

<b>PUBLIC HEALTH ITEMS</b>			
Sl. No.	Description	Unit	SoR for 2019-20
1	2	3	4
1	<b>RATES OF LABOUR (SKILLED WORKMEN)</b>		
	1. Caulker	Per Day	As per Labor rates of SoR
	2. Plumber 1st Class	Per Day	
	3. Plumber 2nd Class	Per Day	
	4. Sewer Cleaner	Per Day	
	5. Well Sinker	Per Day	
	6. Pipe line Fitter 1st Class	Per Day	
	7. Pipe line Fitter 2nd Class	Per Day	
	8. Pump Operator	Per Day	
	9. Bore Mechanic	Per Day	
	10. Light Vehicle Driver	Per Day	
	Note: The rate at relevant item in common SoR is applicable for occasional employment.		
2	<b>RATES FOR EARTH WORK :</b>		
a.	Earth work excavation in all types soils for pipe lines, for drainage and water supply, where the depth is more than 1.5 times the width.		To follow the relevant items of Irrigation work items as per AP. Standard data
b.	Earth work excavation in all types soils for pipe lines, for drainage and water supply, where the depth is less than 1.5 times the width.		
c.	Earth work excavation in all types soils for open trenches, for valve pits, inspection chambers, etc.		
3.	Excavation of pipe line trenches for drainage and water supply in rock requiring blasting with initial lead and lift including cost of blasting materials where the depth is more than 1.5 times the width, in places where there is no habitation.		
a.	Excavation of pipe line trenches for drainage and water supply in rock requiring blasting with initial lead and lift including cost of blasting materials where the depth is less than 1.5 times the width, in places where there is no habitation.		
b.	Excavation of pipe line trenches for drainage and water supply in rock requiring blasting with initial lead and lift including cost of blasting materials where the depth is less than 1.5 times the width, in places where there is no habitation.		
c.	Cutting rock for pipe line trenches by hammers, knuckles and chisels including stacking where the depth is 1.5 times or more than the width.		
d.	Cutting rock for pipe line trenches by hammers, knuckles and chisels including stacking where the depth is less than 1.5 times the width.		

e.	Cutting rock for works other than pipe lines trenches by hammers, knuckles and chisels including stacking.		
f.	For controlled blasting at restricted places		
	NOTE: - Rock should be measured in solids. In case it is not possible, stacks should be made in which case 40% for voids to be deducted from the stack measurements.		
4	Loading or unloading materials such as C.I. Pipes, PVC Pipes, AC Pressure Pipes, DI Pipes, SW Pipes, PVC Pipes, A.C/Specials less than 300 mm dia. Up to 4 m in length including stacking.		
a.	C.I. Pipes/D.I. Pipes and fittings	Per Tonne	To follow as per AP. Standard data
b.	A.C. Pipes & Specials	Per Tonne	
c.	Stoneware pipes & Specials	Per Tonne	
d.	P.V.C. Pipes and fittings	Per Tonne	
5	Loading or unloading materials such as C.I. Pipes, DI pipes, SW pipes, AC pressure pipes & fittings/ specials from 300 mm to 600 mm dia. Up to 4 m in length including stacking.		
a.	C.I. Pipes/D.I. Pipes and fittings	Per Tonne	To follow as per AP. Standard data
b.	A.C. Pipes & Specials	Per Tonne	
c.	Stoneware pipes & Specials	Per Tonne	
6	Loading or unloading materials such as C.I. Pipes, DI pipes, PVC pipes, AC pipes less than 300 mm dia., above 4 m in length including stacking.		
a.	C.I. Pipes/D.I. Pipes and fittings	Per Tonne	To follow as per AP. Standard data
b.	A.C. Pipes & Specials	Per Tonne	
c.	P.V.C. Pipes and fittings	Per Tonne	
7	Loading or unloading materials such as C.I. Pipes, DI pipes, AC pipes from 300 mm to 600 mm above 4 m in length including stacking.		To follow as per AP. Standard data
a.	C.I. Pipes/D.I. Pipes and fittings	Per Tonne	
b.	A.C. Pipes & Specials	Per Tonne	
	Note:- For loading and unloading the above materials at Railway Stations, the rates may be adopted based on the competitive quotations or the hummable charges if prevailing.		
8.	Lowering C.I. / D.I. Pipes (all classes) and specials (fittings) with s/s ends carefully into trenches and laying them true to alignment and gradient including all sundries but excluding cost and conveyance of pipes from source of supply (Ref to specifications. BIS No.3114/1994)		To follow as per AP. Standard data
	Diameter of Pipe/Fittings in mm :		
	80mm to 1000mm dia.	Per Meter	

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8. b.	Lowering C.I. / D.I. Pipes (all classes) and specials (fittings) with flanged ends carefully into trench and laying them true to alignment and gradient including all sundries but excluding cost and conveyance of pipes from source of supply. (Reference to specifications. BIS No.3114/1994)		
	DIAMETER OF PIPE/Fittings in mm :		To follow as per AP. Standard data
	80mm to 750mm dia.		
	800	Per Meter	<b>624</b>
	900	Per Meter	<b>811</b>
	1000	Per Meter	<b>1054</b>
	1100	Per Meter	<b>1298</b>
	1200	Per Meter	<b>1543</b>
9. a.	Jointing CI /DI pipes & fittings with s/s ends including cost of pig lead, Spun yarn and sundries such as cost of fuel for melting lead, filling with water with lead up to 500m and testing to required pressure complete. (Reference to specifications. BIS No.3114/94/12288:1997)		
	DIAMETER OF PIPE/Fittings in mm :		To follow as per AP. Standard data
	80mm to 800mm		
	900	Each Joint	<b>16304</b>
	1000	Each Joint	<b>18215</b>
	1100	Each Joint	<b>20123</b>
	1200	Each Joint	<b>22033</b>
9. b.	Jointing C.I., D.I. pipes and fittings with rubber gasket (push-on-joint),excluding the cost of the gasket but including all sundries filling with water, with a water lead up to 500m and testing to required pressure, etc. complete (Reference to specifications IS 3114/1994/12888/1997)		
	Diameter of Pipe/Fittings in mm :		To follow as per AP. Standard data
	80mm to 1000mm dia.	Each Joint	

10	Jointing CI pipes, fittings and valves with flanged ends including cost of jointing materials such as bolts, rubber insertion, white lead including filling with water, with lead up to 500 meters and testing to required pressure complete. (Reference to specifications. BIS No.3114/1994.)		
	DIAMETER OF PIPE/Fittings/ valve in mm :		
	80mm to 750mm dia.	Each Joint	To follow as per AP. Standard data
	800	Each Joint	<b>6836</b>
	900	Each Joint	<b>8040</b>
	1000	Each Joint	<b>9259</b>
	1100	Each Joint	<b>10508</b>
	1200	Each Joint	<b>11802</b>
11a	Lowering the RCC plain ended pipes carefully into the trench laying them true to alignment and gradient, jointing RCC pipes with cement joints including curing, the cost of jointing materials i.e., Cement Mortar (1:1.5), hemp yarn etc., and testing including filling with water with a water lead up to 500 Meters excluding cost of rubber rings as per BIS No.783/85.		
	per every 25 mm dia.	Per Meter	<b>24</b>
11b	Lowering the RCC S/S pipes carefully into the readymade trenches laying them true to alignment and gradient, jointing with rubber rings and testing including filling with water with a water lead up to 500 meters including cost of rubber rings as per BIS No. 783/1985		
	per every 25 mm dia.	Per Meter	
	80mm to 600mm		To follow as per AP. Standard data
	700		<b>377</b>
	800		<b>453</b>
	900		<b>543</b>
	1000		<b>651</b>
12	Lowering and Jointing G.I. pipes and specials / fittings including excavation of trench of 0.5m width and 0.50 m depth in all soils except rock requiring blasting and refilling trenches after laying and jointing pipes and also including cost of jointing materials but excluding the cost of pipes. Reference to specifications. BIS No.783/85		
a	G.I. Pipes :Dia. in mm		To follow

	15mm to 150mm	Per Meter	as per AP. Standard data
12-b	Laying, jointing of PVC/HDPE pipes as per BIS No.7634 part-III/75 for PVC and BIS No.7634 part-II/75 for HDPE pipes including trench excavation and refilling.		
	DIA in mm		
	50	Per Meter	<b>38</b>
	40	Per Meter	<b>38</b>
	32	Per Meter	<b>38</b>
	25	Per Meter	<b>35</b>
	20	Per Meter	<b>33</b>
	NOTE: - (i) The above rates are applicable for the works in District only.		
	(ii) If the depth of excavation is more than 0.5 m separate rates to be worked out.		
<b>13</b>	Lowering and laying in readymade trench true to alignment and gradient, jointing, and testing of Stone ware pipes including cost of jointing material such as cement mortar (1:1) proportion and hemp yarn but excluding cost and conveyance of pipe. (Reference to specifications BIS No. 6530/72)		
	Dia. of Pipes in mm		<b>To follow as per AP. Standard data</b>
	100mm to 450mm	Per Meter	
<b>14</b>	Lowering, Laying, Jointing and Testing to hydraulic test pressure including cost of water with minimum water lead of 500m for UPVC pressure pipes in readymade trenches to alignment and gradient including all sundries but excluding cost & conveyance of pipes from source of supply and jointing material as per BIS No: 7634 part-III-1975.		
	Dia. Of pipe	Per Meter	<b>To follow as per AP. Standard data</b>
	63 to 315mm		
15	Laying and jointing of HDPE pipes by butt fusion welding as per IS: 7634 – part-II/1975 as amended from time to time to the alignment and gradient and testing the pipeline to the required pressure.		
	Outer Dia. of pipes in MM		
	63 to 355 mm dia.		<b>To follow as per AP. Standard data</b>
	400		<b>268</b>

	450		<b>296</b>
16	Lowering, keeping in position and fixing D.I. sluice valves (with cap / with hand wheel & Reflex valves) excluding cost of bolts, nuts, rubber insertion, sluice valve and tail pieces		
	<u>Dia. of Valve in mm.</u>		<b>To follow as per AP. Standard data</b>
	80mm to 600mm	Each	
17	Labor charges for fixing <u>Air valves</u> including boring the mains and threading the bore fixing nipple etc., complete.		
	<u>Dia. of Air valve in mm.</u>		
	25	Each	To follow as per A.P. Standard data
	40	Each	
	50	Each	<b>195</b>
	65	Each	<b>207</b>
	80	Each	<b>224</b>
	100	Each	<b>266</b>
	125	Each	<b>414</b>
	150	Each	<b>453</b>
18	Labor charges for fixing <u>Kinetic Air Valves</u> with isolating Sluice valves, Double Air valves/ Air Cushion valve excluding cost of jointing materials such as bolts, nuts and rubber insertions etc., complete.		
	<u>Dia. of Air valve in mm.</u>		
	25	Each	<b>184</b>
	40	Each	<b>208</b>
	50(Double Air valves)	Each	<b>221</b>
	65	Each	<b>237</b>
	80	Each	<b>259</b>
	100	Each	<b>301</b>
	125	Each	<b>471</b>
	150	Each	<b>516</b>
19	Uprooting C.I. / DI Pipes by melting the lead, loosening the joints, scraping the pipes, hoisting and keeping within a lead of 10 m but excluding earth work excavation and refilling.		
	80mm to 600mm	Per Meter	<b>To follow as per AP. Standard data</b>
20	Uprooting of RCC pipes including breaking the collars, loosening the joint, separating the pipes, hoisting and keeping within a lead of 10 m but excluding earthwork		

	excavation and refilling.		
	100mm to 300mm	Per Meter	<b>To follow as per AP. Standard data</b>
<b>21</b>	Removing old G.I. pipes and specials / fittings and cleaning, scraping the pipes, hoisting and keeping within 50m lead but excluding earth work excavation of trenches and refilling.		
	Dia. of Pipes in mm		
	15mm to 50mm	Per Meter	<b>To follow as per AP. Standard data</b>
22	Cutting C.I./ DI Pipes without water in mains Dia. of pipes in mm.		
	Dia. of Pipes in mm		
	80mm to 600mm	Each cut	To follow as per AP. Standard data
	680	Each cut	<b>572</b>
	700	Each cut	<b>587</b>
	750	Each cut	<b>633</b>
	800	Each cut	<b>673</b>
	900	Each cut	<b>756</b>
	1000	Each cut	<b>840</b>
	1100	Each cut	<b>926</b>
	1200	Each cut	<b>1010</b>
23	Cutting A.C. Pipes without water in mains Dia. of pipes in mm.		
	Dia. of Pipes in mm		
	80	Each cut	<b>37</b>
	100	Each cut	<b>37</b>
	125	Each cut	<b>37</b>
	150	Each cut	<b>37</b>
	200	Each cut	<b>39</b>
	250	Each cut	<b>64</b>
	300	Each cut	<b>64</b>
	350	Each cut	<b>79</b>
	400	Each cut	<b>87</b>
	450	Each cut	<b>108</b>
	500	Each cut	<b>120</b>

	600	Each cut	<b>132</b>
24	Drilling and tapping CI/ DI / GI Main and fixing brass screw down ferrule and plug.		
	10 mm to 20mm	Each Tapping	<b>To follow as per AP. Standard data</b>
	25 mm to 40mm	Each Tapping	
25	Cutting road surface including stacking of excavated materials for pipe line trench work.		
	a) Cutting open B.T. road surface (as well as asphalt concrete up to 75 mm thick) including water bound macadam	10 Sqm	<b>794</b>
	b) Cutting open C.C. road surface with concrete saw cutter and removal with Breaker	1 Cum	<b>2424</b>
	c) Cutting open water bound macadam road including soiling	1 Cum	<b>270</b>
26	<b>Bailing out water.(For PH item)</b>		
	a) Bailing out water from the pipe line trenches with oil engine driven pump sets, including hire charges, fuel charges and wages for Driver and Helper up to 5HP capacity pumps.	HP/Hour	<b>64</b>
	b) Bailing out water from the pipe line trenches with Electric Driven pump set including hire charges, current charges and wages for Driver and Helper up to 5HP capacity pumps.	HP/Hour	<b>45</b>
	c) For capacity of Pumps more than 5HP		
	A. Water lifting charges using Electrical driven pump		
	i. per hphr rate(including contractors profit and overhead charges of 13.615%	Rs.10.24/-	<b>Per hphr</b>
	ii. Other expenses in terms of Mazdoor, pump operator and pipe laying and dismantling(including contractors profit and overhead charges of 13.615%) per hr	Rs.166.78/-	<b>Per hr</b>
	Total hire charges of Electrically driven dewatering pump per hour	= (10.24xhp capacity)+166.78	<b>Per hr</b>
	B. Water lifting charges using Diesel driven pump		
	i. per hphr rate(including contractors profit and overhead charges of 13.615%	Rs.25.51/-	<b>Per hphr</b>
	ii. Other expenses in terms of Mazdoor, pump operator and pipe laying and dismantling(including contractors profit and overhead charges of 13.615%) per hr	Rs.201.55/-	<b>Per hr</b>
	Total hire charges of Diesel driven dewatering pump per hour	= (25.51xhp capacity)+201.55	<b>Per hr</b>
	NOTE:- The rate is payable on the total H.P. hours ignoring fractions less than 0.5 HP hour and rounding off 0.5 HP hour or more to the next higher integer.		
27	Shoring and strutting of trenches for water and sewer main		



	a) Single Staging from (0 to 2.5 Mts.)	1 Sqm of Shoring area	<b>To follow as per AP. Standard data</b>
	b) Double staging from (2.5 m to 4.5 Mts.)	1 Sqm of Shoring area	
28	Barricading, hoarding, lighting and watching etc., for water supply and sewerage works for trenches.	1 RMT	To follow as per AP. Standard data
29	Excavation of trenches for infiltration galleries, siphon lines and connecting mains in all soils under water including all leads, lifts, shoring, strutting, bailing out water and removal of shoring and strutting materials, after completion of pipe line work.		
	a) 0 to 1 m deep under water.	10 Cum	<b>13223</b>
	b) 1 to 2 m deep under water.	10 Cum	<b>18941</b>
	c) 2 to 5 m deep under water.	10 Cum	<b>28429</b>
	d) Beyond 5 m deep under water for every additional 1 m depth over item 'c'	10 Cum	<b>5431</b>
	NOTE:- The above rates do not include rock requiring blasting or chiseling		
30	Laying and jointing <u>perforated RCC pipes</u> inclusive of bailing out water and jointing with cement fillets and all other incidental charges for infiltration gallery inclusive of bailing out water by pumping to keep the trench reasonably dry to facilitate the work excluding cost of perforated pipes and collars.	Per Meter	<b>41.20</b>
	Per every 25 mm dia.		
31	Centering and scaffolding charges for RCC members including all materials and labor charges for forming and dismantling.		
a)	for RCC Elevated Service Reservoir of staging up to 15 Meter below L W L.	One Sqm of Centering area	
	1) Slabs for thickness (150 mm to 300 mm)		<b>4028</b>
	2) Slabs for thickness above 300 mm		<b>extra for every 50mm thickness increase Rs.473/-</b>
	3) Side walls curved surfaces. (rate is for both sides centering)		<b>3044</b>
	4) Side wall straight surfaces. (rate is for both sides centering)		<b>2708</b>
	5) Dome.		<b>3300</b>
	6) Roof Slab.		<b>1846</b>
	7) Column braces and beams		<b>1359</b>
	8) Circular braces, ring beams & circular column.		<b>1491</b>

	Note: - For RCC ELSR of staging above 15 m, the % increase in these rates shall be as follows. 15-18 m ---- 9% 18-21m --- 15% 21-24 m --- 21% 24 m -27m --27% above27m --- 30%		
	<b>Note: The Centering charges for item No's.3 &amp; 4 are for both the faces of the respective numbers. The measurement of centering charges shall be in "Sqm" for one face only and the centering charges given are for two faces of centering.</b>		
b)	For Ground level works :-		
	1) Slabs	1 Sqm	<b>To follow as per AP. Standard data</b>
	2) Beams & Lintels	1 Cum	
	3) Sun shades	1 Sqm	
	4-a) RCC vertical walls of plane surface (rate is for both sides centering) including open drains	1 Sqm of centering area	<b>1000/Sqm</b>
	4-b) VCC vertical walls of plane surface (rate is for both sides centering) including open drains	1 Sqm of centering area	<b>980/ Sqm</b>
	5) RCC vertical walls of circular faces (rate is for both sides centering)	1 Sqm of centering area	<b>1270/ Sqm</b>
	<b>Note: The Centering charges for item No's 4 &amp; 5 are for both the faces of the respective numbers. The measurement of centering charges shall be in "Sqm" for one face only and the centering charges given are for two faces of centering.</b>		
32	Lift or delift of materials :		
	a) Lifting of cement concrete for RCC elevated reservoir. For every <b>1m</b> height or part thereof over the initial lift of <b>3 m</b>	1 Cum	<b>161</b>
	b) Delifting the materials such as stones, concrete etc., for concrete below ground level for construction of masonry ground level reservoirs, construction of ground level reservoirs, inspection wells, test wells and sump wells etc., for every 1 m depth or part there of beyond the initial depth of 3 meters from ground level.	1 Cum	<b>50</b>
39 (a)	Extra allowance for isolated scattered works viz., valve pits / chambers, public fountains, meter pits and manholes, delivery cistern etc., complete.	Each	30% extra over the cost of chamber.
(b)	Repairs to the existing mains, interconnections, replacement of valves/specials etc., including the cutting, jointing, bailing out of water, drying, earth work excavation etc., complete.		100% extra over the cost of work
40	Removal of wet silt and sludge by manual means from sullage drains with aid of baskets and vessels.	10 Cum	<b>2734</b>
41	Well sinking in sandy and other loose soils under water either by manual labor, divers, or dredgers, weighting the top of staging to assist sinking etc., including dewatering		

	and other incidental charges such as hire charges for mechanical equipment etc.,		
	Up to 2 m below GL/m	Per meter	To adopt as per Standard data
	From 2 to 4 m below GL/m	Per meter	
	From 4 to 6 m below GL/m	Per meter	
	From 6 to 8 m below GL/m	Per meter	
	From 8 to 10 m below GL/m	Per meter	
42	Sinking in Hard strata other than rock but in soils like limestone, gravel, clay under water including, pumping dewatering, hire charges for mechanical equipment etc., complete.		Observed Data
43	Rates for OHSRs/ELSRs including fixtures with a staging of 15 m, without Seismic analysis.		
a	500 Kilo liters	Per liter	<b>19.11</b>
b	1000 Kilo liters	Per liter	<b>15.88</b>
c	1500 Kilo liters	Per liter	<b>14.31</b>
d	2000 Kilo liters	Per liter	<b>12.46</b>
e	2500 Kilo liters	Per liter	<b>11.68</b>
	1) The above rates are arrived with base rate of Cement Rs.3900/- per MT & Steel Rs 43500/- per MT (Bo CE rates for the month of March 2018.)		
	2) All concrete components shall be designed with M30 Design Mix proportion.		
	3) For intermediate capacities proportional rates shall be adopted.		
	4) The foundations shall be designed for Annular Raft Footings. The above rates are applicable for Elevated Level Services Reservoirs / OHSRs for <b><u>SBC of 15 T/Sqm.</u></b>		
	a) For every decrease of 2.50 T/Sqm of SBC, the rate shall be increased by <b><u>2.50% on basic rate.</u></b>		
	b) For every increase of 2.5 T/Sqm of SBC, the rate shall be decreased by <b><u>1.0% on basic rate up to 20 T/Sqm</u></b>		
	c) For SBC below 10T/Sqm , solid raft shall be provided and for solid raft the rate shall be increased by <b><u>10% on basic rate.</u></b>		
	d) For SBC value of less than 5 T/Sqm, soil improvement shall be adopted, for which additional payment shall be made as per field condition.		
	5) For staging less than 15 m, the rate shall be decreased by Rs.0.05 paisa on basic rate per liter per every Meter decrease in staging.		
	6) For staging above 15 m, the rate shall be increased by Rs.0.10 paisa on basic rate per liter per every Meter additional staging.		
	7) The above rates shall be increased / decreased due to increase/decrease in the cost of cement by Basic rate x $\{(R_c-3900)/3900\} \times 0.07$ R <sub>c</sub> = Rate of Cement (Rs per MT) at the time of preparation of estimate.		
	8) The above rates shall be increased / decreased due to increase/decrease in the cost of Steel by Basic rate x $\{(R_s-43500)/43500\} \times 0.2$ R <sub>s</sub> = Rate of Steel (Rs per MT) at the time of preparation of estimate.		
	9) a) Rate inclusive of three coats of epoxy paint Food Grade of best quality to inner surface of the Reservoir including roof.		

	b)The rate inclusive of 2 coats of weather proof emulsion painting for external surfaces, lettering, all required fixtures, Pipes, Pipe specials, valves of DI material, Valve chambers etc., for pipe connections including cost of pipes, specials and valves as per departmental designs and drawings.
	10) For tribal/Agency / Rural area, the above rates as arrived up to shall be increased by 10%.
	11) The above rates adopted for a wind pressure up to "250 kg/Sqm". For every 100 kg/Sqm decrease in wind pressure, the rate shall be decreased by 5%
	12) a) The Basic rate is adopted by considering the design for Seismic forces for Zone- II only of seismic zones.
	(b) The basic rates shall be increased by 15 % for Zone-III of seismic zones.
	13-(a). The ELSR/OHSR shall be designed with minimum of two rows of columns for capacities above 500 KL & up to 1000KL.
	13-(b). The ELSR/OHSR shall be designed with minimum of three rows of columns for capacities above 1000KL.
	14. The shaft type staging with slip form can also be provided with proper approval from competent authority without any additional cost.
	<b>15) The basic rate is inclusive of following <u>Fixtures</u></b>
	i) Pipe connections & Specials with D.I materials
	(a) All pipe connections for Inlet, Out let, Over Flow, Scour pipes shall be provided with D/F DI material. (b) The Valves for above pipe connections also shall be of DI material of PN 16 duty confirming to the specification of SoR item No.28 (c) All specials such as Bends, Tees, Reducers, Duck foot Bends, Bell mouths etc.,. Shall be of DI material.
	II) The sizes of the verticals for ELSR/OHSR shall be:
	a) For 500 KL to 750 KI ELSRs Inlet Pipe - 300mm dia. Out let Pipe - 350mm dia. DI valves – 2 No's Over Flow pipe - 350m dia. Scour Pipe - 200mm dia.
	b) For 800 KL to 1500 KI ELSRs Inlet Pipe - 400mm dia. Out let Pipe - 450mm dia. DI valves – 2 No's Over Flow pipe - 450m dia. Scour Pipe - 200mm dia.
	c) For above 1500 KL to 2500 KI ELSRs Inlet Pipe - 400mm dia. Out let Pipe - 500mm dia. DI valves – 2 No's Over Flow pipe - 500m dia. Scour Pipe - 200mm dia.

