



# **MAHARASHTRA JEEVAN PRADHIKARAN**

## **SCHEDULE OF RATES**

**FOR YEAR 2018 - 2019**

**Effective from 1st June 2018**

**APPLICABLE FOR PUNE REGION**

**MAHARASHTRA JEEVAN PRADHIKARAN**

Approved by the Chief Engineer - Maharashtra Jeevan Pradhikaran,  
Pune's Marathi Letter No. CE (Pune) / TB-3 / DSR 2018-19 / 896 dated 31/05/2018.

**COUNTERSIGNED FOR THE YEAR 2018 - 2019**

**Sd/-**

**CHIEF ENGINEER Maharashtra Jeevan  
Pradhikaran, Pune.**

# INDEX

Section No.	Name of Section	Page Nos.	
		From	To
	List of Hilly Area	1	6
	General Notes	7	12
A	Materials	13	16
B	Labour & Machinery	17	20
C	Transportation	21	40
D	Cement Consumption	41	44
E	Excavation	45	52
F	Iron and Structural Steel Work	53	56
G	Plain & Reinforced Cement Concrete, Ready Mix Concrete	57	68
H	Miscellaneous	69	78
I	Pipes { <b>Detail Index below</b> }	79	317
J	(I) Treatment Plant ( WTP & STP )	319	339
	(II) Moving Media Bio Reactor Technology	341	359
K	(I) RCC GSRs & Sumps	361	365
	(II) RCC ESRs	367	373
	(III) Ancillary Items for Reservoirs	377	382
L	Chambers, Manholes & Drainage Drops	383	393
M	Well Sinking & River Infiltration Works	395	401
N	Trial Run	403	405
O	Type Designs	-	-

## DETAIL INDEX FOR I SECTION (PIPES)

Section I	Name of Sub-Section	Page Nos.	
		From	To
(I)	C.I. / D. I. Pipes	81	95
(II)	P.V.C. Pipes	96	109
(III)	G.I. Pipes	110	115
(IV)	R.C.C. Pipes	157	163
(V)	P.S.C. Pipes	164	173
(VI)	B.W.S.C. Pipes	174	183
(VII)	G.R.P. / F.R.P. Pipes	184	195
(VIII)	H.D.P.E. Pipes	196	207

Section I	Name of Sub-Section	Page Nos.	
		From	To
(IX)	M.D.P.E. Pipes	208	217
(X)	P.C.C. Pipes	218	229
(XI)	Pipe Appurtenances	230	259
(XII)	Mechanical Joints / Fittings	260	269
(XIII)	M.S. Pipes	270	291
(XIV)	Fabrication of M.S. Pipes & Specials	292	294
(XV)	M.S. Pipe Laying	295	317



## **LIST OF HILLY AREA**

शासन निर्णय, ग्रामविकास विभाग क्र. ग्रापापु-१०९० / सीआर-१६३/३९-अ  
दि.७ डिसेंबर १९९० चे सहपत्र

परिशिष्ट - १

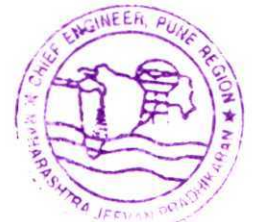
राज्यातील डोंगरी विभागाचे क्षेत्र दर्शविणारे विवरणपत्र

