.3	For 22 mm outer dia x 3/4" nominal dia threaded	each	1095.45
18.95A.4	For 28 mm outer dia x 1/2" nominal dia threaded	each	1159.45
18.95A.5	For 28 mm outer dia x 3/4" nominal dia threaded	each	1202.15
18.95A.6	For 28 mm outer dia x 1" nominal dia threaded	each	1330.15
18.95A.7	For 35 mm outer dia x 1/2" nominal dia threaded	each	1337.30
18.95A.8	For 35 mm outer dia x 1-1/4" nominal dia threaded	each	1842.30
18.95A.9	For 42 mm outer dia x 1-1/4" nominal dia threaded	each	2141.05
18.95A.10	For 54 mm outer dia x 1-1/2" nominal dia threaded	each	3058.65
18.95A.11	For 54 mm outer dia x 2" nominal dia threaded	each	3670.40
18.96	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		
18.96.1	For 15.88 mm outer dia x 15 mm nominal dia threaded	each	264.60
18.96.2	For 22.22 mm outer dia x 15 mm nominal dia threaded	each	291.65
18.96.3	For 22.22 mm outer dia x 20 mm nominal dia threaded	each	337.15
18.96.4	For 28.58 mm outer dia x 15 mm nominal dia threaded	each	394.05
18.96.5	For 28.58 mm outer dia x 20 mm nominal dia threaded	each	412.55
18.96.6	For 28.58 mm outer dia x 25 mm nominal dia threaded	each	505.05
18.96.7	For 34.00 mm outer dia x 25 mm nominal dia threaded	each	640.20
18.96.8	For 34.00 mm outer dia x 32 mm nominal dia threaded	each	768.25
18.96.9	For 42.70 mm outer dia x 32 mm nominal dia threaded	each	953.15
18.96.10	For 42.70 mm outer dia x 40 mm nominal dia threaded	each	1002.95
18.96.11	For 48.60 mm outer dia x 40 mm nominal dia threaded	each	1287.50

Code No	Description	Unit	Rate
18.96A	18.96.12 For 48.60 mm outer dia x 50 mm nominal dia threaded Providing and fixing required Stainless Steel Fitting of press fit design of grade 316L as per IS : 6911:2017 and conforming to EN-10312 standards with V-profile and with O-ring sealing gasket of EPDM material of required dia as per direction of Engineer-in-charge. Female Thread Connector/ Adapter	each	1387.05
	18.96A.1 For 15 mm outer dia x 1/2" mm nominal dia threaded	each	697.10
	18.96A.2 For 22 mm outer dia x 1/2" mm nominal dia threaded	each	782.45
	18.96A.3 For 22 mm outer dia x 3/4" mm nominal dia threaded	each	917.60
	18.96A.4 For 28 mm outer dia X 1" nominal dia threaded	each	1515.10
	18.96A.5 For 35 mm outer dia X 1-1/4" nominal dia threaded	each	1621.80
	18.96A.6 For 42 mm outer dia X 1-1/2" nominal dia threaded	each	2489.60
	18.96A.7 For 54 mm outer dia X 2" nominal dia threaded	each	3819.80
18.97	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		
	18.97.1 For 15.88 mm outer dia x 15 mm nominal dia threaded	each	250.40
	18.97.2 For 22.22 mm outer dia x 15 mm nominal dia threaded	each	268.85
	18.97.3 For 22.22 mm outer dia x 20 mm nominal dia threaded	each	300.20
	18.97.4 For 28.58 mm outer dia x 20 mm nominal dia threaded	each	458.10
	18.97.5 For 28.58 mm outer dia x 25 mm nominal dia threaded	each	460.95
	18.97.6 For 34.00 mm outer dia x 25 mm nominal dia threaded	each	675.75
	18.97.7 For 34.00 mm outer dia x 32 mm nominal dia threaded	each	803.80
	18.97.8 For 42.70 mm outer dia x 32 mm nominal dia threaded	each	1017.20
	18.97.9 For 42.70 mm outer dia x 40 mm nominal dia threaded	each	1038.50
	18.97.10 For 48.60 mm outer dia x 40 mm nominal dia threaded	each	1330.15
	18.97.11 For 48.60 mm outer dia x 50 mm nominal dia threaded	each	1621.80
18.97A	Providing and fixing required Stainless Steel Fitting of press fit design of grade 316L as per IS : 6911:2017 and conforming to EN-10312 standard with V-profile and with O-ring sealing gasket of EPDM material of required dia as per direction of Engineer-in-charge. Male Thread Connector/ Adapter		
	18.97A.1 For 15 mm outer dia X 1/2" nominal dia threaded	each	640.20
	18.97A.2 For 22 mm outer dia X 1/2" nominal dia threaded	each	761.10
	18.97A.3 For 22 mm outer dia X 3/4" nominal dia threaded	each	803.80
	18.97A.4 For 28 mm outer dia X 1" nominal dia threaded	each	1052.75
	18.97A.5 For 35 mm outer dia X 1-1/4" nominal dia threaded	each	1543.55
	18.97A.6 For 42 mm outer dia X 1-1/2" nominal dia threaded	each	2247.75
	18.97A.7 For 54 mm outer dia X 2" nominal dia threaded	each	3016.00
18.98	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		

Code No	Description	Unit	Rate
18.98.1	For 15.88 mm outer dia x 15 mm nominal dia threaded	each	317.25
18.98.2	For 22.22 mm outer dia x 15 mm nominal dia threaded	each	364.20
18.98.3	For 22.22 mm outer dia x 20 mm nominal dia threaded	each	395.50
18.98.4	For 28.58 mm outer dia x 25 mm nominal dia threaded	each	604.60
18.98.5	For 34.00 mm outer dia x 32 mm nominal dia threaded	each	917.60
18.98.6	For 42.70 mm outer dia x 40 mm nominal dia threaded	each	1298.85
18.98.7	For 48.60 mm outer dia x 50 mm nominal dia threaded	each	1756.95
18.99	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°		
18.99.1	For 15.88 mm outer dia x 15 mm nominal dia threaded	each	270.30
18.99.2	For 22.22 mm outer dia x 15 mm nominal dia threaded	each	305.85
18.99.3	For 22.22 mm outer dia x 20 mm nominal dia threaded	each	341.45
18.99.4	For 25.58 mm outer dia x 25 mm nominal dia threaded	each	369.90
18.99.5	For 34.00 mm outer dia x 32 mm nominal dia threaded	each	476.60
18.99.6	For 42.70 mm outer dia x 32 mm nominal dia threaded	each	754.00
18.99.7	For 42.70 mm outer dia x 40 mm nominal dia threaded	each	754.00
18.99.8	For 48.60 mm outer dia x 40 mm nominal dia threaded	each	1123.90
18.99.9	For 48.60 mm outer dia x 50 mm nominal dia threaded	each	1123.90
18.99A	Providing and fixing required Stainless Steel Fitting of press fit design of grade 316L as per IS : 6911:2017 and conforming to EN-10312 standard with V-profile and with O-ring sealing gasket of EPDM material of required dia as per direction of Engineer-in-charge. Female Threaded Elbow 90°		
18.99A.1	For 15 mm outer dia X 1/2" nominal dia threaded	each	1017.20
18.99A.2	For 22 mm outer dia X 3/4" nominal dia threaded	each	1365.70
18.99A.3	For 28 mm outer dia X 1" nominal dia threaded	each	1877.90
18.99A.4	For 35 mm outer dia X 1-1/4" nominal dia threaded	each	3051.55
18.99A.5	For 42 mm outer dia X 1-1/2" nominal dia threaded	each	3321.85
18.99A.6	For 54 mm outer dia X 2" nominal dia threaded	each	5135.70
18.100	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°		
18.100.1	For 15.88 mm outer dia x 15 mm nominal dia threaded	each	325.80
18.100.2	For 22.22 mm outer dia x 15 mm nominal dia threaded	each	355.65
18.100.3	For 22.22 mm outer dia x 20 mm nominal dia threaded	each	377.00
18.100.4	For 28.58 mm outer dia x 25 mm nominal dia threaded	each	405.45
18.100.5	For 34.00 mm outer dia x 25 mm nominal dia threaded	each	448.15
18.100.6	For 34.00 mm outer dia x 32 mm nominal dia threaded	each	448.15
18.100.7	For 42.70 mm outer dia x 32 mm nominal dia threaded	each	682.85
18.100.8	For 42.70 mm outer dia x 40 mm nominal dia threaded	each	754.00

Code No	Description	Unit	Rate
18.100.9	For 48.60 mm outer dia x 40 mm nominal dia threaded	each	1088.30
18.100.10	For 48.60 mm outer dia x 50 mm nominal dia threaded	each	1187.90
18.100.A	Providing and fixing required Stainless Steel Fitting of press fit design of grade 316L as per IS : 6911:2017 and conforming to EN-10312 standard with V-profile and with O-ring sealing gasket of EPDM material of required dia as per direction of Engineer-in-charge. Male Threaded Elbow 90°		
18.100A.1	For 15 mm outer dia X 1/2" nominal dia threaded	each	832.25
18.100A.2	For 22 mm outer dia X 3/4" nominal dia threaded	each	1251.95
18.100A.3	For 28 mm outer dia X 1" nominal dia threaded	each	1664.50
18.100A.4	For 35 mm outer dia X 1-1/4" nominal dia threaded	each	2290.45
18.100A.5	For 42 mm outer dia X 1-1/2" nominal dia threaded	each	4196.80
18.100A.6	For 54 mm outer dia X 2" mm nominal dia threaded	each	4772.95
18.101	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		
18.101.1	For 15.88 mm outer dia pipe	each	58.35
18.101.2	For 22.22 mm outer dia pipe	each	85.35
18.101.3	For 28.58 mm outer dia pipe	each	122.35
18.101.4	For 34.00 mm outer dia pipe	each	234.75
18.101.5	For 42.70 mm outer dia pipe	each	342.85
18.101.6	For 48.60 mm outer dia pipe	each	426.80
18.101A	Providing and fixing required Stainless Steel Fitting of press fit design of grade 316L as per IS : 6911:2017 and conforming to EN-10312 standard with V-profile and with O-ring sealing gasket of EPDM material of required dia as per direction of Engineer-in-charge. Cap		
18.101A.1	For 15 mm outer dia pipe	each	505.05
18.101A.2	For 22 mm outer dia pipe	each	654.40
18.101A.3	For 28 mm outer dia pipe	each	818.00
18.101A.4	For 35 mm outer dia pipe	each	1145.25
18.101A.5	For 42 mm outer dia pipe	each	2489.60
18.101A.6	For 54 mm outer dia pipe	each	2738.55
18.102	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		
18.102.1	For 15.88 mm outer dia pipe	each	136.55
18.102.2	For 22.22 mm outer dia pipe	each	240.45
18.102.3	For 28.58 mm outer dia pipe	each	386.95

Code No	Description	Unit	Rate
18.102A	Providing and fixing required Stainless Steel Fitting of press fit design of grade 316L as per IS : 6911:2017 and conforming to EN-10312 standard with V-profile and with O-ring sealing gasket of EPDM material of required dia as per direction of Engineer-in-charge. Pipe Bridge		
18.102A.1	For 15 mm outer dia pipe	each	654.40
18.102A.2	For 22 mm outer dia pipe	each	1764.10
18.102A.3	For 28 mm outer dia pipe	each	2425.60
18.103	Providing and fixing required Stainless Steel Fitting of press fit design of grade 316L as per IS : 6911:2017 and conforming to EN-10312 standard with V-profile and with O-ring sealing gasket of EPDM material of required dia as per direction of Engineer-in-charge. Male Union		
18.103.1	For 15 mm outer dia X 1/2" nominal dia threaded	each	1408.40
18.103.2	For 22 mm outer dia X 1/2" nominal dia threaded	each	1422.65
18.103.3	For 22 mm outer dia X 3/4" nominal dia threaded	each	1628.90
18.103.4	For 28 mm outer dia X 1" nominal dia threaded	each	2873.70
18.103.5	For 35 mm outer dia X 1-1/4" nominal dia threaded	each	3001.75
18.103.6	For 42 mm outer dia X 1-1/2" nominal dia threaded	each	3385.85
18.103.7	For 54 mm outer dia X 2" nominal dia threaded	each	5861.25
18.104	Providing and fixing required Stainless Steel Fitting of press fit design of grade 316L as per IS : 6911:2017 and conforming to EN-10312 standard with V-profile and with O-ring sealing gasket of EPDM material of required dia as per direction of Engineer-in-charge. Female Union		
18.104.1	For 22 mm outer dia X 3/4" nominal dia threaded	each	1508.00
18.104.2	For 28 mm outer dia X 1" nominal dia threaded	each	2034.35
18.105	Providing and fixing required Stainless Steel Fitting of press fit design of grade 316L as per IS : 6911:2017 and conforming to EN-10312 standard with V-profile and with O-ring sealing gasket of EPDM material of required dia as per direction of Engineer-in-charge. Female Transition Elbow / FTE		
18.105.1	For 15 mm outer dia X 1/2" nominal dia threaded	each	1031.40
18.105.2	For 22 mm outer dia X 1/2" nominal dia threaded	each	1379.95
18.105.3	For 22 mm outer dia X 3/4" nominal dia threaded	each	1429.75

SUB HEAD : 19.0

DRAINAGE

19.0 DRAINAGE

Code No	Description	Unit	Rate
NOTE : - The rates given for all the items under sub-head 'Drainage' 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.			
STONE WARE PIPES AND FITTINGS			
19.1	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 :		
19.1.1	100 mm diameter	metre	443.60
19.1.2	150 mm diameter	metre	695.80
19.1.3	200 mm diameter	metre	970.35
19.1.4	250 mm diameter	metre	1505.60
19.1.5	300 mm diameter	metre	2064.15
19.2	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 :		
19.2.1	100 mm diameter S.W. pipe	metre	964.75
19.2.2	150 mm diameter S.W. pipe	metre	1179.85
19.2.3	200 mm diameter S.W. pipe	metre	1375.45
19.2.4	250 mm diameter S.W. pipe	metre	1590.55
19.3	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 :		
19.3.1	100 mm diameter S.W. pipe	metre	458.50
19.3.2	150 mm diameter S.W. pipe	metre	743.10
19.3.3	200 mm diameter S.W. pipe	metre	873.50
19.3.4	250 mm diameter S.W. pipe	metre	1016.90
19.3.5	300 mm diameter S.W. pipe	metre	1173.35
19.4	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 x 300 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:		
19.4.1	100x100 mm size P type		
19.4.1.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	each	2707.65
19.4.1.2	With Sewer bricks conforming to IS : 4885	each	2685.20
19.4.2	150 x 100 mm size P type		
19.4.2.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	each	2734.20
19.4.2.2	With sewer bricks conforming to IS : 4885	each	2711.70
19.4.3	180x150 mm size P type		
19.4.3.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	each	2802.15
19.4.3.2	With Sewer bricks conforming to IS : 4885	each	2779.65

Code No	Description	Unit	Rate
19.5	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 :		
19.5.1	100 mm diameter	metre	89.00
19.5.2	150 mm diameter	metre	98.45
19.5.3	200 mm diameter	metre	104.70
19.5.4	250 mm diameter	metre	111.00
19.5.5	300 mm diameter	metre	117.25
19.5.6	350 mm diameter	metre	135.05
19.5.7	400 mm diameter	metre	147.65
19.5.8	450 mm diameter	metre	153.90
19.6	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 :		
19.6.1	100 mm dia. R.C.C. pipe	metre	507.05
19.6.2	150 mm dia. R.C.C. pipe	metre	556.45
19.6.3	250 mm dia. R.C.C. pipe	metre	899.80
19.6.4	300 mm dia. R.C.C. pipe	metre	994.30
19.6.5	450 mm dia. R.C.C. pipe	metre	1620.95
19.6.6	500 mm dia. R.C.C. pipe	metre	1918.90
19.6.7	600 mm dia. R.C.C. pipe	metre	2243.40
19.6.8	700 mm dia. R.C.C. pipe	metre	2932.50
19.6.9	800 mm dia. R.C.C. pipe	metre	3511.95
19.6.10	900 mm dia. R.C.C. pipe	metre	4750.85
19.6.11	1000 mm dia. R.C.C. pipe	metre	5562.60
19.6.12	1100 mm dia. R.C.C. pipe	metre	6276.60
19.6.13	1200 mm dia. R.C.C. pipe	metre	7102.15
19.7	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 :		
19.7.1	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) :		
19.7.1.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	each	12770.55
19.7.1.2	With Sewer bricks conforming to IS : 4885	each	12711.80

Code No	Description	Unit	Rate
19.7.2	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) :		
19.7.2.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	each	26405.50
19.7.2.2	With Sewer bricks conforming to IS : 4885	each	26244.70
19.7.3	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) :		
19.7.3.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	each	32857.85
19.7.3.2	With Sewer bricks conforming to IS : 4885	each	32719.50
19.8	Extra for depth for manholes :		
19.8.1	Size 90x80 cm		
19.8.1.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	metre	8825.40
19.8.1.2	With Sewer bricks conforming to IS : 4885	metre	8654.25
19.8.2	Size 120x90 cm		
19.8.2.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	metre	10585.50
19.8.2.2	With Sewer bricks conforming to IS : 4885	metre	10381.45
19.9	Constructing brick masonry circular type manhole 0.91 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 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 :		
19.9.1	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 12 mm thick cement plaster at the external surface shall be paid for separately) :		
19.9.1.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	each	12725.00
19.9.1.2	With Sewer bricks conforming to IS : 4885	each	12600.40
19.10	Extra depth for circular type manhole 0.91m internal dia (at bottom) beyond 0.91 m to 1.67 m		
19.10.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	metre	7591.80
19.10.2	With Sewer bricks conforming IS : 4885	metre	7448.45

Code No	Description	Unit	Rate
19.11	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 :		
19.11.1	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) :		
19.11.1.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	each	24702.75
19.11.1.2	With Sewer bricks conforming IS : 4885	each	24446.70
19.12	Extra depth for circular type manhole 1.22 m internal dia (at bottom) beyond 1.68 m to 2.29 m :		
19.12.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	metre	9861.45
19.12.2	With Sewer bricks conforming IS : 4885	metre	9674.40
19.13	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 :		
19.13.1	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) :		
19.13.1.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	each	52969.10
19.13.1.2	With Sewer bricks conforming IS : 4885	each	52266.80
19.14	Extra depth for circular type manhole 1.52 m internal dia (at bottom) beyond 2.30 m :		
19.14.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	metre	22771.85
19.14.2	With Sewer bricks conforming IS : 4885	metre	22288.10

Code No	Description	Unit	Rate
19.15	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 :		
19.15.1	With 20x20 mm square bar	each	544.70
19.15.2	With 20 mm diameter round bar	each	496.50
19.16	Providing orange colour safety foot rest of minimum 6 mm thick plastic encapsulated as per IS : 10910, on 12 mm dia steel bar conforming to IS: 1786, having minimum cross section as 23 mmx25 mm and over all minimum length 263 mm and width as 165 mm with minimum 112 mm space between protruded legs having 2 mm tread on top surface by ribbing or chequering besides necessary and adequate anchoring projections on tail length on 138 mm as per standard drawing and suitable to with stand the bend test and chemical resistance test as per specifications and having manufacture's permanent identification mark to be visible even after fixing, including fixing in manholes with 30x20x15 cm cement concrete block 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) complete as per design.	each	553.70
19.17	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):		
19.17.1	With 20x20 mm square bar	each	670.20
19.17.2	With 20 mm diameter round bar	each	621.95
19.18	Supplying and fixing C.I. cover without frame for manholes :		
19.18.1	455x610 mm rectangular C.I. cover (light duty) the weight of the cover to be not less than 23 kg	each	1358.00
19.18.2	500 mm diameter C.I. cover (medium duty) the weight of the cover to be not less than 58 kg	each	3441.20
19.18.3	560 mm diameter C.I. cover (heavy duty) the weight of the cover to be not less than 108 kg	each	7575.40
19.19	Providing and fixing in position pre-cast R.C.C. manhole cover and frame of required shape and approved quality		
19.19.1	L D- 2.5		
19.19.1.1	Rectangular shape 600x450 mm internal dimensions	each	1437.65
19.19.1.2	Square shape 450 mm internal dimensions	each	1155.45
19.19.1.3	Circular shape 450 mm internal diameter	each	1169.65
19.19.2	M D - 10		
19.19.2.1	Square shape 450 mm internal dimension	each	1386.55
19.19.2.2	Circular shape 500 mm internal diameter	each	1172.60
19.19.3	H D - 20		
19.19.3.1	Circular shape 560 mm internal diameter	each	1675.70
19.19.4	EHD - 35		
19.19.4.1	Circular shape 560 mm internal dia	each	2123.80
19.20	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	787.00

Code No	Description	Unit	Rate
19.21	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 :		
19.21.1	For pipes 100 to 250 mm diameter	each	810.45
19.21.2	For pipes 250 to 300 mm diameter	each	922.40
19.21.3	For pipes 350 to 450 mm diameter	each	1328.45
19.22	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 :		
19.22.1	100 mm dia sand cast iron drop connection	each	12172.05
19.22.2	150 mm dia sand cast iron drop connection	each	16577.80
19.23	Extra for depths beyond 60 cm of sand cast iron drop connection complete:		
19.23.1	For 100 mm dia sand cast iron drop connection	metre	3240.45
19.23.2	For 150 mm dia sand cast iron drop connection	metre	4126.90
19.24	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:		
19.24.1	Rectangular manhole 90x80 cm and 45 cm deep	each	2540.85
19.24.2	Rectangular manhole 120x90 cm and 90 cm deep	each	4475.50
19.24.3	Rectangular arch type manhole 140x90 cm and 2.45 m deep	each	8466.35
19.24.4	Circular manhole 122 cm diameter and 1.68 m deep	each	6472.40
19.25	Extra for depth of manholes dismantled :		
19.25.1	Rectangular manhole 90x80 cm and beyond 45 cm depth	metre	2045.50
19.25.2	Rectangular manhole 120x90 cm and beyond 90 cm depth	metre	2436.90
19.25.3	Rectangular arch type manhole 140x90 cm and beyond 2.45 m depth (up to 4.25 m depth)	metre	1975.85
19.25.4	Circular manhole 122 cm diameter and beyond 1.68 m depth (up to 2.29 m depth)	metre	2229.20
19.26	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) :		
19.26.1	Rectangular manhole 90x80 cm with rectangular cover 600 x 450 mm of grade LD - 2.5	each	2625.50
19.26.2	Rectangular manhole 120x90 cm with circular cover 500 mm dia of grade MD - 10	each	4168.05

Code No	Description	Unit	Rate
19.26.3	Rectangular manhole 120x90 cm with circular cover 560 mm dia of grade HD - 20	each	3881.50
19.26.4	Circular manhole 140 cm dia with circular cover 600 mm dia of grade EHD - 35	each	320.15
19.27	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 :		
19.27.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	each	5957.90
19.28	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 :		
19.28.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	each	6889.80
19.29	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 :		
19.29.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	each	11520.55
19.30	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 fine sand : 3 graded stone aggregate 20 mm nominal size), foundation concrete 1:5:10 (1 cement : 5 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:		
19.30.1	Inside dimensions 455x610 mm and 45 cm deep for single pipe line :		
19.30.1.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	each	6937.90
19.30.2	Inside dimensions 500x700 mm and 45 cm deep for pipe line with one or two inlets :		
19.30.2.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	each	8150.50
19.30.3	Inside dimensions 600x 850 mm and 45 cm deep for pipe line with three or more inlets :		
19.30.3.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	each	9594.35
19.31	Extra for depth beyond 45 cm of brick masonry chamber :		
19.31.1	For 455x610 mm size		
19.31.1.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	metre	6117.00
19.31.2	For 500x700 mm size		