	<b>Note: Any deviation from the above sizes as per design, shall be paid or recovered.</b>
	(iii) Manhole Frames & Covers
	a) All man hole Frames & Covers shall be made of CI/DI materials with min. size of 0.60mX 0.60m - For Roof & Valve Chambers.
	iv) CI/D.I Double Swan neck ventilators (min. of 150mm dia.) shall be provided in top dome and slab with mosquito/fly proof nets - 4Nos.
	v) RCC Finial ventilator with fly/bird protection with GI mesh - 1 No.
	vi) RCC precast ladders of 0.60 m width - 2 Nos.
	vii) RCC dog legged stair case of 1.00 m flight width and 1.20 m landing width R.C.C hand railing of 1.0 m height – 1 No
	viii) The staircase shall be enclosed with brick masonry walls on three sides and collapsible MS gate on front side up to 1 <sup>st</sup> brace level, to prevent unauthorized entry.
	ix) Construction of R.C.C valve chambers as per Standard Drawings with RCC cover slab fixed with CI/DI manhole Frame & Cover with lock and Key arrangement. The Mix shall not be less than VRCC M 20 grade with 150mm thick side walls, 150mm thick top slab, 150mm thick base slab over base course of 100mm thick (1:4:8) prop.
	x) Balcony of 1.00 m width at floor slab level / middle ring beam level by using Stainless Steel pipe of grade 304 hand railing up to 1.20 m height, with top railing of 40mm dia. pipe & middle railing of 25mm dia. and verticals with 40mm dia. at an interval not more than of 1.00m c/c.
	xi) Water Level Indicator of reputed make – Digital type (1 No) and Conventional type (1 No)
	xii) Lightning Arrestor with all its accessories complete including earthing, with relevant IS Codes - 1 No.
	xiii) <b>Compound wall:</b> Construction of compound wall including ornamental M.S.Gate of size 3.0 X 2.40m is included in the basic rate of ELSRs. Length of compound wall hall is minimum of 150m. Min. height of the compound wall shall be 1.80m above plinth and thickness 230mm in brick masonry in CM (1:6).The compound wall shall be constructed including earth work excavation in all types of soils for plinth beam of 230mm X 300mm and 0.75X0.75X1.20m size for column footing portions. The footings shall be of 0.75X0.75X0.25m in VRCC M20 grade and constructed over a C.C (1:4:8) prop bed of 100mm thick. The columns shall be of 230X230 mm in size with VRCC M20 grade at 3.00m c/c spacing, having depth of 1.20m below ground level and height of 2.00m above GL. The plinth beam of size of 230X300 mm shall be constructed in VRCC M20 grade at Ground level, over a bed of CC(1:4:8)-100mmthick. 450X450mm size columns in M20 grade shall be constructed for gate pillars. All the materials shall be followed as per the standards.
	Tie beam shall be provided above the brick work with 230X200mm size, fixed with MS angular of 25mm X 25mm X 4mm in "Y" shape to height of 0.60m, with embedded length of 150mm in concrete. The barbed wire fencing with 3 ply of 18 gauges shall be stretched in 4 rows (2x2). Plastering shall be done with 16mm thick in two coats i.e., base coat 12mm thick in CM(1:6)prop and 4mm thick 2nd coat CM(1:4) prop on both sides of brick work.
	Snowcem paint in two coats shall be provided for both sides of wall. The M.S ornamental gate as per the approved drawings shall be provided with minimum of 3.60mts width and 2.40mts height with enamel paint. Yard lighting shall be arranged on four corners of

	compound wall. If the length of the wall is increased/decreased		
	<p>Note:-For every 1m increase/decrease in length of compound wall the increase/decrease in basic rates of ELSRs of the capacities from 500KL to 2500KL shall be as follows.:</p> <p>i)500 KL : 0.086%</p> <p>ii)1000 KL : 0.047%</p> <p>iii)1500 KL : 0.034%</p> <p>iv)2000 KL : 0.026%</p> <p>v)2500 KL : 0.022 %</p> <p>For intermediate capacities, interpolated percentages shall be adopted.</p>		
	xiv) <b>Staff Quarter</b> shall be constructed for a minimum plinth area of 40 Sqm with the following specification: RCC framed structure with concrete grade not less than M20 design mix at the locations specified by the department at the time of execution with veranda, hall, bed room, kitchen and bath &W/C with floor area of 40.00sqmts excluding balconies and staircases.		
	MS hollow door frame with cold rolled processed steel sheet 1.25mm thick bright CRCA conforming to IS 4351/76, Flush door shutters with solid bond wood bond board doors shall be provided. N.C.L. Windows centre fixed both sides open able shutter window 1.35 X 1.35mts outer frame section 48 x50mm shutter frame section with a size of 48 X20 mm mullion section of size 48 X 50mm fixed beading section of 12 X 12 mm shall be provided. Flooring with polished Kadapa stone shall be provided. Walls shall be provided with snowcem paint in two coats over primary coat. Electrical and water supply arrangement shall be provided as directed by dept officer. Water Storage tank made with plastic/polymer material of reputed make with necessary out let and inlet connection pipes shall provided. Septic tank for 5 users shall be provided.		
<b>44</b>	<b>Rates for OHSRs/ELSRs including fixtures with a staging of 10 m without Seismic analysis.</b>		<b>Rs/liter</b>
a	Up to 10,000 Liters capacity	Per liter	<b>58.91</b>
b	15,000 Liters capacity	Per liter	<b>44.00</b>
c	20,000 Liters capacity	Per liter	<b>39.80</b>
d	40,000 Liters capacity	Per liter	<b>33.74</b>
e	60,000 Liters capacity	Per liter	<b>25.57</b>
f	1,00,000 Liters capacity	Per liter	<b>23.59</b>
g	2,00,000 Liters capacity	Per liter	<b>20.62</b>
h	3,00,000 Liters capacity	Per liter	<b>19.40</b>
i	4,00,000 Liters capacity	Per liter	<b>17.09</b>
j	4,50,000 Liters capacity	Per liter	<b>14.77</b>
	NOTE: -1). All concrete members shall be designed with M30 grade design mix.		
	2) For intermediate ranges proportional rates may be adopted		
	2) The above rates are applicable for Elevated Level Services Reservoirs / OHSRs with RAFT FOUNDATION and a rate of Rs.3900/- per tonne for cement and Rs.43500/- per tonne for steel.		
	3) For every Meter of staging less than 10 m, the rate shall be reduced by Rs.0.05 paisa per liter per every Meter of difference in staging		

	4) For every Meter of staging above 10 m , the rate shall be increase by Rs.0.10 paisa per liter per every Meter of additional in staging
	5) The above rates shall be increased / decreased due to increase / decrease in the cost of cement by Basic Rate x {(Rc-3900)/3900 } x 0.07 Rc = Rate of cement (Rs per Mt) at the time of preparation of estimate.
	6)The above rates shall be increased / decreased due to increase / decrease in the cost of steel by Basic Rate x { (Rs-43500)/43500 x0.2 Rs = Rate of steel (Rs per Mt) at the time of preparation of estimate.
	7) Rate inclusive of three coats of epoxy paint Food Grade of best quality to inner surface of the Reservoir including roof.
	8) The above rates shall be adopted for estimate purposes for construction of ELSR for a finished work including 2 coats of whether proof emulsion painting for external surfaces, lettering, all required fixtures, pipes, bends, valves etc., for pipe connections but excluding cost of pipes, bends and valves as per departmental designs and drawings.
	9) The above rates are applicable for wind pressures up to 250 kg / Sq m .For decrease in wind pressure the rate has to be decreased by 5% per every 100kg/Sqm. If the ELSR / OHSR are to be designed for seismic forces also, cost shall be arrived by working out detailed quantities based on the designs.
	10) (a)For tribal/Agency / Rural area, the above rates as arrived up to shall be increased by 10%. (b) An additional increase of 7.50% shall be allowed for OHSRs/ELSRs located in agency areas over the above rates for RWS Department works.
	11) If the ELSR is to be designed for seismic forces also, cost shall be arrived by working out detailed quantities based on the design & difference to be paid extra.
	12) If the ELSR is to be designed for seismic forces a) The above rates are applied up to Zone-II earth quake. b) For Zone-III earth quake the above rates are to be increased by 15 %.
	13) The rate is arrived with the Cement & Steel rates of Rs 3900/MT and 43500/- approved by the BoCE for the month of March 2018.
	<b>13) Fixtures include :</b>
	a) RCC or Aluminum ladder inside 0.60 m wide.
	b) Spiral staircase on the outside shall be provided up to 200KL. Above 200KL capacity dog legged staircase shall be provided with staircase flight width of 1.0mts and landing width of 1.20mts with S.S railing up to 1.0 height.
	c) Lightening arrestor, including conductor and earthling etc.
	d) RCC ventilators with copper or stainless steel fly proof mesh.
	e) D.I Manholes frame and cover 0.60x0.60 m as per IS specifications (light duty) - 2 Nos.
	f) Water level indicator of good quality with ebonite/ copper float approved pattern - 1 No.

	g) The ladder shall be with M.S ladder and Verticals with HDPE of 10kg/Sqcm shall be provided for single column OHSRs only.		
	h) Minimum staging for all ELSR/OHSR shall be 10.0mts.		
	i) The increase in staging shall be at 1.0mt interval.		
	j) The railing provided to the gallery and stair case shall be with stainless steel of grade 304 for a height of 1.20mts.		
	k). The dog legged staircase shall be enclosed with brick/CRS wall on three sides and front side with M.S collapsible gate up to 1st brace level from ground level to prevent unauthorized entry.		
	l). D.I swan neck ventilators shall be provided in top dome and slab.		
	m). The above rates are exclusive of all inlet, out let connection and valves. All valves near inlet, out let and for scour of ELSRs shall be D.I valves of heavy duty confirming to the specification of SoR item No.28		
<b>45</b>	<b>Construction of Rapid Gravity Filtration Plant including all civil, mechanical and electrical works using sand as filter media, compatible with SCADA arrangements, duly following relevant IS codes in the design of plant components including trial running for 90 days etc., including chlorine contact tank &amp; consumables etc., complete.</b>		
	1) 2.0 MLD	Per liter	<b>4.64</b>
	2) 5.0 MLD	Per liter	<b>3.78</b>
	3) 10.0 MLD	Per liter	<b>3.41</b>
	4) 20.0 MLD	Per liter	<b>2.74</b>
	5) 30.00 MLD and above	Per liter	<b>2.38</b>
	NOTE :-		
	a) For Intermediate Capacities proportional rates may be adopted		
	b) The above rates are applicable with Cement @ rate of Rs.3900/-MT and Steel of Rs. 43500/MT.		
	c) The above rates shall be increased / decreased due to increase / decrease in the cost of cement by Basic Rate x $\{(Rc-3900)/3900\} \times 0.07$ Rc = Rate of cement (Rs per Mt) at the time of preparation of estimate		
	d) The above rates shall be increased / decreased due to increase / decrease in the cost of steel by Basic Rate x $\{(Rs-43500)/43500\} \times 0.2$ Rs = Rate of Steel (Rs per MT) at the time of preparation of estimate.		
	e) For Rural areas an extra allowance of 10% shall be given on basic rate		
	f) For components immersed in water Stain less Steel of Grade 304L shall be used. for other components 304 Grade steel shall be used.		
	g) Lab testing equipment of reputed make and consumables for one year. The testing		



	equipment for conducting all laboratory tests shall be installed & training shall be imparted to the Municipal staff.
	h) The rate is arrived with the Cement & Steel rates of Rs 3900/MT and 43500/- approved by the BoCE for the month of March 2018.
	The above rates of Filtration Plants shall include all the following components.
	<b>A) Civil Works</b> (All works of VRCC Shall be in M30 design mix)
	1). Stilling Chamber and Aeration cascade
	2) Pre settling tank shall be provided for 30 MLD and above capacities of WTP for a minimum of 1 hr capacity.
	3). Raw water channel with Stainless Steel Weir of SS 304 L Grade material and also with digital flow meters
	4) Flash Mixer chamber with Flash mixing arrangements including SS shaft & SS Blades with gear wheel arrangements etc, using 304 L Grade Steel.
	5-a) Clariflocculator / Flocculation tanks with the components of central driven circular clarifier with scrapper & bridge arrangements made with Stainless Steel Grade 304 L tubes /angular for durability & chemical resistant with wheel arrangements etc,
	5-b) Two numbers of Clariflocculator shall be provided for WTP's of more than 30 MLD capacity.
	6) Filter house, Chemical house, Alum store, Laboratory room, Chlorination plant room, toilet etc. (All structures shall be provided RCC roof only).Chemical house & Chlorinator rooms are to be isolated and shall be as per CPHEEO manual.
	7) Wash water tank of suitable capacity shall be constructed at minimum clearance of 2.00m, above the roof slab of Filter beds / any other structure, and the minimum residual head at the top of under drain system shall not be less than 8.0 meters.
	8) Chlorine contact tank
	9) All the Doors and Windows shall be of Best Teak wood/Aluminum / UPVC make, except entrance door. The entrance door including shutter in filter house shall be with best teak wood of minimum size of 2.40 X 2.40 mts. a) Main Doors of all individual Buildings shall be made of Best Teak wood b) Other Internal Doors of the buildings shall be of Compressed wood/ Aluminum/ UPVC materials. c) Ventilators shall be provided for each building/structure of suitable size as per NBC standards.
	10) a) All pipes in Plant shall be of D.I., D/F materials. All Connecting pipes of the plant components such as from Flash mixer to Clariflocculator/ Clarifier/Flocculation tank, to Filter beds, sludge disposal pipes shall be of D.I., D/F material. The size of sludge disposal pipe shall be minimum of 450 mm dia. with D.I D/F pipe and minimum length of 100 meters. b) All the Valves in Plant shall be heavy duty and as per the specification of SoR item No.28
	11) The Pipe gallery way for Clear water/ Back wash water/ pipe connections shall be sufficiently spaced for easy operation & maintenance and inspection, as per standard norms.

	12) The bottom level of the wash water control chamber must be above G.L so as to dispose the wash water and sludge from Clariflocculator by gravity to disposal point.
	Additional specifications
	13) Railing for all the components (Clariflocculator, Filter House, Staircase etc.,) shall be provided with Stainless Steel of grade 304 for a height of 1.00m, with 40mm dia. pipe for top horizontals, 25mm dia. for middle row and 40mm dia. verticals spaced at interval of not more than 1.00m c/c.
	14) Inspection / Path ways in filter beds: Middle pathway: Minimum of 1.50m, Side pathway: Minimum of 1.20m
	15) Flooring in the buildings (Filter house, Chemical House, Chlorinator Room, Laboratory) shall be provided with Non-skid tiles of approved make & quality, as per standard specifications.
	16) The basement of the Filtration plant building shall be minimum of 1.20m and pipe gallery shall be minimum 0.3m above the existing nearby Road top level.
	17) Minimum head room of 2.00m shall be provided, at the alum mixing chambers in alum store for inspection & maintenance.
	18) The minimum width of entrance hall for the Filter House shall be 4.50m, and Laboratory of min size .of 3.30 X 4.50m.
	18) b) For various components of the WTP should be designed by considering the uplift pressure also.
	19) a) High efficient Air Blowers shall be installed to the design requirement with low noise pollution, environmental pollution as per PCB guide lines & Testing of blowers as per I.S Standards at site. b) The Piping from Blower to Filter Beds shall be GI and submerged pipe in water shall be HDPE.
	20) UPVC pipes shall be provided for under drain system. Filter pipe manifolds shall be assembled with HDPE pipes.
	21) Alum storage capacity shall be designed for minimum period of 90 days. Consumables shall be provided for 2115 Running Hours of WTP.
	22) <b><u>Chlorinator</u></b> : Vacuum type chlorinator shall be provided with following specifications: a) Vacuum operated solution feeding type Vacuum Regulator, Rotameter, Rate setting Valve, built-in NRV, Gas Overflow out let by man folding to mount the system with the unit. b) The unit shall consist of Ejector with necessary accessories such as Check Valve, Drain Valve and Vacuum relief Valves - for control of chlorinator dosage. c) The Accessories and manifolds shall be chlorine resistant and made of carbon steel seam less pipes, copper tube with brass fittings of suitable size & dimensions, with diaphragm sealed chlorine pressure gauge arrangements
	d) Water Booster Pump of pumping capacity ranging from 2 cum/hr to 12 cum/hr, with Head ranging from 16 to 35 m e) The water & solution carrying pipes shall be made of UPVC material of suitable size incl. all specials such as Tee's , Bends, couplings & NRVs and also Pressure Gauges of suitable range. f) Chlorine Gas Leak detector with alarm indicator. The installation includes all necessary accessories, civil and mechanical works, manifold

	header installations, injector fixing, connection with UPVC pipes, solution piping's, fixing of motors as per standard specifications and commissioning of Chlorination Plant to the required demand, with a defect liability period of 1 year. The chlorinator of may be of any reputed make or any make of Metito/Toshocow-Jesco Siemens Industrial Devices. g) Life breathing apparatus. h) Chlorine escape BA set
	i) 2 to 10 MLD Plants - 1Kg/hr Chlorinator- For Post Chlorination
	ii) 10 MLD to 20 MLD Plants - 2 Kg/hr Chlorinator - For Post Chlorination.
	iii) 20 MLD to 50 MLD Plants - 5 Kg/hr Chlorinator - For Post Chlorination.
	<b>B) Mechanical Equipment</b>
	1) Alum dosing equipment with SS 304 material made stirrers & paddles for chemical resistance. (Alum tanks must be bound with corrosion resistant material (HDPE Lining, Bitumen Coating, tiles etc)
	2) Flash mixer equipment with SS 304 material made stirrers & paddles for chemical resistance.
	3) Filtration plant equipment instrumentation and piping.
	4) Clariflocculation equipment (with stainless steel blades) with rotating bridge arrangement etc.,
	5) Pneumatic tyre wheel shall be provided for the bridge Clariflocculator.
	6) Wash water tank fittings and pump sets with 100% stand by.
	7) Air blower with motor of 100% stand by and pipe connections made with of SS pipes confirming to SS 304 Grade, in filter bed region.
	8) Chlorination equipment and pipe connections with chlorinator of 100% standby.
	9) Spares & Tools for 2 years.
	10) Gaseous Chlorination with cylinders has to be provided with protection measures.
	<b>C) Electrical Equipment</b>
	1) Necessary power supply wiring to motors and switches bus bar connections as per IE Rules
	2) Internal wiring and illumination and fittings and fixtures for internal and external lighting exhaust fans, ceiling fans etc.
	3) Erecting mechanical and electrical equipment, trial run for 90 days at 23.50 hours per day testing the treated water as per CPHEEO standards and maintenance of records and imparting training to staff.
	4) Supply of 6 - Sets of completion plans and maintenance manual and brochures.
	5) All cables shall be of copper material, Cable ducts shall be covered with MS / Aluminum cheque plate.
	6) Min LUX levels inside the treatment plant shall be maintained.
	7) Yard lighting shall be provided as per norms.
	<b>D) Equipment for Flow measurements</b>
	1) Equipment for measuring Conductivity, Turbidity, Ph value, Residual Chlorine with recording & data storage facility (Computer based) & Alarm by SMS or other methods.

	2) Off - Site Supervisory and Data Acquisition (OSSADA) system for Raw water & Clear water flows by installing Digital Flow meters to measure the flows at Raw water Channel and at each filter bed individually and combined for measuring the quantities of water treated with a facility to record and store the readings & also to send messages to the assigned designatories about the variations/ deficiencies in the flow including alerts for back wash requirements of filter beds, and recovery of data for the past 360 days. All the Digital Flow Meters & Pressure Gauges shall be provided of standard approved make. The equipment shall have the following specifications.
	<b>Hardware:</b>
	i) Wall mounted Sensor House for measuring Raw water & Clear water flow from Filter bed outlets with accessories consists of
	ii) Electrode Type: General type, Scraper type or replaceable type Electrode made with material of SS external Ultra Touch Sensors as per requirement.
	iii) Customized Application Requirement : Sensors with Interface logic control board with serial interfaces, including accessories such as Add-on port, external DC Power Socket, On - sensor Board Buffer, Timer, RS485 Communication, Analog to Digital Sensing Sensor Circuit, 32 Sensors Sensing Tags, Interval Power Supply System , LCD 16c/2L, Filter Bed Working Status Indication LED, Filter Bed Wash Indication Button and memory of Data Storage for 30Days , status of Filter Bed Level indicator, Rating, Reading on LCB Display, Menu Driven Data for sending to Onsite Big Display, operated with Battery Power of any reputed make or any equivalent make.
	iv) Customized Application Requirement: Power Sensors Interface logic control board with support 8 Power Sensing tags, Central System Interfacing Communication, On - board analog to Digit Convert Integrate Circuit of any reputed make or any equivalent make.
	v) Customized Application Requirement: Centralized System with two serial interfaces, 3 No's of Add-On ports, One external DC Power Socket, On - Board Buffer, On - Board Timer, On - Board RS485 Communication, On - Board RS 232 Communication, On - Board GPRS/GSM Module, On - Board Voice Chip, On - Board Power Sensing Module, LCD 16c/2L, Filter Bed Wash Precaution Indication with Stop Button, Memory of Data Storage for 30 Days, Total Bed Rating, Reading display on LCD Display, Menu Driven, Menu Navigate Keypad, sending data to the Web Server, Communication with GPRS , operated with Battery Power of any reputed make or any equivalent make.
	<b>Software:</b>
	The software shall be designed with Web Domain with Data Base Server and Web Name as per the directions of the Departmental Authorities.
	The application of Software for Web design & Desktop shall meet the following requirements:
	i) Onsite Display: Letters with size of 1.5' seven Segment LED Display with Interface for each Filter Bed, for Onsite Display, by displaying the Bed Levels, Ratings, Readings in 3 Columns, for each bed of the plant in successive rows and cumulative results at the bottom of the screen.

	ii) Off Site Display: Letters with size of 1.5' seven Segment LED Display with Interface GPRS/GSM Modules Offsite Display, with Display of Bed Total Rating, Total Cumulative Reading as specified on On-site Display Features.
	The system shall have also the features of Onsite Bed Wash Voice Precautions for Bed Levels, Readings, Ratings, Bed Capacity Readings and Ratings and Bed Low Level Triggering, before & after Bed wash.
	The software shall also have the features of sending messages to the mobiles of the Departmental designatories indicating Bed Low Levels, Power Supply timings, Bed Wash timings and its status, Power Supply timings and its status Grid View Table, Motor Working time and its status Grid View Table, all trigger events and schedule information and including all Snap View Reports, all Daily, Monthly, Yearly Reports, all Power Working Reports, all Power Events Information etc.,.

### 1. S o R FOR R.C.C. PLAIN ENDED PIPES

Sl. No.	Description				
1	Manufacture, Supply and Delivery of R.C.C. Plain ended pipes conforming to B.I.S 458/2003 ,Ex-factory, excluding transportation and all taxes.				
	Size	Unit	SoR For 2019-20		
			NP - 2 Class	NP - 3 Class	NP - 4 Class
	80 mm dia.	Meter	<b>132</b>		
	100 mm dia.	Meter	<b>153</b>		
	150 mm dia.	Meter	<b>181</b>		
	200 mm dia.	Meter	<b>215</b>		
	225 mm dia.	Meter	<b>233</b>		
	250 mm dia.	Meter	<b>246</b>		
	300 mm dia.	Meter	<b>355</b>	<b>844</b>	<b>860</b>
	350 mm dia.	Meter	<b>442</b>	<b>993</b>	<b>1013</b>
	400 mm dia.	Meter	<b>511</b>	<b>1093</b>	<b>1120</b>
	450 mm dia.	Meter	<b>626</b>	<b>1258</b>	<b>1273</b>
	500 mm dia.	Meter	<b>684</b>	<b>1361</b>	<b>1579</b>
	600 mm dia.	Meter	<b>1013</b>	<b>2068</b>	<b>2463</b>
	700 mm dia.	Meter	<b>1293</b>	<b>2573</b>	<b>3318</b>
	800 mm dia.	Meter	<b>1592</b>	<b>3405</b>	<b>4325</b>
	900 mm dia.	Meter	<b>2019</b>	<b>4284</b>	<b>5405</b>
	1000 mm dia.	Meter	<b>2472</b>	<b>5227</b>	<b>7420</b>
	1100 mm dia.	Meter	<b>2896</b>	<b>6299</b>	<b>8609</b>
	1200 mm dia.	Meter	<b>3454</b>	<b>7427</b>	<b>10071</b>
	1400 mm dia.	Meter	<b>4739</b>	<b>9570</b>	<b>13917</b>
	1600 mm dia.	Meter	<b>5454</b>	<b>12453</b>	<b>16620</b>
	1800 mm dia.	Meter	<b>7182</b>	<b>16557</b>	<b>22329</b>

Note : All prices are ex-works.