जिल्हा	तालुका	ज्या डोंगरी भागात आहे त्या डोंगराचे नाव	पूर्ण गट ज्या तालुक्यात ५०% पेक्षा जास्त क्षेत्र आहे तो पूर्णगट	उपगट ज्या तालुक्यात २०% पेक्षा जास्त व ५०% पेक्षा कमी क्षेत्र आहे तो उपगट	शेरा
१. ठाणे	१. मोखाडा	सहाद्री पर्वत रांगा			
	वसई	२. वाडा	पश्चिम घाट		
	३. शहापूर	पश्चिम घाट	पूर्ण गट (३)		
	४. मुरबाड	पश्चिम घाट	पूर्ण गट (४)		
	५. जवहार	पश्चिम घाट	पूर्ण गट (५)		
	६. वसई	पश्चिम घाट	---	उपगट (१)	पूर्व भाग
	७. भिवंडी	पश्चिम घाट	---	उपगट (२)	उत्तर पश्चिम भाग
२. रायगड	८. कर्जत	पश्चिम घाट	पूर्ण गट (६)		
	९. खालापूर	पश्चिम घाट	पूर्ण गट (७)		
	१०. सुधागड	पश्चिम घाट	पूर्ण गट (८)		
	११. रोहा	पश्चिम घाट	पूर्ण गट (९)		
	१२. माणगांव	पश्चिम घाट	पूर्ण गट (१०)		
	१३. महाड	पश्चिम घाट	पूर्ण गट (११)		
	१४. पोलादपूर	पश्चिम घाट	पूर्ण गट (१२)		
	१५. पेण	पश्चिम घाट	पूर्ण गट (१३)		
	१६. मुरुड	पश्चिम घाट	पूर्ण गट (१४)		
	१७. म्हसळा	पश्चिम घाट	पूर्ण गट (१५)		
	१८. पनवेल	पश्चिम घाट	---	उपगट (३)	दक्षिण भाग
३. रत्नागिरी	१९. खेड	पश्चिम घाट	पूर्ण गट (१६)		
	२०. चिपळूण	पश्चिम घाट	पूर्ण गट (१७)		
	२१. संगमेश्वर	पश्चिम घाट	पूर्ण गट (१८)		
	२२. लांजा	पश्चिम घाट	पूर्ण गट (१९)		
	२३. राजापूर	पश्चिम घाट	पूर्ण गट (२०)		
	२४. मंडणगड	पश्चिम घाट	---	उपगट (४)	उत्तरेकडील भाग
४. सिंधुदुर्ग	२५. कळकवली	पश्चिम घाट	पूर्ण गट (२१)		
	२६. सावंतवाडी	पश्चिम घाट	पूर्ण गट (२२)		
	२७. देवगड	पश्चिम घाट	पूर्ण गट (२३)		
	२८. कुडाळ	पश्चिम घाट	पूर्ण गट (२४)		
	२९. वैभववाडी	पश्चिम घाट	पूर्ण गट (२५)		
	३०. मालवण	पश्चिम घाट	---	उपगट (५)	पूर्व भाग





जिल्हा	तालुका	ज्या डोंगरी भागात आहे त्या डोंगराचे नाव	पूर्ण गट ज्या तालुक्यात ५०% पेक्षा जास्त क्षेत्र आहे तो पूर्णगट	उपगट ज्या तालुक्यात २०% पेक्षा जास्त व ५०% पेक्षा कमी क्षेत्र आहे तो उपगट	शेरा
५. नाशिक	३१. इगतपुरी	पश्चिम घाट	पूर्ण गट (२७)		
	३२. नाशिक	पश्चिम घाट	पूर्ण गट (२८)		