Code No	Description	Unit	Rate
19.31.2.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	metre	6680.60
19.31.3	For 600x850 mm size		
19.31.3.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	metre	7789.85
19.32	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, 1.8 m long complete as per standard design.		
19.32.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	each	26861.90
19.33	Constructing soak pit 1.20x1.20x1.20 m filled with brick bats including S.W. drain pipe 100 mm diameter and 1.20 m long complete as per standard design.	each	2890.10
19.34	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 :		
19.34.1	100 mm dia	each	441.40
19.34.2	150 mm dia	each	602.65
19.35	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. complete		
19.35.1	450 mm dia RCC pipes.	metre	2676.55
19.35.2	600 mm dia RCC pipes.	metre	3401.25
19.35.3	900 mm dia RCC pipes.	metre	5377.25
19.35.4	1000 mm dia RCC pipes. (Laying by manual/ machanical means)	metre	6656.55
19.35.5	1200 mm dia RCC pipes. (Laying by manual/ machanical means)	metre	9126.20
19.35.6	1800 mm dia RCC pipes. (Laying by manual/ machanical means)	metre	16184.00
19.36	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. complete		
19.36.1	450 mm dia RCC pipes.	metre	3053.55
19.36.2	600 mm dia RCC pipes.	metre	3934.75
19.36.3	900 mm dia RCC pipes.	metre	7397.40
19.36.4	1000 mm dia RCC pipes. (Laying by manual/ machanical means)	metre	9181.75
19.36.5	1200 mm dia RCC pipes. (Laying by manual/ machanical means)	metre	11119.35
19.36.6	1800 mm dia RCC pipes. (Laying by manual/ machanical means)	metre	22578.75

SUB HEAD : 20.0

PILE WORK

20.0 PILE WORK

Code No	Description	Unit	Rate
20.1	Providing, driving with hydraulic piling rigs with power units and installing driven cast-in-situ reinforced cement concrete piles of grade M-25 of specified diameter and length below the pile cap, to carry safe working load not less than specified, excluding the cost of steel reinforcement but including the cost of shoe and the length of pile to be embedded in the pile cap etc. all complete. (Length of pile for payment shall be measured from top of shoe to the bottom of pile cap) :		
20.1.1	400 mm dia piles	metre	2767.00
20.1.2	450 mm dia piles	metre	3430.65
20.1.3	500 mm dia piles	metre	4129.95
20.1.4	550 mm dia piles	metre	4530.90
20.1.5	750 mm dia piles	metre	7738.55
20.1.6	1000 mm dia piles	metre	12748.45
20.1.7	1200 mm dia piles	metre	16671.05
20.1.8	1500 mm dia piles	metre	23577.75
20.2	Boring, providing and installation bored cast-in-situ reinforced cement concrete piles of grade M-25 of specified diameter and length below the pile cap, to carry a safe working load not less than specified, excluding the cost of steel reinforcement but including the cost of boring with bentonite solution and temporary casing of appropriate length for setting out and removal of same and the length of the pile to be embedded in the pile cap etc. by percussion drilling using Direct mud circulation (DMC) or Bailer and chisel technique by tripod and mechanical Winch Machine all complete, including removal of excavated earth with all its lifts and leads (length of pile for payment shall be measured up to bottom of pile cap).		
20.2.1	450 mm dia piles	metre	2278.30
20.2.2	500 mm dia piles	metre	2703.25
20.2.3	600 mm dia piles	metre	3637.20
20.2.4	750 mm dia piles	metre	5581.20
20.2A	Boring, providing and installation bored cast-in-situ reinforced cement concrete piles of grade M-25 of specified diameter and length below pile cap, to carry a safe working load not less than specified, excluding the cost of steel reinforcement but including the cost of boring with bentonite solution and temporary casing of appropriate length for setting out and removal of same and the length of the pile to be embedded in the pile cap etc. by Crawler mounted, telescopic boom hydraulic piling Rig all complete, including removal of excavated earth with all its lifts and leads (length of pile for payment shall be measured up to bottom of pile cap). Note: Truck Mounted rotary/TMR/Tube well boring machine shall not be used.	metre	
20.2A.1	600 mm dia piles	metre	5386.25
20.2A.2	750 mm dia piles	metre	7758.75
20.2A.3	1000 mm dia piles	metre	12990.80
20.2A.4	1200 mm dia piles	metre	17025.75
20.2A.5	1500 mm dia piles	metre	24408.80

Code No	Description	Unit	Rate
20.3	Boring with hydraulic piling rigs with power units, providing and installing cast in situ single under reamed piles of specified diameter and length below pile cap in M-25 cement concrete, to carry a safe working load not less than specified, excluding the cost of steel reinforcement but including the cost of boring with bentonite solution and the length of the pile to be embedded in pile cap etc. all complete. (Length of pile for payment shall be measured upto to the bottom of pile cap) :		
20.3.1	300 mm dia piles	metre	3065.60
20.3.2	400 mm dia piles	metre	3797.30
20.3.3	450 mm dia piles	metre	4232.75
20.3.4	550 mm dia piles	metre	4721.15
20.4	Extra over single under ream for providing additional bulbs in under reamed piles, under specified diameter(only the nos. of extra bulbs are to be paid)		
20.4.1	300 mm dia piles	each	2626.30
20.4.2	400 mm dia piles	each	2924.45
20.4.3	450 mm dia piles	each	3104.20
20.4.4	550 mm dia piles	each	3360.15
20.5	Providing, driving (with vibrating pile driving hammer complete with power units & accessories) and installing driven Pre-cast reinforced cement concrete piles of specified diameter and length below the pile cap in M-25 cement concrete to carry safe working load not less than specified with a central through preformed hole with M.S. black pipe of dia, 40 mm for grouting with cement sand grouting of mix 1:2 (1cement : 2 coarse sand) under sufficient positive pressure to ensure complete filling including centring, shuttering, driving and removing the steel casing pipe and lifting casing etc. complete but excluding the cost of steel reinforcement. (Length of pile for payment shall be measured from top of the shoe to the bottom of pile cap).		
20.5.1	400 mm dia piles	metre	3727.80
20.5.2	450 mm dia piles	metre	4766.25
20.5.3	500 mm dia piles	metre	4931.35
20.5.4	550 mm dia piles	metre	5633.00
20.5.5	750 mm dia piles	metre	10846.80
20.5.6	1000 mm dia piles	metre	14946.40
20.6	Vertical load testing of piles in accordance with IS 2911 (Part IV) including installation of loading platform by Kentledge/Anchor piles method and preparation of pile head or construction of test cap and dismantling of test cap after test etc. complete as per specification & the direction of Engineer in-charge. Note: 1. Initial and Routine Load Test shall not be carried out by Dynamic method of testing. Note: 2. Testing agency shall submit the design of loading platform for the approval of Engineer-in-charge.		
20.6.1	Single pile upto 50 tonne Safe capacity		
20.6.1.1	Initial test (Test Load 2.5 times the Safe capacity)	per test	54771.50
20.6.1.2	Routine test (Test Load 1.5 times the Safe capacity)	per test	19632.40

Code No	Description	Unit	Rate
20.6.2	Single pile above 50 tonne and upto 100 tonne Safe capacity		
20.6.2.1	Initial test (Test Load 2.5 times the Safe capacity)	per test	61173.35
20.6.2.2	Routine test (Test Load 1.5 times the Safe capacity)	per test	32436.10
20.6.3	Group of two or more piles upto 50 tonne Safe capacity		
20.6.3.1	Initial test (Test Load 2.5 times the Safe capacity)	per test	70420.50
20.6.3.2	Routine test (Test Load 1.5 times the Safe capacity)	per test	40545.15
20.7	Cyclic vertical load testing of pile in accordance with IS Code of practice IS:2911 (part IV) by Kentledge method including preparation of pile head etc for.		
20.7.1	Single pile		
20.7.1.1	Upto 50 tonne Safe capacity pile	per test	19632.40
20.7.1.2	Above 50 tonne and upto 100 tonne Safe capacity pile	per test	32436.10
20.7.2	Group of two or more piles		
20.7.2.1	Upto 400 tonne Safe capacity of group	per test	40545.15
20.8	Lateral load testing of single pile in accordance with IS : Code of practice IS: 2911 (Part IV) for determining safe allowable lateral load on pile :		
20.8.1	Upto 50 tonne capacity pile	per test	19632.40
20.8.2	Above 50 tonne and upto 100 tonne capacity pile	per test	32862.90
20.9	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	1153.20
	Note :- The inclusion of the above item in the schedule of work shall be judiciously decided by the technical sanctioning authority, keeping in view the quality control, type of soil strata & importance of the project.		

SUB HEAD : 21.0

ALUMINIUM WORK

21.0 ALUMINIUM WORK

Code No	Description	Unit	Rate
21.1	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, paneling and dash fasteners to be paid for separately) :		
21.1.1	For fixed portion		
21.1.1.1	Anodised aluminium (anodised transparent or dyed to required shade according to IS: 1868, Minimum anodic coating of grade AC 15)	kg	495.05
21.1.1.2	Powder coated aluminium (minimum thickness of powder coating 50 micron)	kg	530.90
21.1.1.3	Polyester powder coated aluminium (minimum thickness of polyester powder coating 50 micron)	kg	539.85
21.1.2	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)		
21.1.2.1	Anodised aluminium (anodised transparent or dyed to required shade according to IS: 1868, Minimum anodic coating of grade AC 15)	kg	598.60
21.1.2.2	Powder coated aluminium (minimum thickness of powder coating 50 micron)	kg	634.45
21.1.2.3	Polyester powder coated aluminium (minimum thickness of polyester powder coating 50 micron)	kg	643.45
21.2	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 aluminum 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.		
21.2.1	Pre-laminated particle board with decorative lamination on one side and balancing lamination on other side	sqm	1139.30
21.2.2	Pre-laminated particle board with decorative lamination on both sides	sqm	1115.40
21.3	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):		
21.3.1	With float glass panes of 4.0 mm thickness (weight not less than 10kg/sqm)	sqm	1176.80

Code No	Description	Unit	Rate
21.3.2	With float glass panes of 5 mm thickness (weight not less than 12.50 kg/sqm)	sqm	1505.25
21.3.3	With float glass panes of 8 mm thickness (weight not less than 20 kg/sqm)	sqm	1685.40
21.4	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 upto 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.		
21.4.1	With stainless steel cover plate minimum 1.25 mm thickness	each	2823.85
21.4.2	With brass cover plate minimum 1.25 mm thickness	each	2966.10
21.5	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	817.15
21.6	Providing and fixing 6 mm dia. G.I. level adjusting hangers (upto 1200 mm length), fixed to roof slabs by means of ceiling cleats made out of G.I. flat 40x3 mm 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	82.45
21.7	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 200 mm 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.		
21.7.1	Anodised aluminium sheet 2.5 mm thick (anodised transparent or dyed to required shade according to IS: 1868, Minimum anodic coating of grade AC 15)	kg	680.55
21.7.2	Powder coated aluminium sheet 2.5 mm thick (minimum thickness of powder coating 50 micron)	kg	716.40
21.8	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.		
21.8.1	Upto 5 mm depth and 5 mm width	metre	96.75

Code No	Description	Unit	Rate
21.9	Extra for applying additional anodic coating AC 25 instead of AC 15 to aluminium extruded sections.		
21.9.1	For fixed portion	kg	12.80
21.9.2	For shutters of doors, windows & ventilators	kg	12.80
21.10	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	4997.70
21.11	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.		
21.11.1	205 X 19 mm	each	344.30
21.11.2	255 X 19 mm	each	387.00
21.11.3	355 X 19 mm	each	325.80
21.11.4	510 X 19 mm	each	802.40
21.11.5	710 X 19 mm	each	1478.15
21.12	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.		
21.12.1	Anodized (AC 15) aluminium tubular handle bar	each	575.75
21.12.2	Powder coated minimum thickness 50 micron aluminium tubular handle bar	each	631.55
21.12.3	Polyester powder coated minimum thickness 50 micron aluminium tubular handle bar	each	645.50
21.13	Providing and fixing Brass 100 mm 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	528.85
21.14	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	402.80
21.15	Providing and fixing aluminium casement windows fastener of required length for aluminium windows with necessary screws etc. complete.		
21.15.1	Anodized (AC 15) aluminium	each	89.40
21.15.2	Powder coated minimum thickness 50 micron aluminium	each	97.95
21.15.3	Polyester powder coated minimum thickness 50 micron aluminium	each	95.10
21.16	Providing and fixing aluminium round shape handle of outer dia 100 mm with SS screws etc. complete as per direction of Engineer-in-charge		
21.16.1	Anodized (AC 15) aluminium	each	107.90
21.16.2	Powder coated minimum thickness 50 micron aluminium	each	109.30
21.16.3	Polyester powder coated minimum thickness 50 micron aluminium	each	112.15

Code No	Description	Unit	Rate
21.17	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	638.35
21.18	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	5325.90
21.19	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		
21.19.1	Upto 5 mm depth and 5 mm width	metre	148.10
21.19.2	Upto 10 mm depth and 10 mm width	metre	200.95
21.19.3	Upto 20 mm depth and 20 mm width	metre	363.20

SUB HEAD : 22.0

WATER PROOFING

22.0 WATER PROOFING

Code No	Description	Unit	Rate
22.1	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) 1st 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) including applying of twice (at base and top of mortar) cement slurry @ 2.2kg/m² (each time) mixed with water proofing compound conforming to IS:2645 in the recommended proportion over the leveling course (leveling 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.		
	22.1.1 Using rough kota stone.	sqm	1515.60
22.2	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 :		
	22.2.1 Using rough Kota stone	sqm	2024.70
22.3	Providing and laying water proofing treatment to vertical and horizontal surfaces of depressed portions of W.C., kitchen and the like consisting of: (i) 1st 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) 2nd 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) 3rd course of applying blown or residual bitumen applied hot at 1.7 kg. per sqm of area. (iv) 4th 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	769.60
22.4	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 :		
	22.4.1 Serrated with central bulb (225 mm wide, 8-11 mm thick)	metre	327.65
	22.4.2 Dumb bell with central bulb (180 mm wide, 8 mm thick)	metre	267.90
	22.4.3 Kickers (320 mm wide, 5 mm thick)	metre	263.65
22.5	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 :		

Code No	Description	Unit	Rate
22.6	(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	617.05
	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 upto 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).		
22.7	For the purpose of measurement the entire treated surface will be measured.	sqm	688.90
	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 upto 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 upto 300 mm height including rounding of junctions of walls and slabs. (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 jointless 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.		

Code No	Description	Unit	Rate
	(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":		
22.7.1	With average thickness of 120 mm and minimum thickness at khurra as 65 mm.	sqm	1684.60
22.8	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 decimeter per square metre, including preparation of surface but excluding grading complete with :		
22.8.1	Bitumen felt (hessian base) type 3 grade I conforming to IS : 1322	sqm	515.05
22.9	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 decimeter per sqm including preparation of surface but excluding grading, complete.	sqm	806.45
22.10	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 decimeter per sqm including preparation of surface, excluding grading, compete.	sqm	910.85
22.11	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 decimeter per sqm including preparation of surface but excluding grading, complete.	sqm	910.85
22.12	Supplying and applying bituminous solution primer on roof and / or wall surface at 0.24 litre per sqm.	sqm	59.45
22.13	Deduct for omitting in water proofing treatment final course of spreading stone grit 6 mm down size or pea sized gravel :		
22.13.1	at 6 cudm per sqm	sqm	17.55
22.13.2	at 8 cudm per sqm	sqm	22.10
22.14	Grading roof for water proofing treatment with		
22.14.1	Cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	8042.30
22.14.2	Cement mortar 1:3 (1 cement : 3 coarse sand)	cum	16112.10
22.14.3	Cement mortar 1:4 (1cement : 4 coarse sand)	cum	15155.60

Code No	Description	Unit	Rate
22.22	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 0.50 mm. 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	388.00
22.22A	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	563.10
22.23	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 fiber 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 0.50 mm. 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.		
	22.23.1 For vertical surface two coats @ 0.70 kg per sqm per coat	sqm	472.90
	22.23.2 For horizontal surface one coat @1.10 kg per sqm.	sqm	362.80
22.23A	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	447.35

Code No	Description	Unit	Rate
22.24	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 @0.60 kg 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 0.50 mm. 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	309.60
22.24A	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 kg/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 litre/10 sqm, complete as the direction of Engineer -in-Charge.	sqm	597.00
22.25	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 $\geq$ 45 MPa and adhesive bond strength Class R3 $\geq$ 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.		
22.25.1	For sealing cracks and faulty construction joints, routed out/ making U-shape groove size 25x25 mm and then primed the area with integral crystalline slurry @0.05 kg/running metre and while the surface is tacky filled the groove upto surface with crystalline mortar @1.50 kg/running metre. Once crystalline mortar is touch dry then finally applied two coats of integral crystalline slurry @0.05 kg/running metre per coat.	metre	547.70
22.25.2	For patching of tie rod holes, prepared tie rod hole surface and then primed the area with integral crystalline slurry @0.070 kg/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 0.040 kg to fill the hole)	each hole	23.05
22.26	Providing and applying of swellable type water stop tape, 19 mm x 25 mm thick in linear metre (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 metre. 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	573.45

SUB HEAD : 23.0

**RAIN WATER HARVESTING
& TUBEWELLS**

23.0 RAIN WATER HARVESTING & TUBEWELLS

Code No	Description	Unit	Rate
23.1	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, upto 90 metre depth below ground level.		
23.1.1	All types of soil		
23.1.1.1	300 mm dia	metre	707.75
23.1.1.2	350 mm dia	metre	774.05
23.1.1.3	400 mm dia	metre	990.80
23.1.2	Rocky strata including Boulders		
23.1.2.1	300 mm dia	metre	1695.10
23.1.2.2	350 mm dia	metre	1792.85
23.1.2.3	400 mm dia	metre	2131.45
23.2	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 & upto 150 metre depth below ground level.		
23.2.1	All types of soil		
23.2.1.1	300 mm dia	metre	825.70
23.2.1.2	350 mm dia	metre	917.40
23.2.1.3	400 mm dia	metre	1238.50
23.2.2	Rocky strata including Boulders		
23.2.2.1	300 mm dia	metre	1870.60
23.2.2.2	350 mm dia	metre	1955.60
23.2.2.3	400 mm dia	metre	2496.55
23.3	Supplying, assembling, lowering and fixing in vertical position in bore well, unplasticized 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.		
23.3.1	100 mm nominal size dia	metre	672.30
23.3.2	150 mm nominal size dia	metre	793.25
23.3.3	200 mm nominal size dia	metre	1113.35
23.4	Supplying, assembling, lowering and fixing in vertical position in bore well unplasticized 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.		
23.4.1	100 mm nominal size dia	metre	686.55
23.4.2	150 mm nominal size dia	metre	807.45
23.4.3	200 mm nominal size dia	metre	1255.70
23.5	Supplying, filling, spreading & leveling 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	1509.80

Code No	Description	Unit	Rate
23.6	Supplying, filling, spreading & leveling 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	1538.25
23.7	Supplying, filling, spreading & leveling 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	1538.25
23.8	Gravel packing in tubewell 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	2024.50
23.9	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	1399.95
23.10	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.		
23.10.1	100 mm nominal size dia having minimum wall thickness 5.00 mm	metre	1359.25
23.10.2	150 mm nominal size dia having minimum wall thickness 5.00 mm	metre	1972.25
23.10.3	200 mm nominal size dia having minimum wall thickness 5.40 mm	metre	2442.75
23.11	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 bitumestic paint of approved brand and manufacture, including hire & labour charges, fittings & accessories, all complete, for all depths, as per direction of Engineer -in-charge.		
23.11.1	100 mm nominal size dia	metre	1456.80
23.11.2	150 mm nominal size dia	metre	2102.25
23.11.3	200 mm nominal size dia	metre	2571.05
23.12	Development of tube well in accordance with IS : 2800 (part I) and IS: 11189, to establish maximum rate of useable 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, including disinfection of tubewell, all complete, including hire & labour charges of air compressor, tools & accessories etc., all as per requirement and direction of Engineer-in-charge.	hour	1085.05

Code No	Description	Unit	Rate
23.13	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 borewell of:		
23.13.1	100 mm dia	each	224.10
23.13.2	150 mm dia	each	246.45
23.13.3	200 mm dia	each	321.15
23.14	Providing and fixing M.S. clamp of required dia to the top of casing/ housing pipe of tubewell as per IS: 2800 (part I), including necessary bolts & nuts of required size complete.		
23.14.1	100 mm clamp	each	1911.40
23.14.2	150 mm clamp	each	2019.05
23.14.3	200 mm clamp	each	2293.65
23.15	Providing and fixing Bail plug/ Bottom plug of required dia to the bottom of pipe assembly of tubewell as per IS:2800 (part I).		
23.15.1	100 mm dia	each	265.10
23.15.2	150 mm dia	each	322.00
23.15.3	200 mm dia	each	357.60

SUB HEAD : 24.0

**CONSERVATION OF
HERITAGE BUILDINGS**

24.0 CONSERVATION OF HERITAGE BUILDINGS

Code No	Description	Unit	Rate
24.1	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 within 50 metre lead.	sqm	72.45
24.2	Providing and fixing double scaffolding system (cup lock type) on the exterior side of building/structure, upto 25 metre height, above ground level, including additional rows of scaffolding in stepped manner as per requirement of site, made with 40 mm 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.	sqm	338.25
24.3	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	211.05
24.4	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	77.90
24.5	Ruled / Flush pointing on 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	374.30
24.6	Ruled/ Flush pointing on White 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 (15% dark red and 85% light yellow surkhi) : 1/2 marble dust}. (The rate is inclusive of all materials & labours involved except scaffolding).	sqm	374.30

Code No	Description	Unit	Rate
24.7	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	329.05
24.8	Applying breathable, non-reactive, antifungal, and water repellant Silane/ 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	109.90

SUB HEAD : 25.0

**STRUCTURAL GLAZING
ALUMINIUM
COMPOSITE PANEL**

25.0 STRUCTURAL GLAZING ALUMINIUM COMPOSITE PANEL

Code No	Description	Unit	Rate
25.1	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	414.30
25.2	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 aluminum 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 Dimentional 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 seperator 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.		