The above rates of RCC Plain ended pipes are based on the following raw materials

Cost Cement. Rs.3900/- per MT (Excluding all taxes and freight).

Steel (M.S. Rods) - Rs.45000/- per MT. (Excluding all taxes and freight).

The revised cost of RCC pipes due to increase / decrease in the cost of raw materials shall be as per the following formula.

Revised Cost = Cost as per the above table + R1 + R2

R1 = Variation (increase / decrease) in cost (Rs. per Meter) due to change in the Cost of M.S. Rods =  $(S2 - S1) / 1000 \times Ws$ .

R2 = Variation (increase / decrease) in cost (Rs. per Meter) due to change in the Cost of Cement =  $(C2 - C1) / 1000 \times Wc$ .

S1 = Rs. 45000/- , S2 = Cost of M S Rods (Rs. per MT Excluding all taxes and freight) at the time of preparation of estimate.

C1 = Rs3900/- C2 = Cost of Cement (Rs. per MT Excluding all taxes and freight) at the time of preparation of estimate.

Ws = Weight of MS Rods required (Kg.) per Meter of pipe as per IS:458/2003.

Wc = Weight of Cement required (Kg.) per Meter of pipe.

## 2. S o R FOR R.C.C. COLLARS

Sl.No.	Description				
1	Manufacture, Supply and Delivery of R.C.C. Collars conforming to B.I.S. 458/2003 (rate per each collar) suitable for R.C.C. Plain ended pipes including transportation but excluding all taxes.				
	Size	Unit	SoR For 2019-20		
			NP - 2 Class	NP - 3 Class	NP - 4 Class
	80 mm dia.	Each	<b>41</b>		
	100 mm dia.	Each	<b>42</b>		
	150 mm dia.	Each	<b>42</b>		
	200 mm dia.	Each	<b>59</b>		
	225 mm dia.	Each	<b>63</b>		
	250 mm dia.	Each	<b>69</b>		
	300 mm dia.	Each	<b>90</b>	<b>128</b>	<b>128</b>
	350 mm dia.	Each	<b>112</b>	<b>162</b>	<b>162</b>
	400 mm dia.	Each	<b>124</b>	<b>185</b>	<b>185</b>
	450 mm dia.	Each	<b>195</b>	<b>247</b>	<b>247</b>
	500 mm dia.	Each	<b>221</b>	<b>294</b>	<b>294</b>
	600 mm dia.	Each	<b>301</b>	<b>385</b>	<b>385</b>
	700 mm dia.	Each	<b>392</b>	<b>517</b>	<b>517</b>
	800 mm dia.	Each	<b>554</b>	<b>661</b>	<b>661</b>
	900 mm dia.	Each	<b>663</b>	<b>770</b>	<b>770</b>
	1000 mm dia.	Each	<b>774</b>	<b>961</b>	<b>961</b>
	1100 mm dia.	Each	<b>946</b>	<b>1221</b>	<b>1221</b>
	1200 mm dia.	Each	<b>1150</b>	<b>1528</b>	<b>1528</b>
	1400 mm dia.	Each	<b>1481</b>	<b>1936</b>	<b>1936</b>
	1600 mm dia.	Each	<b>1896</b>	<b>2479</b>	<b>2479</b>
	1800 mm dia.	Each	<b>1922</b>	<b>3193</b>	<b>3193</b>

The above rates of RCC Collars suitable to plain ended pipes are based on the following raw materials cost. Cement. Rs.3900/- per MT(Excluding all taxes and freight).

Steel (M.S. Rods) - Rs.45000/- per MT.(Excluding all taxes and freight).

The revised cost of RCC collars due to increase / decrease in the cost of raw materials shall be as per the following formula.

Revised Cost =Cost as per the above table +R1+R2

R1= Variation (increase / decrease) in cost (Rs. per each)due to change in the cost of M.S.

Rods =(S2-S1)/1000 X Ws.

R2= Variation (increase /decrease) in cost (Rs. per each) due to change in the cost of Cement = (C2-C1)/1000 X Wc.

S1 = Rs. 45000/- , S2 = Cost of M S Rods (Rs. per MT excluding all taxes and freight) at the time of preparation of estimate.

C1 = Rs.3900/-,

C2 = Cost of Cement (Rs. per MT excluding all taxes and freight) at the time of preparation of estimate

Ws=Weight of MS Rods required (Kg.) per each collar.

Wc= Weight of Cement required (Kg.) per each collar.

### 3. S o R FOR R.C.C. S/S PIPES (Non - Pressure)

Sl. No.	Description				
1	Manufacture, Supply and Delivery of R.C.C. Socket and Spigot pipes conforming to B.I.S. 458/2003 at ex-factory (rate per meter of effective length) Excluding transportation and all taxes.				
	Size	Unit	SoR For 2019-20		
			NP - 2 Class	NP - 3 Class	NP - 4 Class
	80 mm dia.	Meter	166		
	100 mm dia.	Meter	188		
	150 mm dia.	Meter	218		
	200 mm dia.	Meter	267		
	225 mm dia.	Meter	289		
	250 mm dia.	Meter	308		
	300 mm dia.	Meter	433	1087	1153
	350 mm dia.	Meter	557	1332	1355
	400 mm dia.	Meter	613	1477	1501
	450 mm dia.	Meter	765	1629	1640
	500 mm dia.	Meter	883	1865	2031
	600 mm dia.	Meter	1235	2619	2663
	700 mm dia.	Meter	1601	3358	3473
	800 mm dia.	Meter	2066	4452	4526
	900 mm dia.	Meter	2627	5605	5718
	1000 mm dia.	Meter	3210	6282	5739
	1100 mm dia.	Meter	3720	7432	7792
	1200 mm dia.	Meter	4197	8783	9129
	1400 mm dia.	Meter	6040	11632	12974
	1600 mm dia.	Meter	7478	15146	15505
	1800 mm dia.	Meter	8304	20137	20857

Note: All the prices are ex-works. The above rates of RCC S/S Non-Pressure pipes are based on the following raw materials cost.

Cement. Rs.3900/- per MT,(Excluding all taxes and freight).

Steel (M.S. Rods) – Rs.45000/- per MT. (Excluding all taxes and freight).

The revised cost of RCC pipes due to increase / decrease in the cost of raw materials shall be as per the following formula.

Revised Cost =Cost as per the above table +R1+R2

R1= Variation (increase / decrease) in cost (Rs. per Meter) due to change in the cost of M.S. Rods = (S2-S1)/1000 X Ws.

R2= Variation (increase / decrease) in cost (Rs. per Meter) due to change in the cost of Cement = (C2-C1)/1000 X Wc.

S1 = Rs. 45000/- , S2 = Cost of M S Rods (Rs. per MT excluding all taxes and freight) at the time of preparation of estimate.

C1 = Rs. 3900/- , C2 = Cost of Cement (Rs. per MT excluding all taxes and freight) at the time of preparation of estimate

Ws=Weight of MS Rods required (Kg.) per Meter of pipe as per IS: 458/2003.

WC= Weight of Cement required (Kg.) per Meter of pipe.



#### 4. S o R FOR R.C.C. S/S PIPES (Pressure)

Sl.No.	Description				
1	Manufacture, Supply and Delivery of R.C.C. Socket and Spigot pipes conforming to B.I.S. 458/2003 Ex-factory (rate per meter of effective length) Excluding transportation and all taxes.				
	Size	Unit	SoR For 2019-20		
			P1 - Class	P2 - Class	P3 - Class
	80 mm dia.	Meter	222	249	285
	100 mm dia.	Meter	248	299	346
	150 mm dia.	Meter	343	445	551
	200 mm dia.	Meter	397	573	757
	225 mm dia.	Meter	447	651	842
	250 mm dia.	Meter	490	693	879
	300 mm dia.	Meter	657	993	1236
	350 mm dia.	Meter	818	1387	1789
	400 mm dia.	Meter	973	1842	2372
	450 mm dia.	Meter	1029	2186	2907
	500 mm dia.	Meter	1386	2359	3293
	600 mm dia.	Meter	1898	3524	4556
	700 mm dia.	Meter	2540	4635	5762
	800 mm dia.	Meter	3175	5474	6937
	900 mm dia.	Meter	3823	6412	
	1000 mm dia.	Meter	4864	7328	
	1100 mm dia.	Meter	5851		
	1200 mm dia.	Meter	6821		

Note: All the prices are ex-works.

The above rates of RCC S/S Pressure pipes are based on the following raw materials cost.

Cement. Rs.3900/- per MT,(Excluding all taxes and freight).

Steel (M.S. Rods) - Rs.45000/- per MT. (Excluding all taxes and freight).

The revised cost of RCC pipes due to increase / decrease in the cost of raw materials shall be as per the following formula.

Revised Cost =Cost as per the above table +R1+R2

R1= Variation (increase / decrease) in cost (Rs. per Meter)due to change in the cost of M.S. Rods = (S2-S1)/1000 X Ws.

R2= Variation (increase / decrease) in cost (Rs. per Meter)due to change in the cost of Cement = (C2-C1)/1000 X Wc.

S1 = Rs. 45000/-

S2 = Cost of M S Rods (Rs. per MT excluding all taxes and freight) at the time of preparation of estimate.

C1 = Rs. 3900/-, C2 = Cost of Cement (Rs. per MT excluding all taxes and freight) at the time of preparation of estimate

Ws=Weight of MS Rods required (Kg) per Meter of pipe as per IS: 458 /2003.WC= Weight of Cement required (Kg) per Meter of pipe.

## 5. S o R FOR RUBBER RINGS TO SUIT R.C.C. S/S PIPES

Sl. No.	Description				
1	Manufacture, Supply and Delivery of Rubber rings to suit R.C.C.Socket and Spigot pipes conforming to B.I.S 5382/ 1985 (rate per each rubber ring) including transportation but excluding all taxes. The Rubber Rings shall be tested at the factory premises confirming to B.I.S. 5382/1985.				
	Size	Unit	SoR For 2019-20		
			NP - 2 Class	NP - 3 Class	NP - 4 Class
	80 mm dia.	Each	26		
	100 mm dia.	Each	32		
	150 mm dia.	Each	57		
	200 mm dia.	Each	67		
	225 mm dia.	Each	73		
	250 mm dia.	Each	82		
	300 mm dia.	Each	100	129	129
	350 mm dia.	Each	116	154	154
	400 mm dia.	Each	128	175	175
	450 mm dia.	Each	145	198	198
	500 mm dia.	Each	189	227	227
	600 mm dia.	Each	248	329	329
	700 mm dia.	Each	248	394	394
	800 mm dia.	Each	428	478	478
	900 mm dia.	Each	536	646	646
	1000 mm dia.	Each	627	780	780
	1100 mm dia.	Each	754	999	999
	1200 mm dia.	Each	1208	1256	1256
	1400 mm dia.	Each	1328	1382	1382
	1600 mm dia.	Each	1654	1686	1686
	1800 mm dia.	Each	2060	2154	2154
2	Manufacture, Supply and Delivery of Rubber rings to suit R.C.C. Socket and Spigot pipes conforming to B.I.S 5382/ 1985 (rate per each rubber ring) including transportation but excluding all taxes. The Rubber Rings shall be tested at the factory premises confirming to B.I.S. 5382/1985.				
	Size		P1-Class	P2-Class	P3-Class
	80 mm dia.	Each	26	26	26
	100 mm dia.	Each	32	33	33
	150 mm dia.	Each	57	57	57
	200 mm dia.	Each	67	67	67
	225 mm dia.	Each	73	75	77
	250 mm dia.	Each	82	85	86
	300 mm dia.	Each	100	106	110
	350 mm dia.	Each	116	132	145
	400 mm dia.	Each	128	175	178
	450 mm dia.	Each	145	200	205
	500 mm dia.	Each	189	227	237

	600 mm dia.	Each	248	280	285
	700 mm dia.	Each	338	370	394
	800 mm dia.	Each	428	474	474
	900 mm dia.	Each	536	598	
	1000 mm dia.	Each	627	722	
	1100 mm dia.	Each	754		
	1200 mm dia.	Each	1208		

## 6. S o R FOR CONVEYANCE OF R.C.C. PLAIN ENDED PIPES

Sl.No.	Description	Rate up to 5 Kms Lead including Loading, unloading and stacking	Rate for every additional 1 KM lead or part thereof.	Rate up to 5 Kms Lead including Loading, unloading and stacking	Rate for every additional 1 KM lead or part thereof.
1	Conveyance of R.C.C plain ended pipes on all weathered roads including loading, unloading and stacking (per Meter) SoR for 2019-20				
		NP - 2 Class		NP - 3 Class & NP - 4 Class	
	80 mm dia.	3.81	0.17		
	100 mm dia.	5.07	0.17		
	150 mm dia.	7.61	0.32		
	200 mm dia.	10.14	0.32		
	225 mm dia.	11.41	0.51		
	250 mm dia.	12.68	0.51		
	300 mm dia.	17.76	0.68	49.45	1.36
	350 mm dia.	25.36	1.52	53.26	1.52
	400 mm dia.	27.90	1.69	63.40	2.02
	450 mm dia.	36.77	2.02	68.47	2.36
	500 mm dia.	39.31	2.36	74.81	2.36
	600 mm dia.	57.05	3.71	112.84	5.24
	700 mm dia.	72.27	5.24	125.52	6.08
	800 mm dia.	84.95	5.24	150.88	6.08
	900 mm dia.	97.62	5.24	197.79	11.48
	1000 mm dia.	144.54	10.80	238.36	11.48
	1100 mm dia.	158.48	10.80	258.65	12.49
	1200 mm dia.	180.04	11.48	289.08	12.49
	1400 mm dia.	216.81	11.48	393.05	13.00
	1600 mm dia.	251.05	11.48	471.65	13.00
	1800 mm dia.	289.08	11.48	628.87	18.24

**7. S o R FOR CONVEYANCE OF R.C.C. S/S PIPES**

Sl. No.	Description	Rate up to 5 Kms Lead including Loading, unloading & stacking	Rate for every additional 1 KM lead or part thereof.	Rate up to 5 Kms Lead including Loading, unloading and stacking	Rate for every additional 1 KM lead or part thereof.
1	Conveyance of R.C.C. Socket and Spigot pipes on all-weather roads including loading, unloading and stacking (per Meter of effective length)				
	Size	NP - 2 & P1 Class		NP – 3 & NP - 4 Class	
	80 mm dia.	5.07	0.16		
	100 mm dia.	5.07	0.30		
	150 mm dia.	8.88	0.30		
	200 mm dia.	11.41	0.61		
	225 mm dia.	12.68	0.61		
	250 mm dia.	13.95	1.38		
	300 mm dia.	22.83	1.53	59.98	1.84
	350 mm dia.	26.62	1.69	65.21	2.14
	400 mm dia.	26.62	1.99	80.86	4.00
	450 mm dia.	38.04	2.14	88.68	4.00
	500 mm dia.	41.84	2.31	97.81	4.30
	600 mm dia.	54.52	4.00	131.71	6.13
	700 mm dia.	67.19	4.30	177.35	12.12
	800 mm dia.	92.55	6.59	209.96	12.12
	900 mm dia.	138.20	11.82	242.56	12.12
	1000 mm dia.	157.22	11.82	255.60	12.12
	1100 mm dia.	177.50	12.12	273.86	12.12
	1200 mm dia.	197.79	12.12	306.46	12.42
	1400 mm dia.	245.97	12.12	410.79	12.42
	1600 mm dia.	291.62	12.42	485.13	13.35
	1800 mm dia.	361.34	12.42	646.83	18.26
		P2 – Class		P3 – Class	
	80 mm dia.	5.07	0.16	5.07	0.16
	100 mm dia.	5.07	0.30	5.07	0.30

	150 mm dia.	8.88	0.30	8.88	0.30
	200 mm dia.	11.41	0.61	15.21	1.38
	225 mm dia.	15.21	1.38	17.76	1.53
	250 mm dia.	16.48	1.53	21.55	1.69
	300 mm dia.	31.69	1.84	36.77	1.99
	350 mm dia.	39.31	2.14	50.72	2.31
	400 mm dia.	46.91	2.31	67.19	4.00
	450 mm dia.	59.59	3.84	83.69	4.00
	500 mm dia.	67.19	4.00	101.43	5.99
	600 mm dia.	88.76	4.00	147.07	7.67
	700 mm dia.	133.12	8.13	214.27	12.12
	800 mm dia.	176.24	11.51	273.86	12.12
	900 mm dia.	214.27	12.12		
	1000 mm dia.	263.72	12.42		

## 8. S o R FOR A.C. PIPES

Sl.No	Description					
1	2					
1	Manufacture, Supply of A.C. Pressure pipes (Mazza process) as per BIS No: 1592/2003as amended from time to time duly marked with BIS mark, including cost of material, incidental handling, loading and packing charges , but exclusive of transportation, unloading, stacking at departmental stores, and excluding all taxes. The pipes shall be tested at factory premises confirming to IS Code 1592/2003.					
	Size	Unit	SoR For 2019-20			
			Class - 15	Class - 20	Class - 25	
	80 mm dia.	Rate/Meter	192	209	262	
	100 mm dia.	Rate/Meter	253	321	394	
	125 mm dia.	Rate/Meter	330	411	515	
	150 mm dia.	Rate/Meter	464	577	725	
	200 mm dia.	Rate/Meter	770	984	1249	
	250 mm dia.	Rate/Meter	978	1265	1583	
	300 mm dia.	Rate/Meter	1368	1778	2270	
	350 mm dia.	Rate/Meter	1667	2166	2729	
	400 mm dia.	Rate/Meter	2168	2832	3516	
	450 mm dia.	Rate/Meter	2568	3407	4266	
	500 mm dia.	Rate/Meter	3175	4168	5235	
	600 mm dia.	Rate/Meter	4512	5889	7505	
	700 mm dia.	Rate/Meter	5983	8115	10493	
	750 mm dia.	Rate/Meter	6817	9367	12008	
	800 mm dia.	Rate/Meter	7802	10613	13621	
	850 mm dia.	Rate/Meter	8750	11941	15338	
	900 mm dia.	Rate/Meter	9755	13338	17157	
	1000 mm dia.	Rate/Meter	12042	16377	21098	
2	Lowering, laying and jointing of AC pressure pipes with AC couplings or CID joints complete with Rubber rings in readymade trenches true to alignment and gradient including filling with water lead up to 500 mts and testing to required pressure including all sundries but excluding cost of jointing materials and conveyance from source of supply as per BIS No. 6530/1972					
	80 mm dia.	Rate/Meter	51	51	51	
	100 mm dia.	Rate/Meter	74	74	74	
	125 mm dia.	Rate/Meter	81	81	81	
	150 mm dia.	Rate/Meter	97	97	97	
	200 mm dia.	Rate/Meter	128	128	128	
	250 mm dia.	Rate/Meter	153	153	153	
	300 mm dia.	Rate/Meter	188	188	188	
	350 mm dia.	Rate/Meter	318	318	318	
	400 mm dia.	Rate/Meter	480	480	480	
	450 mm dia.	Rate/Meter	583	583	583	
	500 mm dia.	Rate/Meter	740	740	740	
	600 mm dia.	Rate/Meter	796	796	796	
	700 mm dia.	Rate/Meter	888	888	888	
	750 mm dia.	Rate/Meter	988	988	988	
	800 mm dia.	Rate/Meter	1040	1040	1040	

	850 mm dia.	Rate/Meter		1110	1110	1110
	900 mm dia.	Rate/Meter		1210	1210	1210
	1000 mm dia.	Rate/Meter		1246	1246	1246
	<p>1. The above rates of AC Pipes are based on the Cement cost of RS 3900/- per MT (Excluding all taxes and freight).</p> <p>2. The above rates of AC pipes are based on the Fiber cost of Rs 78,500/- per M.T (Excluding all taxes &amp; Freight)</p> <p>For any Increase/ Decrease in the rate of cement, the price of AC pipe per Rmt shall be increased/decreased as under.</p> <p><math>W \times 0.85 \times IC</math> Where <math>W</math> = Weight of pipe in Kg's/Rmt  <math>IC</math> = Increase/Decrease in cost of cement/Kg</p> <p>For any increase/decrease in the rate of fiber, the price of AC pipe per Rmt shall be increased/Decreased as under :</p> <p><math>W \times 0.15 \times IF</math> Where : <math>W</math> =: Weight of pipe in Kg's/Rmt  <math>IF</math> = Increase /Decrease in cost of fiber/Kg</p>					
Note:	<p>1) The Fiber rates are to be obtained from A.C. Pipe manufacturer of "Mazza" process.</p> <p>2) The cement rate shall be communicated by the sub-committee of Board of Chief engineers.</p>					
	Transportation of AC pressure pipes at site of work anywhere in Andhra Pradesh on motor able roads for full truck loads including transit insurance, unloading, and stacking at site of work etc. Complete (AC Couplings and Rubber rings are to be supplied free of transportation charges).					5% on the basic cost of corresponding AC Pressure pipes.



## 9. S o R FOR A.C. COUPLINGS

Sl. No.	Description					
1	Manufacture, Supply of A.C Couplings suitable to A.C. Pressure pipes (Mazza process) as per BIS: 1592/2003 excluding cost of rubber rings to suit AC pressure pipes including cost of material, incidental handling, packing, transportation and unloading at site transit risk, but excluding all taxes and testing of joints as per IS Code.					
	Size	Unit	SoR For 2019-20			
			Class - 15	Class - 20	Class – 25	
	80 mm dia.	Rate/Each	93	101	115	
	100 mm dia.	Rate/Each	121	130	156	
	125 mm dia.	Rate/Each	152	167	200	
	150 mm dia.	Rate/Each	177	221	273	
	200 mm dia.	Rate/Each	326	354	451	
	250 mm dia.	Rate/Each	380	478	609	
	300 mm dia.	Rate/Each	495	641	825	
	350 mm dia.	Rate/Each	643	830	1060	
	400 mm dia.	Rate/Each	990	1292	1658	
	450 mm dia.	Rate/Each	1185	1565	2010	
	500 mm dia.	Rate/Each	1415	1893	2418	
	600 mm dia.	Rate/Each	1729	2167	2770	
	700 mm dia.	Rate/Each	2290	3082	4008	
	750 mm dia.	Rate/Each	2583	3531	4559	
	800 mm dia.	Rate/Each	2930	3973	5142	
	850 mm dia.	Rate/Each	3265	4445	5763	
	900 mm dia.	Rate/Each	3612	4941	6414	
	1000 mm dia.	Rate/Each	4409	6007	7829	

1. The above rates of AC Coupling are based on the Cement cost of RS 3900/- per MT (Excluding all taxes and freight).
2. The above rates of AC Coupling are based on the Fiber cost of Rs 78,500/- per M.T (excluding all taxes & Fright)

For any Increase/ Decrease in the rate of cement, the price of AC Coupling per Each shall be increased/decreased as under.

$W \times 0.85 \times IC$  Where W = Weight of Coupling in Kgs/each

IC = Increase/Decrease in cost of cement/kg

For any increase/decrease in the rate of fiber, the price of AC Coupling per each shall be increased/Decreased as under:

$W \times 0.15 \times IF$  Where: W= Weight of Coupling in Kgs/Each

IF = Increase /Decrease in cost of fiber/kg

The Fiber rates are to be obtained from A.C. Pipe manufacturer of “Mazza” process.