	३३. दिंडोरी	पश्चिम घाट	पूर्ण गट (२९)		
	३४. पेठ	पश्चिम घाट	पूर्ण गट (३०)		
	३५. सुरगणा	पश्चिम घाट	पूर्ण गट (३१)		
	३६. कळवण	पश्चिम घाट	पूर्ण गट (३२)		
	३७. बागलाप (सटाणा)	पश्चिम घाट	पूर्ण गट (३३)		
	३८. सिन्नर	पश्चिम घाट	पूर्ण गट (३४)		
६. अहमदनगर	३९. अकोला	पश्चिम घाट	पूर्ण गट (३५)		
	४०. सगमनेर	पश्चिम घाट	पूर्ण गट (३६)		
७. पुणे	४१. जुन्नर	सह्याद्री पर्वत रांगा	पूर्णगट (३६)		
	४२. आंबेगाव	सह्याद्री पर्वत रांगा	पूर्णगट (३७)		
	४३. खेड (राजगुरुनगर)	सह्याद्री पर्वत रांगा	पूर्णगट (३८)		
	४४. मावळ	सह्याद्री पर्वत रांगा	पूर्णगट (३९)		
	४५. हवेली	सह्याद्री पर्वत रांगा	पूर्णगट (४०)		
	४६. मुळशी	सह्याद्री पर्वत रांगा	पूर्णगट (४१)		
	४७. वेल्हे	सह्याद्री पर्वत रांगा	पूर्णगट (४२)		
	४८. भोर	सह्याद्री पर्वत रांगा	पूर्णगट (४३)		
	४९. पुरंदर	सह्याद्री पर्वत रांगा	पूर्णगट (४४)		
८. सातारा	५०. सातारा	सह्याद्री पर्वत रांगा	पूर्णगट (४५)		
	५१. वाई	सह्याद्री पर्वत रांगा	पूर्णगट (४६)		
	५२. पाटणा	सह्याद्री पर्वत रांगा	पूर्णगट (४७)		
	५३. जावळी	सह्याद्री पर्वत रांगा	पूर्णगट (४८)		
	५४. महाबळेश्वर	सह्याद्री पर्वत रांगा	पूर्णगट (४९)		
	५५. खटाव	सह्याद्री पर्वत रांगा	पूर्णगट (५०)		
	५६. खंडाळा	सह्याद्री पर्वत रांगा	पूर्णगट (५१)		
	५७. कोरेगाव	सह्याद्री पर्वत रांगा	पूर्णगट (५२)		
	५८. कराड	सह्याद्री पर्वत रांगा		उपगट (६)	पूर्वेकडील पश्चिम भाग
	५९. झुण	सह्याद्री पर्वत रांगा		उपगट (७)	पूर्वेकडील, दक्षिणेकडील, उत्तरेकडील, पश्चिमेकडील काही भाग
	६०. फलटण	सह्याद्री पर्वत रांगा		उपगट (८)	दक्षिणेकडील व पूर्वेकडील काही भाग
९. सांगली	६१. शिराळा	सह्याद्री पर्वत रांगा	पूर्णगट (५३)		
१०. कोल्हापूर	६२. शाहूवाडी	सह्याद्री पर्वत रांगा	पूर्णगट (५४)		
	६३. पन्हाळा	सह्याद्री पर्वत रांगा	पूर्णगट (५५)		
	६४. करवीर	सह्याद्री पर्वत रांगा	पूर्णगट (५६)		
	६५. गगनबावडा	सह्याद्री पर्वत रांगा	पूर्णगट (५७)		
	६६. राधानगरी	सह्याद्री पर्वत रांगा	पूर्णगट (५८)		