Code No	Description	Unit	Rate
	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. Note:- 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. Note:-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 accredited by NABL(National Accreditation Board for Testing and Calibration Laboratories), Department of Science & Technologies, India. Cost of testing is payable separately. The NIT approving authority will decide the necessity of testing on the basis of cost of the work, cost of the test and importance of the work. Performance Testing of Structural glazing system Tests to be conducted in the NABL accredited lab or any other accreditation body which operates in accordance with ISO/IEC 17011 and accredits labs as per ISO/IEC 17025 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 2. Static Water Penetration Test. (50pa to 1500pa) as per ASTM E- 331-09 testing method for a range up to 2000 ml. 3. Dynamic Water Penetration (50pa to 1500pa) as per AAMA 501.01- 05 testing method for a range upto 2000 ml 4. Structural Performance Deflection and deformation by static air pressure test (1.5 times design wind pressure without any failure) as per ASTM E-330-10 testing method for a range upto 50 mm 5. Seismic Movement Test (upto 30 mm) as per AAMA 501.4-09 testing method for Qualitative test, Tests to be conducted on site. 6. Onsite Test for Water Leakage for a pressure range 50 kpa to 240 kpa (35psi) upto 2000 ml		
25.3	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 6 mm 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 6 mm thick, spacer tube 12 mm wide, dessicants, 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.	sqm	3510.50

Code No	Description	Unit	Rate
	(Payment for fixing of IGU Panels in the curtain glazing is included in cost of item No.25.2)		
	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.		
25.4	(i) Coloured tinted float glass 6 mm thick substrate with reflective soft coating on face # 2, + 12 mm Airgap + 6 mm 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	3718.70
25.4	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	3671.50
25.5	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 aluminum sheet backing using, 6 mm thick cement board including SS rivets, nuts, bolts, washers etc complete.	sqm	2159.65
25.6	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.		
	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 6 mm 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	2450.15
25.8	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		

Code No	Description	Unit	Rate
	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 50x25x2 mm 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	9502.35

SUB HEAD : 26.0

**NEW TECHNOLOGIES
AND MATERIALS**

26.0 NEW TECHNOLOGIES AND MATERIALS

Code No	Description	Unit	Rate
26.1	Providing & fixing in position Phenol bonded Bamboo wood flooring with planks of sizes 14 mm thick, minimum 1800 mm length and minimum 100 mm wide, 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 4 mm thick expanded polyethylene foam sheets having density 40 kg/cum, over prepared surface with necessary quarter round planks of size 1900 mm x 18 mm and door reducer of size 1900 mm x 44 mm, wherever required. The bamboowood 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	6145.85
26.2	Providing & fixing in position Phenol bonded Bamboo wood in wall skirting with planks of sizes 14 mm thick, 1900 mm length (minimum) and 85 mm 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 4 mm thick, expanded polyethylene foam sheets having 40 kg/cum density over prepared surface. 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	6033.55
26.3	Providing & fixing in position Phenol bonded Bamboo wood wall cladding at all height with planks of sizes 10 mm thick, minimum 1800 mm length and minimum 100 mm wide, in approved colour, texture and finish, having Performance Appraisal Certificate (PAC) issued by Building Materials & Technology Promotion Council (BMTPC), with necesasary profiled edges fixed with 40 mm 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, 40x15 mm placed at ends of each tile. The cladding shall be laid over backlayment of 1.00 mm thick expanded polyethylene foam of density 40 kg/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	6283.85
26.4	Providing & fixing in position Phenol bonded Bamboo wood panelled or panelled and glazed shutters for doors windows, clerestorey windows with pre-molded minimum 30 mm thick planks, in approved colours, texture & finish. It shall have 10 mm wide, 25 mm 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	6935.75
26.5	Providing & fixing in position Phenol bonded Bamboo wood panelling of 10 mm thick, in 25 to 40 mm thick panelled or panelled & glazed shutters for doors, windows, clerestorey 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	4555.75

Code No	Description	Unit	Rate
26.6	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	325.95
26.6A	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 8 mm dia G.I. plain and bitumen washers etc, all complete as per direction of Engineer-in-Charge.	sqm	6012.10
26.6B	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 8 mm dia G.I. plain and bitumen washers etc, all complete as per direction of Engineer-in-Charge.	metre	4830.10
26.6C	Providing and fixing at all height false ceiling of 4 mm thick phenol bonded Bamboo Mat board (595x595 mm) 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 mm 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 2.64 mm 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	4039.10
26.6D	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, backing or studding to be paid separately)		
26.6D.1	3 mm thickness	sqm	2942.00
26.6D.2	4 mm thickness	sqm	3332.00
26.6D.3	6 mm thickness	sqm	3923.65
26.6D.4	9 mm thickness	sqm	4906.80
26.6D.5	12 mm thickness	sqm	5601.55
26.6E	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 50 mm x 50 mm hard wood 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.		
26.6E.1	9 mm thickness	sqm	5127.60
26.6E.2	12 mm thickness	sqm	5824.10
26.7	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.		

Code No	Description	Unit	Rate
26.8	Fire retardent 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	1004.55
26.9	Providing and fixing 50 mm thick extruded polystyrene rigid insulation board of required size underdeck 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 retardent 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	1091.65
26.10	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 retardent with necessary screw holding capacity. Frame shall be fixed to wall using Expendable Fastner with necesary stainless steel screws, all complete as per direction of Engineer-in-charge.	metre	450.95
26.11	Providing and fixing 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 retardent 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	5350.55
26.12	Providing and fixing concealed hinge of approved quality for 19-20 mm thick door with stainless steel screws complete :	each	144.05
26.13	Supplying & laying of bi-axial extruded high modulus polypropylene geogrid coforming to MORTH SPECIFICATION for base/sub-base reinforcement having minimum tensile strength 15 kN/m in the longitudinal and transverse direction, with 5 kN/m and 7 kN/m tensile strength at 2% and 5% strain respectively in the longitudinal and transverse direction, junction efficiency not less than 95% and with 38 mm X 38 mm mesh opening.	sqm	249.90
26.14	Supplying & laying of bi-axial extruded high modulus polypropylene geogrid coforming to MORTH SPECIFICATION for base/sub-base reinforcement having minimum tensile strength 20 kN/m in the longitudinal and transverse direction, with 7 kN/m and 14 kN/m tensile strength at 2% and 5% strain respectively in the longitudinal and transverse direction, junction efficiency not less than 95% and with 38 mm X 38 mm mesh opening.	sqm	276.50
26.14	Supplying & laying of bi-axial extruded high modulus polypropylene geogrid coforming to MORTH SPECIFICATION for base/sub-base reinforcement having minimum tensile strength 30 kN/m in the longitudinal and transverse direction, with 10.5 kN/m and 21 kN/m tensile strength at 2% and 5% strain respectively in the longitudinal and transverse direction, junction efficiency not less than 95% and with 38 mm X 38 mm mesh opening.	sqm	401.70

Code No	Description	Unit	Rate
26.15	Supplying & laying of bi-axial extruded high modulus polypropylene geogrid coforming to MORTH SPECIFICATION for base/sub-base reinforcement having minimum tensile strength 40 kN/m in the longitudinal and transverse direction, with 14 kN/m and 28 kN/m tensile strength at 2% and 5% strain respectively in the longitudinal and transverse direction, junction efficiency not less than 95% and with 38 mm X 38 mm mesh opening.	sqm	555.05
26.16	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 thermobonding a draining core in extruded monofilaments with two filtering nonwoven geotextiles 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 7.2 mm, with two filtering UV stabilized polypropylene nonwoven geotextile of minimum thickness of 0.75 mm 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	986.95
26.17	Supplying & laying of drainage composite for use behind walls, between two different fills, alongside drains of road, below concrete lining of canals etc. having thermobonding a draining core - HDPE geonet comprises of two sets of parallel overlayed 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	1166.95
26.18	Supplying and laying high strength flexible geogrids (HSFG) as soil reinforcement / basal reinforcement as per MORTH 3100 and IRC 113, made of high tenacity polyester core with polyethylene coating with Minimum Long Term Design Strength (LTDS) of more than 50% of ultimate tensile strength at 30 degree Celcius corresponding to 12 % strain .		
26.18.1	Ultimate tensile strength- 100 kN/m	sqm	393.85
26.18.2	Ultimate tensile strength- 150 kN/m	sqm	411.10
26.18.3	Ultimate tensile strength- 200 kN/m	sqm	645.80
26.18.4	Ultimate tensile strength- 250 kN/m	sqm	663.05
26.18.5	Ultimate tensile strength- 300 kN/m	sqm	681.80
26.18.6	Ultimate tensile strength- 350 kN/m	sqm	699.05
26.18.7	Ultimate tensile strength- 400 kN/m	sqm	843.00
26.18.8	Ultimate tensile strength- 500 kN/m	sqm	933.75
26.18.9	Ultimate tensile strength- 600 kN/m	sqm	1022.95
26.18.10	Ultimate tensile strength- 700 kN/m	sqm	1202.90
26.18.11	Ultimate tensile strength- 800 kN/m	sqm	1337.50
26.18.12	Ultimate tensile strength- 900 kN/m	sqm	1562.85

Code No	Description	Unit	Rate
	26.18.13 Ultimate tensile strength- 1000 kN/m	sqm	1742.80
	26.18.14 Ultimate tensile strength- 1100 kN/m	sqm	1833.60
	26.18.15 Ultimate tensile strength- 1200 kN/m	sqm	1922.80
26.19	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 upto required pitch in horizontal, vertical or curved surfaces including 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.		
	26.19.1 0.71 mm thick, the profile detail width 1044/920 mm, cover width 1000/875 mm.	sqm	1153.95
	26.19.2 0.91 mm thick, the profile detail width 1044/920 mm, cover width 1000/875 mm.	sqm	1462.90
26.22	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 as per CPWD Specification 2019, to be laid in true horizontal level suspended on inter-locking metal T-Grid of hot dipped galvanised iron section of 0.33 mm 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 600 mm 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. 12x50 mm long dash fasteners, 6 mm dia fully threaded hanger rod upto 1000 mm length and L-shape level adjuster of size 76x25x25x1.6 mm fixed with grid and Z cleat of size 25x37x25x1.6 mm thick with precut hole on both 25 mm flange to pierce into 12x50 mm or even bigger size dash fastener if require, fixed with Galvanised iron perimeter wall angle or 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 center to center 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.		
26.22.1	With 15 mm thick Tegular edged light weight calcium silicate false ceiling tiles	sqm	2207.00
26.22.2	With 15 mm thick tegular/butt edged without perforation plain/designer light weight calcium silicate Anti-Microbial Bio-Safe coated false ceiling tiles Confirming to JIS-Z2801 and ASTM G-21	sqm	2301.10
26.23	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 6 mm reveal profile (white/black), comprising of main-T runners of size 15x42 mm of length 3000 mm, cross - T of size 15x42 mm of length 1200 mm and secondary		

Code No	Description	Unit	Rate
	intermediate cross-T of size 15x42 mm of length 600 mm 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 upto 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 center to center 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.		
26.23.1	With 15 mm thick integral densified micro edge light weight calcium silicate false ceiling tiles	sqm	2630.40
26.24	Providing and fixing in position wall panelling at all heights with integral densified calcium silicate panels/tiles of size 595 x 595 mm, 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 600 mm centre to centre in a floor and ceiling channel section of size 50 x 32 mm fixed to the floor and soffit at 600 mm centre using 12 mm dia,50 mm long wedge type expanded zinc alloy dash fastner with 10 mm bolt. This same channel is then to be fixed in horizontal direction at 600 mm centre to centre so as to form a grid of 600 mm x 600 mm. Glasswool of 50 mm 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 3.2 mm 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 fiber joint tape roll 50 mm 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.		
26.24.1	With 15 mm thick fully perforated square/butt edge light weight calcium silicate panels/ tiles	sqm	3117.60
26.25	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	1781.20
26.26	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 0.33 mm thick		

Code No	Description	Unit	Rate
	(galvanized @ 120 gram 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 600 mm 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 upto 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 center to center 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.		
26.26.1	With semi perforated 12 mm thick micro tegular edged GRG false ceiling tiles.	sqm	1852.05
26.26.2	With fully perforated 12 mm thick micro tegular edged or 10 mm thick square edged GRG false ceiling tiles.	sqm	1907.35
26.27	Providing and fixing mineral fibre false ceiling tiles at all heights of size 595X595 mm of approved texture, design and pattern. The tiles should have Humidity Resistance (RH) of 99%, Light Reflectance $\geq 85\%$, 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 15x32 mm 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 8 mm 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 size 24x24X3000 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.		
26.27.1	With 16 mm thick beveled tegular mineral fibre false ceiling tile (NRC 0.55 to 0.60)	sqm	2333.60
26.27.2	With 20 mm thick beveled tegular mineral fibre false ceiling tile (NRC 0.7)	sqm	2671.20
26.27.3	With 16 mm thick beveled tegular mineral fibre Anti-microbial false ceiling tile confirming to ISO 5 (class 100) specifications	sqm	2447.15
REPAIR AND REHABILITATION ITEMS			
26.28	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		
26.28.1	75 mm average thickness	sqm	378.00

Code No	Description	Unit	Rate
	26.28.2 50 mm average thickness	sqm	256.35
	26.28.3 25 mm average thickness	sqm	126.75
26.29	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.		
	26.29.1 Bars upto 12 mm diameter	metre	8.25
	26.29.2 Bars above 12 mm diameter	metre	16.45
26.30	Drilling suitable holes in reinforced or plain cement concrete with power driven drill machine to a minimum depth of 100 mm upto 200 mm 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.		
	26.30.1 Upto and including 12 mm dia.	each	141.20
26.31	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.		
	26.31.1 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	141.20
	26.31.2 Epoxy bonding adhesive having coverage 2.20 sqm/kg of approved make	sqm	285.20
26.32	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 75 mm size cube crushing strength at the end of 28 days to be not less than 30 N/Sqmm2).		
	26.32.1 12 mm average thickness.	sqm	388.65
	26.32.2 25 mm average thickness in 2 layers.	sqm	587.35
	26.32.3 50 mm average thickness in 3 layers.	sqm	1174.70
26.33	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 10 mm 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 flowable 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)		

Code No	Description	Unit	Rate
26.33.1	50 mm thick in Grade M25 with cement content not less than 330 kg per cum	sqm	569.15
26.33.2	75 mm thick in Grade M25 with cement content not less than 330 kg per cum	sqm	853.70
26.34	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 10 mm 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 flowable 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)		
26.34.1	50 mm thick in Grade M25 with cement content not less than 330 kg per cum	sqm	569.15
26.34.2	75 mm thick in Grade M25 with cement content not less than 330 kg per cum	sqm	853.70
26.34.3	100 mm thick in Grade M25 with cement content not less than 330 kg per cum	sqm	1138.25
26.35	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.)		
26.35.1	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	119.30
26.35.2	Stirrer mixed SBR Polymer (of approved make) modified Cement slurry made with Shrinkage Compensating Cement in concrete/RCC work.	kg	124.00
26.35.3	Epoxy injection grout in concrete/RCC work of approved make	kg	553.40
26.36	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.		
26.36.1	Wooven PVC cloth	sqm	54.25
26.37	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	382.40

Code No	Description	Unit	Rate
26.38	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.		
26.38.1	25 mm thick in Grade M25 with cement content not less than 330 kg per cum	sqm	746.90
26.38.2	50 mm thick in Grade M25 with cement content not less than 330 kg per cum	sqm	1151.05
26.38.3	75 mm thick in Grade M25 with cement content not less than 330 kg per cum	sqm	1628.85
26.39	Providing and inserting 12 mm dia galvanised steel injection nipple in honey comb area and along crack line including drilling of holes of required diameter (20 mm to 30 mm) up to depth from 30 mm to 80 mm 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	236.90
26.40	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	902.55
NEW TECHNOLOGY ITEMS			
26.41	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/ Revit 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 39 mm flange x 11 mm 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 250 mm away from both ends of the member. The frame can be supplied in panelized 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		

Code No	Description	Unit	Rate
	have a Type II coating in accordance with ASTM B633(13) or equivalent corrosion protection of gauge 10 & 12, TPI 16 & 8 of length 20 mm. 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 12 mm diameter and 121 mm length conforming to AISI 304 and 316 at 500 mm c/c with minimum embedment of 100 mm in RCC (RCC to be paid separately) and located not more than 300 mm 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	285.90
26.42	Providing and fixing of external wall system on Light gauge steel frame work with outer face cement boards as per standard sizes fixed with self-drilling / tapping screws / fasteners @ 60 cm c/c of approved make. A groove of 2 mm to 3 mm shall be maintained and grooves 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 1.60 mm to 4 mm thick or 8 to 10 gauge of length varying from 25 to 45 mm and. Internal face 12.5 mm thick gypsum plaster board fixed on cement board as per standard sizes fixed with self- drilling / tapping screws / fasteners @ 60cm c/c of approved make, proper taping and jointing to be done using fiber mesh tape and epoxy and acrylic based jointing compound for seamless finish.(cost of frame work to be paid for separately)		
26.42.1	Outer face- Outer face having 6 mm thick fiber cement board Type A, Category-IV as per IS:14862:2000 fixed on 9 mm thick fiber cement board, Type A, Category-IV as per IS:14862:2000 (high pressure steam cured) Inner Face- 12.5 mm thick gypsum plaster board conforming to IS 2095:2011 fixed on 8 mm thick fibre cement board of Type B, Category-III as per IS:14862:2000 (High pressure steam cured)	sqm	3580.65
26.42.1 A	Outer face- Outer face having 6 mm thick fiber cement board Type A, Category-III as per IS:14862:2000 fixed on 9 mm thick fiber cement board Type A, Category-III, as per IS:14862:2000 (high pressure steam cured) Inner Face- 12.5 mm thick gypsum plaster board conforming to IS 2095:2011 fixed on 8 mm thick fibre cement board of Type B, Category-III, as per IS:14862:2000 (High pressure steam cured)	sqm	2821.65
26.42.2	Outer face: Outer face having 8 mm thick cement bonded particle Board fixed on 10 mm thick cement bonded particle board. (Termite, Fire and Moisture Resistance) as per IS 14276:1995. Inner face:-12.5 mm thick gypsum plaster board conforming to IS 2095:2011 fixed on 8 mm thick cement bonded particle board (Termite, fire and moisture resistance) confirming to IS:14276:1995)	sqm	3167.85
26.43	Providing and fixing internal wall panels on Light gauge steel frame work with 12.5 mm thick gypsum plaster board conforming IS 2095:2011 fixed on cement board as per standard sizes fixed with self-drilling / tapping screws / fasteners @ 60 cm c/c of approved make, Screws shall be of counter sunk rib head of 1.60 mm to 4 mm thick or 8 to 10 gauge of length varying from 25 to 45 mm. Proper taping and jointing to be done using fiber mesh tape and epoxy and acrylic based jointing compound for seamless finish.(cost of frame work to be paid for separately)		

Code No	Description	Unit	Rate
26.43.1	Cement Fiber Board 8 mm thick of Type B, Category III as per IS 14862:2000 (High pressure Steam Cured)	sqm	2221.05
26.43.2	Cement Bonded particle board 8 mm (Termite, Fire & Moisture Resistance), as per IS:14276 : 1995	sqm	2189.75
26.44	Providing and fixing in all exterior face panels breathable vapour barrier underneath the cement fiber board as per National Building Code 2009 complete as per direction of Engineer-in-charge.	sqm	298.75
26.45	Supplying and installation of moisture resistant/fire resistant cement board as per standard sizes fixed with self-drilling / tapping screws. Screws shall be of counter sunk rib head of 1.60 mm to 4 mm thick or 8 to 10 gauge of length varying from 25 to 45 mm.		
26.45.1	Cement Fiber Board 6 mm thick as per IS 14862:2000 of type B (High pressure Steam Cured)	sqm	1430.15
26.45.2	Cement Bonded particle board 8 mm thick (Termite, Fire & Moisture Resistance), as per IS:14276 : 1995	sqm	991.95
26.46	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 upto 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	4347.15
26.47	Providing and fixing in position, 230 mm 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 upto 6 mm)} A 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	4701.60

Code No	Description	Unit	Rate
26.48	Providing and fixing of customized Aluminium form work for monolithic construction on RCC members with repetitive usage made up of aluminium sheets/plates of minimum 4 mm thickness and grade 6061 (Type-6). The formwork comprises of (a) wall panel, rocker, kicker and internal soffit corner, external soffit corner, external corner, internal corner etc., (b) beam components i.e, beam side panel, prop head for soffit beam, beams soffit panel, beam soffit bulk head and (c) deck components i.e. deck panel, deck prop, prop length, deck mid, soffit length, deck beam bar. The panels are held in position by a simple pin and wedge system that passes thorough holes in the out side rib of each panel. The tolerance of finished panel shall not be less than (-1 mm) and shall conform to IS : 14987-1999. Pins and wedges to be made of high grade hot dipped galvansied mild steel. This form work also comprises of M.S. angle iron, "Z" shaped brackets braced diagonally at 0.90 to 1.00 metre centre to centre on extrenal wall face just the level below on which to lay M.S. square tube panels (Challis) and guard railing supports to form working platform and 40 mm dia G.I./M.S. telescopic adjustable props to support deck formwork and beam soffit panels including de-shuttering the formwork from odd/even level to be shifted/lifted to next alterante odd/even level before which the points and shuttering surface to be thoroughly cleaned, pins greasing and shuttering surface oiling propoerly before fixing all complete including sealing of gap between kicker plates of wall panel and floors (if any) as per design of formwork as provided by shuttering supplier and as per direction of the Engineer-in-charge including filling and finishing the holes of varied sizes and shapes (left by keys/pins of aluminium form work shuttering while de-shuttering) with GP-2 cementitious polymer compound mixed with water in ratio prescribed by manufacturer to form consistent workable enough for pushing it in the holes upto full depth of wall using appropriate tools and finishing smooth all complete as per directions of the Engineer-in-charge.	sqm	451.35
26.49	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 fiber cement board confirming to IS 14862:2000 or Calcium silicate board confirming to EN 14306:2009 of 5 mm thick each. Panel shall be laid on 6 mm thick cement mortar (1 cement: 2 fine sand) mixed with chemical adhesive of 0.5 kg per 50 kg of cement or shall be preferably fixed into 'C' channel made of 1.2 mm thick MS plate screwed/fastened 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 seperately).		
26.49.1	Non load bearing panels 50 mm thick of required size	sqm	1315.70
26.49.2	Non load bearing panels 60 mm thick of required size	sqm	1487.50
26.49.3	Non load bearing panels 75 mm thick of required size	sqm	1840.05
26.49.4	Non load bearing panels 90 mm thick of required size	sqm	2141.80
26.49.5	Non load bearing panels 100 mm thick of required size	sqm	2518.20

Code No	Description	Unit	Rate
26.50	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 1 mm 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).		
26.50.1	Non load bearing panels 50 mm thick of required size (minimum 4 mm thick fibre cement board Type B, Category III as per IS: 14862:2000 on both faces)	sqm	1527.50
26.50.1 A	Non load bearing panels 50 mm thick of required size (minimum 4 mm thick fibre cement board Type A, Category III as per IS: 14862:2000 on both faces)	sqm	1635.05
26.50.1 B	Non load bearing panels 50 mm thick of required size (minimum 4 mm thick fibre cement board Type A, Category IV as per IS: 14862:2000 on both faces)	sqm	2068.25
26.50.2	Non load bearing panels 75 mm thick of required size (minimum 5 mm thick fibre cement board Type B, Category III as per IS: 14862:2000 on both faces)	sqm	1841.20
26.50.2 A	Non load bearing panels 75 mm thick of required size (minimum 5 mm thick fibre cement board Type A, Category III as per IS: 14862:2000 on both faces)	sqm	1784.40
26.50.2 B	Non load bearing panels 75 mm thick of required size (minimum 5 mm thick fibre cement board Type A, Category IV as per IS: 14862:2000 on both faces)	sqm	2326.65
26.51	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 upto 300 km 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 300 km, additional charges to be paid.	sqm	1477.30

Code No	Description	Unit	Rate
26.52	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 repellant 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. The work shall be carried out as per the Special Conditions for Glass Fibre Reinforced Gypsum (GFRG) Structures mentioned in NIT. 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	283.25
26.53	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 1.5 m 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 10 mm hole in GFRG panel immediately above concrete filled level to drain out water before pour/in-fill of balance concreting)	cum	2604.30
26.54	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 25 mm 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 25 mm 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.		