## 10. S o R FOR RUBBER RINGS TO SUIT A.C. COUPLINGS

Sl. No.	Description					
1	Schedule of rate for supply of Rubber rings manufactured as per BIS: 5382/1988 with BIS Mark embossed per each set suitable for A.C. Couplings including cost of material, incidental, handling, packing and transportation and unloading at site transit risk etc., but excluding all taxes. The Rubber Rings shall be tested at the factory premises confirming to B.I.S 5382/1988					
	Size	Unit	SoR for 2019-20			
				Class - 15	Class - 20	Class - 25
	80 mm dia.	Each Set		75	75	75
	100 mm dia.	Each Set		91	91	91
	125 mm dia.	Each Set		119	119	119
	150 mm dia.	Each Set		150	150	150
	200 mm dia.	Each Set		156	156	156
	250 mm dia.	Each Set		180	180	180
	300 mm dia.	Each Set		180	180	180
	350 mm dia.	Each Set		205	205	205
	400 mm dia.	Each Set		251	251	251
	450 mm dia.	Each Set		294	294	294
	500 mm dia.	Each Set		340	340	340
	600 mm dia.	Each Set		385	385	385
	700 mm dia.	Each Set		800	800	800
	750 mm dia.	Each Set		831	831	831
	800 mm dia.	Each Set		892	892	892
	850 mm dia.	Each Set		994	994	994
	900 mm dia.	Each Set		1045	1045	1045
	1000 mm dia.	Each Set		1158	1158	1158

**11. S o R FOR PRE-STRESSED (NON-CYLINDER) CONCRETE PIPES FOR THE YEAR 2019-20**

Sl.No.	Description							
1	Manufacture, Supply, Delivery of Pre-stressed (Non-cylinder) concrete pipes conforming to IS 784/2001 ex-factory excluding transportation, taxes For the following Field/Site Test Pressures. (The manufacture shall design the pipes as per the IS Code 784-2001)							
	Size	Unit	SoR for 2019-20.					
			6 Kg/cm2	8 Kg/cm2	10 Kg/cm2	12 Kg/cm2	14 Kg/cm2	16 Kg/cm2
	350 MM DIA.	Meter	2481	2489	2500	2513	2566	2658
	400 MM DIA.	Meter	2661	2680	2711	2747	2799	2842
	450 MM DIA.	Meter	2788	2811	2843	2900	2979	3045
	500 MM DIA.	Meter	3026	3040	3065	3132	3200	3300
	600 MM DIA.	Meter	3473	3499	3536	3651	3774	3891
	700 MM DIA.	Meter	3951	4016	4143	4281	4417	4632
	800 MM DIA.	Meter	4798	4934	5062	5253	5431	5787
	900 MM DIA.	Meter	5518	5698	5869	6153	6394	6924
	1000 MM DIA.	Meter	6519	6741	6973	7209	7462	8106
	1100 MM DIA.	Meter	7342	7586	7872	8157	8456	9222
	1200 MM DIA.	Meter	8254	8601	8919	9137	9575	10668
	1300 MM DIA.	Meter	9410	9790	10171	10542	11639	12120
	1400 MM DIA.	Meter	10947	11400	11845	12595	13441	14108
	1500 MM DIA.	Meter	12401	12928	13427	14732	15236	17148
	1600 MM DIA.	Meter	13977	14549	15119	16699	17290	19117
	1700 MM DIA.	Meter	15075	15728	16382	18033	20063	20994
	1800 MM DIA.	Meter	16678	17786	18791	20713	21665	23985
	1900 MM DIA.	Meter	17830	18853	20565	21790	23753	26205
	2000 MM DIA.	Meter	19593	20867	21995	24235	27402	28531
2	Cost of laying jointing, testing to hydrostatic field test pressure including cost of rubber rings, cost of transportation of water and emptying pipe line after completion of field testing etc.							
	350 MM DIA.	Meter	276	276	276	276	276	276

	400 MM DIA.	Meter	<b>298</b>	<b>298</b>	<b>298</b>	<b>298</b>	<b>298</b>	<b>298</b>
	450 MM DIA.	Meter	<b>345</b>	<b>345</b>	<b>345</b>	<b>345</b>	<b>345</b>	<b>345</b>
	500 MM DIA.	Meter	<b>366</b>	<b>366</b>	<b>366</b>	<b>366</b>	<b>366</b>	<b>366</b>
	600 MM DIA.	Meter	<b>450</b>	<b>450</b>	<b>450</b>	<b>450</b>	<b>450</b>	<b>450</b>
	700 MM DIA.	Meter	<b>529</b>	<b>529</b>	<b>529</b>	<b>529</b>	<b>529</b>	<b>529</b>
	800 MM DIA.	Meter	<b>597</b>	<b>597</b>	<b>597</b>	<b>597</b>	<b>597</b>	<b>597</b>
	900 MM DIA.	Meter	<b>655</b>	<b>655</b>	<b>655</b>	<b>655</b>	<b>655</b>	<b>655</b>
	1000 MM IA	Meter	<b>757</b>	<b>757</b>	<b>757</b>	<b>757</b>	<b>757</b>	<b>757</b>
	1100 MM IA	Meter	<b>849</b>	<b>849</b>	<b>849</b>	<b>849</b>	<b>849</b>	<b>849</b>
	1200 MMDIA.	Meter	<b>942</b>	<b>942</b>	<b>942</b>	<b>942</b>	<b>942</b>	<b>942</b>
	1300 MM DIA.	Meter	<b>1067</b>	<b>1067</b>	<b>1067</b>	<b>1067</b>	<b>1067</b>	<b>1067</b>
	1400 MM DIA.	Meter	<b>1207</b>	<b>1207</b>	<b>1207</b>	<b>1207</b>	<b>1207</b>	<b>1207</b>
	1500 MM DIA.	Meter	<b>1309</b>	<b>1309</b>	<b>1309</b>	<b>1309</b>	<b>1309</b>	<b>1309</b>
	1600 MM DIA.	Meter	<b>1466</b>	<b>1466</b>	<b>1466</b>	<b>1466</b>	<b>1466</b>	<b>1466</b>
	1700 MM DIA.	Meter	<b>1596</b>	<b>1596</b>	<b>1596</b>	<b>1596</b>	<b>1596</b>	<b>1596</b>
	1800 MM DIA.	Meter	<b>1690</b>	<b>1690</b>	<b>1690</b>	<b>1690</b>	<b>1690</b>	<b>1690</b>
	1900 MM DIA.	Meter	<b>1783</b>	<b>1783</b>	<b>1783</b>	<b>1783</b>	<b>1783</b>	<b>1783</b>
	2000 MM DIA.	Meter	<b>1878</b>	<b>1878</b>	<b>1878</b>	<b>1878</b>	<b>1878</b>	<b>1878</b>
3	Conveyance of pre-stressed (Non-cylinder) concrete pipes and accessories including loading at factory, un-loading at site and stacking for the following sizes.(minimum distance of 100 km to be considered if the distance is less by 100 km from factory to site)							
	350 MM DIA.	Per K.M/M	<b>1.58</b>	<b>1.58</b>	<b>1.58</b>	<b>1.58</b>	<b>1.58</b>	<b>1.58</b>
	400 MM DIA.	Per K.M/M	<b>1.58</b>	<b>1.58</b>	<b>1.58</b>	<b>1.58</b>	<b>1.58</b>	<b>1.58</b>
	450 MM DIA.	Per K.M/M	<b>1.93</b>	<b>1.93</b>	<b>1.93</b>	<b>1.93</b>	<b>1.93</b>	<b>1.93</b>
	500 MM DIA.	Per K.M/M	<b>2.06</b>	<b>2.06</b>	<b>2.06</b>	<b>2.06</b>	<b>2.06</b>	<b>2.06</b>
	600 MM DIA.	Per K.M/M	<b>2.30</b>	<b>2.30</b>	<b>2.30</b>	<b>2.30</b>	<b>2.30</b>	<b>2.30</b>
	700 MM DIA.	Per K.M/M	<b>3.75</b>	<b>3.75</b>	<b>3.75</b>	<b>3.75</b>	<b>3.75</b>	<b>3.75</b>
	800 MM DIA.	Per K.M/M	<b>3.75</b>	<b>3.75</b>	<b>3.75</b>	<b>3.75</b>	<b>3.75</b>	<b>3.75</b>

	900 MM DIA.	Per K.M/M	<b>3.75</b>	<b>3.75</b>	<b>3.75</b>	<b>3.75</b>	<b>3.75</b>	<b>3.75</b>
	1000 MM DIA.	Per K.M/M	<b>6.04</b>	<b>6.04</b>	<b>6.04</b>	<b>6.04</b>	<b>6.04</b>	<b>6.04</b>
	1100 MM DIA.	Per K.M/M	<b>6.04</b>	<b>6.04</b>	<b>6.04</b>	<b>6.04</b>	<b>6.04</b>	<b>6.04</b>
	1200 MM DIA.	Per K.M/M	<b>11.59</b>	<b>11.59</b>	<b>11.59</b>	<b>11.59</b>	<b>11.59</b>	<b>11.59</b>
	1300 MM DIA.	Per K.M/M	<b>11.72</b>	<b>11.72</b>	<b>11.72</b>	<b>11.72</b>	<b>11.72</b>	<b>11.72</b>
	1400 MM DIA.	Per K.M/M	<b>11.72</b>	<b>11.72</b>	<b>11.72</b>	<b>11.72</b>	<b>11.72</b>	<b>11.72</b>
	1500 MM DIA.	Per K.M/M	<b>11.72</b>	<b>11.72</b>	<b>11.72</b>	<b>11.72</b>	<b>11.72</b>	<b>11.72</b>
	1600 MM DIA.	Per K.M/M	<b>13.17</b>	<b>13.17</b>	<b>13.17</b>	<b>13.17</b>	<b>13.17</b>	<b>13.17</b>
	1700 MM DIA.	Per K.M/M	<b>13.17</b>	<b>13.17</b>	<b>13.17</b>	<b>13.17</b>	<b>13.17</b>	<b>13.17</b>
	1800 MM DIA.	Per K.M/M	<b>13.41</b>	<b>13.41</b>	<b>13.41</b>	<b>13.41</b>	<b>13.41</b>	<b>13.41</b>
	1900 MM DIA.	Per K.M/M	<b>14.01</b>	<b>14.01</b>	<b>14.01</b>	<b>14.01</b>	<b>14.01</b>	<b>14.01</b>
	2000 MM DIA.	Per K.M/M	<b>14.01</b>	<b>14.01</b>	<b>14.01</b>	<b>14.01</b>	<b>14.01</b>	<b>14.01</b>
4	Cost of Machine End pair (Socket +Spigot) for providing M.S Specials on PSC pipelines excluding cost of M.S Special including cost and conveyance to site etc., complete.							
	350 MM DIA.	Per Pair	<b>9900</b>	<b>9900</b>	<b>9900</b>	<b>9900</b>	<b>9900</b>	<b>9900</b>
	400 MM DIA.	Per Pair	<b>11400</b>	<b>11400</b>	<b>11400</b>	<b>11400</b>	<b>11400</b>	<b>11400</b>
	450 MM DIA.	Per Pair	<b>12800</b>	<b>12800</b>	<b>12800</b>	<b>12800</b>	<b>12800</b>	<b>12800</b>
	500 MM DIA.	Per Pair	<b>14300</b>	<b>14300</b>	<b>14300</b>	<b>14300</b>	<b>14300</b>	<b>14300</b>
	600 MM DIA.	Per Pair	<b>17100</b>	<b>17100</b>	<b>17100</b>	<b>17100</b>	<b>17100</b>	<b>17100</b>
	700 MM DIA.	Per Pair	<b>20100</b>	<b>20100</b>	<b>20100</b>	<b>20100</b>	<b>20100</b>	<b>20100</b>
	800 MM DIA.	Per Pair	<b>23000</b>	<b>23000</b>	<b>23000</b>	<b>23000</b>	<b>23000</b>	<b>23000</b>
	900 MM DIA.	Per Pair	<b>25900</b>	<b>25900</b>	<b>25900</b>	<b>25900</b>	<b>25900</b>	<b>25900</b>
	1000 MM DIA.	Per Pair	<b>28600</b>	<b>28600</b>	<b>28600</b>	<b>28600</b>	<b>28600</b>	<b>28600</b>
	1100 MM DIA.	Per Pair	<b>31500</b>	<b>31500</b>	<b>31500</b>	<b>31500</b>	<b>31500</b>	<b>31500</b>

	1200 MM DIA.	Per Pair	<b>34400</b>	<b>34400</b>	<b>34400</b>	<b>34400</b>	<b>34400</b>	<b>34400</b>
	1300 MM DIA.	Per Pair	<b>37100</b>	<b>37100</b>	<b>37100</b>	<b>37100</b>	<b>37100</b>	<b>37100</b>
	1400 MM DIA.	Per Pair	<b>43700</b>	<b>43700</b>	<b>43700</b>	<b>43700</b>	<b>43700</b>	<b>43700</b>
	1500 MM DIA.	Per Pair	<b>51300</b>	<b>51300</b>	<b>51300</b>	<b>51300</b>	<b>51300</b>	<b>51300</b>
	1600 MM DIA.	Per Pair	<b>57100</b>	<b>57100</b>	<b>57100</b>	<b>57100</b>	<b>57100</b>	<b>57100</b>
	1700 MM DIA.	Per Pair	<b>64100</b>	<b>64100</b>	<b>64100</b>	<b>64100</b>	<b>64100</b>	<b>64100</b>
	1800 MM DIA.	Per Pair	<b>73300</b>	<b>73300</b>	<b>73300</b>	<b>73300</b>	<b>73300</b>	<b>73300</b>
	1900 MM DIA.	Per Pair	<b>84700</b>	<b>84700</b>	<b>84700</b>	<b>84700</b>	<b>84700</b>	<b>84700</b>
	2000 MM DIA.	Per Pair	<b>101900</b>	<b>101900</b>	<b>101900</b>	<b>101900</b>	<b>101900</b>	<b>101900</b>
5	Cost of M.S Flanges including cost of bolts, nuts, rubber packing etc., complete and flange thickness confirming to is:7322-1985 and flange dimensions confirming to is:1538-1993 excluding cost of ms specials including cost and conveyance to site, vat etc., complete.							
	Diameter and thickness	Unit	Rate	Diameter and thickness	Unit	Rate		
	80 mm dia. x 15 mm thick	Each Flange	<b>700</b>	500mm dia. x 20 mm thick	Each Flange	<b>7150</b>		
	100 mm dia. x 15 mm thick	Each Flange	<b>970</b>	600 mm dia. x 20 mm thick	Each Flange	<b>9010</b>		
	125 mm dia. x 15 mm thick	Each Flange	<b>1160</b>	700 mm dia. x 25 mm thick	Each Flange	<b>12740</b>		
	150 mm dia. x 15 mm thick	Each Flange	<b>1540</b>	750 mm dia. x 25 mm thick	Each Flange	<b>14020</b>		
	200 mm dia. x 15 mm thick	Each Flange	<b>1930</b>	800 mm dia. x 25 mm thick	Each Flange	<b>15690</b>		
	250 mm dia. x 15 mm thick	Each Flange	<b>2510</b>	900 mm dia. x 25 mm thick	Each Flange	<b>18010</b>		
	300 mm dia. x 15 mm thick	Each Flange	<b>2840</b>	1000 mm dia. x 25 mm thick	Each Flange	<b>21230</b>		
	350 mm dia. x 18 mm thick	Each Flange	<b>4140</b>	1050 mm dia. x 25 mm thick	Each Flange	<b>22490</b>		
	400 mm dia. x 18 mm thick	Each Flange	<b>5170</b>	1100 mm dia. x 25 mm thick	Each Flange	<b>24310</b>		
	450 mm dia. x 18 mm thick	Each Flange	<b>6320</b>	1200 mm dia. x 32 mm thick	Each Flange	<b>32290</b>		

Note: a) The above rate of PSC pipes are based on the HT wire cost of Rs.56,500/-MT (Excluding all taxes and freight).and cement price of Rs3900/- per MT (Excluding all taxes and freight).

The rates may be revised depending upon the increase/decrease in the cost of HT wire and Cement. as per the following method.  
The cost of HT wire may be obtained from reputed firms like SAIL/TATA/ SS Ltd. etc.,

Revised Cost =Cost as per the above table +R1+R2.

R1= Variation (increase / decrease) in cost (Rs. per meter) due to change in the cost of HT Wire  $=\frac{(H2-H1)}{1000} \times Wh$ .

R2= Variation (increase / decrease) in cost (Rs. per meter) due to change in the cost of Cement  $=\frac{(C2-C1)}{1000} \times Wc$ .

H1 = Rs. 56,500/- H2 = Cost of HT Wire (Rs. per MT excluding all taxes and freight) at the time of preparation of estimate.

C1 = Rs. 3900/- C2 = Cost of Cement (Rs. per MT excluding all taxes and freight) at the time of preparation of estimate

Wh=Weight of HT Wire required (Kg.) per meter of pipe.

Wc= Weight of Cement required (Kg.) per meter of pipe.

The rates for MS flanges are considering landed price of MS Plates of Rs.47000/- per MT.(Excluding all taxes and freight). Price variation to be released on actual weight of flange.

**Note: 1)** The above formula for calculation of revised cost to be used for preparation of Estimates only.

**12. S o R FOR PRE-STRESSED (CYLINDER) CONCRETE PIPES FOR THE YEAR 2019-20**

S. No.	Description										
1	Pre-stressed (Cylinder type ) concrete pipes conforming to IS 784/2001 @ ex-factory cost of pipes, excluding transportation, laying, jointing, testing, bends, tees, specials, all taxes for the following Field/Site Test Pressures.(The manufacture shall design the pipes as per the IS Code 784-2001)										
	Size	Unit	SoR For 2019-20								
			4 Kg/cm2	6 Kg/cm2	8 Kg/cm2	10 Kg/cm2	12 Kg/cm2	14 Kg/cm2	16 Kg/cm2	18 Kg/cm2	20 Kg/cm2
	400 MM DIA.	Meter	4726	4726	4726	4746	4796	4828	4889	4932	4973
	450 MM DIA.	Meter	5044	5044	5004	5103	5145	5207	5280	5332	5374
	500 MM DIA.	Meter	5361	5361	5411	5474	5525	5588	5671	5744	5806
	600 MM DIA.	Meter	6149	6230	6302	6375	6449	6522	6644	6749	6814
	700 MM DIA.	Meter	7006	7109	7203	7306	7400	7503	7668	7784	7919
	800 MM DIA.	Meter	8254	8369	8493	8619	8743	8879	9064	9232	9389
	900 MM DIA.	Meter	9389	9545	9710	9868	10034	10201	10639	10857	11115
	1000 MM DIA.	Meter	11293	11489	11688	11886	12094	12292	12871	13162	13462
	1100 MM DIA.	Meter	12545	12784	13024	13263	13513	13762	14463	14785	15171
	1200 MM DIA.	Meter	13960	14240	14532	14822	15115	15405	16248	16665	17074
	1300 MM DIA.	Meter	15290	15993	16337	16679	17024	17676	18376	18881	19432
	1400 MM DIA.	Meter	17552	17976	18411	18887	19733	20283	21083	21321	22252
	1500 MM DIA.	Meter	20680	21139	21598	22056	22941	23452	24134	25168	25739
	1600 MM DIA.	Meter	23537	24057	24577	25535	26120	26773	27932	28577	29232
	1700 MM DIA.	Meter	25286	25879	26475	27569	28215	29595	30349	31088	31825
	1800 MM DIA.	Meter	29967	30623	31782	32514	33253	34799	35639	36474	37308
	1900 MM DIA.	Meter	32142	32881	34176	34979	36627	37533	41070	42099	43126
	2000 MM DIA.	Meter	33932	35285	36191	37099	38914	39932	40963	41996	43024



2	Cost of laying jointing, testing to hydrostatic field test pressure including cost of site welding and fixing of polypropylene diaper cloth, cost of transportation of water and emptying pipe line after completion of field testing etc.										
	400 MM DIA.	Meter	<b>581</b>	<b>581</b>	<b>581</b>	<b>581</b>	<b>581</b>	<b>581</b>	<b>581</b>	<b>581</b>	<b>581</b>
	450 MM DIA.	Meter	<b>684</b>	<b>684</b>	<b>684</b>	<b>684</b>	<b>684</b>	<b>684</b>	<b>684</b>	<b>684</b>	<b>684</b>
	500 MM DIA.	Meter	<b>745</b>	<b>745</b>	<b>745</b>	<b>745</b>	<b>745</b>	<b>745</b>	<b>745</b>	<b>745</b>	<b>745</b>
	600 MM DIA.	Meter	<b>871</b>	<b>871</b>	<b>871</b>	<b>871</b>	<b>871</b>	<b>871</b>	<b>871</b>	<b>871</b>	<b>871</b>
	700 MM DIA.	Meter	<b>993</b>	<b>993</b>	<b>993</b>	<b>993</b>	<b>993</b>	<b>993</b>	<b>993</b>	<b>993</b>	<b>993</b>
	800 MM DIA.	Meter	<b>1140</b>	<b>1140</b>	<b>1140</b>	<b>1140</b>	<b>1140</b>	<b>1140</b>	<b>1140</b>	<b>1140</b>	<b>1140</b>
	900 MM DIA.	Meter	<b>1284</b>	<b>1284</b>	<b>1284</b>	<b>1284</b>	<b>1284</b>	<b>1284</b>	<b>1284</b>	<b>1284</b>	<b>1284</b>
	1000 MM DIA.	Meter	<b>1407</b>	<b>1407</b>	<b>1407</b>	<b>1407</b>	<b>1407</b>	<b>1407</b>	<b>1407</b>	<b>1407</b>	<b>1407</b>
	1100 MM DIA.	Meter	<b>1595</b>	<b>1595</b>	<b>1595</b>	<b>1595</b>	<b>1595</b>	<b>1595</b>	<b>1595</b>	<b>1595</b>	<b>1595</b>
	1200 MM DIA.	Meter	<b>1740</b>	<b>1740</b>	<b>1740</b>	<b>1740</b>	<b>1740</b>	<b>1740</b>	<b>1740</b>	<b>1740</b>	<b>1740</b>
	1300 MM DIA.	Meter	<b>1863</b>	<b>1863</b>	<b>1863</b>	<b>1863</b>	<b>1863</b>	<b>1863</b>	<b>1863</b>	<b>1863</b>	<b>1863</b>
	1400 MM DIA.	Meter	<b>2052</b>	<b>2052</b>	<b>2052</b>	<b>2052</b>	<b>2052</b>	<b>2052</b>	<b>2052</b>	<b>2052</b>	<b>2052</b>
	1500 MM DIA.	Meter	<b>2276</b>	<b>2276</b>	<b>2276</b>	<b>2276</b>	<b>2276</b>	<b>2276</b>	<b>2276</b>	<b>2276</b>	<b>2276</b>
	1600 MM DIA.	Meter	<b>2464</b>	<b>2464</b>	<b>2464</b>	<b>2464</b>	<b>2464</b>	<b>2464</b>	<b>2464</b>	<b>2464</b>	<b>2464</b>
	1700 MM DIA.	Meter	<b>2774</b>	<b>2774</b>	<b>2774</b>	<b>2774</b>	<b>2774</b>	<b>2774</b>	<b>2774</b>	<b>2774</b>	<b>2774</b>
	1800 MM DIA.	Meter	<b>2941</b>	<b>2941</b>	<b>2941</b>	<b>2941</b>	<b>2941</b>	<b>2941</b>	<b>2941</b>	<b>2941</b>	<b>2941</b>
	1900 MM DIA.	Meter	<b>3208</b>	<b>3208</b>	<b>3208</b>	<b>3208</b>	<b>3208</b>	<b>3208</b>	<b>3208</b>	<b>3208</b>	<b>3208</b>
	2000 MM DIA.	Meter	<b>3416</b>	<b>3416</b>	<b>3416</b>	<b>3416</b>	<b>3416</b>	<b>3416</b>	<b>3416</b>	<b>3416</b>	<b>3416</b>
3	Conveyance of Pre-stressed (Cylinder type) concrete pipes and accessories including loading at factory, un-loading at site and stacking for the following sizes. (minimum distance of 100 km to be considered if the distance is less by 100 km from factory to site)										
	400 MM DIA.	Per KM/M	<b>1.33</b>	<b>1.33</b>	<b>1.33</b>	<b>1.33</b>	<b>1.33</b>	<b>1.33</b>	<b>1.33</b>	<b>1.33</b>	<b>1.33</b>
	450 MM DIA.	Per KM/M	<b>1.33</b>	<b>1.33</b>	<b>1.33</b>	<b>1.33</b>	<b>1.33</b>	<b>1.33</b>	<b>1.33</b>	<b>1.33</b>	<b>1.33</b>
	500 MM DIA.	Per KM/M	<b>1.93</b>	<b>1.93</b>	<b>1.93</b>	<b>1.93</b>	<b>1.93</b>	<b>1.93</b>	<b>1.93</b>	<b>1.93</b>	<b>1.93</b>

600 MM DIA.	Per KM/M	<b>2.17</b>	<b>2.17</b>	<b>2.17</b>	<b>2.17</b>	<b>2.17</b>	<b>2.17</b>	<b>2.17</b>	<b>2.17</b>	<b>2.17</b>	<b>2.17</b>
700 MM DIA.	Per KM/M	<b>3.51</b>	<b>3.51</b>	<b>3.51</b>	<b>3.51</b>	<b>3.51</b>	<b>3.51</b>	<b>3.51</b>	<b>3.51</b>	<b>3.51</b>	<b>3.51</b>
800 MM DIA.	Per KM/M	<b>3.51</b>	<b>3.51</b>	<b>3.51</b>	<b>3.51</b>	<b>3.51</b>	<b>3.51</b>	<b>3.51</b>	<b>3.51</b>	<b>3.51</b>	<b>3.51</b>
900 MM DIA.	Per KM/M	<b>3.51</b>	<b>3.51</b>	<b>3.51</b>	<b>3.51</b>	<b>3.51</b>	<b>3.51</b>	<b>3.51</b>	<b>3.51</b>	<b>3.51</b>	<b>3.51</b>
1000 MM DIA.	Per KM/M	<b>5.55</b>	<b>5.55</b>	<b>5.55</b>	<b>5.55</b>	<b>5.55</b>	<b>5.55</b>	<b>5.55</b>	<b>5.55</b>	<b>5.55</b>	<b>5.55</b>
1100 MM DIA.	Per KM/M	<b>5.55</b>	<b>5.55</b>	<b>5.55</b>	<b>5.55</b>	<b>5.55</b>	<b>5.55</b>	<b>5.55</b>	<b>5.55</b>	<b>5.55</b>	<b>5.55</b>
1200 MM DIA.	Per KM/M	<b>10.87</b>	<b>10.87</b>	<b>10.87</b>	<b>10.87</b>	<b>10.87</b>	<b>10.87</b>	<b>10.87</b>	<b>10.87</b>	<b>10.87</b>	<b>10.87</b>
1300 MM DIA.	Per KM/M	<b>10.87</b>	<b>10.87</b>	<b>10.87</b>	<b>10.87</b>	<b>10.87</b>	<b>10.87</b>	<b>10.87</b>	<b>10.87</b>	<b>10.87</b>	<b>10.87</b>
1400 MM DIA.	Per KM/M	<b>10.87</b>	<b>10.87</b>	<b>10.87</b>	<b>10.87</b>	<b>10.87</b>	<b>10.87</b>	<b>10.87</b>	<b>10.87</b>	<b>10.87</b>	<b>10.87</b>
1500 MM DIA.	Per KM/M	<b>10.87</b>	<b>10.87</b>	<b>10.87</b>	<b>10.87</b>	<b>10.87</b>	<b>10.87</b>	<b>10.87</b>	<b>10.87</b>	<b>10.87</b>	<b>10.87</b>
1600 MM DIA.	Per KM/M	<b>10.87</b>	<b>10.87</b>	<b>10.87</b>	<b>10.87</b>	<b>10.87</b>	<b>10.87</b>	<b>10.87</b>	<b>10.87</b>	<b>10.87</b>	<b>10.87</b>
1700 MM DIA.	Per KM/M	<b>13.17</b>	<b>13.17</b>	<b>13.17</b>	<b>13.17</b>	<b>13.17</b>	<b>13.17</b>	<b>13.17</b>	<b>13.17</b>	<b>13.17</b>	<b>13.17</b>
1800 MM DIA.	Per KM/M	<b>13.17</b>	<b>13.17</b>	<b>13.17</b>	<b>13.17</b>	<b>13.17</b>	<b>13.17</b>	<b>13.17</b>	<b>13.17</b>	<b>13.17</b>	<b>13.17</b>
1900 MM DIA.	Per KM/M	<b>13.17</b>	<b>13.17</b>	<b>13.17</b>	<b>13.17</b>	<b>13.17</b>	<b>13.17</b>	<b>13.17</b>	<b>13.17</b>	<b>13.17</b>	<b>13.17</b>
2000 MM DIA.	Per KM/M	<b>13.89</b>	<b>13.89</b>	<b>13.89</b>	<b>13.89</b>	<b>13.89</b>	<b>13.89</b>	<b>13.89</b>	<b>13.89</b>	<b>13.89</b>	<b>13.89</b>

Note: The rates of PCCP pipes which were incorporated in the SSR are based on the following raw materials cost.