जिल्हा	तालुका	ज्या डोंगरी भागात आहे त्या डोंगराचे नाव	पूर्ण गट ज्या तालुक्यात ५०% पेक्षा जास्त क्षेत्र आहे तो पूर्णगट	उपगट ज्या तालुक्यात २०% पेक्षा जास्त व ५०% पेक्षा कमी क्षेत्र आहे तो उपगट	शेरा
	६७. कागल	सह्याद्री पर्वत रांगा	पूर्णगट (५९)		
	६८. भुदरगड	पश्चिम घाट	पूर्ण गट (६०)		
	६९. आजरा	पश्चिम घाट	पूर्ण गट (६१)		
	७०. चंदगड	पश्चिम घाट	पूर्ण गट (६२)		
	७१. गडहिंगलज	पश्चिम घाट	पूर्ण गट (६३)		
११. धुळे	७२. साकी	पश्चिम घाट	पूर्ण गट (६४)		
	७३. नवापुरी	पश्चिम घाट	पूर्ण गट (६५)		
	७४. अक्कलकुवा	सातपुडा डोंगर	पूर्ण गट (६६)		
	७५. अकाणी	सातपुडा डोंगर	पूर्ण गट (६७)		
	७६. शिरपूर	सातपुडा डोंगर	पूर्ण गट (६८)		
	७७. शहादा	सातपुडा डोंगर	---	उपगट (९)	पूर्वेकडील व थोडा उत्तरेकडील भाग
	७८. लळोदा	सातपुडा डोंगर	---	उपगट (१०)	उत्तरेकडील भाग
१२. जळगाव	७९. चोपडा	सातपुडा डोंगर	---	उपगट (११)	उत्तरेकडील भाग
	८०. येवला	सातपुडा डोंगर	---	उपगट (१२)	उत्तरेकडील भाग
	८१. रावेर	सातपुडा डोंगर	---	उपगट (१३)	उत्तरेकडील भाग
	८२. ऐदलाबाद	सातपुडा डोंगर	---	उपगट (१४)	उत्तरेकडील व पूर्वेकडील काही भाग
१३. अमरावती	८३. धारणी	सातपुडा डोंगर	पूर्ण गट (६९)		
	८४. चिखलदरा	सातपुडा डोंगर	पूर्ण गट (७०)		
१४. यवतमाळ	८५. पुसद	सातमाळा रांगा	---	उपगट (१५)	उत्तर पश्चिमेकडील भाग, थोडा मध्यम भाग
	८६. अमरखेड	सातमाळा रांगा	---	उपगट (१६)	उत्तरेकडील व पूर्वेकडील भाग
१५. नांदेड	८७. किनवट	सातमाळा रांगा	पूर्ण गट (७१)		
१६. अकोला	८८. पातूर	अजिठाचे डोंगर	---	उपगट (१७)	दक्षिण व पूर्व
१७. बुलढाणा	८९. खामगाव	अजिठाचे डोंगर	---	उपगट (१८)	उत्तर व पूर्वेकडील भाग
१८. औरंगाबाद	९०. कझड	अजिठाचे डोंगर	---	उपगट (१९)	उत्तर व पूर्वेकडील भाग
	९१. खुलताबाद	अजिठाचे डोंगर	---	उपगट (२०)	मधला व दक्षिणेकडील भाग
	९२. सोयगाव	अजिठाचे डोंगर	पूर्ण गट (७२)		
	९३. सिल्लोड	अजिठाचे डोंगर	---	उपगट (२१)	उत्तरेकडील व थोडा दक्षिण पश्चिमेकडील भाग
१९. परभणी	९४. हिंगोली	अजिठाचे डोंगर	---	उपगट (२२)	दक्षिणेकडील भाग
	९५. कलमनूरी	अजिठाचे डोंगर	---	उपगट (२३)	दक्षिणेकडील भाग