Code No	Description	Unit	Rate
	(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 mm size weld mesh with 25 mm effective cover from the panel top.	sqm	287.40
26.55	Supplying and fixing 10 Gauge weld mesh of size 100 mm x100 mm for floor/roof slab concrete screed over the micro beams as reinforcement. The weld mesh shall be fixed as per drawing.	sqm	254.75
26.56	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	371.25
26.57	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	92.45
26.58	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	49.30
26.59	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.	metre	49.95
26.60	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	136.45
26.61	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.	metre	49.95
26.62	Designing, Providing, installing and fixing factory finished customized 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	182.05

Code No	Description	Unit	Rate
26.63	Providing and fixing special adjustable lockbars 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	27.10
26.64	Centering and shuttering with 12 mm thick shuttering plywood confirming to IS 4990:2011 and removal of form at all heights. Plywood will be supported on lock bars.		
26.64.1	Suspended floors, roofs, landings, balconies and access platform.	sqm	106.80
26.65	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 3 mm 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	1525.60
26.66	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 3 mm dia at alternate row by welding. The EPS core shall consist of 60 mm thick EPS of density not less than 16 kg/ 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 upto 6 mm)} with the help of shotcreting/guniting equipment etc at a pressure not less than 1 bar (100KN/m ²) 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	2673.70
26.67	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/m ³ 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 10 mm & L=200 mm 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 Fiberglass mesh covered with alkali-resistant coating, mass per unit area ≥145 g/m ² , 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 g/m ² . 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	3935.35
26.68	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:		
26.68.1	Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	7387.25

Code No	Description	Unit	Rate
26.69	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 V level		
26.69.1	Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	9844.65
26.70	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:		
26.70.1	Cement mortar 1:4(1 cement : 4 coarse sand)	sqm	897.15
26.71	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 V level:		
26.71.1	Cement mortar 1:4 (1 cement : 4 coarse sand)	sqm	1099.15
26.72	Providing and laying 60 mm 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 50 mm thick compacted bed of coarse sand, filling the joints with fine sand etc. all complete as per the direction of Engineer-in-charge.	sqm	829.75
PREFAB/PRECAST TECHNOLOGY			
26.73	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 conforming 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 shuttels of standard make & layed on bed with the help of extruder/ Slipformer, finishing, curing and also provision of steam curing. Cutting, making necessary cutout/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: Excess/less cement over the specified cement content used as per design mix is payable/recoverable separately)		
26.73.1	Concrete Grade-M-40 (cement content 400 kg)		
26.73.1.1	100 mm thick hollow core slab	metre	1287.25
26.73.1.2	120 mm thick hollow core slab	metre	1501.40
26.73.1.3	150 mm thick hollow core slab	metre	1822.60
26.73.1.4	200 mm thick hollow core slab	metre	2217.00
26.73.1.5	250 mm thick hollow core slab	metre	2717.10
26.73.1.6	300 mm thick hollow core slab	metre	3217.20
26.73.1.7	350 mm thick hollow core slab	metre	3717.25
26.73.1.8	400 mm thick hollow core slab	metre	4217.35
26.73.2	Extra for using M-50 (Cement content 425 kg) instead of M-40		
26.73.2.1	100 mm thick hollow core slab	metre	18.40
26.73.2.2	120 mm thick hollow core slab	metre	22.10
26.73.2.3	150 mm thick hollow core slab	metre	27.65

Code No	Description	Unit	Rate
	26.73.2.4 200 mm thick hollow core slab	metre	34.40
	26.73.2.5 250 mm thick hollow core slab	metre	43.00
	26.73.2.6 300 mm thick hollow core slab	metre	51.60
	26.73.2.7 350 mm thick hollow core slab	metre	60.20
	26.73.2.8 400 mm thick hollow core slab	metre	68.80
26.73.3	Extra for using M-60 (Cement content 440 kg) instead of M-40		
	26.73.3.1 100 mm thick hollow core slab	metre	29.50
	26.73.3.2 120 mm thick hollow core slab	metre	35.35
	26.73.3.3 150 mm thick hollow core slab	metre	44.20
	26.73.3.4 200 mm thick hollow core slab	metre	55.00
	26.73.3.5 250 mm thick hollow core slab	metre	68.80
	26.73.3.6 300 mm thick hollow core slab	metre	82.55
	26.73.3.7 350 mm thick hollow core slab	metre	96.30
	26.73.3.8 400 mm thick hollow core slab	metre	110.05
26.74	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 cutout/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).		
	26.74.1 Concrete grade M-35 (Cement content 370 kgs)	cum	20928.70
	26.74.2 Extra for using M-40 (Cement content 400 kg) instead of M-35	cum	245.65
	26.74.3 Extra for using M-50 (Cement content 425 kg) instead of M-35	cum	450.40
	26.74.4 Extra for using M-60 (Cement content 440 kg) instead of M-35	cum	573.20
26.75	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 IS : 1343 & grade FY-1860 etc, complete as per drawings and direction of Engineer -in-charge.	kg	192.35
26.76	Transportation of Precast Elements by flat bed Trailor (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.		
	26.76.1 Lead within 15 km	MT	540.85
	26.76.2 Add/Deduct over item 26.76.1 for every additional lead of 5 km	MT	117.30

Code No	Description	Unit	Rate
26.77	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 fifth floor.		
26.77.1	Prestressed hollow core Slab up to 200 mm thickness	sqm	203.50
26.77.2	Prestressed hollow core slab above 200 mm up to 400 mm thickness	sqm	345.15
26.77.3	Solid concrete wall elements	cum	2720.30
26.78	Providing & Applying weather proof sealant on outer joints of approved make confirming to IS & directed by Engineer-in-charge.		
26.78.1	Sealant 25 mm x10 mm at joints	metre	178.95
26.79	Providing & Laying of levelling sim pads required sizes (5x5 cm to 10x10 cm) of PVC / Rubber to adjust level of bearing surface of supporting members as per the direction of Engineer in charge.		
26.79.1	2 mm thick	each	28.90
26.79.2	5 mm thick	each	36.00
26.79.3	10 mm thick	each	51.65
26.80	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.)		
26.80.1	Stirrer mixed cementitious grout (non shrink) of approved make in dowel tubes / Shear keys / Joints of precast members.	kg	85.05
26.81	Providing and fixing Scaffolding net of required width made of high density Polyethylene UV stabilized knitted on warp knitting machines having density 100 gram / 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	29.25
26.82	Providing and laying rigid EPS (cellular plastic material) blocks conforming to ASTM standards/specifications of minimum density 21.60 Kg/cum on floors, steps, stage etc. of required size and shape as per direction of the Engineer-in-Charge. This shall include the following operation. The EPS blocks shall be cut to required shape and sizes including cuttings for passing of services, joined together with synthetic resin adhesives as per relevant specifications and packed/placed in position for stepped floor or platform formation. The top and sides surfaces to be provided with GI woven wire mesh of aperture 5.45 mm (with wire dia 0.90 mm) secured to EPS blocks with wire pins/clips. Horizontal top surface to be provided with 20 mm thick cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate upto 6 mm chippings) and vertical surface to be provided with 12 mm cement plaster 1:4 (1 cement : 4 coarse sand).		

Code No	Description	Unit	Rate
26.83	The concrete/plastered surfaces so prepared shall be scratched with wire brushes to form burrs, so as to act as base for flooring or veneering/panelling to be done later as per approved design (which shall be paid for separately) complete as per direction of the Engineer-in-Charge. Applying stamping finish to the top surface of freshly laid plain/reinforced cement concrete of specified grade in porticos, sidewalks, driveways, pool decks and open yards as per direction of the Engineer-in-Charge. The process shall include the following:- • The concrete shall be placed and screeded to the finished grade, and floated to a uniform surface by using standard finishing techniques. The approved color hardener @ 2.7 kg/sqm shall be applied evenly to the surface of the fresh concrete by the dry shake method by sprinkling in two or more shakes, floated after each shake and trowelled only after the final floating. The approved release agent @ 0.113 kg/sqm shall be applied evenly to the trowelled surface before stamping or the said release agent can be applied to the flexible polyurethane stamp moulds of approved design and in required sizes to achieve final stamped pattern. These stampings shall be placed on the surface of concrete in three to four pieces at a time and tapped gently with rammers of sufficient size & weight to leave proper stamp marks and the process repeated for the remaining concrete surface till the whole surface to be stamped is completed within the time while concrete is in plastic stage of setting. • After stamping, the curing shall be done as per manufactures specifications. After initial curing the imprinted joints shall be grouted using cement slurry mixed with color hardener as per the requirement. The surface shall be sealed by applying acrylic based sealer not less than 0.167 litre/sqm.on finished surface. • The construction joints shall be provided by groove cutting of size 4 mm x 20 mm in panel size 3m x 3 m or lesser as per the site conditions and filling the same with 10 mm baker rod and providing and laying (PU) Polyurethane based joint sealer of approved make as per manufacturer's specifications and finished by applying Polyurethane resin based top protective clear coat of minimum 80 micron applied with rollers on properly cured and dry clean surface. (Cost of concrete for flooring is not included in this item which shall be paid separately.)	sqm	2293.30
26.84	Supplying and laying of Uni-Axial Woven Polyester Geogrid conforming to MORTH 3100 and IRC113, as soil reinforcement/basal reinforcement including accessories like tie-strips, nuts & bolts and loops/lugs for joining reinforcing elements with the fascia pannels, overlaps and other protective elements for synthetic geo-grids and all other activities required for reinforced soil walls, slopes etc complete as per design requirements, manufacturer specifications and as per direction of engineer-in-charge.	sqm	762.75
26.84.1	Uni Axial Woven polyester geogrid of minimum tensile strength 40 KN/m in the Longitudinal direction and 20 KN/m in the Transverse direction.	sqm	271.45
26.84.2	Uni Axial Woven polyester geogrid of minimum tensile strength 60 KN/m in the Longitudinal direction and 20 KN/m in the Transverse direction.	sqm	310.30
26.84.3	Uni Axial Woven polyester geogrid of minimum tensile strength 80 KN/m in the Longitudinal direction and 30 KN/m in the Transverse direction.	sqm	385.00
26.84.4	Uni Axial Woven polyester geogrid of minimum tensile strength 100 KN/m in the Longitudinal direction and 30 KN/m in the Transverse direction.	sqm	440.25

Code No	Description	Unit	Rate
26.84.5	Uni Axial Woven polyster geogrid of minimum tensile strength 120 KN/m in the Longitudinal direction and 30 KN/m in the Transverse direction.	sqm	470.10
26.84.6	Uni Axial Woven polyster geogrid of minimum tensile strength 150 KN/m in the Longitudinal direction and 30 KN/m in the Transverse direction.	sqm	580.65
26.84.7	Uni Axial Woven polyster geogrid of minimum tensile strength 200 KN/m in the Longitudinal direction and 30 KN/m in the Transverse direction.	sqm	677.75
26.84.8	Uni Axial Woven polyster geogrid of minimum tensile strength 250 KN/m in the Longitudinal direction and 30 KN/m in the Transverse direction.	sqm	819.65
26.84.9	Uni Axial Woven polyster geogrid of minimum tensile strength 300 KN/m in the Longitudinal direction and 30 KN/m in the Transverse direction.	sqm	942.15
26.85	Supplying and laying of Bi-Axial Woven Polyester Geogrid conforming to MORTH 3100 and IRC113, as soil reinforcement/basal reinforcement of granular road base and sub base, area stabilization, track bed stabilization, load transfer platforms including accessories like tie-strips, nuts & bolts and loops/lugs for joining reinforcing elements with the fascia panels, overlaps and other protective elements for synthetic geo-grids and all other activities required etc. complete as per design requirements, manufacturer specifications and as per direction of engineer-in-charge.		
26.85.1	Bi Axial Woven polyster geogrid of minimum tensile strength 20 KN/m in both Longitudinal and Transverse direction.	sqm	229.65
26.85.2	Bi Axial Woven polyster geogrid of minimum tensile strength 40 KN/m in both Longitudinal and Transverse direction.	sqm	329.70
26.85.3	Bi Axial Woven polyster geogrid of minimum tensile strength 60 KN/m in both Longitudinal and Transverse direction.	sqm	416.35
26.86	Providing and fixing factory made single extruded WPC (Wood Polymer Composite) solid door/window/Clerestory windows & other Frames/Chowkhat comprising of virgin PVC polymer of K value 58-60 (Suspension Grade), calcium carbonate and natural fibers (wood powder/ rice husk/ wheat husk) and non toxic additives (maximum toxicity index of 12 for 100 gms) fabricated with miter joints after applying PVC solvent cement and screwed with full body threaded star headed SS screws having minimum frame density of 750 kg/cum, screw withdrawal strength of 2200 N (Face) & 1100 N (Edge), minimum compressive strength of 58 N/mm ² , modulus of elasticity 900 N/mm ² and resistance to spread of flame of Class A category with property of being termite/borer proof, water/moisture proof and fire retardant and fixed in position with M.S hold fast/lugs/SS dash fasteners of required dia and length complete as per direction of Engineer-In- Charge. (M.S hold fast/lugs or SS dash fasteners shall be paid for separately).		
	Note: For WPC solid door/window frames, minus 5 mm tolerance in dimensions i.e depth and width of profile shall be acceptable. Variation in profile dimensions on plus side shall be acceptable but no extra payment on this account shall be made.		
26.86.1	Frame size 45 x 70 mm	metre	705.85
26.86.2	Frame size 45 x 85 mm	metre	926.35
26.86.3	Frame size 50 x 100 mm	metre	947.70
26.86.4	Frame size 50 x 125 mm	metre	1075.70

Code No	Description	Unit	Rate
	26.86.5 Frame size 65 x 100 mm	metre	1111.30
	26.86.6 Frame size 65 x 125 mm	metre	1381.60
	26.86.7 Frame size 65 x 150 mm	metre	1637.65
26.87	Providing and fixing factory made single extruded WPC (Wood Polymer Composite) solid plain flush door shutter of required size comprising of virgin polymer of K value 58-60 (Suspension Grade), calcium carbonate and natural fibers (wood powder/ rice husk/wheat husk) and non toxic additives (maximum toxicity index of 12 for 100 gms) having minimum density of 650 kg/cum and screw withdrawal strength of 1800 N (Face) & 900 N (Edge), minimum compressive strength 50 N/mm2, modulus of elasticity 850 N/mm2 and resistance to spread of flame of Class A category with property of being termite/borer proof, water/moisture proof and fire retardant and fixing with stainless steel butt hinges of required size with necessary full body threaded star headed counter sunk S.S screws, all as per direction of Engineer-In- Charge. (Note: stainless steel butt hinges and necessary S.S screws shall be paid separately)		
	26.87.1 30 mm thick	sqm	4346.70
	26.87.2 35 mm thick	sqm	5015.35
26.88	Providing and fixing factory made single extruded WPC (Wood Polymer Composite) solid decorative type flush door shutter of required size comprising of virgin polymer of K value 58-60 (Suspension Grade), calcium carbonate and natural fibers (wood powder/ rice husk/wheat husk) and non toxic additives (maximum toxicity index of 12 for 100 gms) having minimum density of 650 kg/cum and screw withdrawal strength of 1800 N (Face) & 900 N (Edge), minimum compressive strength 50 N/mm2, modulus of elasticity 850 N/mm2 and resistance to spread of flame of Class A category with property of being termite/borer proof, water/moisture proof and fire retardant. WPC to be laminated with PVC foil of minimum 14 microns thick of approved design pasted with hot melt adhesive on both faces of shutter and fixing with stainless steel butt hinges of required size with necessary full body threaded star headed counter sunk S.S screws, all as per direction of Engineer-In- Charge. (Note: stainless steel butt hinges and necessary S.S screws shall be paid separately)		
	26.88.1 30 mm thick	sqm	4764.20
	26.88.2 35 mm thick	sqm	5432.85
26.89	Providing and fixing factory made single extruded WPC (Wood Polymer Composite) solid board one side white color and other side of board laminated with PVC foil of minimum 14 micron thickness of approved design pasted with hot melt adhesive for cup boards, work stations and bathroom/ kitchen cabinet etc. of required sizes comprising of virgin polymer of K value 58-60 (Suspension Grade), calcium carbonate and natural fibers (wood powder/ rice husk/wheat husk) and non toxic additives (maximum toxicity index of 12 for 100 gms) having minimum density of 650 kg/cum and screw withdrawal strength of 1800 N (Face) & 900 N (Edge), minimum compressive strength 50 N/mm2, modulus of elasticity 850 N/mm2 and resistance to spread of flame of Class A category with property of being termite/borer proof, water/moisture proof and fire retardant and fixing with stainless steel piano hinges/soft close clip on concealed hinges of required size with necessary full body threaded star headed counter sunk S.S screws, all as per direction of Engineer-In- Charge. (Note: stainless steel piano hinges/soft close clip on concealed hinges and necessary S.S screws shall be paid separately)		

Code No	Description	Unit	Rate
	26.89.1 18 mm thick	sqm	2992.90
	26.89.2 25 mm thick	sqm	3889.15
26.90	Providing and fixing factory made single extruded WPC (Wood Polymer Composite) solid plain white color board for backing of cup boards and bathroom/kitchen cabinets etc. of required size comprising of virgin polymer of K value 58-60 (Suspension Grade), calcium carbonate and natural fibers (wood powder/ rice husk/wheat husk) and non toxic additives (maximum toxicity index of 12 for 100 gms) having minimum density of 650 kg/cum and screw withdrawal strength of 1800 N (Face) & 900 N (Edge), minimum compressive strength 50 N/mm ² , modulus of elasticity 850 N/mm ² and resistance to spread of flame of Class A category with property of being termite/borer proof, water/moisture proof and fire retardant and fixing with stainless steel screws etc. all as per direction of Engineer-In-Charge. (Note: stainless steel screws shall be paid separately)		
	26.90.1 6 mm thick	sqm	1099.35
	26.90.2 12 mm thick	sqm	1711.10
26.91	Providing and fixing factory made 18 mm thick single extruded WPC (Wood Polymer Composite) solid plain white colour board Jali, CNC (Computer numeric control) routed of approved design by Engineer-in-charge which are machine cut for duct/shaft covering, partitions and facades comprising of virgin polymer of K value 58-60 (Suspension Grade), calcium carbonate and natural fibers (wood powder/ rice husk/ wheat husk) and non toxic additives(maximum toxicity index of 12 for 100 gms) having minimum density of 650 kg/cum and screw withdrawal strength of 1800 N (Face) minimum compressive strength 50 N/mm ² , modulus of elasticity 850 N/mm ² and resistance to spread of flame of Class A category with properties of being termite/borer proof, water/ moisture proof and fire retardant and fixing on M.S (mild steel) frame made of 25 x 25 x 1.5 mm square hollow box section including applying a priming coat of approved steel primer, placed at grid made at 1.0 x 1.0 m or as per requirement at site with necessary stainless steel fasteners and SS screws etc., all complete as per direction of Engineer-In- Charge. (Note: M.S (mild steel) framework with priming coat and necessary SS fasteners and SS screws shall be paid separately.	sqm	3437.15
26.92	Providing and fixing of façade at all heights with extruded hollow Clay / Terracotta ventilated rainscreen tiles of height 250/ 300/ 400 mm and length of 595 mm of approved texture,design and pattern having Flexural Strength/ Modulus of Rupture of ≥ 14 N/m ² and maximum water absorption of 10% tested as per ISO 10545-4:2004(E) and ISO 10545-3:1995 respectively in true level fixed to a supporting aluminium framework(Alloy 6063 T5/T6) consisting of vertical 'T' (for intermediates)/ 'L'(for ends/ termination)/ Tubular sections (at corners)of size 80x60x2 mm/ 40x60x2 mm / 40x40x2 mm respectively, spaced at maximum spacing of 600 mm c/c matching to the tile vertical grid, and horizontal aluminium 'C'-clamps of size 56x25x2 mm thickness of length 150 mm at junction of tiles and of length 75 mm at wall ends/ corners fixed on top of the vertical sections at spacing of 250/ 300/ 400 mm c/c matching to the tile horizontal grid with two numbers of self-drilling / self-tapping SS screws of size 5.5x25 mm with EPDM washers. The vertical 'T'/'L/ Tubular' sections shall be fixed to the wall using HDG (hot-dip-galvanized) steel L-brackets (galvanizing thickness of minimum 80 microns)of size 110x80x6 mm at intermediate vertical aluminium profiles and of size 220x110x12 mm at outer corners and stainless steel grade 304,M10 full threaded anchor fasteners with nylon sleeve 100 mm long (for brick work) and M8 expansion anchor fasteners 75 mm long for concrete surface,		

Code No	Description	Unit	Rate
	spacing of brackets to be based on a structural/ static calculation. The brackets shall be of length 175 mm at junction of two vertical aluminium profiles and of length 100 mm at intermediate points of vertical profiles and shall be fixed to the vertical aluminium T / L / Tubular profiles using two numbers self-drilling/ self-tapping SS screws of size 5.5x25 mm with EPDM washers. EPDM gaskets to be fixed in between brackets and vertical profiles. The tiles shall be mounted on the 'C' clamps such that the tiles are supported at top and bottom at both ends. The tiles shall be additionally secured to the horizontal 'C' clamps using special SS clips of required size which shall be inserted and pressed into position on the 'C' clamps holding the tiles and the cut-tiles shall be glued at points to the horizontal 'C' clamps by using MS Polymer sealant adhesive. The vertical joint open groove between two adjacent tiles shall be 5 mm. The tiles and system shall be designed to resist wind load as per IS 875 (Part 3) according to different zones. The tiles shall be installed using the ventilated rain screen principle with provision for natural ventilation of the space between the façade tiles and the structural wall. The work shall be carried out as per specification, drawing and as per direction of the Engineer-in-Charge. Note : Scaffolding wherever required to be paid separately		
26.92.1	With 16 mm thickness (+/- 10%) terracotta tiles of grey colour	sqm	6320.00
26.92.2	With 16 mm thickness (+/- 10%) terracotta tiles of other than grey colors	sqm	5991.40
26.93	Providing and fixing of façade at all heights with extruded hollow Clay / Terracotta ventilated rainscreen tiles of height 259/ 309/ 409 mm and length of 1190 mm of approved texture, design and pattern having Flexural Strength/ Modulus of Rupture of $\geq 14 \text{ N/m}^2$ and maximum water absorption of 10% tested as per ISO 10545-4:2004(E) and ISO 10545-3:1995 respectively in true level fixed to a supporting aluminium framework (Alloy 6063 T5/T6) consisting of vertical 'T' (for intermediates)/ 'L' (for ends/ termination)/ Tubular sections (at corners) of size 80x60x2 mm/ 40x60x2 mm/ 40x40x2 mm respectively, spaced at maximum spacing of 1200 mm c/c matching to the tile vertical grid, and horizontal aluminium 'C'-clamps of size 56x34x2 mm thickness of length 150 mm at junction of tiles and of length 75 mm at wall ends/ corners fixed on top of the vertical sections at spacing of 250/ 300/ 400 mm c/c matching to the tile horizontal grid with two numbers of self-drilling / self-tapping SS screws of size 5.5x25 mm with EPDM washers. The vertical 'T'/L/ Tubular' sections shall be fixed to the wall using HDG (hot-dip-galvanized) steel L-brackets (galvanizing thickness of minimum 80 microns) of size 110x80x6 mm at intermediate vertical aluminium profiles and of size 220x110x12 mm at outer corners and stainless steel grade 304, M10 full threaded anchor fasteners with nylon sleeve 100 mm long (for brick work) and M8 expansion anchor fasteners 75 mm long for concrete surface, spacing of brackets to be based on a structural/ static calculation. The brackets shall be of length 175 mm at junction of two vertical aluminium profiles and of length 100 mm at intermediate points of vertical profiles and shall be fixed to the vertical aluminium T / L / Tubular profiles using two numbers self-drilling/ self-tapping SS screws of size 5.5x25 mm with EPDM washers. EPDM gaskets to be fixed in between brackets and vertical profiles. The tiles shall be mounted on the 'C' clamps such that the tiles are supported at top and bottom at both ends. The tiles shall be mounted on the C-clamps with EPDM profiles in between such that the tiles are supported at top and bottom at both ends.		