HT Wire: - Rs.56, 500/- (excluding all taxes & freight)

HR Coil (Hot Rolled): - Rs.49,375/- (excluding all taxes & freight)

Cement Cost Rs. 3900/- per MT (excluding all taxes & freight)

The rates may be revised depending upon the increase/ decrease in the cost of raw materials (landed price) as per the following method.

Revised Cost = Cost as per the above table + R1 + R2 + R3.

R1 = Variation (increase / decrease) in cost (Rs. per meter) due to change in the cost of HT Wire =  $(H2 - H1) / 1000 \times W_h$ .

R2 = Variation (increase / decrease) in cost (Rs. per meter) due to change in the cost of HR Coil =  $(R2 - R1) / 1000 \times W_r$ .

R3 = Variation (increase / decrease) in cost (Rs. per meter) due to change in the cost of Cement =  $(C2 - C1) / 1000 \times W_c$ .

H1 = Rs. 56,500/- H2 = Cost of HT Wire (Rs. per MT excluding all taxes and freight) at the time of preparation of estimate.

R1 = Rs. 49,375/- R2 = Cost of HR Coil (Rs. per MT excluding all taxes and freight) at the time of preparation of estimate.

C1 = Rs. 3900/- C2 = Cost of Cement (Rs. per MT excluding all taxes and freight) at the time of preparation of estimate

W<sub>h</sub> = Weight of HT Wire required (Kg.) per Meter of pipe.

W<sub>c</sub> = Weight of Cement required (Kg.) per Meter of pipe.

W<sub>r</sub> = Weight of HR Coil required (kg) per Meter of pipe.

**Note: 1)** The above formula for calculation of revised cost to be used for preparation of Estimates only.

**13. S o R FOR BAR WRAPPED STEEL CYLINDRICAL (BWSC) PIPES FOR THE YEAR 2019-20**

Sl.No	Description											
1	Bar Wrapped Steel Cylindrical (BWSC) pipes conforming to IS 15155 - 2002, ex-factory excluding transportation and all taxes., for bar wrapped steel cylindrical pipes for the following Field/Site Test Pressures.(The manufacture shall design the pipes as per the IS Code 784-2001)											
	Size	Unit	4 -12 Kg/cm <sup>2</sup>	14 Kg/cm <sup>2</sup>	16 Kg/cm <sup>2</sup>	18 Kg/cm <sup>2</sup>	20 Kg/cm <sup>2</sup>	22 Kg/cm <sup>2</sup>	24 Kg/cm <sup>2</sup>	26 Kg/cm <sup>2</sup>	28 Kg/cm <sup>2</sup>	30 Kg/cm <sup>2</sup>
	250 MM DIA.	Meter	<b>2349</b>	<b>2349</b>	<b>2349</b>	<b>2349</b>	<b>2349</b>	<b>2349</b>	<b>2607</b>	<b>2683</b>	<b>2776</b>	<b>2846</b>
	300 MM DIA.	Meter	<b>2620</b>	<b>2620</b>	<b>2620</b>	<b>2620</b>	<b>2620</b>	<b>2722</b>	<b>3114</b>	<b>3218</b>	<b>3330</b>	<b>3450</b>
	350 MM DIA.	Meter	<b>3502</b>	<b>3502</b>	<b>3572</b>	<b>3768</b>	<b>3959</b>	<b>4137</b>	<b>4317</b>	<b>4509</b>	<b>4749</b>	<b>4929</b>
	400 MM DIA.	Meter	<b>3833</b>	<b>3932</b>	<b>3964</b>	<b>4213</b>	<b>4445</b>	<b>4695</b>	<b>4736</b>	<b>5222</b>	<b>5498</b>	<b>5708</b>
	450 MM DIA.	Meter	<b>3798</b>	<b>3893</b>	<b>3908</b>	<b>4153</b>	<b>4378</b>	<b>4622</b>	<b>4646</b>	<b>5136</b>	<b>5380</b>	<b>5620</b>
	500 MM DIA.	Meter	<b>4218</b>	<b>4215</b>	<b>4460</b>	<b>4740</b>	<b>5050</b>	<b>5340</b>	<b>5670</b>	<b>6329</b>	<b>6693</b>	<b>7121</b>
	600 MM DIA.	Meter	<b>5213</b>	<b>5540</b>	<b>5952</b>	<b>6345</b>	<b>6768</b>	<b>7213</b>	<b>7771</b>	<b>8247</b>	<b>8695</b>	<b>9205</b>
	700 MM DIA.	Meter	<b>6347</b>	<b>6872</b>	<b>7414</b>	<b>7959</b>	<b>8639</b>	<b>9292</b>	<b>9886</b>	<b>10770</b>	<b>11325</b>	<b>11915</b>
	800 MM DIA.	Meter	<b>7659</b>	<b>8305</b>	<b>9008</b>	<b>9867</b>	<b>10840</b>	<b>11614</b>	<b>12589</b>	<b>13381</b>	<b>14186</b>	<b>15126</b>
	900 MM DIA.	Meter	<b>9239</b>	<b>10065</b>	<b>10937</b>	<b>11886</b>	<b>12989</b>	<b>14148</b>	<b>15165</b>	<b>16125</b>	<b>17327</b>	<b>18717</b>
	1000 MM DIA.	Meter	<b>10964</b>	<b>11991</b>	<b>13174</b>	<b>14466</b>	<b>15593</b>	<b>16922</b>	<b>18063</b>	<b>19503</b>	<b>21177</b>	<b>22547</b>
	1100 MM DIA.	Meter	<b>14392</b>	<b>14673</b>	<b>15965</b>	<b>17397</b>	<b>19083</b>	<b>20295</b>	<b>22127</b>	<b>23581</b>	<b>25393</b>	<b>27293</b>
	1200 MM DIA.	Meter	<b>15682</b>	<b>16676</b>	<b>18241</b>	<b>19859</b>	<b>21516</b>	<b>23494</b>	<b>25731</b>	<b>27896</b>	<b>29873</b>	<b>31813</b>

2	Cost of laying jointing, testing to hydrostatic field test pressure including cost of site welding and fixing of polypropylene dia. Per cloth, cost of transportation of water and emptying pipe line after completion of field testing.											
	250 MM DIA.	Meter	<b>396</b>	<b>396</b>	<b>396</b>	<b>396</b>	<b>396</b>	<b>396</b>	<b>396</b>	<b>396</b>	<b>396</b>	<b>396</b>
	300 MM DIA.	Meter	<b>466</b>	<b>466</b>	<b>466</b>	<b>466</b>	<b>466</b>	<b>466</b>	<b>466</b>	<b>466</b>	<b>466</b>	<b>466</b>
	350 MM DIA.	Meter	<b>552</b>	<b>552</b>	<b>552</b>	<b>552</b>	<b>552</b>	<b>552</b>	<b>552</b>	<b>552</b>	<b>552</b>	<b>552</b>
	400 MM DIA.	Meter	<b>616</b>	<b>616</b>	<b>616</b>	<b>616</b>	<b>616</b>	<b>616</b>	<b>616</b>	<b>616</b>	<b>616</b>	<b>616</b>
	450 MM DIA.	Meter	<b>616</b>	<b>616</b>	<b>616</b>	<b>616</b>	<b>616</b>	<b>616</b>	<b>616</b>	<b>616</b>	<b>616</b>	<b>616</b>
	500 MM DIA.	Meter	<b>772</b>	<b>772</b>	<b>772</b>	<b>772</b>	<b>772</b>	<b>772</b>	<b>772</b>	<b>772</b>	<b>772</b>	<b>772</b>
	600 MM DIA.	Meter	<b>948</b>	<b>948</b>	<b>948</b>	<b>948</b>	<b>948</b>	<b>948</b>	<b>948</b>	<b>948</b>	<b>948</b>	<b>948</b>
	700 MM DIA.	Meter	<b>1106</b>	<b>1106</b>	<b>1106</b>	<b>1106</b>	<b>1106</b>	<b>1106</b>	<b>1106</b>	<b>1106</b>	<b>1106</b>	<b>1106</b>
	800 MM DIA.	Meter	<b>1257</b>	<b>1257</b>	<b>1257</b>	<b>1257</b>	<b>1257</b>	<b>1257</b>	<b>1257</b>	<b>1257</b>	<b>1257</b>	<b>1257</b>
	900 MM DIA.	Meter	<b>1478</b>	<b>1478</b>	<b>1478</b>	<b>1478</b>	<b>1478</b>	<b>1478</b>	<b>1478</b>	<b>1478</b>	<b>1478</b>	<b>1478</b>
	1000 MM DIA.	Meter	<b>1634</b>	<b>1634</b>	<b>1634</b>	<b>1634</b>	<b>1634</b>	<b>1634</b>	<b>1634</b>	<b>1634</b>	<b>1634</b>	<b>1634</b>
	1100 MM DIA.	Meter	<b>1921</b>	<b>1921</b>	<b>1921</b>	<b>1921</b>	<b>1921</b>	<b>1921</b>	<b>1921</b>	<b>1921</b>	<b>1921</b>	<b>1921</b>
	1200 MM DIA.	Meter	<b>2149</b>	<b>2149</b>	<b>2149</b>	<b>2149</b>	<b>2149</b>	<b>2149</b>	<b>2149</b>	<b>2149</b>	<b>2149</b>	<b>2149</b>
3	Conveyance of Bar Wrapped Steel Cylindrical (BWSC) pipes and accessories including loading at factory, un-loading at site and stacking for the following sizes. (minimum distance of 100 km to be considered if the distance is less by 100 km from factory to site)											
	250 MM DIA.	Per KM/M	<b>0.72</b>	<b>0.72</b>	<b>0.72</b>	<b>0.72</b>	<b>0.72</b>	<b>0.72</b>	<b>0.72</b>	<b>0.72</b>	<b>0.72</b>	<b>0.72</b>
	300 MM DIA.	Per KM/M	<b>0.72</b>	<b>0.72</b>	<b>0.72</b>	<b>0.72</b>	<b>0.72</b>	<b>0.72</b>	<b>0.72</b>	<b>0.72</b>	<b>0.72</b>	<b>0.72</b>

Public Health Items												
350 MM DIA.	Per KM/M	<b>0.97</b>	<b>0.97</b>	<b>0.97</b>	<b>0.97</b>	<b>0.97</b>	<b>0.97</b>	<b>0.97</b>	<b>0.97</b>	<b>0.97</b>	<b>0.97</b>	<b>0.97</b>
400 MM DIA.	Per KM/M	<b>1.21</b>	<b>1.21</b>	<b>1.21</b>	<b>1.21</b>	<b>1.21</b>	<b>1.21</b>	<b>1.21</b>	<b>1.21</b>	<b>1.21</b>	<b>1.21</b>	<b>1.21</b>
450 MM DIA.	Per KM/M	<b>1.58</b>	<b>1.58</b>	<b>1.58</b>	<b>1.58</b>	<b>1.58</b>	<b>1.58</b>	<b>1.58</b>	<b>1.58</b>	<b>1.58</b>	<b>1.58</b>	<b>1.58</b>
500 MM DIA.	Per KM/M	<b>1.93</b>	<b>1.93</b>	<b>1.93</b>	<b>1.93</b>	<b>1.93</b>	<b>1.93</b>	<b>1.93</b>	<b>1.93</b>	<b>1.93</b>	<b>1.93</b>	<b>1.93</b>
600 MM DIA.	Per KM/M	<b>2.06</b>	<b>2.06</b>	<b>2.06</b>	<b>2.06</b>	<b>2.06</b>	<b>2.06</b>	<b>2.06</b>	<b>2.06</b>	<b>2.06</b>	<b>2.06</b>	<b>2.06</b>
700 MM DIA.	Per KM/M	<b>2.30</b>	<b>2.30</b>	<b>2.30</b>	<b>2.30</b>	<b>2.30</b>	<b>2.30</b>	<b>2.30</b>	<b>2.30</b>	<b>2.30</b>	<b>2.30</b>	<b>2.30</b>
800 MM DIA.	Per KM/M	<b>3.02</b>	<b>3.02</b>	<b>3.02</b>	<b>3.02</b>	<b>3.02</b>	<b>3.02</b>	<b>3.02</b>	<b>3.02</b>	<b>3.02</b>	<b>3.02</b>	<b>3.02</b>
900 MM DIA.	Per KM/M	<b>3.27</b>	<b>3.27</b>	<b>3.27</b>	<b>3.27</b>	<b>3.27</b>	<b>3.27</b>	<b>3.27</b>	<b>3.27</b>	<b>3.27</b>	<b>3.27</b>	<b>3.27</b>
1000 MM DIA.	Per KM/M	<b>3.75</b>	<b>3.75</b>	<b>3.75</b>	<b>3.75</b>	<b>3.75</b>	<b>3.75</b>	<b>3.75</b>	<b>3.75</b>	<b>3.75</b>	<b>3.75</b>	<b>3.75</b>
1100 MM DIA.	Per KM/M	<b>8.37</b>	<b>8.37</b>	<b>8.37</b>	<b>8.37</b>	<b>8.37</b>	<b>8.37</b>	<b>8.37</b>	<b>8.37</b>	<b>8.37</b>	<b>8.37</b>	<b>8.37</b>
1200 MM DIA.	Per KM/M	<b>11.68</b>	<b>11.68</b>	<b>11.68</b>	<b>11.68</b>	<b>11.68</b>	<b>11.68</b>	<b>11.68</b>	<b>11.68</b>	<b>11.68</b>	<b>11.68</b>	<b>11.68</b>

Note: The above rates of BWSC pipes are based on the following raw materials' cost.

HR coil - Rs.49,375/- per MT(Excluding all taxes and freight).

Wire rods - Rs.48,500/- per MT (Excluding all taxes and freight).

Cement Cost Rs. 3900/-per MT(Excluding all taxes and freight).

The rates may be revised depending upon the increase/ decrease in the cost of raw materials (landed price) as per the following method.

Revised Cost =Cost as per the above table +R1+R2+R3.

R1= Variation (increase / decrease) in cost (Rs. per meter) due to change in the cost of HR Plate  $= (H2-H1)/1000 \times Wh$ .

R2= Variation (increase / decrease) in cost (Rs. per meter) due to change in the cost of wire rods  $= (W2-W1)/1000 \times Ww$ .

R3= Variation (increase / decrease) in cost (Rs. per meter) due to change in the cost of Cement  $= (C2-C1)/1000 \times Wc$   
 H1 = Rs. 49,375/- H2 = Cost of HR Plate (Rs. per MT excluding all taxes and freight) at the time of preparation of estimate.

Wire rods (Rs. per MT excluding all taxes and freight) at the time of preparation of estimate.

Cement (Rs. per MT excluding all taxes and freight) at the time of preparation of estimate  
 meter of pipe.

Wc= Weight of Cement required (Kg.) per Meter of pipe.

Ww = Weight of wire rods required (kg) per meter of pipe.

W1 = Rs. 48,500/- W2 = Cost of  
 C1 = Rs. 3900/- C2 = Cost of  
 Wh=Weight of HR Plate required (Kg.) per

Note: 1) The above formula for calculation of revised cost to be used for preparation of Estimates only.

**14. S o R FOR M.S. PIPES FOR THE YEAR 2019-20**

Sl.No.	Description	Unit	Thickness in mm	Rate
1	Manufacture, supply and delivery of M.S Spirally Welded Pipes conforming to IS: 3589/2001 including in lining with cement mortar (1:2) 15mm thick using 4 numbers of 6mm dia. M.S. Rings at each end of the pipe and out coating with cement mortar (1:3) 30mm thick by short crating or gunetting duly providing wire mesh of size 50x50x3mm including cost of all materials, labor charges, transportation to anywhere in AP, but excluding all taxes.			
	500 mm dia.	Meter	8.00	<b>9174</b>
	600 mm dia.	Meter	8.00	<b>10907</b>
	700 mm dia.	Meter	8.00	<b>12719</b>
	700 mm dia.	Meter	10.00	<b>15685</b>
	800 mm dia.	Meter	8.00	<b>14589</b>
	800 mm dia.	Meter	10.00	<b>16808</b>
	800 mm dia.	Meter	12.00	<b>19819</b>
	900 mm dia.	Meter	8.00	<b>16293</b>
	900 mm dia.	Meter	10.00	<b>18784</b>
	900 mm dia.	Meter	12.00	<b>21281</b>
	1000 mm dia.	Meter	8.00	<b>18275</b>
	1000 mm dia.	Meter	10.00	<b>21031</b>
	1000 mm dia.	Meter	12.00	<b>23706</b>
	1000 mm dia.	Meter	14.00	<b>27296</b>
	1100 mm dia.	Meter	8.00	<b>20982</b>
	1100 mm dia.	Meter	10.00	<b>24491</b>
	1100 mm dia.	Meter	12.00	<b>27526</b>
	1100 mm dia.	Meter	14.00	<b>31715</b>
	1100 mm dia.	Meter	16.00	<b>35919</b>
	1200 mm dia.	Meter	8.00	<b>23408</b>
	1200 mm dia.	Meter	10.00	<b>27485</b>



	1200 mm dia.	Meter	12.00	<b>30812</b>
	1200 mm dia.	Meter	14.00	<b>34136</b>
	1200 mm dia.	Meter	16.00	<b>38650</b>
	1200 mm dia.	Meter	18.00	<b>43176</b>
	1300 mm dia.	Meter	8.00	<b>25871</b>
	1300 mm dia.	Meter	10.00	<b>29660</b>
	1300 mm dia.	Meter	12.00	<b>33552</b>
	1300 mm dia.	Meter	14.00	<b>37141</b>
	1300 MM DIA.	Meter	16.00	<b>40745</b>
	1300 MM DIA.	Meter	18.00	<b>45503</b>
	1300 MM DIA.	Meter	20.00	<b>50276</b>
	1400 MM DIA.	Meter	8.00	<b>27792</b>
	1400 MM DIA.	Meter	10.00	<b>31860</b>
	1400 MM DIA.	Meter	12.00	<b>35794</b>
	1400 MM DIA.	Meter	14.00	<b>39657</b>
	1400 MM DIA.	Meter	16.00	<b>43528</b>
	1400 MM DIA.	Meter	18.00	<b>48604</b>
	1400 MM DIA.	Meter	20.00	<b>53692</b>
	1400 MM DIA.	Meter	22.00	<b>58794</b>
	1500 MM DIA.	Meter	8.00	<b>29724</b>
	1500 MM DIA.	Meter	10.00	<b>34076</b>
	1500 MM DIA.	Meter	12.00	<b>38315</b>
	1500 MM DIA.	Meter	14.00	<b>42444</b>
	1500 MM DIA.	Meter	16.00	<b>46588</b>
	1500 MM DIA.	Meter	18.00	<b>50735</b>
	1500 MM DIA.	Meter	20.00	<b>56032</b>
	1500 MM DIA.	Meter	22.00	<b>61343</b>
	1500 MM DIA.	Meter	24.00	<b>66666</b>
	1600 MM DIA.	Meter	8.00	<b>31694</b>
	1600 MM DIA.	Meter	10.00	<b>36167</b>
	1600 MM DIA.	Meter	12.00	<b>40556</b>
	1600 MM DIA.	Meter	14.00	<b>44958</b>

	1600 MM DIA.	Meter	16.00	<b>49369</b>
	1600 MM DIA.	Meter	18.00	<b>53790</b>
	1600 MM DIA.	Meter	20.00	<b>59397</b>
	1600 MM DIA.	Meter	22.00	<b>65020</b>
	1600 MM DIA.	Meter	24.00	<b>70655</b>
	1600 MM DIA.	Meter	26.00	<b>76302</b>
	1700 MM DIA.	Meter	8.00	<b>33543</b>
	1700 MM DIA.	Meter	10.00	<b>38415</b>
	1700 MM DIA.	Meter	12.00	<b>43074</b>
	1700 MM DIA.	Meter	14.00	<b>47747</b>
	1700 MM DIA.	Meter	16.00	<b>52424</b>
	1700 MM DIA.	Meter	18.00	<b>57117</b>
	1700 MM DIA.	Meter	20.00	<b>63067</b>
	1700 MM DIA.	Meter	22.00	<b>69035</b>
	1700 MM DIA.	Meter	24.00	<b>75009</b>
	1700 MM DIA.	Meter	26.00	<b>81005</b>
	1700 MM DIA.	Meter	28.00	<b>87009</b>
	1800 MM DIA.	Meter	8.00	<b>35539</b>
	1800 MM DIA.	Meter	10.00	<b>40664</b>
	1800 MM DIA.	Meter	12.00	<b>45593</b>
	1800 MM DIA.	Meter	14.00	<b>50537</b>
	1800 MM DIA.	Meter	16.00	<b>55482</b>
	1800 MM DIA.	Meter	18.00	<b>60447</b>
	1800 MM DIA.	Meter	20.00	<b>65419</b>
	1800 MM DIA.	Meter	22.00	<b>71592</b>
	1800 MM DIA.	Meter	24.00	<b>77780</b>
	1800 MM DIA.	Meter	26.00	<b>83978</b>
	1800 MM DIA.	Meter	28.00	<b>90192</b>
	1800 MM DIA.	Meter	30.00	<b>96417</b>
	1900 MM DIA.	Meter	8.00	<b>36417</b>
	1900 MM DIA.	Meter	10.00	<b>42637</b>
	1900 MM DIA.	Meter	12.00	<b>47832</b>
	1900 MM DIA.	Meter	14.00	<b>53043</b>