???





शासन निर्णय, ग्रामविकास विभाग क्र. ग्रापापु-१०९० / सीआर-१६३/३९-अ

दि.७ डिसेंबर १९९० चे सहपत्र

परिशिष्ट - २

तालुकावार झाडीतील उपगट म्हणून घोषित केलेल्या तालुकातील गावांची झाडी दर्शविणारे विवरणपत्र

जिल्हा म्हणून घोषित केलेला तालुका	उपगट तालुकातील गावांची नावे
ठाणे १. वसई	१) चांदज २) तिपलिया ३) शिवनासा ४) पानसा ५) उसगांव ६) पारोळ ७) शिरवली ८) जळकीया ९) वसई १०) सारवण ११) घाटेघर १२) भावखल १३) पेलाट १४) साजिवली १५) दापेवली १६) कार्जुरा १७) खाडेकर १८) भिडा १९) खोलसट २०) खैरे २१) संदा २२) चुडाल २३) तिल्लेस २४) सावट २५) मरतारी २६) बिलवुडा २७) गया २८) दडविरा २९) सातिवली ३०) खाडी ३१) दैडा ३२) दडीप ३३) वामन ३४) काजू ३५) कोल्ही ३६) कोळा ३७) चिंचाटी ३८) होवाऊन
२. भिवंडी	१) गणेशपुरी २) वडवली ३) उसगांव ४) धाडगांव ५) आंदीपाडा ६) गोबाटा ७) बोहिली ८) बावची ९) मालवियोर १०) बेलोली ११) उसपाडी पाडा १२) आंबराई पाडा १३) घ्यार १४) खडकी खुर्द १५) पिंपळशेत १६) खडकी बुद्रुक १७) भाऊपोळ १८) कुहापाडा १९) कुहा २०) आंबापाडा २१) देवपाडा कुर्लपाडा २२) पायगांव २३) पाया २४) पेखनपाडा २५) भावडीपाडा २६) खारभाव २७) गाना २८) लाकेवली २९) चिंचपाडा ३०) गौरीपाडा ३१) डोकरनापाडा ३२) अलकौअरी
रायगड ३. पनवेल	१) माणिकघर २) घोडसावना ३) सावना ४) बामणोरी ५) नामदेवी ६) देवलोळी ७) छावना ८) कालेवली ९) सारसाई १०) आपटा ११) कासव १२) कारडा १३) देवती १४) बुलसुडा १५) अकूवडी १६) घुराडाव १७) वावेघर १८) कोष्टी १९) दापोवली २०) देवतुला २१) सावला २२) करनाहा २३) कला २४) वंडाना २५) कारल २६) दुलघट २७) कासभाट २८) दिघारी २९) हातवंडी
रत्नागिरी ४. मंडणगड	१) अंबावना बुद्रुक २) कैजालघर ३) लोरी ४) हेल्ती ५) गारीपाडा ६) पेवा ७) पांडेरी ८) पाडवा ९) अंबरसेट १०) टीव्हेसाई ११) टेरी १२) लोकरवन १३) महाप्रत १४) हडघर १५) तांभी १६) लोहरा १७) गौरज १८) कुंभार १९) गोवेळे २०) पन्हाली २१) धुरी २२) तारवली २३) आंबेगण २४) धनगर २५) सारळ २६) अडखळ २७) व्हेसाई २८) पाट २९) ओंजला ३०) सोडली तर्फे व्हेसाई ३१) बुद्रुक ३२) खुर्द ३३) शिंगांव ३४) साडा ३५) तळघर ३६) टाकेडी ३७) पाचरोल ३८) धामणी ३९) वोरखट ४०) गोवा ४१) धामणघर ४२) सामोटी ४३) निगडी
सिंधुदुर्ग ५. मालवण	१) कुसीस २) असरुडी ३) भवानी ४) वंजकार ५) टाटारभाव ६) भाटपावणी ७) शिरावडे ८) रातीवडे ९) आजगणी १०) ब्राह्मण ११) हिवाळे १२) ओवलीये १३) खाटले १४) हुंडुल १५) वायनगावडे १६) वायरन १७) पोईप १८) नेसुरे १९) वाडेच्या पाट २०) नवा पाट २१) गोलवणे २२) डीकवळ २३) चापेखोल २४) कुमामे २५) नांदोसा २६) तिरावडे २७) पारस २९) डेहूल
सातारा ६. कराड	१) मरळी २) चोरजवाडी ३) कोरीवळे ४) बेलदारे ५) म्होप्रे ६) भोळेवाडी ७) साकुर्डी ८) येणके ९) कोळे १०) कुसूर ११) तुळसण १२) सवादे १३) लाटकेवाडी १४) हवेलवाडी १५) महासोळी १६) शेळकेवाडी १७) मनु १८) येवती १९) घराळवाडी २०) हणमंतवाडी २१) टाळगांव २२) येळगांव २३) गौरेवाडी २४) गणेशवाडी २५) भरेवाडी २६) सोळशिरमे २७) महारगडेवाडी २८) जिती २९) अक्काईवाडी ३०) कासारशिरमे ३१) निगडी ३२) धोलपावाडी ३३) किवळ ३४) खोडताईवाडी ३५) मसूर ३६) हणबरवाडी ३७) वाण्याची वाडी ३८) मालवाडी ३९) कांबीखाडी ४०) शिरगांव ४१) सुळी ४२) पाल ४३) हरपळवाडी ४४) रिसवड ४५) वरची साकुर्डी ४६) सांजूर ४७) वानरवाडी ४८) उंडाळे ४९) भुरडुथी ५०) जतीनवाडी ५१) नांदलापूर ५२) वसंतगड ५३) चरेगाव ५४) तांबवे ५५) आरेवाडी ५६) गमेवाडी ५७) मोळवाडी ५८) कोळेवाडी ५९) पांढरवाडी ६०) आपणे ६१) आंबवडे ६२) तारुख ६३) बाहुनवाडी ६४) भवानपाडा ६५) शितलवाडी ६६) चिखली ६७) पाचुंद ६८) कामथी ६९) वाघेरी ७०) कुरवडी ७१) हजारमाची ७२) दाबरमाची ७३) वनवासमाची ७४) राजमाची ७५) टेंभू ७६) सद्गाड ७७) कोरेगांव ७८) कावें ७९) वडगांव हवेली ८०) शेपोली कालवडे