Code No	Description	Unit	Rate
	The vertical joint open groove between two adjacent tiles shall be 10 mm. The tiles and system shall be designed to resist wind load as per IS 875 (Part 3) according to different zones. The tiles shall be installed using the ventilated rain screen principle with provision for natural ventilation of the space between the façade tiles and the structural wall. The work shall be carried out as per specification, drawing and as per direction of the Engineer-in-Charge. Note : Scaffolding wherever required to be paid separately.		
26.93.1	With 24 mm thickness (+/-10%) terracota tiles of grey colour	sqm	6230.90
26.93.2	With 24 mm thickness (+/- 10%) terracotta tiles of other than grey colors	sqm	5842.50
26.94	Designing, shop fabricating, supplying , erecting, stripping and shifting of customized Modular Tunnel Formwork system for cast-in-situ monolithic RCC structures, using precision steel cubical formworks are molds with minimum 3 mm thick hot rolled plain painted/hot dip galvanized M.S. sheets for panel in contact area with necessary framing and allied accessories as per CPWD specifications including transporting, storage, assembly, hoisting and placing in position for supporting and holding the formwork in place till initial setting of the concrete then stripping the formwork, propping to support horizontal surface cleaning and oiling etc. for shifting to the next cycle, inclusive of all labour, machines and T&P requirements taking all safety measures etc. as per design and cycle programme all complete as per directions of the Engineer-in-Charge. Design of Tunnel Formwork system shall be provided by concerned service provider/vendor and the rate is inclusive of all the elements and all operations for all heights.	sqm	269.40
26.95	Providing and installation of factory made Structural Stay in place form work system with double faced panels for walls, single faced panels for roof/ floor slabs, L-shaped single faced panels for corners, with necessary scaffolding, struts, bracing etc. Complete as per CPWD specification and directions of the Engineer in Charge. Design of walls and other members to be provided by the supplier & shall be duly vetted by any engineering institute of National repute such as IITs, NITs etc. and nothing extra shall be payable on this account (Additional steel reinforcement/dowels, design mix concrete of specified grade, electrical and plumbing conduits insert for services and plastering on either side of walls shall be paid for separately). Note:- This item shall be adopted for building upto G+3 Storeys only excluding seismic zone V.		
26.95.1	Double panel of required thickness (110 mm & above) with minimum weight of panel as 11.05 kg per sqm for walls with corresponding corners and jambs strips.	sqm	3189.10
26.95.2	Single panel for slabs with minimum weight of panel as 4.05 kg/sqm for walls with corresponding corners and jambs strips.	sqm	1713.55
26.96	Providing and placing “Stay in Place PVC Wall formwork” made up of extruded Unplasticised Poly Vinyl Chloride (uPVC) consisting of Main panel, 3 way Connector, Starter Channel, Joint Panel, Connection Panels, Door/Window frame/trim panels etc. all complete as per manufacturer design and for all heights as per direction of Engineer-in-charge. (Note: Suitable for in fill walls with appropriate Structural system).		
26.96.1	125 mm wide Stay in Place PVC Wallform made of minimum 2.50 mm thick sections and minimum weight 21.97 kg /sqm of formwork.	sqm	2926.70
26.96.2	165 mm wide Stay in Place PVC Wallform made of minimum 2.50 mm thick sections and minimum weight 29.00 kg /sqm of formwork.	sqm	3805.05

COEFFICIENTS FOR CEMENT CONSUMPTION

1.0 COEFFICIENTS FOR CEMENT CONSUMPTION

3.0 MORTAR

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
3.1	Cement Mortar 1:1 (1 cement : 1 fine sand).	cum	10.20
3.2	Cement mortar 1:2 (1 cement : 2 fine sand).	cum	6.80
3.3	Cement mortar 1:3 (1 cement : 3 fine sand)	cum	5.10
3.4	Cement mortar 1:4 (1 cement : 4 fine sand)	cum	3.80
3.5	Cement mortar 1:5 (1 cement : 5 fine sand).	cum	3.10
3.6	Cement mortar 1:6 (1 cement : 6 fine sand).	cum	2.50
3.7	Cement mortar 1:2 (1 cement : 2 coarse sand).	cum	6.80
3.8	Cement mortar 1:3 (1 cement : 3 coarse sand).	cum	5.10
3.9	Cement mortar 1:4 (1 cement : 4 coarse sand).	cum	3.80
3.10	Cement mortar 1:5 (1 cement : 5 coarse sand).	cum	3.10
3.11	Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	2.50
3.12	Cement mortar 1:2 (1 cement : 2 stone dust).	cum	6.80
3.13	Cement mortar 1:2 (1 cement : 2 marble dust).	cum	6.80
3.14	Cement mortar 1:5 (1 cement : 5 marble dust).	cum	3.10
3.15	White cement mortar 1:2 (1 white cement : 2 marble dust).	cum	6.80*
3.16	White cement mortar 1:3 (1 white cement : 3 marble dust).	cum	5.10*
3.17	White cement mortar 1:5 (1 white cement : 5 marble dust)	cum	3.10*

* white cement

1.0 COEFFICIENTS FOR CEMENT CONSUMPTION

4.0 CONCRETE WORK

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
CEMENT CONCRETE (CAST-IN-SITU)			
4.1	P/L cement concrete - all works upto plinth level :		
4.1.2	1:1½:3 (1 Cement : 1½ coarse sand derived from natural sources : 3 graded stone aggregate 20 mm nominal size derived from natural sources)	cum	4.00
4.1.2A	1:1½:3 (1 Cement : 1½ coarse sand including manufactured sand derived from Recycled Concrete Aggregate (RCA) upto 25% : 3 graded stone aggregate 20 mm nominal size Recycled Concrete Aggregate (RCA) upto 25%	cum	4.00
4.1.3	1:2:4 (1 cement : 2 coarse sand derived from natural sources : 4 graded stone aggregate 20 mm nominal size derived from natural sources)	cum	3.20
4.1.3A	1:2:4 (1 Cement : 2 coarse sand including manufactured sand derived from Recycled Concrete Aggregate (RCA) upto 25% : 4 graded stone aggregate 20 mm nominal size Recycled Concrete Aggregate (RCA) upto 25%	cum	3.20
4.1.4	1:2:4 (1 Cement : 2 coarse sand derived from natural sources : 4 graded stone aggregate 40 mm nominal size derived from natural sources)	cum	3.20
4.1.5	1:3:6 (1 Cement : 3 coarse sand derived from natural sources : 6 graded stone aggregate 20 mm nominal size derived from natural sources)	cum	2.20
4.1.5A	1:3:6 (1 Cement : 3 manufactured sand derived from Recycled Concrete Aggregate (RCA)) : 6 graded stone aggregate 20 mm nominal size derived from Recycled Concrete Aggregate (RCA))	cum	2.20
4.1.5B	1:3:6 (1 Cement : 3 manufactured sand derived from Recycled Concrete Aggregate (RCA)) : 6 graded stone aggregate 20 mm nominal size derived from Recycled Aggregate (RA))	cum	2.20
4.1.6	1:3:6 (1 Cement : 3 coarse sand derived from natural sources : 6 graded stone aggregate 40 mm nominal size derived from natural sources)	cum	2.20
4.1.6B	1:3:6 (1 Cement : 3 manufactured sand derived from Recycled Concrete Aggregate (RCA)) : 6 graded stone aggregate 40 mm nominal size derived from Recycled Aggregate (RA))	cum	2.20
4.1.8	1:4:8 (1 Cement : 4 coarse sand derived from natural sources : 8 graded stone aggregate 40 mm nominal size derived from natural sources)	cum	1.70

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
4.1.8A	1:4:8 (1 Cement : 4 manufactured sand derived from Recycled Concrete Aggregate (RCA)) : 8 graded stone aggregate 40 mm nominal size derived from Recycled Aggregate (RA))	cum	1.70
4.1.10	1:5:10 (1 cement : 5 coarse sand derived from natural sources : 10 graded stone aggregate 40 mm nominal size derived from natural sources)	cum	1.30
4.1.10A	1:5:10 (1 Cement : 5 manufactured sand derived from Recycled Concrete Aggregate (RCA)) : 10 graded stone aggregate 40 mm nominal size derived from Recycled Aggregate (RA))	cum	1.30
4.1.11	1:5:10 (1 cement : 5 fine sand derived from natural sources: 10 graded stone aggregate 40 mm nominal size derived from natural sources)	cum	1.30
4.1.12	1:2:3½:9 (1 ordinary portland cement : 2 Fly ash : 3½ coarse sand derived from natural sources : 9 graded stone aggregate 40 mm nominal size derived from natural sources)	cum	1.70
4.1.12A	1:2:3½:9 (1 ordinary portland cement : 2 Fly ash : 3½ manufactured sand Recycled Concrete Aggregate (RCA) : 9 graded stone aggregate 40 mm nominal size derived from Recycled Aggregate (RA))	cum	1.70
4.1.13	1:2½:4:11 (1 ordinary portland cement : 2½ fly ash : 4 coarse sand derived from natural sources: 11 graded stone aggregate 40 mm nominal size derived from derived from natural sources)	cum	1.30
4.1.13A	1:2½:4:11 (1 ordinary portland cement : 2½ fly ash : 4 manufactured sand Recycled Concrete Aggregate (RCA): 11 graded stone aggregate 40 mm nominal size derived from Recycled Aggregate (RA))	cum	1.30
4.2	P/L cement concrete - all works upto plinth level :		
4.2.2	1:1½:3 (1 cement:1½ coarse sand derived from natural sources :3 graded stone aggregate 20 mm nominal size derived from natural sources)	cum	4.00
4.2.2A	1:1½:3 (1 cement:1½ coarse sand including manufactured sand derived from Recycled Concrete Aggregate (RCA) upto 25%: 3 graded stone aggregate 20 mm nominal size Recycled Concrete Aggregate (RCA) upto 25%)	cum	4.00
4.2.3	1:2:4 (1 Cement : 2 coarse sand derived from natural sources: 4 graded stone aggregate 20 mm nominal size derived from natural sources)	cum	3.20
4.2.3A	1:2:4 (1 Cement : 2 including manufactured sand derived from Recycled Concrete Aggregate (RCA) upto 25%: 4 graded stone aggregate 20 mm nominal size Recycled Concrete Aggregate (RCA) upto 25%)	cum	3.20

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
4.2.5	1:3:6 (1 cement : 3 coarse sand derived from natural sources : 6 graded stone aggregate 20 mm nominal size derived from natural sources)	cum	2.20
4.2.5A	1:3:6 (1 cement : 3 manufactured sand derived from Recycled Concrete Aggregate (RCA) : 6 graded stone aggregate 20 mm nominal size derived from Recycled Concrete Aggregate (RCA))	cum	2.20
4.2.5B	1:3:6 (1 cement : 3 manufactured sand derived from Recycled Concrete Aggregate (RCA) : 6 graded stone aggregate 20 mm nominal size derived from Recycled Aggregate (RA))	cum	2.20
4.2.8	1:5:10 (1 cement : 5 coarse sand derived from natural sources: 10 graded stone aggregate 40 mm nominal size derived from natural sources)	cum	1.30
4.2.8A	1:5:10 (1 cement : 5 manufactured sand derived from Recycled Concrete Aggregate (RCA) : 10 graded stone aggregate 40 mm nominal size derived from Recycled Aggregate (RA))	cum	1.30
4.4	P/L cement concrete in kerbs, steps etc.:		
4.4.1	1:1.5:3 (1 cement : 1.5 coarse sand derived from natural sources : 3 graded stone aggregate 20 mm nominal size derived from natural sources)	cum	4.00
4.4.1A	1:1.5:3 (1 cement : 1.5 including manufactured sand derived from Recycled Concrete Aggregate (RCA) upto 25% : 3 graded stone aggregate 20 mm nominal size derived from Recycled Concrete Aggregate (RCA) upto 25%)	cum	4.00
	CEMENT CONCRETE (PRE-CAST)		
4.5	P/L precast cement concrete string or lacing courses, copings etc.:		
4.5.1	1:1½:3 (1 cement:1½ coarse sand derived from natural sources:3 graded stone aggregate 20 mm nominal size derived from natural sources)	cum	4.05
4.5.1A	1:1½:3 (1 cement:1½ including manufactured sand derived from Recycled Concrete Aggregate (RCA) upto 25% : 3 graded stone aggregate 20 mm nominal size derived from Recycled Concrete Aggregate (RCA) upto 25%)	cum	4.05
4.6	P/L precast cement concrete in kerbs, edgings etc.:		
4.6.1	1:1.5:3 (1 cement : 1.5 coarse sand derived from natural sources : 3 graded stone aggregate 20 mm nominal size derived from natural sources)	cum	4.05
4.6.1A	1:1.5:3 (1 cement : 1.5 including manufactured sand derived from Recycled Concrete Aggregate (RCA) upto 25% : 3 graded stone aggregate 20 mm nominal size derived from Recycled Concrete Aggregate (RCA) upto 25%)	cum	4.05

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
4.7	P/L precast cement concrete solid blocks:		
4.7.1	1:1.5:3 (1 cement : 1.5 coarse sand derived from natural sources : 3 graded stone aggregate 20 mm nominal size derived from natural sources)	cum	4.56
4.7.1A	1:1.5:3 (1 cement : 1.5 including manufactured sand derived from Recycled Concrete Aggregate (RCA) upto 25% : 3 graded stone aggregate 20 mm nominal size derived from Recycled Concrete Aggregate (RCA) upto 25%)	cum	4.56
4.8	P/L precast cement concrete hollow blocks:		
4.8.1	1:1.5:3 (1 cement : 1.5 coarse sand derived from natural sources : 3 graded stone aggregate 20 mm nominal size derived from natural sources)	cum	2.899
4.8.1A	1:1.5:3 (1 cement : 1.5 including manufactured sand derived from Recycled Concrete Aggregate (RCA) upto 25% : 3 graded stone aggregate 20 mm nominal size derived from Recycled Concrete Aggregate (RCA) upto 25%)	cum	2.899
4.9	Precasting and placing in position 125 mm dia Bollards 600 mm high..... cement concrete 1:3:6 (1 Cement : 3 coarse sand (zone-III) derived from natural sources : 6 graded stone aggregate 20 mm nominal size derived from natural sources).....	each	0.097
4.9A	Precasting and placing in position 125 mm dia Bollards 600 mm high..... cement concrete 1:3:6 (1 Cement : 3 manufactured sand derived from Recycled Concrete Aggregate (RCA) : 6 graded stone aggregate 20 mm nominal size derived from Recycled Concrete Aggregate (RCA)).....	each	0.097
4.9B	Precasting and placing in position 125 mm dia Bollards 600 mm high..... cement concrete 1:3:6 (1 Cement : 3 manufactured sand derived from Recycled Concrete Aggregate (RCA) : 6 graded stone aggregate 20 mm nominal size derived from Recycled Aggregate (RA)).....	each	0.097
DAMP- PROOF COURSE			
4.10	P/L D.P.C. 40 mm thick with C.C. (1 cement :2 coarse sand derived from natural sources :4 graded stone aggregate 12.5mm nominal size derived from natural sources).	sqm	0.13
4.10A	P/L D.P.C. 40 mm thick with C.C. (1 cement :2 including manufactured sand derived from Recycled Concrete Aggregate (RCA) upto 25% :4 graded stone aggregate 12.5mm nominal size derived from Recycled Concrete Aggregate (RCA) upto 25%).	sqm	0.13
4.11	P/L D.P.C. 50 mm thick with C.C. (1 cement :2 coarse sand derived from natural sources :4 graded stone aggregate 12.5mm nominal size derived from natural sources).	sqm	0.16

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
4.11A	P/L D.P.C. 50 mm thick with C.C. (1 cement :2 including manufactured sand derived from Recycled Concrete Aggregate (RCA) upto 25% :4 graded stone aggregate 12.5mm nominal size derived from Recycled Concrete Aggregate (RCA) upto 25%).	sqm	0.16
MISCELLANEOUS			
4.17	Making plinth protection 50 mm thick of cement concrete 1:3 coarse sand (zone-III) derived from natural sources : 6 graded stone aggregate 20 mm nominal size derived from natural sources)	sqm	0.11
4.17A	Making plinth protection 50 mm thick of cement concrete 1:3 manufactured sand derived from Recycled Concrete Aggregate (RCA) : 6 graded stone aggregate 20 mm nominal size derived from Recycled Concrete Aggregate (RCA))	sqm	0.11
4.17B	Making plinth protection 50 mm thick of cement concrete 1:3 manufactured sand derived from Recycled Concrete Aggregate (RCA) : 6 graded stone aggregate 20 mm nominal size derived from Recycled Aggregate (RA))	sqm	0.11
4.20	P/L ready mix plain cement concrete derived from natural sources		
4.20.1	All works upto plinth level		
4.20.1.1	Concrete of M10 grade with minimum cement content of 220 kg /cum	cum	2.20
4.20.1.2	Concrete of M15 grade with minimum cement content of 240 kg /cum	cum	2.40
4.20.1.3	Concrete of M20 grade with minimum cement content of 270 kg /cum	cum	2.70
4.20.1.4	Concrete of M25 grade with minimum cement content of 300 kg /cum	cum	3.00
4.20.2	All works above plinth and upto floor V level		
4.20.2.1	Concrete of M10 grade with minimum cement content of 220 kg /cum	cum	2.20
4.20.2.2	Concrete of M15 grade with minimum cement content of 240 kg /cum	cum	2.40
4.20.2.3	Concrete of M20 grade with minimum cement content of 270 kg /cum	cum	2.70
4.20.2.4	Concrete of M25 grade with minimum cement content of 300 kg /cum	cum	3.00
4.20A	P/L ready mix plain cement concrete derived from natural sources & Recycled Concrete Aggregate (RCA)		
4.20A.1	All works upto plinth level		
4.20A.1.1	Concrete of M10 grade with minimum cement content of 220 kg /cum	cum	2.20
4.20A.1.2	Concrete of M15 grade with minimum cement content of 240 kg /cum	cum	2.40
4.20A.1.3	Concrete of M20 grade with minimum cement content of 270 kg /cum	cum	2.70

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
4.20A.1.4	Concrete of M25 grade with minimum cement content of 300 kg /cum	cum	3.00
4.20A.2	All works above plinth and upto floor V level		
4.20A.2.1	Concrete of M10 grade with minimum cement content of 220 kg /cum	cum	2.20
4.20A.2.2	Concrete of M15 grade with minimum cement content of 240 kg /cum	cum	2.40
4.20A.2.3	Concrete of M20 grade with minimum cement content of 270 kg /cum	cum	2.70
4.20A.2.4	Concrete of M25 grade with minimum cement content of 300 kg /cum	cum	3.00

1.0 COEFFICIENTS FOR CEMENT CONSUMPTION

5.0 REINFORCED CEMENT CONCRETE

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
CAST-IN-SITU			
5.1	P/L R.C.C. upto plinth level :		
5.1.2	1:1.5:3 (1 cement : 1.5 coarse sand derived from natural sources: 3 graded stone aggregate 20 mm nominal size derived from natural sources)	cum	4.00
5.1.2A	1:1.5:3 (1 cement : 1.5 coarse sand including manufactured sand derived from Recycled Concrete Aggregate (RCA) upto 20%: 3 graded stone aggregate 20 mm nominal size derived from Recycled Concrete Aggregate (RCA) upto 20%)	cum	4.00
5.1.3	1:2:4 (1 cement : 2 coarse sand derived from natural sources: 4 graded stone aggregate 20 mm nominal size derived from natural sources)	cum	3.2
5.1.3A	1:2:4 (1 cement : 2 coarse sand including manufactured sand derived from Recycled Concrete Aggregate (RCA) upto 20%: 4 graded stone aggregate 20 mm nominal size derived from Recycled Concrete Aggregate (RCA) upto 20%)	cum	3.2
5.2	R.C.C work in walls etc.:		
5.2.2	1:1.5:3 (1 cement : 1.5 coarse sand derived from natural sources: 3 graded stone aggregate 20 mm nominal size derived from natural sources)	cum	4.00
5.2.2A	1:1.5:3 (1 cement : 1.5 coarse sand including manufactured sand derived from Recycled Concrete Aggregate (RCA) upto 20%: 3 graded stone aggregate 20 mm nominal size derived from Recycled Concrete Aggregate (RCA) upto 20%)	cum	4.00
5.3	R.C.C. (1:1.5 coarse sand(zone-III) derived from natural sources : 3 graded stone aggregate 20 mm nominal size derived from natural sources) work in beams etc.	cum	4.00
5.3A	R.C.C. (1:1.5 including manufactured sand derived from Recycled Concrete Aggregate (RCA) upto 20%: 3 graded stone aggregate 20 mm nominal size derived from Recycled Concrete Aggregate (RCA) upto 20%) work in beams etc.	cum	4.00
5.4	R.C.C. (1:1.5 coarse sand(zone-III) derived from natural sources : 3 graded stone aggregate 20 mm nominal size derived from natural sources) work in kerbs, steps etc.	cum	4.00
5.4A	R.C.C. (1:1.5 including manufactured sand derived from Recycled Concrete Aggregate (RCA) upto 20% : 3 graded stone aggregate 20 mm nominal size derived from Recycled Concrete Aggregate (RCA) upto 20%) work in kerbs, steps etc.	cum	4.00
5.5	R.C.C. (1:1.5 coarse sand(zone-III) derived from natural sources : 3 graded stone aggregate 20 mm nominal size derived from natural sources) work in arches,domes etc.	cum	4.00