	1900 MM DIA.	Meter	16.00	<b>58264</b>
	1900 MM DIA.	Meter	18.00	<b>63499</b>
	1900 MM DIA.	Meter	20.00	<b>68737</b>
	1900 MM DIA.	Meter	22.00	<b>75218</b>
	1900 MM DIA.	Meter	24.00	<b>81712</b>
	1900 MM DIA.	Meter	26.00	<b>88221</b>
	1900 MM DIA.	Meter	28.00	<b>94741</b>
	1900 MM DIA.	Meter	30.00	<b>101277</b>
	1900 MM DIA.	Meter	32.00	<b>107821</b>
	2000 MM DIA.	Meter	8.00	<b>38111</b>
	2000 MM DIA.	Meter	10.00	<b>44612</b>
	2000 MM DIA.	Meter	12.00	<b>50078</b>
	2000 MM DIA.	Meter	14.00	<b>55559</b>
	2000 MM DIA.	Meter	16.00	<b>61050</b>
	2000 MM DIA.	Meter	18.00	<b>66553</b>
	2000 MM DIA.	Meter	20.00	<b>72060</b>
	2000 MM DIA.	Meter	22.00	<b>77542</b>
	2000 MM DIA.	Meter	24.00	<b>84223</b>
	2000 MM DIA.	Meter	26.00	<b>90916</b>
	2000 MM DIA.	Meter	28.00	<b>97625</b>
	2000 MM DIA.	Meter	30.00	<b>104343</b>
	2000 MM DIA.	Meter	32.00	<b>111076</b>
	2000 MM DIA.	Meter	34.00	<b>117820</b>
	2100 MM DIA.	Meter	8.00	<b>40033</b>
	2100 MM DIA.	Meter	10.00	<b>46859</b>
	2100 MM DIA.	Meter	12.00	<b>52597</b>
	2100 MM DIA.	Meter	14.00	<b>58333</b>
	2100 MM DIA.	Meter	16.00	<b>64105</b>
	2100 MM DIA.	Meter	18.00	<b>69876</b>
	2100 MM DIA.	Meter	20.00	<b>75657</b>
	2100 MM DIA.	Meter	22.00	<b>81453</b>
	2100 MM DIA.	Meter	24.00	<b>88469</b>
	2100 MM DIA.	Meter	26.00	<b>95496</b>
	2100 MM DIA.	Meter	28.00	<b>102537</b>

	2100 MM DIA.	Meter	30.00	<b>109590</b>
	2100 MM DIA.	Meter	32.00	<b>116657</b>
	2100 MM DIA.	Meter	34.00	<b>123737</b>
	2100 MM DIA.	Meter	36.00	<b>130826</b>
	2200 MM DIA.	Meter	8.00	<b>41723</b>
	2200 MM DIA.	Meter	10.00	<b>48833</b>
	2200 MM DIA.	Meter	12.00	<b>54844</b>
	2200 MM DIA.	Meter	14.00	<b>60859</b>
	2200 MM DIA.	Meter	16.00	<b>66891</b>
	2200 MM DIA.	Meter	18.00	<b>72927</b>
	2200 MM DIA.	Meter	20.00	<b>78981</b>
	2200 MM DIA.	Meter	22.00	<b>85047</b>
	2200 MM DIA.	Meter	26.00	<b>99698</b>
	2200 MM DIA.	Meter	28.00	<b>107042</b>
	2200 MM DIA.	Meter	30.00	<b>114397</b>
	2200 MM DIA.	Meter	32.00	<b>121767</b>
	2200 MM DIA.	Meter	34.00	<b>129153</b>
	2200 MM DIA.	Meter	36.00	<b>136548</b>
	2200 MM DIA.	Meter	38.00	<b>143958</b>
	2300 MM DIA.	Meter	10.00	<b>46742</b>
	2300 MM DIA.	Meter	12.00	<b>57359</b>
	2300 MM DIA.	Meter	16.00	<b>68771</b>
	2300 MM DIA.	Meter	18.00	<b>76255</b>
	2300 MM DIA.	Meter	20.00	<b>82579</b>
	2300 MM DIA.	Meter	22.00	<b>88908</b>
	2300 MM DIA.	Meter	26.00	<b>101701</b>
	2300 MM DIA.	Meter	28.00	<b>109638</b>
	2300 MM DIA.	Meter	30.00	<b>117634</b>
	2300 MM DIA.	Meter	32.00	<b>126472</b>
	2300 MM DIA.	Meter	34.00	<b>133541</b>
	2300 MM DIA.	Meter	36.00	<b>141544</b>
	2300 MM DIA.	Meter	38.00	<b>149604</b>
	2300 MM DIA.	Meter	40.00	<b>157620</b>

	2400MM DIA.	Meter	10.00	<b>53054</b>
	2400 MM DIA.	Meter	12.00	<b>59602</b>
	2400 MM DIA.	Meter	14.00	<b>67090</b>
	2400 MM DIA.	Meter	16.00	<b>73663</b>
	2400 MM DIA.	Meter	18.00	<b>80239</b>
	2400 MM DIA.	Meter	20.00	<b>86836</b>
	2400 MM DIA.	Meter	22.00	<b>94282</b>
	2400 MM DIA.	Meter	26.00	<b>102031</b>
	2400 MM DIA.	Meter	28.00	<b>109032</b>
	2400 MM DIA.	Meter	30.00	<b>116046</b>
	2400 MM DIA.	Meter	32.00	<b>123070</b>
	2400 MM DIA.	Meter	34.00	<b>130104</b>
	2400 MM DIA.	Meter	36.00	<b>137154</b>
	2400 MM DIA.	Meter	38.00	<b>144211</b>
	2400 MM DIA.	Meter	40.00	<b>145016</b>
	2400 MM DIA.	Meter	42.00	<b>152091</b>
	2500 MM DIA.	Meter	10.00	<b>55304</b>
	2500 MM DIA.	Meter	14.00	<b>68948</b>
	2500 MM DIA.	Meter	16.00	<b>75787</b>
	2500 MM DIA.	Meter	18.00	<b>82638</b>
	2500 MM DIA.	Meter	20.00	<b>89498</b>
	2500 MM DIA.	Meter	22.00	<b>96371</b>
	2500 MM DIA.	Meter	28.00	<b>121251</b>
	2500 MM DIA.	Meter	30.00	<b>129573</b>
	2500 MM DIA.	Meter	34.00	<b>142050</b>
	2500 MM DIA.	Meter	36.00	<b>150945</b>
	2500 MM DIA.	Meter	38.00	<b>159896</b>
	2500 MM DIA.	Meter	40.00	<b>168860</b>
	2500 MM DIA.	Meter	42.00	<b>177871</b>
	2500 MM DIA.	Meter	44.00	<b>186831</b>
	2500 MM DIA.	Meter	46.00	<b>195848</b>
	2600 MM DIA.	Meter	12.00	<b>58835</b>
	2600 MM DIA.	Meter	14.00	<b>71462</b>
	2600 MM DIA.	Meter	16.00	<b>78573</b>

	2600 MM DIA.	Meter	18.00	<b>85692</b>
	2600 MM DIA.	Meter	20.00	<b>92824</b>
	2600 MM DIA.	Meter	22.00	<b>99963</b>
	2600 MM DIA.	Meter	32.00	<b>143019</b>
	2600 MM DIA.	Meter	34.00	<b>151672</b>
	2600 MM DIA.	Meter	36.00	<b>160331</b>
	2600 MM DIA.	Meter	38.00	<b>169007</b>
	2600 MM DIA.	Meter	40.00	<b>177696</b>
	2600 MM DIA.	Meter	42.00	<b>186398</b>
	2600 MM DIA.	Meter	44.00	<b>195113</b>
	2600 MM DIA.	Meter	46.00	<b>203838</b>
	2600 MM DIA.	Meter	48.00	<b>212580</b>
2	Cost of Laying, Jointing, Hydrostatic Filed Test Pressure, Including Cost of Site Welding, Jointing Materials And Cost of Transportation of Water Including Emptying Pipe Line After Completion Of Field Testing			
	400 MM DIA.	Meter		<b>682</b>
	500 MM DIA.	Meter		<b>849</b>
	600 MM DIA.	Meter		<b>1044</b>
	700 MM DIA.	Meter		<b>1212</b>
	800 MM DIA.	Meter		<b>1383</b>
	900 MM DIA.	Meter		<b>1626</b>
	1000 MM DIA.	Meter		<b>1795</b>
	1100 MM DIA.	Meter		<b>2112</b>
	1200 MM DIA.	Meter		<b>2366</b>
	1300 MM DIA.	Meter		<b>2719</b>
	1400 MM DIA.	Meter		<b>3130</b>
	1500 MM DIA.	Meter		<b>3540</b>
	1600 MM DIA.	Meter		<b>3731</b>
	1700 MM DIA.	Meter		<b>3946</b>
	1800 MM DIA.	Meter		<b>4463</b>
	1900 MM DIA.	Meter		<b>5201</b>
	2000 MM DIA.	Meter		<b>6531</b>
	2100 MM DIA.	Meter		<b>7472</b>
	2200 MM DIA.	Meter		<b>8393</b>
	2300 MM DIA.	Meter		<b>10239</b>
	2400 MM DIA.	Meter		<b>12521</b>

	2500 MM DIA.	Meter		<b>14542</b>
	2600 MM DIA.	Meter		<b>16370</b>

The above rates of MS Spiral pipes are based on the following raw materials cost.

MS Plates = Rs47,000/- Per MT.(Excluding all taxes and freight).

The rates may be revised depending upon the increase/decrease in the cost of raw materials (landed price) as per the following method.

Revised Cost = Cost of the pipe as per the above table +R<sub>1</sub>

$R_1 = (M_2 - M_1) / 1000 \times W_m$

M<sub>1</sub> = Rs 47,000/-

M<sub>2</sub> = Cost of MS Plates at the time of preparation of estimate excluding all taxes and freight

W<sub>m</sub> = Weight of MS Plates in Kg's per meter of pipe

**15. S.S. RATES FOR H.D.P.E PIPES FOR THE YEAR 2019-20. (PE - 80 Grade)**

Sl.No	Description	4.0 kg/sqcm
1	Manufacture, Supply, & Delivery of HDPE pipes conforming to IS 4984 - 1995 including transportation to anywhere in A.P, excluding all taxes (Supply up to 90 mm dia. in coil & above 90 mm dia. straight Length)	
	Rate per Meter	
	OD 40 mm	<b>34</b>
	OD 50 mm	<b>49</b>
	OD 63 mm	<b>67</b>
	OD 75 mm	<b>92</b>
	OD 90 mm	<b>132</b>
	OD 110 mm	<b>198</b>
	OD 125 mm	<b>254</b>
	OD 140 mm	<b>316</b>
	OD 160 mm	<b>413</b>
	OD 180 mm	<b>522</b>
	OD 200 mm	<b>637</b>
	OD 225 mm	<b>808</b>
	OD 250 mm	<b>1001</b>
	OD 280 mm	<b>1247</b>
	OD 315 mm	<b>1585</b>
	OD 355 mm	<b>2073</b>
	OD 400 mm	<b>2686</b>
	OD 450 mm	<b>3414</b>
	OD 500 mm	<b>4194</b>
	OD 560 mm	<b>5185</b>
	OD 630 mm	<b>6558</b>
	OD 710 mm	<b>8333</b>
	OD 800 mm	<b>10547</b>
	OD 900 mm	<b>13364</b>
	OD 1000 mm	<b>16458</b>

Note: - Reliance Industries Resin cost adopted for the above rates are For PE - 80 grade Rs.88800/- per MT. (Excluding all taxes).

The variation in cost of HDPE pipes due to increase / decrease in raw material cost shall be allowed as per the following price variation formula.

$$P2 = P1 + (A2 - A1) / 1000 \times M \times 0.95 \text{ (for increase in raw material cost)}$$

$$P2 = P1 - (A1 - A2) / 1000 \times M \times 0.95 \text{ (for decrease in raw material cost)}$$

P2 = Revised pipe price in Rs. per Meter (Excluding all taxes).

P1 = Existing pipe price in Rs. per Meter (Excluding all taxes).

A2 = Revised price of raw material Rs. per MT excluding all taxes.

A1 = Existing price of raw material Rs. Per MT excluding all taxes

M = Weight of pipe in Kg's per Meter as per weight chart.

The above formula for calculation of revised cost to be used for preparation of Estimates only.



**16. S o R FOR H.D.P.E PIPES FOR THE YEAR 2019-20. (PE - 100 Grades)**

Sl. No.	Description	6.0 kg/ sqcm	8.0 kg/ sqcm	10.0 kg/ sqcm	12.5 kg/ sqcm	16.0 kg/ sqcm
<b>1</b>	<b>Manufacture, Supply, &amp; Delivery of HDPE Pipes conforming to IS 4984 - 1995 including transportation to anywhere in A.P, excluding all taxes (Supply up to 90 mm dia. in coil &amp; above 90 mm dia. straight length.)</b>					
	<b>Rate per Meter</b>					
	OD 20 mm					<b>23</b>
	OD 25 mm					<b>35</b>
	OD 32 mm			<b>38</b>	<b>42</b>	<b>57</b>
	OD 40 mm		<b>49</b>	<b>58</b>	<b>64</b>	<b>88</b>
	OD 50 mm	<b>60</b>	<b>73</b>	<b>89</b>	<b>101</b>	<b>136</b>
	OD 63 mm	<b>89</b>	<b>112</b>	<b>136</b>	<b>158</b>	<b>215</b>
	OD 75 mm	<b>126</b>	<b>160</b>	<b>191</b>	<b>229</b>	<b>304</b>
	OD 90 mm	<b>177</b>	<b>228</b>	<b>273</b>	<b>326</b>	<b>438</b>
	OD 110 mm	<b>269</b>	<b>340</b>	<b>404</b>	<b>498</b>	<b>666</b>
	OD 125 mm	<b>342</b>	<b>439</b>	<b>527</b>	<b>662</b>	<b>859</b>
	OD 140 mm	<b>429</b>	<b>548</b>	<b>661</b>	<b>837</b>	<b>1076</b>
	OD 160 mm	<b>563</b>	<b>716</b>	<b>859</b>	<b>1081</b>	<b>1407</b>
	OD 180 mm	<b>707</b>	<b>905</b>	<b>1087</b>	<b>1376</b>	<b>1777</b>
	OD 200 mm	<b>876</b>	<b>1119</b>	<b>1341</b>	<b>1709</b>	<b>2187</b>
	OD 225 mm	<b>1133</b>	<b>1447</b>	<b>1740</b>	<b>2147</b>	<b>2773</b>
	OD 250 mm	<b>1394</b>	<b>1788</b>	<b>2149</b>	<b>2665</b>	<b>3420</b>
	OD 280 mm	<b>1747</b>	<b>2238</b>	<b>2689</b>	<b>3329</b>	<b>4289</b>
	OD 315 mm	<b>2214</b>	<b>2834</b>	<b>3405</b>	<b>4197</b>	<b>5422</b>
	OD 355 mm	<b>2775</b>	<b>3548</b>	<b>4264</b>	<b>5148</b>	<b>6919</b>
	OD 400 mm	<b>3661</b>	<b>4673</b>	<b>5604</b>	<b>7380</b>	<b>8945</b>
	OD 450 mm	<b>4543</b>	<b>5820</b>	<b>6996</b>	<b>9331</b>	<b>11276</b>
	OD 500 mm	<b>5617</b>	<b>7176</b>	<b>8629</b>	<b>11525</b>	<b>13767</b>
	OD 560 mm	<b>6472</b>	<b>8275</b>	<b>9880</b>	<b>12767</b>	
	OD 630 mm	<b>8157</b>	<b>10470</b>	<b>12517</b>	<b>15013</b>	

	OD 710 mm	<b>10380</b>	<b>13264</b>	<b>15898</b>		
	OD 800 mm	<b>13172</b>	<b>16844</b>	<b>20254</b>		
	OD 900 mm	<b>16686</b>	<b>21323</b>			
	OD 1000 mm	<b>20577</b>				

Note: Reliance Industries Resin cost adopted for the above rates are

For PE - 100 grade Rs..90110/-per MT. (Excluding all taxes).

The variation in cost of HDPE pipes due to increase / decrease in raw material cost shall be allowed as per the following price variation formula.

$P2 = P1 + (A2 - A1) / 1000 \times M \times 0.95$ (for increase in raw material cost)

$P2 = P1 - (A1 - A2) / 1000 \times M \times 0.95$ (for decrease in raw material cost)

P2 = Revised pipe price in Rs. per Meter (Excluding all taxes).

P1 = Existing pipe price in Rs. per Meter (Excluding all taxes).

A2 = Revised price of raw material Rs. per MT excluding all taxes

A1 = Existing price of raw material Rs. per MT excluding all taxes

M = Weight of pipe in Kg's per Meter as per weight chart.

The above formula for calculation of revised cost to be used for preparation of Estimates only.

**17.HDPE PIPES – (PE –100 Grade) SEWER LINES FOR THE YEAR 2019-20**

Sl. No	Description	6.0 kg/ sqcm	8.0 kg/ sqcm	10.0 kg/ sqcm	12.5 kg/ sqcm	16.0 kg/ sqcm
1	Manufacture, Supply, & Delivery of HDPE Pipes are conforming to IS 14333 - 2000 for using underground drainage and sewerage systems including transportation to anywhere in A.P, excluding all taxes (Supply up to 90 mm drain coil & above 90 mm dia. straight length)					
	Rate per Meter					
	OD 63mm	<b>96</b>	<b>121</b>	<b>145</b>	<b>173</b>	<b>207</b>
	OD 75 mm	<b>136</b>	<b>174</b>	<b>207</b>	<b>247</b>	<b>294</b>
	OD 90 mm	<b>193</b>	<b>248</b>	<b>294</b>	<b>350</b>	<b>424</b>
	OD 110 mm	<b>278</b>	<b>351</b>	<b>419</b>	<b>503</b>	<b>600</b>
	OD 125 mm	<b>355</b>	<b>453</b>	<b>542</b>	<b>642</b>	<b>776</b>
	OD 140 mm	<b>444</b>	<b>564</b>	<b>679</b>	<b>809</b>	<b>974</b>
	OD 160 mm	<b>578</b>	<b>737</b>	<b>886</b>	<b>1047</b>	<b>1267</b>
	OD 180 mm	<b>728</b>	<b>935</b>	<b>1121</b>	<b>1332</b>	<b>1603</b>
	OD 200 mm	<b>902</b>	<b>1153</b>	<b>1382</b>	<b>1649</b>	<b>1976</b>
	OD 225 mm	<b>1138</b>	<b>1453</b>	<b>1748</b>	<b>2079</b>	<b>2504</b>
	OD 250 mm	<b>1404</b>	<b>1798</b>	<b>2157</b>	<b>2567</b>	<b>3084</b>
	OD 280 mm	<b>1755</b>	<b>2248</b>	<b>2690</b>	<b>3227</b>	<b>3873</b>
	OD 315 mm	<b>2222</b>	<b>2847</b>	<b>3432</b>	<b>4072</b>	<b>4897</b>
	OD 355 mm	<b>2815</b>	<b>3606</b>	<b>4338</b>	<b>5177</b>	<b>6213</b>
	OD 400 mm	<b>3728</b>	<b>4771</b>	<b>5728</b>	<b>6829</b>	<b>8190</b>
	OD 450 mm	<b>4705</b>	<b>6035</b>	<b>7253</b>	<b>8628</b>	
	OD 500 mm	<b>5816</b>	<b>7440</b>	<b>8946</b>	<b>10664</b>	
	OD 560 mm	<b>7272</b>	<b>9324</b>	<b>11224</b>		
	OD 630 mm	<b>9207</b>	<b>11802</b>	<b>14180</b>		
	OD 710 mm	<b>11961</b>	<b>15324</b>			
	OD 800 mm	<b>15176</b>				
	OD 900 mm	<b>19221</b>				
	OD 1000 mm	<b>23748</b>				

Note: Reliance Industries Resin cost adopted for the above rates are

For PE - 100 grade Rs.90110/-per MT. (Excluding all taxes).

The variation in cost of HDPE pipes due to increase / decrease in raw material cost shall be

allowed as per the following price variation formula.

$$P2 = P1 + (A2 - A1) / 1000 \times M \times 0.95 \text{ (for increase in raw material cost)}$$

$$P2 = P1 - (A1 - A2) / 1000 \times M \times 0.95 \text{ (for decrease in raw material cost)}$$

P2 = Revised pipe price in Rs. per Meter excluding all taxes

P1 = Existing pipe price in Rs. per Meter excluding all taxes

A2 = Revised price of raw material Rs. per MT excluding all taxes

A1 = Existing price of raw material Rs. per MT excluding all taxes

M = Weight of pipe in Kgs per Meter as per weight chart.

The above formula for calculation of revised cost to be used for preparation of Estimates only.

**18. S o R FOR H.D.P.E- (PE –100 Grade) FITTINGS FOR THE YEAR 2019-20.**

I	Manufacture, Supply, & Delivery of HDPE (PE –100 Grade) fittings conforming to IS 4984 - 1995 including transportation to anywhere in A.P. Excluding all taxes.	
I (a)	<b>PIPE ENDS LONG NECK</b>	<b>Rate per Each</b>
	OD 50 mm	<b>63</b>
	OD 63 mm	<b>80</b>
	OD 75 mm	<b>96</b>
	OD 90 mm	<b>134</b>
	OD 110 mm	<b>185</b>
	OD 125 mm	<b>333</b>
	OD 140 mm	<b>312</b>
	OD 160 mm	<b>436</b>
	OD 180 mm	<b>663</b>
	OD 200 mm	<b>853</b>
	OD 225 mm	<b>980</b>
	OD 250 mm	<b>1148</b>
	OD 280 mm	<b>1282</b>
	OD 315 mm	<b>1478</b>
	OD 355 mm	<b>3091</b>
	OD 400 mm	<b>4119</b>
	OD 450 mm	<b>6852</b>
	OD 500 mm	<b>7627</b>
(b)	<b>MS FLANGES</b>	<b>Rate per Each</b>
	OD 50 mm	<b>77</b>
	OD 63 mm	<b>97</b>
	OD 75 mm	<b>124</b>
	OD 90 mm	<b>134</b>
	OD 110 mm	<b>141</b>
	OD 125 mm	<b>193</b>
	OD 140 mm	<b>209</b>
	OD 160 mm	<b>275</b>
	OD 180 mm	<b>387</b>
	OD 200 mm	<b>502</b>
	OD 225 mm	<b>629</b>
	OD 250 mm	<b>742</b>
	OD 280 mm	<b>842</b>
	OD 315 mm	<b>990</b>
	OD 355 mm	<b>1677</b>
	OD 400 mm	<b>2080</b>
	OD 450 mm	<b>2715</b>
	OD 500 mm	<b>3109</b>
(c)	<b>END CAPS</b>	<b>Rate per Each</b>

	OD 50 mm	<b>46</b>
	OD 63 mm	<b>55</b>
	OD 75 mm	<b>69</b>
	OD 90 mm	<b>92</b>
	OD 110 mm	<b>105</b>
	OD 125 mm	<b>145</b>
	OD 140 mm	<b>170</b>
	OD 160 mm	<b>259</b>
	OD 180 mm	<b>421</b>
	OD 200 mm	<b>461</b>
	OD 225 mm	<b>480</b>
	OD 250 mm	<b>682</b>
	OD 280 mm	<b>698</b>
	OD 315 mm	<b>954</b>
	OD 355 mm	<b>1473</b>
	OD 400 mm	<b>2573</b>
	OD 450 mm	<b>4138</b>
	OD 500 mm	<b>7627</b>
(d)	<b>REDUCERS</b>	<b>Rate per Each</b>
	OD 50 mm x 63 mm	<b>63</b>
	OD 63 mm x 75 mm	<b>92</b>
	OD 75 mm x 90 mm	<b>151</b>
	OD 90 mm x 110 mm	<b>208</b>
	OD 110 mm x 125 mm	<b>318</b>
	OD 125 mm x 140 mm	<b>440</b>
	OD 140 mm x 160 mm	<b>614</b>
	OD 160 mm x 180 mm	<b>850</b>
	OD 180 mm x 200 mm	<b>1097</b>
	OD 200 mm x 225 mm	<b>1348</b>
	OD 225 mm x 250 mm	<b>1837</b>
	OD 250 mm x 280 mm	<b>2608</b>
	OD 280 mm x 315 mm	<b>3688</b>
	OD 315 mm x 355 mm	<b>4230</b>
	OD 355 mm x 400 mm	<b>5968</b>
	OD 400 mm x 450 mm	<b>6192</b>
	OD 450 mm x 500 mm	<b>7938</b>

(e)	<b>TEES</b>	<b>Rate per Each</b>
	OD 50 mm	<b>88</b>
	OD 63 mm	<b>140</b>
	OD 75 mm	<b>170</b>
	OD 90 mm	<b>298</b>