जिल्हा म्हणून घोषित केलेला तालुका	उपगट तालुकातील गावांची नावे
७. फलटण	१) सालपे २) आदकीखुर्द ३) आळजापूर ४) कोराळे ५) वाघोशी ६) लाथवडा ७) मानेवाडी ८) झाडकबाईवाडी ९) वेलोशी १०) उपलवे ११) दाववाडी १२) भीरवाडी १३) गिरवी १४) घुमाळवाडी १५) बेडकेवाडी १६) सासकळ १७) भाडळी खुर्द १८) दुधभावी १९) झीरडे २०) जावली २१) आंदुड २२) कुरवाली बु.
८. मान	१) कुळकजाई २) कळसकरवाडी ३) गाडेवाडी ४) शिंदे बुद्रुक ५) पाळवण ६) तोंडले ७) उगळेवाडी ८) खंडघाची वाडी ९) झोगराळे १०) शिंगणापूर ११) भांडळी १२) इंजलात १३) कळचोडी १४) विरळी १५) वळई १६) कुळडवाड १७) मढणे १८) काळेवाडी १९) दोरगेवाडी २०) किरकसाड २१) इहिमानगड २२) दिवडी २३) पांढरवाडी २४) स्वरूपवानवाडी २५) उकिरडे २६) शिंदी बुद्रुक २७) बोधे
धुळे ९. शाहदा	१) काकरेदे खुर्द २) काकरेदे बुद्रुक ३) कोंढावळ ४) चांदसेली ५) चिरंडे ६) वरूड बुद्रुक ७) मळगांव ८) भुलाना ९) दरा १०) राणीपुरी ११) आकसपूर १२) मानमोडया १३) नागझरी १४) लंगडी भवसनी १५) कुकुडवाड १६) मखणे १७) आभाडपूर खुर्द १८) टरबा १९) नाथगांव २०) सिसुरा २१) पेठा २२) फोफाराले २३) चांदपूर २४) गुदा २५) इकरास २६) काटघर २७) पिरपूर
१०. तळोदा	१) सोजूरवाडा २) माळखुर्द ३) चौगांव खुर्द ४) लाकुड शेट ५) खडी खुर्द ६) काठोर ७) बंधारा ८) खडी बुद्रुक ९) जुवाणी १०) लाखापूर ११) माळ १२) मोरामाळ १३) आंबा गव्हाण १४) सीतपावळी १५) बामनी १६) मलुवा १७) राजापूर
जळगाव ११. चोपडा	१) मराठा २) सत्रासेन ३) खांडरा ४) भोरचिडा ५) उमरटी ६) गोवापाडा ७) कृष्णापूर ८) खान्यापाडा ९) विजापूर १०) मुख्यावतार ११) शेतपाणी १२) बोअरअनंती १३) मालापूर १४) विष्णापूर १५) बोरमळी १६) कर्जाणा १७) मेलाना १८) देव्हारी
१२. येवला	१) मनुबाई देवस्थान २) लंगडा आंबा ३) गढुन्या ४) जामन्या ५) उसमळी ६) हरीपुरी ७) नागदेवी ८) वाघझीर ९) आसरावारी
१३. रावेर	१) तिडया २) अंधारमाळी ३) मोहमोडी ४) चिचाडी ५) चिमडया ६) गारखेडा ७) मोहमांडली सून ८) पिंपटकुंड ९) पाल १०) मोरव्हाल ११) जिन्सी १२) गारखेड १३) सहरनलिंग १४) लालमाती
१४. ऐदलाबाद	१) दुई २) सुकली ३) सोमणगांव ४) डोलरखेड ५) नोंदवेल ६) वायल ७) चारठाणे ८) देवी मंदीर ९) मोरझिरा १०) जोनधखेड ११) लालगोडा १२) हलखेडा
बुलढाणा १५. खामगांव	१) गिरोळी २) इसालवाडी ३) चिंचखेडनाथ ४) कठडेगांव ५) चिंचखेडबंड ६) शेढी ७) मांडणी ८) बोधा ९) खेडी १०) वाकी ११) गारखेड १२) गारोडी १३) धार १४) माटरगांव १५) चिंचखेड १६) कान्ती १७) कझर १८) पिंपरी १९) धनगर १८) लाखनवाडी खुर्द १९) पतेपूर २०) निमखेडा २१) हिवरखेडा २२) गिरोडा
अकोला १६. पातूर	१) अंबारी २) भानोसा ३) बेलवळ ४) बलकापूर ५) भोक्द कंदोली ६) बडी आमराई ७) बोडसा ८) खानापूर ९) काकडदारी १०) कोठारी बुद्रुक ११) पासटल १२) कोसगांव १३) माळराजूर १४) सावरखेड १५) चिंचखेड पातूर १६) शेकापूर १७) कार्ता १८) चारमुळी १९) धरम २०) पांदुर्णा २१) सोनुना २२) चिखलपाव्हळ २३) चोंडी २४) जांब २५) चिंचखेड २६) गोळेगांव २७) आधार सावंगी २८) गावडगांव २९) सावरगांव
यवतमाळ १७. पुराद	१) पिंपळगांव २) हौसापूर ३) बामनवाडी ४) कोन्होळ ५) गहुळी ६) चोडी ७) चिंचघाट ८) देवगव्हाण ९) बेलगव्हाण १०) जामनी धुद ११) मोरगड १२) उडाणी १३) पारवा १४) पांदुणी खुर्द १५) खटकोला १६) पन्हाळा १७) मांजरजवळा खुर्द १८) मांजरजवळा १९) सावतमाळ २०) हनवंतखेड २१) मारवाडी २२) अमृतनगर २३) धनतळ २४) अनजळ २५) उपवनवाडी २६) रामपूरनगर २७) दुधगिरी २८) अनसिंग २९) जांबनाइकर ३०) शिलोना