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
5.5.A	R.C.C. (1:1.5 including manufactured sand derived from Recycled Concrete Aggregate (RCA) upto 20%: 3 graded stone aggregate 20 mm nominal size derived from Recycled Concrete Aggregate (RCA) upto 20%) work in arches, domes etc.	cum	4.00
5.6	R.C.C. (1:1.5 coarse sand (zone-III) derived from natural sources : 3 graded stone aggregate 20 mm nominal size derived from natural sources) work in chimneys & shafts.	cum	4.00
5.6A	R.C.C. (1:1.5 including manufactured sand derived from Recycled Concrete Aggregate (RCA) upto 20%: 3 graded stone aggregate 20 mm nominal size derived from Recycled Concrete Aggregate (RCA) upto 20%) work in chimneys & shafts.	cum	4.00
5.7	R.C.C. (1:1.5 coarse sand (zone-III) derived from natural sources : 3 graded stone aggregate 20 mm nominal size derived from natural sources) work in well-steining.	cum	4.00
5.7A	R.C.C. (1:1.5 including manufactured sand derived from Recycled Concrete Aggregate (RCA) upto 20%: 3 graded stone aggregate 20 mm nominal size derived from Recycled Concrete Aggregate (RCA) upto 20%) work in well-steining.	cum	4.00
5.8	R.C.C. (1:1.5 coarse sand (zone-III) derived from natural sources : 3 graded stone aggregate 20 mm nominal size derived from natural sources) work in vertical and horizontal fins individually or forming box louvers, facias and eaves boards.	cum	4.00
5.8A	R.C.C. (1:1.5 including manufactured sand derived from Recycled Concrete Aggregate (RCA) upto 20%: 3 graded stone aggregate 20 mm nominal size derived from Recycled Concrete Aggregate (RCA) upto 20%) work in vertical and horizontal fins individually or forming box louvers, facias and eaves boards.	cum	4.00
PRE - CAST R.C.C.			
5.12	P/F precast R.C.C. (1:1.5 coarse sand (zone-III) derived from natural sources : 3 graded stone aggregate 20 mm nominal size derived from natural sources) work in string courses, bands, copings, bed plates, anchor blocks, plain window sills etc.	cum	4.00
5.12A	P/F precast R.C.C. (1:1.5 including manufactured sand derived from Recycled Concrete Aggregate (RCA) upto 20% : 3 graded stone aggregate 20 mm nominal size derived from Recycled Concrete Aggregate (RCA) upto 20%) work in string courses, bands, copings, bed plates, anchor blocks, plain window sills etc.	cum	4.00
5.13	P/F precast R.C.C. (1:1.5 coarse sand (zone-III) derived from natural sources : 3 graded stone aggregate 20 mm nominal size derived from natural sources) in small lintels not exceeding 1.5m clear span.	cum	4.00
5.13A	P/F precast R.C.C. (1:1.5 including manufactured sand derived from Recycled Concrete Aggregate (RCA) upto 20% : 3 graded stone aggregate 20 mm nominal size derived from Recycled Concrete Aggregate (RCA) upto 20%) in small lintels not exceeding 1.5m clear span.	cum	4.00
5.14	P/F precast R.C.C. (1:1.5 coarse sand (zone-III) derived from natural sources : 3 graded stone aggregate 20 mm nominal size derived from natural sources) in mouldings as in cornices, windows sills etc.	cum	4.00

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
5.14A	P/F precast R.C.C. (1:1.5 including manufactured sand derived from Recycled Concrete Aggregate (RCA) upto 20% : 3 graded stone aggregate 20 mm nominal size derived from Recycled Concrete Aggregate (RCA) upto 20%) in mouldings as in cornices, windows sills etc.	cum	4.00
5.15	P/F precast R.C.C. (1:1.5 coarse sand (zone-III) derived from natural sources : 3 graded stone aggregate 20 mm nominal size derived from natural sources) in lintels, beams and bressumers etc.	cum	4.00
5.15A	P/F precast R.C.C. (1:1.5 including manufactured sand derived from Recycled Concrete Aggregate (RCA) upto 20% : 3 graded stone aggregate 20 mm nominal size derived from Recycled Concrete Aggregate (RCA) upto 20%) in lintels, beams and bressumers etc.	cum	4.00
5.16	P/F precast R.C.C. (1:1.5 coarse sand (zone-III) derived from natural sources : 3 graded stone aggregate 20 mm nominal size derived from natural sources) in shelves.	cum	4.05
5.16A	P/F precast R.C.C. (1:1.5 including manufactured sand derived from Recycled Concrete Aggregate (RCA) upto 20% : 3 graded stone aggregate 20 mm nominal size derived from Recycled Concrete Aggregate (RCA) upto 20%) in shelves.	cum	4.05
5.17	P/F precast R.C.C. (1:1.5 coarse sand (zone-III) derived from natural sources : 3 graded stone aggregate 20 mm nominal size derived from natural sources) in vertical & horizontal fins individually or forming box louvers.	cum	4.00
5.17A	P/F precast R.C.C. (1:1.5 including manufactured sand derived from Recycled Concrete Aggregate (RCA) upto 20% : 3 graded stone aggregate 20 mm nominal size derived from Recycled Concrete Aggregate (RCA) upto 20%) in vertical & horizontal fins individually or forming box louvers.	cum	4.00
5.18	Fixing precast cement concrete Jali (1:2:4).		
5.18.1	50 mm thick	100 sqm	1.64**
5.18.2	40 mm thick	100 sqm	1.64**
5.18.3	25 mm thick	100 sqm	1.64**

** Cement for fixing only.

ENCASING ROLLED STEEL SECTION

5.19	Encasing rolled steel sections, in beams and columns, with cement concrete (1:1.5 coarse sand (zone-III) derived from natural sources : 3 graded stone aggregate 20 mm nominal size derived from natural sources).	cum	4.00
5.19A	Encasing rolled steel sections, in beams and columns, with cement concrete (1:1.5 including manufactured sand derived from Recycled Concrete Aggregate (RCA) upto 20% : 3 graded stone aggregate 20 mm nominal size derived from Recycled Concrete Aggregate (RCA) upto 20%).	cum	4.00

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
5.20	Encasing rolled steel section in grillages with cement concrete (1:1.5 coarse sand (zone-III) derived from natural sources : 3 graded stone aggregate 20 mm nominal size derived from natural sources).	cum	4.00
5.20A	Encasing rolled steel section in grillages with cement concrete (1:1.5 including manufactured sand derived from Recycled Concrete Aggregate (RCA) upto 20% : 3 graded stone aggregate 20 mm nominal size derived from Recycled Concrete Aggregate (RCA) upto 20%).	cum	4.00
5.23	Smooth finishing of exposed surface of R.C.C. work with 6 mm thick cement mortar (1:3).	100 sqm	3.67
5.24	Extra for Rendering smooth the top of suspended floors, landings and staircases with cement mortar (1:2).	100 sqm	4.17
5.27	Providing and filling in position bitumen mix filler.	cum	0.032
DESIGN MIX CONCRETE			
5.33	P/L Design mix concrete derived from natural sources.	cum	3.30***
5.33.1	Upto Plinth level		
5.33.1.1	Concrete of M25 grade with minimum cement content of 330 kg /cum	cum	3.30
5.33.1.2	Concrete of M30 grade with minimum cement content of 350 kg /cum	cum	3.50
5.33.1.3	Concrete of M35 grade with minimum cement content of 370 kg /cum	cum	3.70
5.33.1.4	Concrete of M40 grade with minimum cement content of 390 kg/cum	cum	3.90
5.33.1.5	Concrete of M50 grade with minimum cement content of 410 kg/cum	cum	4.10
5.33.2	Above plinth level Plinth level		
5.33.2.1	Concrete of M25 grade with minimum cement content of 330 kg /cum	cum	3.30
5.33.2.2	Concrete of M30 grade with minimum cement content of 350 kg /cum	cum	3.50
5.33.2.3	Concrete of M35 grade with minimum cement content of 370 kg /cum	cum	3.70
5.33.2.4	Concrete of M40 grade with minimum cement content of 390 kg/cum	cum	3.90
5.33.2.5	Concrete of M50 grade with minimum cement content of 410 kg/cum	cum	4.10
5.33A	P/L Design mix concrete derived from natural sources with permissible utilization of Recycled Concrete Aggregate (RCA).		
5.33A.1	Upto Plinth level		
5.33A.1.1	Concrete of M25 grade with minimum cement content of 330 kg /cum	cum	3.30
5.33A.2	Above plinth level Plinth level		
5.33A.2.1	Concrete of M25 grade with minimum cement content of 330 kg /cum	cum	3.30

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
5.36	P/F precast R.C.C. in waffle units.... 1:1½:3 (1 Cement : 1½ coarse sand (zone-III) derived from natural sources : 3 graded stone aggregate 10 mm nominal size derived from natural sources)	cum	4.12***
5.36A	P/F precast R.C.C. in waffle units.... 1:1½:3 (1 Cement : 1½ including manufactured sand derived from Recycled Concrete Aggregate (RCA) upto 20% : 3 graded stone aggregate 10 mm nominal size derived from Recycled Concrete Aggregate (RCA) upto 20%) *** Actual weight for design mix will be worked out taking into consideration the cement requirement as per particular mix design	cum	4.12***
5.47.1	P/F factory made precast RCC M-40 doors & windows	100 metre	0.381**
5.47.2	P/F factory made precast RCC M-40 doors & windows	100 metre	0.381**
5.47.3	P/F factory made precast RCC M-40 doors & windows	100 metre	0.381**
5.48	Providing and laying RCC for construction of piers abutments portal frames etc.	cum	4.80
5.49	Constructing cast insitu RCC diaphragm wall by providing	cum.	4.41

** Cement for fixing only.

1.0 COEFFICIENTS FOR CEMENT CONSUMPTION

6.0 MASONRY WORK

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
6.1	Brick work in foundation & plinth with non modular bricks.		
6.1.1	Cement mortar 1:4 (1 cement : 4 coarse sand)	cum	0.95
6.1.2	Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	0.625
6.2	Brick work in foundation & plinth with modular bricks.		
6.2.1	Cement mortar 1:4 (1 cement : 4 coarse sand)	cum	0.836
6.2.2	Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	0.55
6.3	Brick work with machine moulded perforated bricks.		
6.3.1	With non modular bricks.	cum	0.625
6.3.2	With modular bricks.	cum	0.55
6.4	Brick work in superstructure		
6.4.1	Cement mortar 1:4 (1 cement : 4 coarse sand)	cum	0.95
6.4.2	Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	0.625
6.7	Half brick masonry in cement mortar (1:3) for closing cavity 5 to 7.5 cm wide in cavity wall.	100 metre	3.86
6.8	Brick work 7 cm in cement mortar (1:3).	100 sqm	9.23
6.9 & 6.10	Brick work in plain & gauged arches in cement mortar (1:3).	cum	1.28
HALF BRICK MASONRY			
6.12 & 6.13	Half brick masonry in foundations & plinth and superstructure.		
6.12.1 & 6.13.1	Cement mortar 1:3 (1 cement : 3 coarse sand)	100 sqm	14.28
6.12.2 & 6.13.2	Cement mortar 1:4 (1 cement : 4 coarse sand)	100 sqm	10.64
BRICK TILE WORK			
6.16	Tile brick masonry in foundation and plinth. :		
6.16.1	Cement mortar 1:4 (1 cement : 4 coarse sand)	cum	1.52
6.16.2	Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	1.00
6.17 & 6.18	Tile brick masonry with m/c moulded tiles in cement mortar 1:6 (1 cement : 6 coarse sand).	cum	1.00
6.20 & 6.21	Tile brick masonry with tile bricks in plain/gauged arches work in cement mortar (1:4).	cum	1.33
6.22	Tile brick masonry work 5 cm thick in cement mortar (1:3).	100 sqm	7.65
HONEY COMB WORK			
6.23	Honey-comb brick work 10/11.4 cm thick in cement mortar 1:4.	100 sqm	6.56
EXPOSED BRICK WORK			
6.26	Brick work with selected bricks in cement mortar (1:6).	cum	0.625
6.27	Brick work with modular bricks in cement mortar (1:6).	cum	0.55

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
6.28	Brick work with machine moulded modular bricks in cement mortar (1:6).	cum	0.55
6.29	Brick work with m/c moulded F.P.S. bricks in cement mortar (1:6).	cum	0.625
6.30	Brick work with machine moulded perforated F.P.S. bricks in cement mortar (1:6).	cum	0.625
6.31	Brick work with machine moulded perforated modular bricks in cement mortar (1:6).	cum	0.55
6.32	Brick work with clay flyash F.P.S. brick		
6.32.1	Cement mortar 1:4 (1 cement : 4 coarse sand)	cum	0.95
6.32.2	Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	0.625
6.34	Brick work with non modular fly ash bricks in		
6.34.1	Cement mortar 1:4 (1 cement : 4 coarse sand)	cum	0.95
6.34.2	Cement mortar 1:6 (1 cement : 6 Coarse sand)	cum	0.625
6.35	Brick work with modular calcium silicate bricks machine moulded in		
6.35.1	Cement mortar 1:4 (1 cement : 4 coarse sand)	cum	0.836
6.35.3	Cement mortar 1:6 (1 cement : 6 Coarse sand)	cum	0.55
6.36	Brick work with modular extruded burnt fly ash clay sewer bricks in :		
6.36.1	Cement Mortar 1:4 (1 cement : 4 coarse sand)	cum	0.836
6.37	Brick work with modular extruded burnt fly ash clay sewer bricks in cement mortar (1:3).	cum	1.275
6.38	Autoclaved aerated cement blocks masonry with 100mm thick AAC blocks in cement mortar (1:4).	cum	0.57
6.44	Brick edging 7 cm wide in cement mortar (1:4).	100 metre	0.137
6.45	Half brick masonry with non modular fly ash bricks.		
6.45.1	Cement mortar 1:3 (1 cement :3 coarse sand).	100 sqm	14.28
6.45.2	Cement mortar 1:4 (1 cement :4 coarse sand).	100 sqm	10.64

1.0 COEFFICIENTS FOR CEMENT CONSUMPTION

7.0 STONE WORK

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
RANDOM RUBBLE MASONRY			
7.1 & 7.2	Random rubble masonry with cement mortar (1:6).	cum	0.825
COURSED RUBBLE MASONRY			
7.6	Coursed rubble masonry (first sort) with :		
7.6.1	Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	0.750
7.7	Coursed rubble masonry (second sort) with :		
7.7.1	Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	0.750
ASHLAR MASONRY			
7.12	Stone work in plain ashlar in cement mortar (1:6) including pointing with white cement mortar (1:2).	cum	0.54
7.13 & 7.14	Stone work plain ashlar in arches/domes in cement mortar (1:3) including pointing with white cement mortar (1:2).	cum	1.07
7.15	Stone work ashlar punched in cement mortar 1:6) including pointing with white cement mortar (1:2).	cum	0.54
SUNK, MOULDED, CARVED ASHLAR MASONRY			
7.20	Stone work sunk and / or moulded including pointing with white cement mortar (1:2).	cum	0.54
MISCELLANEOUS STONE WORK			
7.26	P/F stone dowels 10x5x2.50 cm in cement mortar (1:2) .	each	0.007
7.28	P/F sloping chajja of stone 40 mm thick and upto 80 cm wide in cement mortar (1:4) including pointing in white cement mortar (1:2).	100 sqm	5.59
7.29	P/F horizontal chajja of stone 40 mm thick and upto 80 cm projection in cement mortar (1:4) including pointing in white cement mortar (1:2).	100 sqm	4.94 + 0.03*
7.30	P/F 30 mm red sand stone sun-shade with cement mortar 1:4 including finishing complete.	100 sqm	2.19
7.31	Providing and fixing red sand stone brackets 55x22.5x45cm.	100nos	3.02
7.32	Stone work, plain in copings, cornices, string courses etc. in Cement mortar 1:6 including pointing with white cement mortar (1:2).	cum	0.54
7.38	Stone tile work for wall lining with 12 mm thick bed in cement mortar (1:3).	sqm	10.44 + 1.70*
	* White cement		

1.0 COEFFICIENTS FOR CEMENT CONSUMPTION

8.0 CLADDING WORK

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
8.1	Marble work 18 mm thick for wall lining in cement mortar 1:3 including pointing with white cement mortar 1:2.	100 sqm	8.67 + 1.70*
8.2	P/F 18mm thick gang saw cut mirror polished premoulded and prepolished) machine cut for kitchen platforms, vanity counters etc. laid over 20mm thick base cement mortar 1:4.	100 sqm	9.12
8.4	Extra for fixing marble /granite stone over and above corresponding basic item, in facia and drops of width upto 150 mm with epoxy resin based adhesive including cleaning etc. complete.	100 metre	1.27
8.7	P/F cramps in RCC/ CC backing with cement mortar 1:2.		
8.7.1	Gunmetal cramps	kg	0.0635
8.7.2	Stainless steel cramps	kg	0.0701
8.9	Stone tile work for wall lining over 12mm thick bed of cement mortar (1:3) and cement slurry @ 3.3 kg/sqm including pointing in white cement complete.	100 sqm	10.44 + 1.90*
8.11	P/F machine cut mirror/edge polished	100 sqm.	8.16 + 3.30*
8.14	Stone work (machine cut edges) for wall lining etc. (veneer work) in cement mortar (1:3) including pointing in white cement mortar (1:2).	100 sqm	9.18 + 1.56*
8.15	P/F stainless steel cramps in stone wall lining in cement mortar (1:2).	kg	0.07
8.16	P/F copper pins 7.5 cm long 6 mm diameter in stone wall lining in cement mortar (1:2).	each	0.007
8.17	Wall lining butch work with Dholpur stone 40 mm thick, in cement mortar (1:3) including ruled pointing in cement mortar (1:2).	100 sqm	15.50 + 1.70*
8.18	Stone work (machine cut edges) for wall lining with grout of 12 mm thick in cement mortar (1:3) and jointed with Cement mortar (1:2).	100 sqm	13.744
8.21	P/F structural steel frame (for dry stone cladding) embedded in brick wall with cement concrete block (1:2:4)	100kg	1.05
8.23	P/F 50x50x50 mm 2nd class teak wood plugs in cement mortar 1:3.	100 nos.	0.01
8.25	P/F 2nd class teak wood plain lining with wooden plugs.	100 sqm	0.055
8.31	P/F 1st quality ceramic glazed wall tiles over 12 mm thick bed of cement Mortar (1:3) with grey cement slurry @ 3.3kg/sqm	sqm	0.1044

* White cement

1.0 COEFFICIENTS FOR CEMENT CONSUMPTION

9.0 WOOD AND P.V.C. WORK

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
MISCELLANEOUS - WOOD WORK			
9.53	Providing 40x5 mm flat iron hold fast 40 cm long with cement concrete block 30x10x15cm 1:3:6 mix. 100 nos 1.10	100 nos	1.10

1.0 COEFFICIENTS FOR CEMENT CONSUMPTION

10.0 STEEL WORK

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
10.4	P/F 1 mm thick M.S. sheet sliding-shutters with frame.	100 sqm	0.35
10.5	P/F 1 mm thick M.S. sheet door with frame.	100 sqm	0.35
10.6	Supplying and fixing rolling shutters.	100 sqm	0.35
10.10.1 & 10.11.1	Fixing standard steel glaze door windows etc.	100 kg	0.13
10.13.1	P/F 'T' iron froms for doors windows & ventilators	100 kg	0.11
10.15	Providing and fixing M.S. Tubular frames for doors, windows, ventilators and cupboard with 15x3 mm lugs 10 cm long embedded in cement concrete blocks 15x10x10 cm of 1:3:6 mix.	100 kg	0.28

1.0 COEFFICIENTS FOR CEMENT CONSUMPTION

11.0 FLOORING

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
11.1	Brick on edge flooring.		
11.1.1	1:4 (1 cement : 4 coarse sand)	sqm	0.1850
11.1.2	1:6 (1 cement : 6 coarse sand)	sqm	0.1285
11.3	Cement concrete flooring 1:2:4.		
11.3.1	40mm thick with 20mm nominal size stone aggregate	sqm	0.17
11.4	52 mm thick cement concrete flooring.	sqm	0.231
11.5	62 mm thick cement concrete flooring.	sqm	0.263
11.6	Cement plaster skirting with cement mortar (1:3).	sqm	0.14
11.7	Cement concrete pavement with C.C. (1:2:4).	cum	3.20
TERRAZO FLOORING			
11.9	40 mm thick marble chips flooring with under layer 34 mm thick cement concrete (1:2:4).		
11.9.1	Dark shade pigment with ordinary cement	sqm	0.1695
11.9.2	Light shade pigment with white cement	sqm	0.129+0.0405*
11.9.3	Medium shade pigment with 50% white cement and 50% ordinary cement	sqm	0.1492+0.0202*
11.9.4	White cement without any pigment	sqm	0.129+0.0202*
11.9.5	Light shade pigment with ordinary cement	sqm	0.1695
11.9.6	Ordinary cement without any pigment	sqm	0.1695
11.10	40 mm thick marble chips flooring with under layer 31mm thick cement concrete 1:2:4.		
11.10.1	Dark shade pigment with Ordinary cement	sqm	0.1783
11.10.2	Light shade pigment with white cement	sqm	0.1205+0.0578*
11.10.3	Medium shade pigment with 50% white cement and 50% ordinary cement	sqm	0.1494+0.0289*
11.10.4	White cement without any pigment	sqm	0.1205+0.0578*
11.10.5	Light shade pigment with ordinary cement	sqm	0.1783
11.10.6	Ordinary cement without any pigment	sqm	0.1783
11.11	40 mm thick marble chips flooring with under layer 28 mm thick cement concrete 1:2:4.		
11.11.1	Dark shade pigment with ordinary cement	sqm	0.1907
11.11.2	Light shade pigment with white cement	sqm	0.1097+0.081*
11.11.3	Medium shade pigment with 50% white cement and 50% ordinary cement	sqm	0.1502+0.0405*
11.11.4	White cement without any pigment	sqm	0.1097+0.081*
11.11.5	Light shade pigment with ordinary cement	sqm	0.1097
11.11.6	Ordinary cement without any pigment	sqm	0.1097

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
11.12	Marble chips skirting :		
11.12.1	18 mm thick with under layer 12 mm thick in cement plaster 1:3 (1 cement : 3 coarse sand)		
11.12.1.1	Dark shade pigment with ordinary cement	sqm	0.1292
11.12.1.2	Light shade pigment with white cement	sqm	0.0887+0.0405*
11.12.1.3	Medium shade pigment with 50% white cement and 50% ordinary cement	sqm	0.109+0.0203*
11.12.1.4	White cement without any pigment	sqm	0.109+0.0405*
11.12.1.5	Light shade pigment with ordinary cement	sqm	0.1292
11.12.1.6	Ordinary cement without any pigment	sqm	0.1292
11.15	Crazy marble stone flooring		
11.15.1	18 mm thick crazy marble stone white, black or as specified	sqm	0.1200+0.0405*
	* White Cement		
	TILE FLOORING		
11.16	Precast terrazo tiles 22mm thick in floors, and landings on 20mm thick bed of cement mortar (1:4).		
11.16.1	Light shade using white cement	sqm	0.0895+0.044*
11.16.2	Medium shade using 50%white cement and 50% ordinary cement	sqm	0.0917+0.0220*
11.16.3	Dark shade using ordinary cement	sqm	0.0939
11.16.4	Ordinary cement without any pigment	sqm	0.0939
11.18	Precast terrazo tiles 22 mm thick in skirting and risers of steps.		
11.18.1	Light shade using white cement.	sqm	0.0734+0.066*
11.18.2	Medium shades using 50% white cement and 50% ordinary cement.	sqm	0.1064+0.033*
11.18.3	Dark shade using ordinary cement	sqm	0.1394
11.18.4	Ordinary cement without any pigment	sqm	0.1394
11.19	Chequered terrazo tiles 22 mm thick in floors on 20 mm thick bed of cement mortar (1:4).		
11.19.1	Light shade using white cement	sqm	0.0895+0.044*
11.19.2	Medium shade using 50% white cement, 50% ordinary cement	sqm	0.0917+0.024*
11.19.3	Dark shade using ordinary cement	sqm	0.0939
11.19.4	Ordinary cement without any pigment	sqm	0.0939
11.20	Chequerred precast cement concrete tiles 22 mm thick in foot path on 20 mm thick bed of cement mortar (1:4).		
11.20.1	Light shade using white cement	sqm	0.1291+0.066*
11.20.2	Medium shade using 50% white cement 50% Grey cement	sqm	0.1621+0.033*
11.20.3	Dark shade using ordinary cement	sqm	0.1951
11.20.4	Ordinary cement without any pigment	sqm	0.1951