	OD 110 mm	<b>353</b>
	OD 125 mm	<b>531</b>
	OD 140 mm	<b>732</b>
	OD 160 mm	<b>1261</b>
	OD 180 mm	<b>1710</b>
	OD 200 mm	<b>2355</b>
	OD 225 mm	<b>3344</b>
	OD 250 mm	<b>4579</b>
	OD 280 mm	<b>6411</b>
	OD 315 mm	<b>9136</b>
	OD 355 mm	<b>13029</b>
	OD 400 mm	<b>19083</b>
	OD 450 mm	<b>27106</b>
	OD 500 mm	<b>37227</b>
(f)	BENDS Rate per Each	
	OD 50 mm	<b>55</b>
	OD 63 mm	<b>123</b>
	OD 75 mm	<b>161</b>
	OD 90 mm	<b>274</b>
	OD 110 mm	<b>362</b>
	OD 125 mm	<b>534</b>
	OD 140 mm	<b>703</b>
	OD 160 mm	<b>1049</b>
	OD 180 mm	<b>1506</b>
	OD 200 mm	<b>2039</b>
	OD 225 mm	<b>2894</b>
	OD 250 mm	<b>3966</b>
	OD 280 mm	<b>5718</b>
	OD 315 mm	<b>7909</b>
	OD 355 mm	<b>10963</b>
	OD 400 mm	<b>16538</b>
	OD 450 mm	<b>24312</b>
	OD 500 mm	<b>32960</b>

II	Providing and Fixing electro Fusion Ferrule Tapping saddle manufactured from virgin resin of PE-80/PE-100 having blue/black color using food grade compounded raw material with quality assurance certificate from quality agencies like CIPET etc. For usage in drinking water system and having working pressure of 10 bar. The cost shall include testing of all materials, labor all taxes (central & state), inspection charges, transportation up to site, transit insurance, loading, unloading, stacking, providing and fixing etc. Complete as specified and directed by the Departmental Engineers.	
	SIZE	Rate Each
	(Main pipe outer diameter in mm & Tapping size in Inches)	
	63x1/2"	967
	63 x3/4"	967
	63 x1"	967
	63 x1/2"	967
	75 x1/2"	967
	75 x3/4"	967
	75 x1	967
	90 x1/2"	967
	90 x3/4"	967
	90 x1"	967
	90 x 1 1/4"	1254
	90 x 1 1/2"	1254
	90 x2"	1254
	110x1/2"	967
	110 x3/4"	967
	110 x1"	967
	110 x 1 1/4"	1254
	110x1 1/2"	1254
	110x2"	1254
	160 x1/2"	967
	160 x3/4"	967
	160 x1"	967
	160 x 1 1/4"	1371
	160 x 1 1/2"	1371
	160 x 2"	1371
	200 x 1/2"	1371
	200 x 3/4"	1371



	200 x 1"	1371
	200 x 1 1/4"	1973
	200 x 2"	1973
	250 x 1/2"	1390
	250 x 3/4"	1390
	250 x 1"	1390
	250 x 1 1/4"	2009
	250 x 1 1/2"	2009
	250 x 2"	2009
	315 x 1/2"	1655
	315 x 3/4"	1655
	315x1"	1655
	315x1 1/4"	2248
	315x1 1/2"	2248
	315x2"	2248

**19. S o R FOR Double Wall Corrugated (DWC) Pipes FOR THE YEAR 2019-20**

Sl.No.	Description	Unit	SoR RATES 2019-20
1	2	3	4
I	Manufacture, supply, & delivery of (DWC) structured wall polyethylene/polypropylene piping system with non smooth external annular corrugated and smooth internal surface (Double Wall) for non pressure sewage & Drainage application pipes of standard length 6 m, grade conforming to IS 16098 (part-II: 2013) excluding transportation to anywhere in A.P, excluding all taxes.	Meter	
	Inner Dia. (mm)		
	Stiffness Class SN-8		
	100		<b>156</b>
	135		<b>237</b>
	150		<b>289</b>
	170		<b>349</b>
	200		<b>479</b>
	250		<b>740</b>
	300		<b>995</b>
	400		<b>1,708</b>
	500		<b>2,624</b>
	600		<b>4,523</b>
	800		<b>7,499</b>
	1000		<b>12,212</b>

**20. SoR FOR PVC PIPES FOR THE YEAR 2019-20**

Sl. No.	Description	TEST PRESSURE		
		4.0 Kgs/cm <sup>2</sup>	6 Kgs/cm <sup>2</sup>	10 Kgs/cm <sup>2</sup>
1	Manufacture, Supply and Delivery of Unplasticised PVCs Pipes for potable water supplies conforming to IS : 4985/2000 (3 <sup>rd</sup> revision) with bell ends (Socket) as per specification in light Grey/Natural Ivory Grey/ Any other Color (except White) inclusive of transportation to the sub-divisional stores anywhere in AP excluding all taxes.			
	DIA. IN MM	Rate/Meter		
	20			<b>16</b>
	25			<b>24</b>
	32			<b>36</b>
	40		<b>34</b>	<b>55</b>
	50		<b>51</b>	<b>85</b>
	63	<b>56</b>	<b>81</b>	<b>121</b>
	75	<b>81</b>	<b>111</b>	<b>176</b>
	90	<b>112</b>	<b>160</b>	<b>250</b>
	110	<b>162</b>	<b>232</b>	<b>372</b>
	125	<b>212</b>	<b>296</b>	<b>486</b>
	140	<b>265</b>	<b>381</b>	<b>603</b>
	160	<b>349</b>	<b>494</b>	<b>790</b>
	180	<b>444</b>	<b>636</b>	<b>1013</b>
	200	<b>540</b>	<b>774</b>	<b>1233</b>
	225	<b>722</b>	<b>1043</b>	<b>1659</b>
	250	<b>838</b>	<b>1268</b>	<b>2009</b>
	280	<b>1090</b>	<b>1600</b>	<b>2530</b>
	315	<b>1383</b>	<b>2028</b>	<b>3203</b>
	355	<b>1820</b>	<b>2640</b>	
	400	<b>2295</b>	<b>3360</b>	

**Note:**

The resin cost adopted for the above rates is Rs.78,668/- per MT (excluding all taxes)

The variation in cost of PVC pipes due to increase / decrease in raw material cost shall be allowed subject to the following price variation formula.

The price variation formula to be adopted is as follows:

$$P2 = P1 + (A2 - A1) / 1000 \times M \times 0.95 \text{ (for increase in raw material cost)}$$

$$P2 = P1 - (A1 - A2) / 1000 \times M \times 0.95 \text{ (for decrease in raw material cost)}$$

P2 = Revised pipe price in Rs. Per Meter, P1 = Existing pipe price in Rs. Per Meter

A2 = Revised price of raw material Rs. Per MT,

A1 = Existing price of raw material Rs. Per MT

M = Weight of pipe in Kgs per Meter as per weight chart.

The above formula for calculation of revised cost to be used for preparation of Estimates only.

**21. SoR FOR NON- PRESSURE P.V.C.U PIPES FOR THE YEAR 2019-20**

S. No	Description	
1	Manufacture, Supply, & Delivery of Unplasticised Non-pressure polyvinyl chloride(PVC-U) pipes of dark (any shade of brown) for use in underground drainage & sewerage system conforming to IS 15328/2003) <u>with solvent cement jointing</u> as per specification inclusive of transportation to the sub-divisional stores anywhere in A.P, excluding all taxes	
	Pipe Series (S25)	Rate per Meter
	OD 160 mm	<b>296</b>
	OD 200 mm	<b>449</b>
	OD 250mm	<b>696</b>
	OD 315 mm	<b>1099</b>
	Pipe Series (S20)	
	OD 125 mm	<b>228</b>
	OD 160 mm	<b>366</b>
	OD 200 mm	<b>555</b>
	OD 250mm	<b>865</b>
	OD 315 mm	<b>1358</b>
	Pipe Series (S16.5)	
	OD 110 mm	<b>201</b>
	OD 125 mm	<b>271</b>
	OD 160 mm	<b>425</b>
	OD 200 mm	<b>660</b>
	OD 250mm	<b>1023</b>
	OD 315 mm	<b>1615</b>

**Note:** The resin cost adopted for the above rates is Rs.78,668/- per MT (Excluding all taxes).

The variation in cost of PVC pipes due to increase / decrease in raw material cost shall be allowed subject to the following price variation formula.

The price variation formula to be adopted is as follows:

$$P2 = P1 + (A2 - A1) / 1000 \times M \times 0.95 \text{ (for increase in raw material cost)}$$

$$P2 = P1 - (A1 - A2) / 1000 \times M \times 0.95 \text{ (for decrease in raw material cost)}$$

P2 = Revised pipe price in Rs. per Meter

P1 = Existing pipe price in Rs. per Meter

A2 = Revised price of raw material Rs. per MT

A1 = Existing price of raw material Rs. per MT

M = Weight of pipe in Kg's per Meter as per weight chart.

The above formula for calculation of revised cost to be used for preparation of Estimates only.

**22. SoR FOR NON- PRESSURE P.V.C.U PIPES FOR THE YEAR 2019-20**

S. No	Description	
1	Manufacture, supply, & delivery of un-plasticized Non-Pressure Polyvinyl Chloride(PVC-U) pipes of dark (any shade of Brown) for use in underground drainage & sewerage system conforming to IS 15328/2003) <u>with Elastomeric Seal Ring Joints (Ringtite PVC Pipes)</u> as per specification inclusive of transportation to the Sub-Divisional stores anywhere in A.P, excluding all taxes	
	Pipe Series (S25)	Rate per Meter
	OD 160 mm	<b>315</b>
	OD 200 mm	<b>478</b>
	OD 250mm	<b>743</b>
	OD 315 mm	<b>1170</b>
	Pipe Series (S20)	
	OD 125 mm	<b>245</b>
	OD 160 mm	<b>387</b>
	OD 200 mm	<b>589</b>
	OD 250mm	<b>919</b>
	OD 315 mm	<b>1443</b>
	Pipe Series (S16.5)	
	OD 110 mm	<b>214</b>
	OD 125 mm	<b>289</b>
	OD 160 mm	<b>453</b>
	OD 200 mm	<b>697</b>
	OD 250mm	<b>1084</b>
	OD 315 mm	<b>1712</b>

**Note:** The resin cost adopted for the above rates is Rs.78,668/- per MT (Excluding all taxes). The variation in cost of PVC pipes due to increase / decrease in raw material cost shall be allowed subject to the following price variation formula.

The price variation formula to be adopted is as follows:

$$P2 = P1 + (A2 - A1) / 1000 \times M \times 0.95 \text{ (for increase in raw material cost)}$$

$$P2 = P1 - (A1 - A2) / 1000 \times M \times 0.95 \text{ (for decrease in raw material cost)}$$

P2 = Revised pipe price in Rs. per Meter

P1 = Existing pipe price in Rs. per Meter

A2 = Revised price of raw material Rs. per MT

A1 = Existing price of raw material Rs. per MT

M = Weight of pipe in Kg's per Meter as per weight chart.

The above formula for calculation of revised cost to be used for preparation of Estimates only.

### 23. SoR FOR CENTRIFUGALLY CAST (SPUN)IRON PRESSURE PIPES

Sl. No.	Description	Unit	S.S. Rates for 2019-20		
I	Socket and Spigot Centrifugally Cast (Spun) Iron pressure pipes for water, Gas and Sewage conforming to specification No: IS 1536/1989 (third revision) with amdt. No: 1 & 2 in standard lengths of 3.66 m, 4 m, 4.5m, 5 m, 5.5 m & 6 m and details given below, suitable either for lead jointing or rubber gasket (push on) jointing at purchasers option at ex-factory excluding transportation and all taxes.				
	Nominal dia. (in MM)		LA Class	A Class	B Class
	80	Rmt	<b>928</b>	<b>1009</b>	<b>1079</b>
	100	Rmt	<b>1150</b>	<b>1266</b>	<b>1350</b>
	125	Rmt	<b>1486</b>	<b>1623</b>	<b>1746</b>
	150	Rmt	<b>1803</b>	<b>1976</b>	<b>2123</b>
	200	Rmt	<b>2637</b>	<b>2861</b>	<b>3088</b>
	250	Rmt	<b>3554</b>	<b>3869</b>	<b>4174</b>
	300	Rmt	<b>4583</b>	<b>5010</b>	<b>5414</b>
	350	Rmt	<b>5773</b>	<b>6262</b>	<b>6774</b>
	400	Rmt	<b>7026</b>	<b>7677</b>	<b>8267</b>
	450	Rmt	<b>8472</b>	<b>9307</b>	<b>10013</b>
	500	Rmt	<b>9917</b>	<b>10804</b>	<b>11658</b>
	600	Rmt	<b>13216</b>	<b>14428</b>	<b>15587</b>
	700	Rmt	<b>17056</b>	<b>18634</b>	<b>20077</b>
	750	Rmt	<b>19101</b>	<b>20884</b>	<b>22595</b>
	800	Rmt	<b>21383</b>	<b>23298</b>	<b>25135</b>
	900	Rmt	<b>26045</b>	<b>28417</b>	<b>30708</b>
	1000	Rmt	<b>31290</b>	<b>34182</b>	<b>36835</b>
II	Conveyance of Centrifugally Cast (Spun) Iron Pressure Pipes and accessories including loading at Factory, un-loading at site and stacking for the following sizes. (The Minimum distance/lead in Km for destination below 100 Km to be taken as 100 Km)				
	SIZE IN MM UNIT		LA	A	B
	80 Per KM/RMT		0.29	0.29	0.29
	100 Per KM/RMT		0.29	0.29	0.29
	125 Per KM/RMT		0.44	0.44	0.44
	150 Per KM/RMT		0.44	0.44	0.44
	200 Per KM/RMT		0.74	0.74	0.74
	250 Per KM/RMT		0.89	0.89	0.89

	300 Per KM/RMT		1.17	1.17	1.17
	350 Per KM/RMT		1.61	1.61	1.61
	400 Per KM/RMT		1.90	1.90	1.90
	450 Per KM/RMT		2.20	2.20	2.20
	500 Per KM/RMT		2.63	2.63	2.63
	600 Per KM/RMT		2.63	2.63	2.63
	700 Per KM/RMT		2.63	2.63	2.63
	750 Per KM/RMT		4.38	4.38	4.38
	800 Per KM/RMT		7.45	7.45	7.45
	900 Per KM/RMT		7.45	7.45	7.45
	1000 Per KM/RMT		7.45	7.45	7.45

**Note:** Price Variation Formula due to Increase / Decrease in the cost of pig iron.

$$P2 = P1 + (R2 - R1) / 1000 * M * 1.0$$

Where M= Weight of pipe in kg per Meter.

P2 = Revised rate of pipe in Rs. per Rmt

P1 = Rate of pipe in Rs. per Rmt as per above table.

R2 = Price of Pig Iron (Rs per MT excluding all taxes) at the time of preparation of estimate.

R1 = Price of Pig Iron (Rs per MT excluding all taxes) at the time of preparation of SSR =Rs. 36,500/-

The above formula for calculation of revised cost to be used for preparation of Estimates only.

**24.S o R FOR DUCTILE IRON PRESSURE PIPES FOR THE YEAR 2019-20**

Sl. No.	Description	Unit	Class of Pipe	
1	Centrifugally cast (Spun) Ductile Iron pressure pipes for water, gas and sewage with <u>Socket Spigot ends</u> conforming to IS.: 8329/2000 in standard working lengths of 4, 5 5.5 & 6 meter for classification K9 & K7 suitable for push-on-joint (rubber gasket d jointing) with cement mortar lining inside the pipes with outside zinc coating. Rates are ex-factory, excluding transportation and all taxes.			
	Nominal Dia. in mm	Rmt	K7	K9
	100	Rmt	<b>913</b>	<b>1091</b>
	150	Rmt	<b>1314</b>	<b>1627</b>
	200	Rmt	<b>1789</b>	<b>2164</b>
	250	Rmt	<b>2383</b>	<b>2868</b>
	300	Rmt	<b>3040</b>	<b>3663</b>
	350	Rmt	<b>3909</b>	<b>4632</b>
	400	Rmt	<b>4688</b>	<b>5527</b>
	450	Rmt	<b>5669</b>	<b>6669</b>
	500	Rmt	<b>6679</b>	<b>7687</b>
	600	Rmt	<b>8959</b>	<b>10254</b>
	700	Rmt	<b>11390</b>	<b>12945</b>
	750	Rmt	<b>12883</b>	<b>14684</b>
	800	Rmt	<b>14138</b>	<b>15977</b>
	900	Rmt	<b>17412</b>	<b>19636</b>
	1000	Rmt	<b>20521</b>	<b>23087</b>
	1100	Rmt		<b>25086</b>
	1200	Rmt		<b>29323</b>
2	Centrifugally cast (Spun) Ductile Iron pressure pipes for water, gas and sewage with <u>plain ends</u> conforming to IS:8329/2000in standard working lengths of 4, 5, 5.5 & 6 meter for classification K9 & K7 with cement mortar lining inside the pipes with outside zinc coating. Rates are ex-factory, excluding transportation and all taxes.			
	Nominal Dia. in mm		K7	K9
	100	Rmt	<b>814</b>	<b>1039</b>
	150	Rmt	<b>1204</b>	<b>1534</b>
	200	Rmt	<b>1660</b>	<b>2080</b>
	250	Rmt	<b>2160</b>	<b>2759</b>
	300	Rmt	<b>2852</b>	<b>3521</b>
	350	Rmt	<b>3593</b>	<b>4376</b>
	400	Rmt	<b>4339</b>	<b>5274</b>
	450	Rmt	<b>5181</b>	<b>6236</b>



	500	Rmt	<b>6172</b>	<b>7427</b>
	600	Rmt	<b>8159</b>	<b>9600</b>
	700	Rmt	<b>10746</b>	<b>12177</b>
	750	Rmt	<b>12009</b>	<b>13607</b>
	800	Rmt	<b>13290</b>	<b>15037</b>
	900	Rmt	<b>16085</b>	<b>18166</b>
	1000	Rmt	<b>19104</b>	<b>21616</b>
	1100	Rmt		<b>23218</b>
	1200	Rmt		<b>24640</b>

3

Centrifugally cast (Spun) Ductile Iron pressure pipes with flanged (welded) ends for water, gas, sewage conforming to IS: 8329/2000 in standard working lengths of 1,2,3, 4, 5 mts for classification K9 with cement mortar lining inside the pipes with outside zinc coating. Rates are ex-factory, excluding transportation and all taxes.

	Nominal Dia. in mm	Unit	1.0 Mt. Length	2.0 Mt. Length	3.0 Mt. Length	4.0 Mt. Length	5.0 Mt. Length
	100	Each	<b>3321</b>	<b>4269</b>	<b>5214</b>	<b>6162</b>	<b>8187</b>
	150	Each	<b>5325</b>	<b>7127</b>	<b>7565</b>	<b>7962</b>	<b>11169</b>
	200	Each	<b>7071</b>	<b>9535</b>	<b>9587</b>	<b>10566</b>	<b>14562</b>
	250	Each	<b>9236</b>	<b>12526</b>	<b>13656</b>	<b>14247</b>	<b>19771</b>
	300	Each	<b>11858</b>	<b>16042</b>	<b>18009</b>	<b>18535</b>	<b>25461</b>
	350	Each	<b>21597</b>	<b>24327</b>	<b>25383</b>	<b>27869</b>	<b>35530</b>
	400	Each	<b>25297</b>	<b>31581</b>	<b>34645</b>	<b>35000</b>	<b>41984</b>
	450	Each	<b>32333</b>	<b>39879</b>	<b>42961</b>	<b>44078</b>	<b>51823</b>
	500	Each	<b>41262</b>	<b>50229</b>	<b>51866</b>	<b>52369</b>	<b>61686</b>
	600	Each	<b>47769</b>	<b>59915</b>	<b>67315</b>	<b>68526</b>	<b>86532</b>
	700	Each	<b>67106</b>	<b>81695</b>	<b>85104</b>	<b>87657</b>	<b>94770</b>
	800	Each	<b>79130</b>	<b>96824</b>	<b>100973</b>	<b>109712</b>	<b>121228</b>
	900	Each	<b>84026</b>	<b>105493</b>	<b>120470</b>	<b>137362</b>	<b>151569</b>
	1000	Each	<b>115096</b>	<b>140362</b>	<b>150596</b>	<b>171018</b>	<b>188058</b>
	1100	Each	<b>134238</b>	<b>161162</b>	<b>184443</b>	<b>197334</b>	<b>223562</b>

4	Conveyance of Ductile Iron Pressure Pipes and accessories including loading at Factory, un-loading at site and stacking for the following sizes				Class		WELDED DOUBLE FLANGED PIPES
	SIZE IN MM	UNIT		K7	K9	K9	
	100	Per KM/RMT		0.23	0.23	0.35	
	150	Per KM/RMT		0.35	0.35	0.46	
	200	Per KM/RMT		0.35	0.46	0.69	
	250	Per KM/RMT		0.46	0.58	0.92	

	300	Per KM/RMT	0.69	0.69	1.16
	350	Per KM/RMT	0.81	0.92	1.39
	400	Per KM/RMT	0.92	1.04	1.62
	450	Per KM/RMT	1.16	1.27	1.96
	500	Per KM/RMT	1.39	1.50	2.31
	600	Per KM/RMT	1.96	1.96	3.00
	700	Per KM/RMT	2.89	2.89	4.39
	750	Per KM/RMT	3.47	3.47	5.31
	800	Per KM/RMT	5.89	5.89	8.78
	900	Per KM/RMT	5.89	5.89	8.78
	1000	Per KM/RMT	5.89	5.89	8.78
	1100	Per KM/RMT	5.89	5.89	8.78
5	Supply and Delivery of Polyethylene (PE) Sleeves for Ductile Iron Pipes used to guard the pipe against corrosion.				
	DIA. IN MM				
	100 MM DIA.		RMT		45.00
	150 MM DIA.		RMT		55.00
	200 MM DIA.		RMT		70.00
	250 MM DIA.		RMT		81.00
	300 MM DIA.		RMT		89.00
	350 MM DIA.		RMT		100.00
	400 MM DIA.		RMT		140.00
	450 MM DIA.		RMT		140.00
	500 MM DIA.		RMT		169.00
	600 MM DIA.		RMT		169.00
	700 MM DIA.		RMT		220.00
	750 MM DIA.		RMT		220.00
	800 MM DIA.		RMT		220.00
	900 MM DIA.		RMT		250.00
	1000 MM DIA.		RMT		250.00
	1100 MM DIA.		RMT		308.00
6	Additional price for HAC(high alumina cement mortar lining)				
	DIA. IN MM				
	100 MM DIA.		RMT		67.00
	150 MM DIA.		RMT		88.00
	200 MM DIA.		RMT		108.00
	250 MM DIA.		RMT		129.00

300 MM DIA.	RMT	138.00
350 MM DIA.	RMT	157.00
400 MM DIA.	RMT	216.00
450 MM DIA.	RMT	216.00
500 MM DIA.	RMT	266.00
600 MM DIA.	RMT	266.00
700 MM DIA.	RMT	341.00
750 MM DIA.	RMT	341.00
800 MM DIA.	RMT	341.00
900 MM DIA.	RMT	389.00
1000 MM DIA.	RMT	389.00
1100 MM DIA.	RMT	389.00
1200 MM DIA.	RMT	389.00

**Note:** Price Variation Formula due to Increase / Decrease in the cost of pig iron.

$P2 = P1 + (R2 - R1) / 1000 * M * 0.96$ , Where

M = Weight of pipe in kg per Meter as per I.S.8329-2000.

P2 = Revised rate of pipe in Rs. per Rmt.

P1 = Rate of pipe in Rs. per Rmt. as per above table.

R2 = Price of Pig Iron(Rs per MT)) at the time of preparation of estimate.

R1 = Price of Pig Iron(Rs per MT) at the time of preparation

Of SoR =Rs.36,500/-(Excluding all taxes).

The above formula for calculation of revised cost to be used for preparation of Estimates only.