जिल्हा महणून घोषित केलेला तालुका	उपगट तालुकातील गावांची नावे
१८. उमरखेड	१) दिडाळा २) पाडी ३) पिरंजी ४) गोविंदपूर ५) कुरळी ६) जाम ७) अकोली ८) सातारा ९) मसळग १०) पाडी ११) जेवळी १२) पिंपळगांव १३) बोडखा १४) पेधा १५) उदापूर १६) सावरगांव १७) परोटी १८) नानी १९) बोरी २०) घेरडी २१) पवनाळा २२) सोनदामी २३) येकंदा २४) मोरचंडी २५) कोसंबी २६) चिखली २७) रामपूर २८) बोरगांव २९) डोंगरगांव ३०) धडोली ३१) भोईर ३२) नवलालपूर ३३) दिशस ३४) काटी ३५) कवठा ३६) वहेली ३७) वानोरा ३८) शिवाजीनगर ३९) जवराळा ४०) उमरी ४१) असोली ४२) सेवालालनगर ४३) वडगांव ४४) दामसरी ४५) धार बुद्रुक ४६) सेरंडी ४७) दसरी ४८) मधुरानगर
औरंगाबाद १९. सिल्लोड	१) धनशिगवाडी २) बाभुळगांव ३) पोखरी ४) बावरा ५) मोमोनाबाद ६) लेहा ७) दाधेगाव बुद्रुक ८) अंधारी ९) जातवा १०) अमरावती ११) घाटानांदा १२) परदेशीवाडी १३) चारनेर १४) धावडा १५) अंधारवाडी १६) कडेगांव १७) सिरसाम १८) नातेगांव १९) घाटमखेळ २०) हालदा २१) पिंपळदरी २२) मुखबार २३) वाघरा २४) राजणी २५) अजिठा २६) अनाड २७) आमसरी २८) नारवी २९) वडाळी
२०. कन्नड	१) तांदुळवाडी २) पेवळी ३) मुमसापूर ४) पेकडवाडी ५) कोंडवाडी ६) कल्याणी ७) वडनेर ८) अंबाला ९) आंबा १०) जामडी ११) रेळ १२) कुंजखेड १३) नांदगिरवाडी १४) हिवरखेड १५) वडाळी १६) जेतखेड १७) मालेगांव डोकळ १८) भारवा १९) मालेगांव लोखोंडे २०) मोहाडी २१) हरता २२) माहेगांव २३) चेडसर २४) पळसी खुर्द २५) कांबळी २६) भिलदरी २७) गोरपिंपळी २८) सवखेड बुद्रुक २९) पिंपरखेडा ३०) सफीयाबाद ३१) खडकी ३२) पिशीर ३३) भातवाडी ३४) वासरी ३५) निभोरा ३६) उमरखेड ३७) सावरगांव ३८) धामणी ३९) आंबेवाडी बुद्रुक ४०) मेहूण ४१) हारेवाडी ४२) वडगांव ४३) लोडा ४४) पांगरी ४५) भापेवाडी ४६) सोनवाडी ४७) शिवघाट ४८) चिमणापूर ४९) नागापूर ५०) करंजखेड ५१) रेडळगांव ५२) नेवूपूर ५३) घाटशेंटा ५४) टाकळी ५५) अंतूर ५६) लोहगांव
२१. खुलताबाद	१) वडगांव २) पाडळी ३) शिरोळ बुद्रुक ४) सावरखेडा ५) लोधी ६) बोडक ७) खुलताबाद ८) धामणगांव ९) अब्दुलापूर १०) निरगुडी बुद्रुक ११) पिंपरी १२) जमालवाडी १३) म्हैसमाळ १४) शिरसमाळ १५) टाकळी खुर्द १६) आखतवाड १७) वेरुळ १८) मंत्रापूर १९) खुलताबाद २०) सराई २१) बदलाबाई २२) नंदुबाद २३) मापसाळा २४) रसूलपूर २५) शंकरपूरवाडी २६) साबुखेडा २७) खिर्डी २८) सोनखेडा २९) भटजी ३०) लामनगांव ३१) खोतेनापूर ३२) विरमगांव
परभणी २२. हिंगोली	१) नरसी २) लोहगांव ३) सेवली ४) पिंपळी ५) बोरळा ६) जळगांव ७) शेलेगांव ८) सोनेगांव ९) पिंपरखेड १०) देवळा ११) अनापनवाडी १२) ससुळापूर १३) माथा १४) मूर्तिजापूर १५) केहरपिंपरी १६) सिद्धेश्वर १७) दिघुळ १८) टुडचना १९) बडचुना २०) ओढा २१) हनुमानदरी २२) शिवकार २३) जामला २४) जामदन २५) वैजापूर २६) खंबाळा २७) फासेले २८) तबलीगवाहाण २९) मांडेगांव ३०) राख ३१) जामरी खुर्द ३२) पांगरी ३३) बोराळा ३४) नांदुरा ३५) कडवी ३६) आमनखेड ३७) ब्रह्मपुरी ३८) खळगांव ३९) जामसन ४०) पारडी ४१) खळगांव ४२) रिधोस ४३) तेजगांव ४४) कोळंब ४५) सुकली बुद्रुक ४६) सुकली ४७) शिंदेपळ ४८) धनगरवाडी ४९) सबळखेड ५०) बाभुळगांव ५१) गोरेगांव ५२) पोडीखुर्द ५३) ब्रह्मणवाडी ५४) पिंपरी पाथबळ ५५) बोरखेड ५६) एकंवा ५७) खंडाळा ५८) चिंचोळी ५९) बेलरा ६०) आडगांव ६१) देवठाण ६२) काळेगांव ६३) कलोखेड ६४) कपचुली ६५) चाटोना ६६) देवठाण
२३. कळमनूरी	१) खेड २) धानापूर ३) धोत्रा ४) अमरखोजा ५) शिरस खुर्द ६) शिरस बुद्रुक ७) डिगस वापी ८) पिंपरी ९) सांडस १०) रेटकर ११) वराडी १२) खडकत बुद्रुक १३) खडकस खुर्द १४) मंदारी १५) गारखेड १६) महरी खुर्द १७) खडकत १८) वैज १९) दुधरी २०) चिंचोळी २१) खोडतला २२) पेडगांव २३) डोंगी २४) नांदुरा २५) बोलापुरी २६) तळेगांव २७) जावा २८) मिसे बुद्रुक २९) कापस ३०) शिपगी ३१) माळवाडी ३२) दाडेगांव ३३) मोतीचोर ३४) विठ्ठलवाडी ३५) पिंपरी उर्द ३६) कानेगांव ३७) फाटना ३८) दाभाडी ३९) पुंचा ४०) मोरगांव