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
11.21	Providing and fixing 10mm thick acid and or alkali resistant tiles.		
11.21.1	In flooring on a bed of 10 mm thick mortar 1:4 (1 acid proof cement : 4 coarse sand)		
11.21.1.1	Acid and alkali resistant tile	sqm	0.0786**
11.21.2	In dado/skirting on 12 mm thick mortar 1:4 (1 acid proof cement : 4 coarse sand)		
11.21.2.1	Acid and alkali resistant tile	sqm	0.0862**
11.22	Tile work in skirting, risers of steps etc. with 8 mm thick marble tile.	sqm	0.1044
	STONE FLOORING		
11.23	Marble stone flooring with 18 mm thick marble stone over 20 mm thick cement mortar (1:4).	sqm	0.13512
	KOTA STONE FLOORING		
11.26	Kota stone slab flooring over 20 mm thick bed of cement mortar (1:4).	sqm	0.1491
11.27	Kota stone slabs 20 mm thick in risers of steps, skirting etc. laid on 12 mm (average) thick cement mortar 1:3.	sqm	0.1374
	SAND STONE FLOORING		
11.28	40 mm thick fine dressed stone flooring over 20 mm (average) thick base of cement mortar 1:5 with joints finished flush.	sqm	0.0775
11.29	40 mm thick fine dressed stone flooring over 20 mm (average) thick base of cement mortar 1:5 including pointing with cement mortar 1:2.	sqm	0.0931
11.30	40 mm thick rubbed stone flooring over 20 mm (average) thick base of cement mortar 1:5 with joints 3mm thick, side buttered with cement mortar 1:2.	sqm	0.0931
	CERAMIC GLAZED TILES		
11.37	P/L ceramic glazed floor tiles laid on 20 mm thick Cement Mortar (1:4) with grey cement @ 3.3kg/sqm	sqm	0.1242
11.38	P/L ceramic glazed floor tiles laid on 20mm thick bed of Cement Mortar (1:4) with grey cement @ 3.3kg/sqm	sqm	0.1242
11.39 & 11.40	P/L rectified Glazed Ceramic floor tiles laid on 20mm thick cement mortar (1:4).	sqm	0.1242
	VITRIFIED FLOOR TILES		
11.41 & 11.41A	P/L vitrified floor tile laid on 20mm thick cement mortar (1:4).	sqm	0.1242
11.44	Crazy ceramic tile flooring.	sqm	0.0646
11.46	P/L vitrified tile in skirting in cement mortar (1:3).	sqm	0.088
11.51	P/L Machine cut, Mirror polished, Italian Marble stone flooring	Sqm.	0.085 + 0.05*
11.52	P/L Machine cut Mirror polished Marble stone flooring	Sqm.	0.085 + 0.05*
11.55	P/L flamed finish granite stone flooring	100 sqm.	13.50
11.56	P/L polished granite stone	100 sqm.	13.50

* White cement

** Acid alkali resistant cement.

1.0 COEFFICIENTS FOR CEMENT CONSUMPTION

12.0 ROOFING

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
12.16	10 cm thick mud phaska with flat tile bricks grouted with cement mortar (1:3).	100 sqm	3.11
12.17	10cm thick mud phaska with machine moulded tile bricks grouted with cement mortar (1:3).	100 sqm	3.11
12.19	Providing and laying brick tiles over mumty roofs grouted with cement mortar (1:3).	100 sqm	9.13
12.20	Providing and laying pressed clay tiles on roofs jointed with cement mortar (1:4).	100 sqm	9.92
12.21	Providing gola 75x75 mm in cement concrete (1:2:4).	metre	0.031
12.22	Making khurras 45x45 cm with average minimum thickness of 5 cm cement concrete (1:2:4).	each	0.06
12.23	Providing sand stone slab for roofing and laying cement mortar (1 : 4).	100 sqm	0.74
12.38	Providing and fixing M.S. holder bat clamps in cement concrete blocks 10x10x10cm of 1:2:4 mix.	each	0.005
12.55	P/F heat resistant tile on roof with cement mortar (1:4) and filling joints with white cement marble mix.	sqm	0.1291+0.044*

* White cement

1.0 COEFFICIENTS FOR CEMENT CONSUMPTION

13.0 FINISHING

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
CEMENT PLASTER (IN FINE SAND)			
13.1	12 mm cement plaster:		
13.1.1	1:4 (1 cement : 4 fine sand)	100 sqm	5.47
13.1.2	1:6 (1 cement : 6 fine sand)	100 sqm	3.60
13.2	15 mm cement plaster:		
13.2.1	1:4 (1 cement : 4 fine sand)	100 sqm	6.54
13.2.2	1:6 (1 cement : 6 fine sand)	100 sqm	4.30
13.3	20 mm cement plaster :		
13.3.1	1:4 (1 cement : 4 fine sand)	100 sqm	8.51
13.3.2	1:6 (1 cement : 6 fine sand)	100 sqm	5.60
CEMENT PLASTER (IN COARSE SAND)			
13.4	12 mm cement plaster :		
13.4.1	1:4 (1 cement : 4 coarse sand)	100 sqm	5.47
13.4.2	1:6 (1 cement : 6 coarse sand)	100 sqm	3.60
13.5	15 mm cement plaster :		
13.5.1	1:4 (1 cement : 4 coarse sand)	100 sqm	6.54
13.5.2	1:6 (1 cement : 6 coarse sand)	100 sqm	4.30
13.6	20 mm cement plaster :		
13.6.1	1:4 (1 cement : 4 coarse sand)	100 sqm	8.51
13.6.2	1:6 (1 cement : 6 coarse sand)	100 sqm	5.60
CEMENT PLASTER WITH A FLOATING COAT OF NEAT CEMENT			
13.7	12 mm cement plaster finished with a floating coat of neat cement :		
13.7.1	1:3 (1 cement : 3 fine sand)	100 sqm	9.54
13.7.2	1:4 (1 cement : 4 fine sand)	100 sqm	7.67
13.8	15 mm cement plaster finished with a floating coat of neat cement :		
13.8.1	1:3 (1 cement : 3 fine sand)	100 sqm	10.97
13.8.2	1:4 (1 cement : 4 fine sand)	100 sqm	8.74
13.9	Cement plaster (1:3) finished with a floating coat of neat cement.		
13.9.1	12 mm Cement Plaster	100 sqm	9.54
13.9.2	20 mm Cement Plaster	100 sqm	13.62
13.10	15 mm cement plaster (1:3) finished with a floating coat of neat cement.	100 sqm	10.97

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
CEMENT PLASTER IN TWO COATS			
13.11	18 mm cement plaster in two coats under layer 12 mm thick cement plaster 1:5 finished with a top layer 6mm thick cement plaster 1:6.	100 sqm	6.26
13.12	18 mm cement plaster in two coats under layer 12 mm thick cement plaster 1:5 and a top layer 6mm thick cement plaster (1:3).	100 sqm	8.13
13.13	12 mm cement plaster 1:2 (1 cement : 2 stone dust).	100 sqm	9.79
13.14	15 mm cement plaster 1:2 (1 cement : 2 stone dust).	100 sqm	11.70
13.15	20 mm cement plaster 1:2 (1 cement : 2 stone dust).	100 sqm	15.23
6 MM CEMENT PLASTER			
13.16	6 mm cement plaster of mix :		
13.16.1	1:3 (1 cement : 3 fine sand)	100 sqm	3.67
13.17	6 mm cement plaster (1:3) finished with a floating coat of neat cement.	100 sqm	5.87
13.18	Neat cement punning	100 sqm	2.20
ROUGH CAST PLASTER			
13.19	Rough cast plaster in two layers, under layer 12 mm cement plaster (1:4) and top layer 10mm cement plaster (1:3).	100 sqm	11.59
PEBBLE DASH PLASTER			
13.20	Pebble dash plaster in two layers, under layer 12mm cement plaster 1:4 and top layer 10mm cement plaster with cement mortar (1:3).	100 sqm	11.59
PLAIN CEMENT MORTAR BANDS			
13.28	12 mm thick plain cement mortar bands in cement mortar (1:4) : (Flush /Sunk / Raised / Moulded Band).	100 metre 1cm wide	0.053
13.29	18 mm thick plain cement mortar band in cement mortar (1:4)	100 metre 1cm wide	0.076
13.30	18 mm thick moulded cement mortar band in two coats under layer 12mm thick with cement mortar 1:5, top layer 6mm thick with cement mortar (1:4).	100 metre 1cm wide	0.07
POINTING OF BRICK WORK			
13.31	Pointing on brick work with cement mortar (1:3) :		
13.31.1	Flush / Ruled/ Struck or weathered pointing	100 sqm	1.53
13.31.2	Raised and cut pointing	100 sqm	2.04
POINTING ON TILE BRICK WORK			
13.32	Pointing on tile brick work with cement mortar (1:3).		
13.32.1	Flush/ Ruled/ Struck or weathered pointing	100 sqm	2.35
POINTING ON STONE WORK			
13.33	Pointing on stone work with cement mortar (1:3).		
13.33.1	Flush/ Ruled pointing	100 sqm	1.17
13.33.2	Raised and cut pointing	100 sqm	2.35

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
13.34	Raised and cut pointing on stone work in white cement mortar (1:3).	100 sqm	2.35*
13.35	Pointing on stone slab ceiling with cement mortar (1:2).	100 sqm	1.02
13.72	Washed stone grit plaster on exterior walls in two layers under layer 12mm cement plaster (1:4), top layer 15mm cement plaster 1:1/2:2. Note: - cement consumption for pointing is same for modular & non modular bricks.	100 sqm	17.472
	* White cement		

1.0 COEFFICIENTS FOR CEMENT CONSUMPTION

14.0 REPAIRS TO BUILDING

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
14.1	Repairs to plaster of thickness 12 mm to 20 mm in patches with cement mortar 1:4.	100 sqm	6.95
14.2	Fixing chowkhats in existing opening with hold fasts in cement concrete blocks with cement concrete 1:3:6.		
14.2.1	Door chowkhats	each	0.12
14.2.2	Window chowkhats	each	0.06
14.2.3	Clerestory window chowkhats	each	0.03
14.12	Providing and fixing 16 mm M.S. Fan clamps in existing R.C.C. slab.	each	0.016
14.13	Regrading terracing of mud phaska to proper slope.	100 sqm	3.11
14.14	Replacing sand stone slabs in roofing in cement mortar 1:4.	100 sqm	0.78
14.15	Renewing wooden battens in roofs & making good the holes in walls.	cum	0.36
14.16	Renewing wooden beams in roofs & making good the holes in walls.	cum	0.13
14.18	Flush pointing with cement mortar 1:3 for flat tile bricks on top of mud phaska.	100 sqm	0.76

1.0 COEFFICIENTS FOR CEMENT CONSUMPTION

16.0 ROAD WORK

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
FENCING			
16.23	P/F boundary stone including finishing smooth with cement mortar (1:3).	each	0.082
16.24	P/F precast R.C.C. kilometre stone including finishing smooth in cement mortar (1:3).		
16.24.1	35x111x25 cm size	each	0.37
16.24.2	50x152.5x25 cm size	each	0.698
16.24.3	35x93.5x18 cm size	each	0.23
CONCRETE PAVEMENT			
16.42	Cement concrete (1:2:4) in pavements.	cum	3.20
16.43	Providing and laying design mix cement concrete of M-30 grade, in roads/ taxi tracks/ runways, using cement content as per design mix.	cum	3.40
16.46.1	Using grade "A" sealing compound conforming to IS:1834		
MISCELLANEOUS			
16.49	Making bell mouth opening including providing cement concrete (1:3:6) & plastering with cement mortar (1:3).	10 Nos.	6.60
16.52	Providing and fixing precast lime fly ash concrete blocks including finishing with 10mm thick cement mortar (1:3), in foot paths.	sqm	0.05
16.63	16.63 P/L kerb channel 30cm wide and 50mm thick of cement concrete (1:3:6).	metre	0.11
16.67	Providing and fixing factory made RCC pavement slab of M-30 grade in footpath over a bed of 20mm average thick cement mortar (1:5).	100 sqm	7.75
16.69	Providing and laying factory made kerb stone of M-25 grade jointed with cement mortar (1:3).	cum	0.05
16.75	Providing and laying C.C. pavement of mix M-25 with ready mixed concrete.	cum	3.30
16.80	Dry lean cement concrete sub base.	cum	1.50
16.85	Laying old kerb stones, jointed with cement mortar (1:3).	100 metre	0.3723
16.86	P/L gang saw cut 18 mm thick, morror polished	sqm	0.09
16.87	P/L gang saw cut 30 mm thick mirror polished	sqm	0.09
16.88	P/L Matt finished vitrified tile of size	sqm	0.12
16.89	P/L Matt finished vitrified tile of size	sqm	0.12
16.90	P/L tactile tile	sqm	0.12
16.92	P/F 10x10x7.5 cm. granite stone block	sqm	1.85
16.93	Providing and Placing in position 100mm thick precast RCC covers on drain of footpath	sqm	0.352

1.0 COEFFICIENTS FOR CEMENT CONSUMPTION

17.0 SANITARY INSTALLATIONS

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
17.1/17.2/17.3	Fixing Indian European type W.C. pan.	each	0.05
17.4	Fixing white vitreous china urinal basin :		
17.4.1	One urinal basin with 5 litre white P.V.C. automatic flushing cistern	each	0.025
17.4.2	Range of two urinal basins with 5 litre white P.V.C. automatic flushing cistern	each	0.04
17.4.3	Range of three urinal basins with 10litre white P.V.C. automatic flushing cistern	each	0.067
17.4.4	Range of four urinal basins with 10 litre white P.V.C. automatic flushing cistern	each	0.095
17.5	Fixing white vitreous china flat back half stall urinal :		
17.5.1	Single half stall urinal with 5 litre P.V.C. automatic flushing cistern	each	0.051
17.5.2	Range of two half stall urinals with 5 litre P.V.C. automatic flushing cistern	each	0.102
17.5.3	Range of three half stall urinals with 10 litre P.V.C. automatic flushing cistern	each	0.153
17.5.4	Range of four half stall urinals with 10 litre P.V.C. automatic flushing cistern	each	0.203
17.6	Fixing one piece construction white vitreous china squatting plate :		
17.6.1	Single squatting plate with 5 litre P.V.C. automatic flushing cistern	each	0.051
17.6.2	Range of two squatting plates with 5 litre P.V.C. automatic flushing cistern	each	0.102
17.6.3	Range of three squatting plates with 10 litre P.V.C. automatic flushing cistern	each	0.153
17.6.4	Range of four squatting plates with 10 litre P.V.C. automatic flushing cistern	each	0.203
17.7	Fixing wash basin with C.I. brackets.	each	0.025
17.8	Fixing white vitreous china pedestal for wash basin.	each	0.016*
17.9	Fixing kitchen sink with C.I. brackets.	each	0.025
17.10	Fixing kitchen sink with C.I. brackets.	each	0.025
17.11	Fixing kitchen sink with C.I. brackets.	each	0.025
17.12	Fixing draining board with C.I. brackets.	each	0.014
17.13	Fixing White vitreous china water closet squatting pan.	each	0.025
17.17	Fixing a pair of white vitreous china foot rests.	each	0.025
17.23	Fixing white vitreous china flat urinal basin.	each	0.01
17.24	Fixing white vitreous china squatting plate urinal.	each	0.02
17.25	Fixing white vitreous china wash basin.	each	0.015

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
17.26	Fixing kitchen sink.	each	0.015
17.27	Fixing kitchen sink.	each	0.015
17.37	Providing and fixing M.S. holder-bat clamps.	each	0.005
17.59	Providing and fixing M.S. stays and clamps.	each	0.005
17.60	Providing and fixing trap of self-cleansing design.	each	0.025
17.61	Cutting chases in brick masonry walls for sand cast iron/ centrifugally cast (spun) iron pipes and making good the same with C.C.(1:3:6).		
17.61.1	100 mm dia	100 metre	5.40
17.61.2	75 mm dia	100 metre	3.70
17.61.3	50 mm dia	100 metre	1.87

* White Cement.

1.0 COEFFICIENTS FOR CEMENT CONSUMPTION

18.0 WATER SUPPLY

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
18.1/18.4/18.7 /18.10/18.85/1 8.85A	Providing and fixing G.I./ PE-AL-PE/ PP-R /CPVC/ SS pipes. Internal work - Exposed on wall		
18.10.1	15 mm dia nominal bore	100 metre	0.05
18.10.2	20 mm dia nominal bore	100 metre	0.06
18.10.3	25 mm dia nominal bore	100 metre	0.07
18.10.4	32 mm dia nominal bore	100 metre	0.075
18.10.5	40 mm dia nominal bore	100 metre	0.08
18.10.6	50 mm dia nominal bore	100 metre	0.08
18.2/18.5/18.8 /18.11/18.86/1 8.86A	P/F concealed pipes.	100 metre	0.88
18.32	Constructing masonry Chamber 0x30x50 cm, for stop cock.	each	0.26
18.33	Constructing masonry Chamber 60x60x75 cm, for sluice valve.	each	1.44
18.34	Constructing masonry Chamber 90x90x100 cm, for sluice valve.	each	2.48
18.35	Constructing masonry Chamber 120x120x100 cm, for sluice valve.	each	3.50
18.36	Constructing masonry Chamber 60x60x75 cm, for fire hydrants.	each	1.30
18.37	Constructing masonry Chamber 60x45x50 cm, for water meter.	each	1.34
18.76	Cutting holes up to 30x30 cm in walls including making good the same.	100 Nos.	2.92
18.77	Cutting holes up to 15x15 cm in R.C.C. floors and roofs and repairing the hole after insertion of drain pipes etc. with cement concrete (1:2:4).	100 Nos.	0.70
18.78	Making chases up to 7.5x7.5 cm in walls including finishing.	100 metre	0.88
18.79	Making hole up to 20x20 cm and embedding pipes up to 150 mm diameter in masonry and filling with cement concrete (1:3:6).	100 metre	4.90

1.0 COEFFICIENTS FOR CEMENT CONSUMPTION

19.0 DRAINAGE

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
19.1	Jointing glazed stoneware pipes with stiff mixture of cement mortar in the proportion of (1:1).		
19.1.1	100 mm diameter	100 metre	2.17
19.1.2	150 mm diameter	100 metre	3.23
19.1.3	200 mm diameter	100 metre	4.33
19.1.5	250 mm diameter	100 metre	5.40
19.1.6	300 mm diameter	100 metre	6.47
19.2	Laying cement concrete (1:5:10) alround S.W. pipes:		
19.2.1	100 mm diameter S.W. pipe	100 metre	19.24
19.2.2	150 mm diameter S.W. pipe	100 metre	23.53
19.2.3	200 mm diameter S.W. pipe	100 metre	27.43
19.2.5	250 mm diameter S.W. pipe	100 metre	31.72
19.3	Laying cement concrete (1:5:10) upto haunches of S.W. pipes:		
19.3.1	100 mm diameter S.W. pipe	100 metre	9.14
19.3.2	150 mm diameter S.W. pipe	100 metre	14.82
19.3.3	200 mm diameter S.W. pipe	100 metre	17.42
19.3.4	250 mm diameter S.W. pipe	100 metre	20.28
19.3.5	300 mm diameter S.W. pipe	100 metre	23.40
19.4	Providing and fixing square-mouth S.W. gully trap :		
19.4.1	100x100 mm size P type	each	0.27
19.4.2	150 x 100 mm size P type.	each	0.26
19.4.3	180x150 mm size P type	each	0.25
19.6	P/L NP2 class R.C.C. pipes with collars jointed with stiff mixture of cement mortar in the proportion of (1:2):		
19.6.1	100 mm dia. R.C.C. pipe	100 metre	0.50
19.6.2	150 mm dia. R.C.C. pipe	100 metre	0.60
19.6.3	250 mm dia. R.C.C. pipe	100 metre	0.90
19.6.4	300 mm dia. R.C.C. pipe	100 metre	1.10
19.6.5	450 mm dia. R.C.C. pipe	100 metre	2.40
19.6.6	500 mm dia. R.C.C. pipe	100 metre	2.60
19.6.7	600 mm dia. R.C.C. pipe	100 metre	3.20
19.6.8	700 mm dia. R.C.C. pipe	100 metre	3.70
19.6.9	800 mm dia. R.C.C. pipe	100 metre	4.20
19.6.10	900 mm dia. R.C.C. pipe	100 metre	4.90
19.6.11	1000 mm dia. R.C.C. pipe	100 metre	5.50

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
19.6.12	1100 mm dia. R.C.C. pipe	100 metre	6.10
19.6.13	1200 mm dia. R.C.C. pipe	100 metre	6.80
19.7	Constructing brick masonry manhole in cement mortar (1:4).		
19.7.1	Inside size 90x80 cm and 45 cm deep	each	2.92
19.7.2 & 19.7.3	Inside size 120x90 cm and 90 cm deep	each	4.73
19.8	Extra for depth for manholes		
19.8.1	Size 90x80 cm	metre	1.26
19.8.2	Size 120x90 cm	metre	1.52
19.9	Constructing brick masonry circular type manhole 0.91 m internal dia at bottom and 0.56m dia at top in cement mortar (1:4).		
19.9.1	0.91 m deep	each	2.75
19.10	Extra depth for circular type manhole 0.91m internal dia (at bottom) with beyond 0.91m to 1.67m	metre	1.40
19.11	Constructing brick masonry circular manhole 1.22 m internal dia at bottom and 0.56m dia at top in cement mortar (1:4).		
19.11.1	1.68 m deep	each	5.39
19.12	Extra depth for circular type manhole 1.22m internal dia (at bottom) beyond 1.68 m to 2.29 m.	metre	1.43
19.13	Constructing brick masonry circular manhole 1.52 m internal dia at bottom and 0.56 m dia at top in cement mortar (1:4).		
19.13.1	2.30 m deep	each	10.86
19.14	Extra depth for circular type manhole 1.52 m internal dia (at bottom) beyond 2.30 m.	metre	3.11
19.15	Providing M.S. foot rests including fixing in manholes with 20x20x10 cm cement concrete blocks (1:3:6).	100 nos.	0.88
19.16	Providing orange colour safety foot rest.	100 nos.	1.98
19.17	Replacement of M.S. foot rests in manholes with 20x10x10 cm C.C. blocks (1:3:6) mix.	100 nos.	0.88
19.19	Providing and fixing in position precast R.C.C. manhole cover and frame.		
19.19.1	LD- 2.5		
19.19.1.1	Rectangular shape 600x450mm internal dimensions	each	0.128
19.19.1.2	Square shape 450mm internal dimensions	each	0.096
19.19.1.3	Circular shape 450mm internal diameter	each	0.096
19.19.2	M D - 10		
19.19.2.1	Square shape 450mm internal dimension	each	0.128
19.19.2.2	Circular shape 500mm internal diameter	each	0.096
19.19.3	H D - 20		
19.19.3.1	Circular shape 560 mm internal diameter	each	0.096