**25. S o R FOR DUCTILE IRON FITTINGS FOR THE YEAR 2019-20**

Sl. No.	Description	Unit	Rate
	Centrifugally cast (spun) Ductile Iron Fittings conforming to IS:9523/2000 having dimensions as per table. The rates mentioned here under are for fittings, zinc coated externally with inside mortar lining (with finishing as per class 13/IS 9523/2000) ( ex-works) Excluding Transportation and all Taxes.		
I	DI double socket branch flange Tee		
	Up to 500 x 500 mm dia.	Kg	<b>120.92</b>
	Above 500 x 500 mm dia.	Kg	<b>133.92</b>
II	DI All Socket Tees		
	Up to 300 x 300 mm dia.	Kg	<b>120.92</b>
	Above 300 x 300 mm dia.	Kg	<b>133.92</b>
III	DI Double socket Tapers (Reducer)		
	Up to 500 x 450 mm dia.	Kg	<b>120.92</b>
	Above 500 x 450 mm dia.	Kg	<b>133.92</b>
IV	DI Flanged Socket		
	Up to 500 mm dia.	Kg	<b>120.92</b>
	Above 500 mm dia.	Kg	<b>133.92</b>
V	DI Flanged Spigot		
	Up to 500 mm dia.	Kg	<b>120.92</b>
	Above 500 mm dia.	Kg	<b>133.92</b>
VI	DI Double Socket Duck Foot Bend		
	Up to 300mm dia.	Kg	<b>120.92</b>
	Above 300mm dia.	Kg	<b>133.92</b>
VII	DI Double Flange Duck/Foot bend		
	Up to 300 mm dia.	Kg	<b>120.92</b>
	Above 300 mm dia.	Kg	<b>133.92</b>
VIII	DI All socket Cross.		
	Up to 300 x 300 mm dia.	Kg	<b>120.92</b>
	Above 300 x 300 mm dia.	Kg	<b>133.92</b>
IX	DI All Flange Tee		
	Up to 500 x 500 mm dia.	Kg	<b>120.92</b>
	Above 500 x 500 mm dia.	Kg	<b>133.92</b>
X	DI All Flange Cross		
	Up to 300 x 300 mm dia.	Kg	<b>120.92</b>
	Above 300 x 300 mm dia.	Kg	<b>133.92</b>

XI	DI Double Flange Reducer		
	Up to 500 x 450 mm dia.	Kg	<b>120.92</b>
	Above 500 x 450 mm dia.	Kg	<b>133.92</b>
XII	Blank Flange		
	Up to 500 mm dia.	Kg	<b>120.92</b>
	Above 500 mm dia.	Kg	<b>133.92</b>
XIII	Mechanical Joints		
	Up to 300 mm dia.	Kg	<b>120.92</b>
	Above 300 mm dia.	Kg	<b>133.92</b>
XIV	DI Double Socket Bends		
	Up to 500mm dia.	Kg	<b>120.92</b>
	Above 500 mm dia.	Kg	<b>133.92</b>
XV	DI Double Flanged Bends		
	Up to 500mm dia.	Kg	<b>120.92</b>
	Above 500 mm dia.	Kg	<b>133.92</b>

**26. S o R FOR RUBBER GASKETS SUITABLE FOR C.I/ D.I. S/S PIPES FOR THE  
YEAR 2019-20**

Sl. No.	Description	Unit	Rate
1	2	3	4
1	Manufacture as per BIS: 12820/89 with S.B.R. Quality Rubber confirming to BIS: 5382/85, supply and delivery of Rubber Gaskets suitable for C.I/ D.I S/S pipes anywhere in A.P. F.O.R. Destination departmental stores including cost of material, loading, incidental handling with companies standard packing, transportation, unloading & stacking but excluding all taxes.		
	80mm dia.	Each	<b>39</b>
	100mm dia.	Each	<b>61</b>
	125mm dia.	Each	<b>73</b>
	150mm dia.	Each	<b>89</b>
	200mm dia.	Each	<b>107</b>
	250mm dia.	Each	<b>120</b>
	300mm dia.	Each	<b>183</b>
	350mm dia.	Each	<b>231</b>
	400mm dia.	Each	<b>256</b>
	450mm dia.	Each	<b>299</b>
	500mm dia.	Each	<b>416</b>
	600mm dia.	Each	<b>525</b>
	700mm dia.	Each	<b>698</b>
	750mm dia.	Each	<b>823</b>
	800mm dia.	Each	<b>987</b>
	900mm dia.	Each	<b>1191</b>
	1000mm dia.	Each	<b>1303</b>

## 27. SoR FOR CI PIPES AND SPECIALS FOR THE YEAR 2019-20

Sl. No.	Description	Quality or sort	Rate/ Kg including packing, forwarding, Transit risk and delivery anywhere in A.P. for the year 2019-20. (Rs.)
1	Manufacture, Supply and Delivery of Cast Iron Pipes and Fittings (spls.) Conforming to IS. No. 7181/1986, 5531/1988, 3950/1979 and C.I.D Joints confirming to is No.8794/1988 at site of work anywhere in A.P. Including, loading, unloading, transportation to site of work stacking at site transit risk and package, excluding taxes and duties.	I.S. No. 7181/1986 5531/1988 3950/1979 & 8794/1988	<b>81.74</b>

**Foot Note:** The rate of CI pipes, CI Specials and CID Joints etc., which are to be incorporated in the SoR are based on the following raw materials cost.

**Pig Iron:** Rs.36,500/- per M.T. (Excluding all taxes).

**Coke :** Rs.29,488/- per M.T. (Excluding all taxes).

The rates may be revised depending upon the increase/decrease in the cost of raw materials as per the following method. For every increase/decrease of Rs.1000/- in the cost of raw materials or part there of proportionately.

**In respect of Pig Iron:** The increase/decrease in cost of CI Specials per Kg is 3.43%.

**In respect of coke:** The increase/decrease in cost of CI Specials per Kg is 0.67%.

The above price is at site of work.

**Note-1:** The above formula for calculation of revised cost to be used for preparation of Estimates only.

**28. S o R FOR WATER HAMMER CONTROL DEVICES FOR THE YEAR 2019-20**  
**(Rate Each in Rs.)**

Sl. No.	Description	TEST PRESSURE			
		10 Kgs/cm <sup>2</sup>	15 Kgs/cm <sup>2</sup>	20 Kgs/cm <sup>2</sup>	25 Kgs/cm <sup>2</sup>
1	Manufacture, Supply and delivery of Air Cushion valves / Quick Released damped Air Valves (QRDA) as per AWWA, Ex-factory excluding transportation and all taxes.				
	DIA. IN MM	Rate/Each	Rate/Each	Rate/Each	Rate/Each
	100	70689	81294	89422	98361
	150	107425	123539	135892	149481
	200	114661	131858	145046	159550
2	Conveyance of valves and accessories including loading at factory and unloading, stacking at site of work.	5% on basic cost of valves			



**29. S o R FOR VALVES CONFORMING TO IS for normal usage 2019-20.**

Sl. No.	Description		
1	Supply, Delivery of D.I double flanged Sluice Valves conforming to IS- 14846 (with up to date amendments, if any) including gear arrangements for the following dia. as per test pressure having Body, Bonnet, Dome, Stool cover, Wedge, Stuffing box, Gland, Thrust plate, Cap/Hand wheel with D.I; Stem, Body seat ring, Wedge facing ring, Bushes, Bolts, Nuts, Pinion and Pinion shaft with Stainless steel (IS 6603) ; Wedge nut, Shoe, Channel with Leaded Tin Bronze ( IS 318 ); Gasket with Neoprene Rubber; Gland packing with Rubber; Gear, Gear housing with Cast Steel excluding all taxes and transportation, etc. complete ISI marked.		
		PN 1.0 (MPa)	PN 1.6 (MPa)
	DIA. IN MM	Rate/Each	
	450	168080	210100
	500	210980	263725
	600	270380	337975
	700	520080	375100
	800	674080	650100
	900	875380	705100
	1000	1425380	842600
	1100	1645380	960850
	1200	1865380	1094225
2	Supply, Delivery of D.I double flanged short/Long body or Wafer Type pattern Butterfly Valves for the following dia. conforming to IS 13095 (with up to date amendments, if any) manually operated having Body, Disc with D.I; Shaft, Seating ring, internal fastenings with Stainless steel (IS: 6603); External bolting with Carbon steel; Seat with Nitrite or EPDM rubber; excluding transportation and all taxes, complete.		
	DIA. IN MM	PN 2.5 (MPa) (Rate/Each)	
	50	14080	
	100	16280	
	150	23980	
	200	43780	
	250	49280	
	300	56980	
	350	69080	
	400	100980	
	450	132880	
	500	190080	
	550	210980	
	600	234080	

	650	270380	
	700	328680	
	750	344080	
	800	369380	
	850	388080	
	900	438680	
	1000	564080	
	1100	674080	
	1200	894080	
3	Supply, Delivery of D.I Double Flanged Swing Check type Reflux valves (Non Return Valves) of following dia. conforming to IS- 5312 (Pts-1&2) (with amendments up to date, if any) having Body, Cover, Door, Bearing holder with D.I; Hinge pin, Door pin, Door suspension pin with Stainless Steel (IS 6603); Body seat ring , Door face ring, Bearing bushes, Plugs for hinge pin with Leaded Tin Bronze ( IS 318 ); Bolts, Nuts with Carbon steel; Gaskets with Rubber; Hinges with Cast steel; excluding transportation and all taxes complete.		
		PN 1.0 (MPa)	PN 1.6 (MPa)
	DIA. IN MM	Rate/Each	
	50	10780	13475
	100	15180	18975
	150	21780	27225
	200	29480	36850
	250	40480	50600
	300	62480	78100
	350	74580	93225
	400	89980	112475
	450	116380	145475
	500	192280	240350
	550	212080	265100
	600	256080	320100
4	Conveyance of valves and accessories including loading at factory and unloading, stacking at site of work.	5% on basic cost of valves	

**30. S o R FOR VALVES FOR HEAVY USUAGE in WTPS, STPS, PUMP HOUSES,  
PUMPING MAINS & ELSRS 2019-20.**

Sl. No.	Description	TEST PRESSURE		
1	Supply and delivery of "Resilient Seated Soft Sealing" Gate Valves (Sluice Valves) with Body and Bonnet of Ductile Iron GGG-40/SG-400/15 or GGG-50/SG-500/7 or Equivalent as per IS1865, IS:3896-2 and Wedge fully Rubber Lined with food grade quality grade W270 grade EPDM, Replaceable Spindle Nut without gland packing with 3-O ring protection system on the Shaft and Seals of NBR. The Valves should be Vacuum tight and 100% leak proof with face to face dimensions as BS:5163 Type A/IS:14846. All the valves should be with fusion bonded Electrostatic Powder coating both inside and outside (Min 250 Microns)-RAL 5005 with Pocket Less Straight through body Passage conforming to Design standards of DIN-3202F4/BS:5163 Type A Flange drilling as per IS - 1538 excluding all taxes, duties and transportation.			
	DIA. IN MM	PN 1.0 (MPa)	PN 1.6 (MPa)	PN 2.5 (MPa)
	A) Without By-Pass			
	50	7669	7669	14403
	80	9922	9922	17758
	100	11880	12957	20134
	150	18480	20401	33584
	200	23980	29975	56644
	250	30580	38225	84135
	300	56980	70965	136471
	350	78980	98725	399358
	400	100980	126225	406201
2	Supply & Delivery of Tamper Proof DI Flanged Single Chamber Air Release Valves with body & cover made of Ductile Iron Grade GGG-40/SG-400/15 or GGG-50/SG-500/7 or Equivalent as per IS1865, IS:3896-2 with Food Grade Epoxy Powder Coating(EP-P) (Min:250 Micron) inside and Outside of Color Blue RAL 5005. All internal parts such as Float, shell, Cove Bolts etc. made of Austenitic alloy steel of SS AISI 304/316 and DN 50 float of and other components with ABS/PTFE/EPDM/NBR and generally conforming to DIN/BIS/AWWA standards (or) combination Flange drilling as per IS - 1538 and exclusive of all taxes and transportation.			
	DIA. IN MM	PN 1.0 (MPa)	PN 1.6 (MPa)	PN 2.5 (MPa)
	25	4180	5225	
	40	7480	9350	53890
	50	10780	13475	45806
	80	18480	23100	47492
	100	23980	29975	63764
	150	45980	57475	77145
	200	66538	66538	85984
	300	108680	119790	

3	Manufacture, Supply and delivery of DI D/F Tilting disc Swing Check Valves Slanted seated with maximum swing of 59 degree with metallic, corrosion proof and wear resistant seat faces, Body and Disc of ductile cast iron GGG-40/SG-400/15 or GGG-50/SG-500/7 or Equivalent as per IS1865, IS:3896-2 Shafts of stainless steel, shaft bearing of zinc free bronze and Integral body seat face & disc face with nickel-chromium overlay welding and micro finished. All the inside and outside of the body is to be coated with double coating of food grade epoxy liquid lacquer (EP-F) with minimum thickness of 150 microns, color: RAL 5005 Blue face to face dimensions according to EN 558-1/14/DIN 3202-F4, Flange dimensions according to EN1092-2/IS 1538				
	DIA. IN MM	PN 1.0 (MPa)	PN 1.6 (MPa)	PN 2.5 (MPa)	
	a) Without By-Pass				
	80	11880	14850	23760	
	100	16280	20350	32560	
	150	21780	27225	43560	
	200	27280	34100	54560	
	250	39380	49225	78760	
	300	56980	71225	113960	
	b) With By-Pass				
	350	67980	84975	135960	
	400	104280	130350	208560	
	450	149380	186725	298760	
	500	206580	258225	413160	
	550	303380	377520	606760	
	600	369380	461725	738760	
	650	438680	548350	877360	
	700	548680	685850	1097360	
	750	850850	935935		
	800	1100000	1210000		
4	Manufacture, Supply and delivery of DI D/F Butterfly Valves, Body and disc of Ductile Iron of grade GGG-40/SG-400/15 or GGG-50/SG-500/7 or Equivalent as per IS1865, IS:3896-2 Double eccentrically designed Disc., with renewable soft seal on the disc and Integral Body seat face of nickel-chromium overlay welding (Fusion Bonded) micro finished, 100 % leak tight in both directions, Medium free bearings and with minimum thickness of 250 microns Fusion bonded food grade epoxy coating and 1200mm dia. and above food grade liquid Epoxy coating of minimum 150 microns applied on both body and disc inside and outside. Face to face dimensions as per EN558-1/IS 13095 body or IS: 13095 long body design standard as per EN 593/IS 5163 Flange drilling as per EN 1092-2/ IS 1538 the Valve should be suitable for buried application.				
	DIA. IN MM	PN 1.0 (MPa)	PN 1.6 (MPa)	PN 2.5 (MPa)	PN 4.0 (MPa)
	150	19580	24475	39160	146478
	200	27280	34100	54560	178108
	250	38280	47850	76560	249581

	300	47080	58850	94160	262068
	350	65780	82225	131560	285236
	400	87780	109725	175560	436082
	450	98780	123475	197560	-
	500	127380	159225	254760	538878
	600	168080	210100	336160	590468
	700	218680	273350	437360	
	800	279180	348975	558360	
	900	328680	410850	657360	
	1000	454080	567600	908160	
	1100	674080	842600	1348160	
	1200	784080	980100	1568160	
	1400	1098680	1373350	2197360	
	1600	1367080	1708850	2734160	
	1800	2116180	2645225	4232360	
	2000	2547380	3184225	5094760	
	2200	2838880	3548600	5677760	

NOTE:-1) All the prices are ex-go down /ex-factory. Packaging and Transportation extra at 5% on basic cost. The grade of DI & conformation to specifications shall be certified by a third party Quality Control Agency approved by indenting authority at the cost of supplier.

**31. S o R FOR SFRC MAN-HOLE FRAME WITH COVERS FOR THE YEAR 2019-20.**

Sl. No.	Description	Unit	Rate
I	Manufacture as per BIS:12592 (Part 1&2) Supply & Delivery of manhole covers and frames with ISI marking anywhere in A.P., F.O.R. destination including, loading, un-loading & stacking at site but excluding all taxes.		
a)	M.D. -10 with 500mm dia. Clear opening	Each	1543.00
b)	H.D.-20 with 500mm dia. Clear opening	Each	1989.00
C)	H.D.-10with 560mmdia. clear opening(New item)	Each	1560.00
d)	H.D.-20 with 560mm dia. Clear opening	Each	2133.00
e)	H.D.-35 with 560mm dia. Clear opening.	Each	2286.00
f)	24x24 MD 10	Each	1682.00
g)	24x18 MD 10	Each	1548.00
h)	24x24 HD 20	Each	1890.00
i)	24x18 HD 20	Each	1927.00
j)	Dividers 0.9 Mtr.	Each	3957.00
II	Manufacture as per company's standard specification supply and delivery of encapsulated plastic steps for man holes anywhere in A.P. including cost of materials packing as per company's standards, loading, transportation, unloading and stacking at site of work etc, complete but excluding all taxes.	Each	166.00

**32. S o R FOR CI and M.S. DISMANTLING JOINTS FOR THE YEAR 2019-20**

Sl.No.	Description	Unit	Rate
1	Manufacture, Supply and Delivery of C.I Dismantling Joints with both side flange end suitable for installation in between flange end pipes. These rates are excluding all taxes.		
	Nominal Dia. In MM		
	50	Each	<b>4826</b>
	80	Each	<b>5282</b>
	100	Each	<b>6900</b>
	125	Each	<b>8800</b>
	150	Each	<b>9777</b>
	200	Each	<b>13864</b>
	250	Each	<b>16504</b>
	300	Each	<b>26409</b>
2	Manufacture, Supply and Delivery of M.S. Dismantling Joints with both side flange end suitable for installation in between flange end pipes. Thickness as per IS: 7322. These rates are excluding all taxes.		
	Nominal Dia. In MM		
	350	Each	<b>59,785</b>
	400	Each	<b>68,507</b>
	450	Each	<b>74,325</b>
	500	Each	<b>88,959</b>
	600	Each	<b>1,03,515</b>
	700	Each	<b>1,15,161</b>
	750	Each	<b>1,18,075</b>
	800	Each	<b>1,41,365</b>
	900	Each	<b>1,47,482</b>
	1000	Each	<b>1,76,660</b>
	1100	Each	<b>1,91,245</b>
	1200	Each	<b>2,20,420</b>
	1300	Each	<b>2,49,592</b>
	1400	Each	<b>2,79,334</b>
	1600	Each	<b>3,08,566</b>
	1800	Each	<b>3,65,405</b>
	2000	Each	<b>4,54,730</b>
3	Conveyance of joints and accessories including loading at factory and unloading, stacking at site of work.	5% on basic cost	

### 33. OTHER ITEMS FOR THE YEAR 2019-20

Sl. No.	Description	Unit	Rate
1	2	3	4
1	SUPPLY AND DELIVERY OF PIG LEAD 99.99 % PURE INCLUDING TAXES AND CONVEYANCE ETC., COMPLETE.	Per Kg	<b>287</b>
2	SUPPLY AND DELIVERY OF LEAD WOOL BEST QUALITY INCLUDING TAXES AND CONVEYANCE ETC., COMPLETE.	Per Kg	<b>168</b>
3	SUPPLY AND DELIVERY OF SPUN YARN OF BEST QUALITY INCLUDING TAXES AND CONVEYANCE ETC., COMPLETE.	Per Kg	<b>116</b>
4	SUPPLY AND DELIVERY OF RUBBER PACKING INCLUDING TAXES AND CONVEYANCE ETC., COMPLETE.		
	a) 3 mm thick	Per Kg	<b>93</b>
	b) 6 mm thick	Per Kg	<b>93</b>
5	SUPPLY AND DELIVERY OF BOLTS AND NUTS WITH DOUBLE WASHERS INCLUDING TAXES AND CONVEYANCE ETC., COMPLETE. (1/2" TO 1")	Per Kg	<b>111</b>



**34. S o R FOR TRENCH LESS TECHNOLOGY WITH PIPE JACKING METHOD FOR  
THE YEAR 2019-20**

Sl. No.	Description	Unit	Rate
1	Railway crossing/Road crossing/Canal crossing by adopting trenchless technology tunneling work through specialized pipe jacking method by erecting the equipment to true to the alignment and gradient, by hydraulic pipe jacking technique complete including tunneling, excavation in all types of soils including hard rock and construction of RCC chambers suitable to casing pipe pits, and conveyance charges of machinery and other required materials but excluding cost of encasing pipe, in co-ordination with the concerned authorities as per approved drawings and directed by the Engineer-in –Charge.		
	800 mm dia.	Rmt	<b>26000</b>
	900 mm dia.	Rmt	<b>27300</b>
	1000 mm dia.	Rmt	<b>28600</b>
	1100 mm dia.	Rmt	<b>29900</b>
	1200 mm dia.	Rmt	<b>31200</b>
	1300 mm dia.	Rmt	<b>32500</b>
	1400mm dia.	Rmt	<b>35100</b>
	1500 mm dia.	Rmt	<b>39000</b>

### 35.S o R FOR HOUSE SERVICE CONNECTIONS FOR THE YEAR 2019-20

Sl. No.	Description	Unit	Rate
1	<p><b><u>House service connections (Compression Fittings)</u></b>                      Supply and Fixing of compression fittings shall comply with ISO 17885 2015, PN-16 rating and manufactured from virgin resin of PE-80 having blue color. Raw material must be WRAS approved as per BS 6920 for effect on water quality intended for human consumption. Compression fittings should have moulded in SS 304 threaded insert outlet with thread dimension confirming to IS 554/ISO 7. The cost shall include testing of all materials, labor all taxes(central and state), inspection charges, transportation up to site, transit insurance, loading, unloading, stacking and fixing etc, complete as specified and directed by the departmental Engineer in charge.</p>		
	Compression male/female threaded adaptor with SS insert D20 mm X 1/2 "	Each	<b>165</b>
	Compression male/female threaded adaptor with SS insert D25 mm X 3/4 "	Each	<b>203</b>
	Compression male/female threaded adaptor with SS insert D32 mm X 1 "	Each	<b>306</b>
	Compression male/female threaded elbow with SS insert D20 mm X 1/2 "	Each	<b>176</b>
	Compression male/female threaded elbow with SS insert D25 mm X 3/4 "	Each	<b>226</b>
	Compression male/female threaded elbow with SS insert D32 mm X 1 "	Each	<b>336</b>
	Double Compression elbow 20 mm 64	Each	<b>72</b>
	Double Compression elbow 25 mm 79	Each	<b>89</b>
	Double Compression elbow 32 mm	Each	<b>126</b>
2	<p><b><u>House service connections (Composite strap saddle for DI/CI pipes)</u></b>                      Supply and fixing of composite strap saddle shall be of wrap around design pN-16 rating. Body shall be manufactured using virgin compounded PE 80/PE 100 polymer with stainless steel 304 grade stirrup plate mounted with PE straps (Engineering Plastic) with Nut bolt joint, sealing between the saddle and mains shall be obtained by using an elastomer seal (Underneath projection for self interlocking). The cost shall include testing of all materials, labor all taxes (central and state), inspection charges, transportation up to site, transit insurance, loading, unloading, stacking and fixing etc, complete as specified and directed by the departmental Engineer in charge.</p>		
	(Main pipe outer diameter in mm & tapping size in inches)		
	100 x 1/2"	Each	<b>685</b>
	100 x 3/4"	Each	<b>709</b>
	100 x 1"	Each	<b>860</b>
	150 x 1/2"	Each	<b>979</b>
	150 x 3/4"	Each	<b>1018</b>
	150 x 1"	Each	<b>1162</b>
	200 x 1/2"	Each	<b>1034</b>

	200 x 3/4"	Each	1139
	200 x 1"	Each	1185
3	<b><u>House service connections (Regulating Brass ferrule)</u></b> The cost shall include testing of all materials, labor all taxes (central and state), inspection charges, transportation up to site, transit insurance, loading, unloading, stacking and fixing etc, complete as specified and directed by the departmental Engineer in charge.		
	1/2"	Each	182
	3/4"	Each	300
	1"	Each	523
4	<b><u>House service connections (PP Saddle)</u></b>		
	(Main pipe outer diameter in mm & tapping size in inches)		
	63x1/2"	Each	800
	63x3/4"	Each	800
	63x1"	Each	800
	75x1/2"	Each	800
	75x3/4"	Each	800
	75x1"	Each	800
	90x1/2"	Each	800
	90x3/4"	Each	800
	90x1"	Each	800
	110x1/2"	Each	800
	110x3/4"	Each	800
	110x1"	Each	800
	125x1/2"	Each	800
	125x3/4"	Each	800
	125x1"	Each	800
	140x1/2"	Each	800
	140x3/4"	Each	800
	140x1"	Each	800
	160x1/2"	Each	800
	160x3/4"	Each	800
	160x1"	Each	800
	180x1/2"	Each	954
	180x3/4"	Each	954
	180x1"	Each	954
	200x1/2"	Each	954
	200x3/4"	Each	954
	200x1"	Each	954
5	Supply and Fixing of Meter Box / Valve box is recommended to encompass & protect Water meters/valves installed on drinking water supply pipes. Meter Box manufacturers must have ISO 9001, ISO 14001 and ISO 18001 certification for their QMS, EMS		

	<p>&amp; OHSAS systems. Meter Box should be of two components, comprising body and lid. Provision for embossed marking on the lid as per customer requirement, Nominal Size of box should be 8" X 12" with Rectangular shape ,Minimum Dimensions: Length 355mm x height 180mm x width 270mm,Locking: with Built in lock.</p>		
	<p>METER BOX 8X12 WITH BUILT IN LOCK,</p>	<p>Each</p>	<p><b>450</b></p>