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
19.19.4	EHD - 35		
19.21	19.19.4.1 Circular shape 560 mm internal dia Making connection of drain or sewer line with existing manhole and making good the walls, floors with C.C.(1:2:4) mix.	each	0.096
	19.21.1 For pipes 100 to 250 mm diameter	each	0.056
	19.21.2 For pipes 100 to 300 mm diameter	each	0.095
	19.21.3 For pipes 100 to 450 mm diameter	each	0.153
19.22	Providing sand cast iron drop connection externally for 60 cm drop from branch sewer line to main sewer manhole. :		
	19.22.1 100 mm dia sand cast iron drop connection	each	0.34
	19.22.2 150 mm dia sand cast iron drop connection	each	0.46
19.23	Extra for depths beyond 60 cm of sand cast iron drop connection. :		
	19.23.1 For 100 mm dia. sand cast iron drop connection	metre	0.21
	19.23.2 For 150 mm dia. sand cast iron drop connection	metre	0.26
19.27	Constructing brick masonry road gully chamber 50x45x 60cm in cement mortar (1:4).	each	0.93
19.28	Constructing brick masonry road gully chamber 45x45x 77.5 cm in cement mortar (1:4).	each	0.82
19.29	Constructing brick masonry road gully chamber 110x50x 77.5 cm in cement mortar (1:4).	each	1.66
19.30	Constructing brick masonry chamber for underground C.I. inspection chamber and bends in cement mortar (1:4).		
	19.30.1 Inside dimensions 455x610 mm and 45 cm deep for single pipe line	each	0.90
	19.30.2 Inside dimensions 500x700 mm and 45 cm deep for pipe line with one or two inlets	each	1.02
	19.30.3 Inside dimensions 600x 850 mm and 45 cm deep for pipe line with three or more inlets	each	1.27
19.31	Extra for depth beyond 45 cm of brick masonry chamber :		
	19.31.1 For 455x610 mm size	metre	0.87
	19.31.2 For 500x700 mm size	metre	0.95
	19.31.3 For 600x850 mm size	metre	1.12
19.32	Making soak pit 2.5 m diameter 3.0 metre deep.	each	0.072
19.34	Providing and fixing S.W. intercepting trap in manholes with stiff mixture of cement mortar (1:1).		
	19.34.1 100 mm dia	each	0.013
	19.34.2 150 mm dia	each	0.019
19.35	P/L Non pressure Np-3 class		
	19.35.1 450 mm dia RCC pipe	100 metre	1.20
	19.35.2 600 mm dia RCC pipe	100 metre	1.60

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
	19.35.3 900 mm dia RCC pipe	100 metre	2.50
	19.35.4 1000 mm dia RCC pipe	100 metre	2.80
	19.35.5 1200 mm dia RCC pipe	100 metre	3.40
	19.35.6 1800 mm dia RCC pipe	100 metre	4.90
19.36	P/L Non pressure Np-4 class	100 metre	
	19.36.1 450 mm dia RCC pipe	100 metre	1.20
	19.36.2 600 mm dia RCC pipe	100 metre	1.60
	19.36.3 900 mm dia RCC pipe	100 metre	2.50
	19.36.4 1000 mm dia RCC pipe	100 metre	2.80
	19.36.5 1200 mm dia RCC pipe	100 metre	3.40
	19.36.6 1800 mm dia RCC pipe	100 metre	4.90

1.0 COEFFICIENTS FOR CEMENT CONSUMPTION

20.0 PILE WORK

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
20.1	Providing, driving and installing driven cast-in-situ reinforced cement concrete piles of grade M -25.		
20.1.1	400 mm dia piles	metre	0.414
20.1.2	450 mm dia piles	metre	0.525
20.1.3	500 mm dia piles	metre	0.648
20.1.4	550 mm dia piles	metre	0.784
20.1.5	750 mm dia piles	metre	1.456
20.1.6	1000 mm dia piles	metre	2.590
20.1.7	1200 mm dia piles	metre	3.729
20.1.8	1500 mm dia piles	metre	5.83
20.2	Boring, providing and installing bored cast-in-situ reinforced cement concrete piles of grade M -25 by tripod and mechanical winch machine.		
20.2.1	450 mm dia piles	metre	0.525
20.2.2	500 mm dia piles	metre	0.648
20.2.3	600 mm dia piles	metre	0.932
20.2.4	750 mm dia piles	metre	1.456
20.2A	Boring, providing and installing bored cast-in-situ reinforced cement concrete piles of grade M -25 by crawler mounted, telescopic boom hydraulic piling Rig.		
20.2A.1	600 mm dia piles	metre	0.932
20.2A.2	750 mm dia piles	metre	1.456
20.2A.3	1000 mm dia piles	metre	2.590
20.2A.4	1200 mm dia piles	metre	3.729
20.2A.5	1500 mm dia pile	metre	5.830
20.3	Boring, Providing and installing cast in situ single under reamed piles of grade M -25.		
20.3.1	300 mm dia piles	metre	0.257
20.3.2	400 mm dia piles	metre	0.488
20.3.3	450 mm dia piles	metre	0.629
20.3.4	550 mm dia piles	metre	0.792
20.4	Extra for providing additional bulb in under reamed piles.		
20.4.1	300 mm dia piles	each	0.109
20.4.2	400 mm dia piles	each	0.208
20.4.3	450 mm dia piles	each	0.267
20.4.4	550 mm dia piles	each	0.337

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
20.5	Providing, driving and installing driven Pre-cast reinforced cement concrete piles of grade M -25.		
20.5.1	400 mm dia piles	metre	0.414*
20.5.2	450 mm dia piles	metre	0.525*
20.5.3	500 mm dia piles	metre	0.648*
20.5.4	550 mm dia piles	metre	0.784*
20.5.5	750 mm dia piles	metre	1.795*
20.5.6	1000 mm dia piles	metre	2.590*

* at precast stage

1.0 COEFFICIENTS FOR CEMENT CONSUMPTION

22.0 WATER PROOFING

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
22.1	P/L integral cement based treatment for water proofing on horizontal surface. :		
22.1.1	Using rough kota stone	sqm	0.335
22.2	P/L integral cement based treatment for water proofing on the vertical surface. :		
22.2.1	Using rough Kota stone	sqm	0.437
22.3	P/L 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 ii) IInd course of 20mm cement plaster (1:3) 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	sqm	0.158
22.5	P/L water proofing treatment in sunken portion of WCs, bathroom etc.	sqm	0.0123
22.6	P/L water proofing treatment on roofs.	sqm	0.0195
22.7	P/L integral cement based water proofing treatment on roofs, balconies, terraces etc. :		
22.7.1	With average thickness of 120mm and minimum thickness at khurra as 65 mm	sqm	0.365
22.14	Grading roof for water proofing treatment with		
22.14.1	Cement concrete 1:2:4	cum	3.20
22.14.2	Cement mortar 1:3	cum	5.10
22.14.3	Cement mortar 1:4	cum	3.80

1.0 COEFFICIENTS FOR CEMENT CONSUMPTION

26.0 NEW TECHNOLOGIES AND MATERIALS

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
26.31.1	SBR Polymer (@10% of cement weight) modified cementitious bond coat @2.2 kg cement per sqm.	100 sqm	2.20
26.32	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) .		
26.32.1	12 mm average thickness.	100 sqm	5.47
26.32.2	25 mm average thickness in 2 layers.	100 sqm	11.40
26.32.3	50 mm average thickness in 3 layers.	100 sqm	22.80
26.33	Providing, mixing and applying SBR polymer (of approved make @ minimum 2% by wt. of cement used) modified plain/reinforced cement concrete for structural members.		
26.33.1	50mm thick in Grade M 25 with cement content not less than 330 kg per cum	100 sqm	16.50
26.33.2	75mm thick in Grade M 25 with cement content not less than 330 kg per cum	100 sqm	24.75
26.34	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.		
26.34.1	50mm thick in Grade M 25 with cement content not less than 330 kg per cum	100 sqm	16.50
26.34.2	75mm thick in Grade M 25 with cement content not less than 330 kg per cum	100 sqm	24.75
26.34.3	100mm thick in Grade M 25 with cement content not less than 330 kg per cum	100 sqm	33.00
26.35	Providing and injecting approved grout in proportion recommended by the manufacturer into cracks/honey-comb area of concrete/masonry by suitable gun/pump.		
26.35.1	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	100 kg	1.00
26.35.2	Stirrer mixed SBR Polymer (of approved make) modified Cement slurry made with Shrinkage Compensating Cement in concrete/RCC work.	100 kg	1.00
26.38	Shotcreting R.C.C. columns, beams and slabs etc. in layers with approved design mix concrete having .		
26.38.1	25mm thick in Grade M 25 with cement content not less than 330 kg per cum	100 sqm	10.31

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
26.38.2	50mm thick in Grade M 25 with cement content not less than 330 kg per cum	100 sqm	20.63
26.38.3	75mm thick in Grade M 25 with cement content not less than 330 kg per cum	100 sqm	30.94
26.46	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.....applying the layer of 50 mm thick cement mortar 1:3 (1 cement: 3 coarse sand)	100 sqm	51.00
26.47	Providing and fixing in position, 230mm thick factory made Expanded Polystyrene Core (EPS Core) roof/ floor panels..... applying a layer of 60-65 mm thick cement mortar 1: 3 {1 cement: 3 coarse sand..... 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).	100 sqm	58.60
26.53	Filling of empty cavities with quarry dust mixed with cement	cum	0.72
26.58	Filling of joints between RCC plinth beam/floor slab and wall panel of external walls	100 metre	0.03125
26.59	Waterproofing treatment of vertical joints between door frame, window & ventilator frames	100 metre	0.03125
26.61	In filling/ sealing of joint between RCC lintel cum sunshade and wall	100 metre	0.03125
26.66	P/F factory made EPS wall panels consisting EPS core sandwiched between two Engineered sheets	sqm	0.357
26.68	P/F Factory made Precast Concrete solid blocks in foundation and plinth	sqm	0.2825
26.69	P/F Factory made Precast Concrete solid blocks in superstructure above plinth level up to floor V level	cum	0.2825
26.70	Providing and laying half block masonry with factory made Precast concrete solid blocks in foundation and plinth	100 sqm	2.6904
26.71	Providing and laying half block masonry with factory made Precast concrete solid blocks in superstructure above plinth level up to floor V level	100 sqm	2.6904
26.73.1	Fabrication & Manufacturing of prestressed Hollow Core slab of concrete grade M-40 (cement content 400kg)		
26.73.1.1	100 mm thick hollow core slab	metre	0.36
26.73.1.2	120 mm thick hollow core slab	metre	0.432
26.73.1.3	150 mm thick hollow core slab	metre	0.54
26.73.1.4	200 mm thick hollow core slab	metre	0.672
26.73.1.5	250 mm thick hollow core slab	metre	0.84

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
	26.73.1.6 300 mm thick hollow core slab	metre	1.008
	26.73.1.7 350 mm thick hollow core slab	metre	1.176
	26.73.1.8 400mm thick hollow core slab	metre	1.344
26.73.2	Extra for using M-50 (Cement content 425kg) instead of M-40		
	26.73.2.1 100 mm thick hollow core slab	metre	0.0225
	26.73.2.2 120 mm thick hollow core slab	metre	0.027
	26.73.2.3 150 mm thick hollow core slab	metre	0.03375
	26.73.2.4 200 mm thick hollow core slab	metre	0.042
	26.73.2.5 250 mm thick hollow core slab	metre	0.0525
	26.73.2.6 300 mm thick hollow core slab	metre	0.063
	26.73.2.7 350 mm thick hollow core slab	metre	0.0735
	26.73.2.8 400mm thick hollow core slab	metre	0.084
26.73.3	Extra for using M-60 (Cement content 440kg) instead of M-40		
	26.73.3.1 100 mm thick hollow core slab	metre	0.036
	26.73.3.2 120 mm thick hollow core slab	metre	0.0432
	26.73.3.3 150 mm thick hollow core slab	metre	0.054
	26.73.3.4 200 mm thick hollow core slab	metre	0.0672
	26.73.3.5 250 mm thick hollow core slab	metre	0.084
	26.73.3.6 300 mm thick hollow core slab	metre	0.1008
	26.73.3.7 350 mm thick hollow core slab	metre	0.1176
	26.73.3.8 400mm thick hollow core slab	metre	0.1344
26.74	Fabrication and manufacturing of solid precast concrete element for walls,stairs,column etc.,		
	Concrete grade M-35 (Cement content 370 kgs)	cum	3.70
	26.74.1 Extra for using M-40 (Cement content 400 kg) instaed of M-35	cum	0.30
	26.74.2 Extra for using M-50 (Cement content 425 kg) instaed of M-35	cum	0.55
	26.74.3 Extra for using M-60 (Cement content 440 kg) instaed of M-35	cum	0.70
26.82	Providing and laying rigid EPS (cellular plastic material) blocks	100 sqm	8.38

COEFFICIENTS FOR BITUMEN CONSUMPTION

1.0 COEFFICIENTS FOR BITUMEN CONSUMPTION

16.0 ROAD WORK

Code No.	Description	Unit	Quantity of bitumen per unit quantity of work (Quintals)
SURFACE DRESSING			
16.25	Surface dressing on new surface with paving bitumen of grade VG -10.	sqm	0.0225
16.26	Surface dressing on new surface in two coats with bitumen of grade VG -10.	sqm	0.029
16.27	Surface dressing on old surface with hot bitumen of grade VG -10.	sqm	0.0195
16.28	Surface dressing one coat on new surface :		
16.28.1	Using bitumen emulsion	sqm	0.0195
16.29	Surface dressing one coat on old surface :		
16.29.1	Using bitumen emulsion	sqm	0.0122
PREMIX CARPET			
16.30	Providing and applying tack coat with bitumen of grade VG-10 :		
16.30.1	On W.B.M. @ 0.75 Kg / sqm	sqm	0.0075
16.30.2	On bituminous surface @ 0.50 Kg / sqm	sqm	0.0050
16.31	Providing and applying tack coat using bitumen emulsion (Rapid Setting):		
16.31.1.1	On W.B.M @ 0.4kg/sqm	sqm	0.0040
16.31.1.2	On bituminous surface @ 0.25kg/sqm	sqm	0.0025
16.32	2 cm premix carpet surfacing with paving asphalt VG-10/VG-30/modified bitumen CRMB 55.	sqm	0.0144
16.33	2.5 cm premix carpet surfacing with paving asphalt VG-10/VG-30/modified bitumen CRMB 55.	sqm	0.018
16.34	2 cm premix carpet surfacing with bitumen emulsion.	sqm	0.0255*
16.35	2.5 cm premix carpet surfacing with bitumen emulsion.	sqm	0.0313*
16.36	Providing and laying Bitumen Penetration Macadam :		
16.36.1	For 50mm compacted thickness with paving asphalt VG-10 @ 50 kg/10 sqm	sqm	0.050
16.36.2	For 75 mm compacted thickness in two layers with paving asphalt VG-10 @ 68 kg/10 sqm	sqm	0.068
MASTIC AND BITUMASTIC WEARING COURSE			
16.37	Providing and laying bitumen mastic wearing course:		
16.37.1	5 mm thick	sqm	0.0588
16.37.2	40 mm thick	sqm	0.0941
16.38	2.5 cm thick bitumastic sheet with hot bitumen, paving asphalt VG-10/VG-30/modified bitumen CRMB 55.	sqm	0.0303
16.39	4 cm thick bitumastic sheet with hot bitumen, paving asphalt VG-10/VG-30/modified bitumen CRMB 55.	sqm	0.0479

Code No.	Description	Unit	Quantity of bitumen per unit quantity of work (Quintals)
SEAL COAT			
16.40	P/L seal coat using 128 kg of bitumen of grade VG-10.	sqm	0.0077
16.41	P/L seal coat using 98 kg of bitumen of grade VG-10.	sqm	0.0098
16.54	P/L Dense Bituminous macadam :		
16.54.1	50 to 100 mm average compacted thickness with bitumen of grade VG-30 @ 5% (percentage by weight of total mix) and lime filler @ 2% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	cum	1.1538
16.54.2	50 to 100 mm average compacted thickness with bitumen of grade VG-30 @ 5% (percentage by weight of total mix) and lime filler @ 2% (percentage by weight of Aggregate) prepared in Drum Type Hot Mix Plant of 60-90 TPH capacity.	cum	1.1538
16.55	Providing and laying Bituminous Macadam.		
16.55.1	50 to 100 mm average compacted thickness with bitumen of grade VG-30 @ 3.50% (percentage by weight of total mix) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	cum	0.7683
16.55.2	50 to 100 mm average compacted thickness with bitumen of grade VG-30 @ 3.50% (percentage by weight of total mix) prepared in Drum Type Hot Mix Plant of 60-90 TPH capacity.	cum	0.7683
16.56	Providing and laying Semi Dense Bituminous concrete		
16.56.1	25 mm compacted thickness with bitumen of grade VG-30 @ 5% (percentage by weight of total mix) and lime filler @ 2% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	100 sqm	2.8846
16.56.2	25 mm compacted thickness with bitumen of grade VG-30 @ 5% (percentage by weight of total mix) and lime filler @ 2% (percentage by weight of Aggregate) prepared in Drum Type Hot Mix Plant of 60-90 TPH capacity.	100 sqm	2.8846
16.57	P/L Bituminous Concrete :		
16.57.1	40/50 mm compacted thickness with bitumen of grade VG-30 @ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100- 120 TPH capacity.	cum	1.2958
16.57.2	40/50 mm compacted thickness with bitumen of grade VG-30 @ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) and waste plastic additive @ 8% (percentage by weight of bitumen) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	cum	1.2958

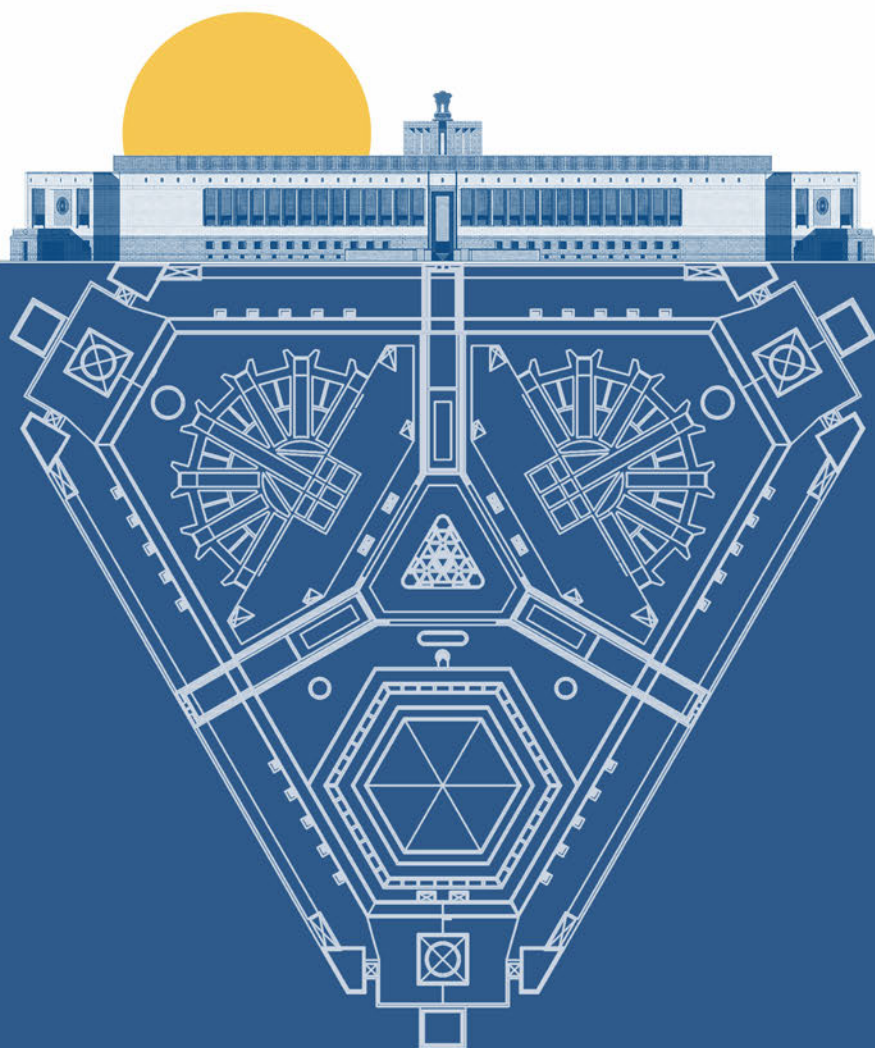
Code No.	Description	Unit	Quantity of bitumen per unit quantity of work (Quintals)
16.57.3	40/50 mm compacted thickness with bitumen of grade PMB-40 @ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	cum	1.2958
16.57.4	40/50 mm compacted thickness with bitumen of grade CRMB-60 @ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	cum	1.2958
16.57.5	40/50 mm compacted thickness with bitumen of grade VG-30 @ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in drum Type Hot Mix Plant of 60-90 TPH capacity.	cum	1.2958
16.57.6	40/50 mm compacted thickness with bitumen of grade VG-30 @ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) and waste plastic additive @ 8% (percentage by weight of bitumen) prepared in drum Type Hot Mix Plant of 60-90 TPH capacity.	cum	1.2958
16.57.7	40/50 mm compacted thickness with bitumen of grade PMB-40 @ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in drum Type Hot Mix Plant of 60-90 TPH capacity.	cum	1.2958
16.57.8	40/50 mm compacted thickness with bitumen of grade CRMB-60 @ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Drum Type Hot Mix Plant of 60-90 TPH capacity.	cum	1.2958

* Including tack coat

1.0 COEFFICIENTS FOR BITUMEN CONSUMPTION

22.0 WATER PROOFING

Code No.	Description	Unit	Quantity of bitumen per unit quantity of work (Quintals)
SURFACE DRESSING			
22.3	P/L water proofing treatment to vertical and horizontal surfaces of depressed portions of W.C., kitchen and the like.	sqm	0.0170
22.6	P/L water proofing treatment on roofs with cement slurry & fibre glass cloth.	sqm	0.0097
22.8	P/L four courses water proofing treatment with bitumen felt over roofs:		
22.8.1	Bitumen felt (hessian base) type 3 grade I	sqm	0.0290
22.9	P/L six courses water proofing treatment with bitumen felt over roofs applied hot @ 1.45, 1.20 & 1.45 for 1st, 3rd and 5th course.	sqm	0.041
22.10 & 22.11	P/L six courses water proofing treatment with bitumen felt over roofs applied hot @ 1.45, 1.20 & 1.70 for 1st, 3rd and 5th course.	sqm	0.0435
22.15	P/L in situ seven course water proofing treatment with APP (1.5 mm thick @ 2.25 kg./sqm).	sqm	0.036
22.16	P/L in situ five course water proofing treatment with APP (2.00 mm thick @ 3.00 kg./sqm).	sqm	0.024
22.17	P/L in situ seven course water proofing treatment with APP (2.00 mm thick @ 3.00 kg./sqm).	sqm	0.0360
22.18	P/F APP.		
22.18.1	2 mm (for corrugated roof sheets)	sqm	0.0035
22.19	P/L APP modified prefabricated five layer, 3 mm thick water proofing membrane. Tear strength in longitudinal and transverse direction as 60/80N.		
22.19.1	3 mm thick	sqm	0.0035
22.20	P/L APP modified prefabricated five layer 3 mm thick water proofing membrane. Tear strength in longitudinal and transverse direction as 300/250N.		
22.20.1	3 mm thick	sqm	0.0035



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