???



## GENERAL NOTES





# MAHARASHTRA JEEVAN PRADHIKARAN PUNE REGION

## SCHEDULE OF RATES FOR THE YEAR 2018-19

### GENERAL NOTES

- 1 These rates are applicable to all MJP works in the PUNE REGION with effect from 01/06/2018..
- 2 Item of excavation is inclusive of normal manual dewatering, however, separate item for dewatering shall be proposed in the estimate where underground water is anticipated in significant magnitude.
- 3 The rates of excavation for O & M works where limited working space is available and work is required to be carried out on emergency basis, the rate should be adopted as per the actual rate analysis which shall be approved by concerned S.E. for that particular work only.
- 4 All Material Rates are exclusive of GST(Goods and service Tax). Rates for completed items are also exclusive of GST. While preparation of estimates prevailing GST Percentage, provision should be made separately in recapitulation sheet.
- 5 For all completed items, initial lead of 5 kms. is considered for collection of materials like sand, bricks, metal, stone etc. Appropriate addition for lead charges excluding loading , unloading for these materials shall be done while estimation. Following quantities shall be considered for additional lead charges beyond 5 Kms for materials required for concrete and reinforcement structures.

Capacity (Lit)	Staging (M)	Concrete Qty (Cum)	Reinforcement Qty. (MT)
20000	12	27.4	2.14
30000	12	32.7	2.55
40000	12	37.8	2.95
50000	12	41.9	3.27
60000	12	46.4	3.62
70000	12	51.2	3.99
75000	12	53	4.13
80000	12	56	4.37
90000	12	62.4	4.87
125000	25	107.4	8.38
150000	12	89.8	7.00
160000	12	94.3	7.36
175000	16	117.6	9.17
200000	20	143.6	11.20
200000	25	157	12.25
250000	25	177	13.81
300000	25	206	16.07
Note: Spiral staircase not considered. Above quantities shall be considered for all types of foundation (SBC) and all types of Seismic Zones.			

### GENERAL NOTES



RCC GSR		
Capacity (Lit)	Concrete Qty	Reinforcement Qty. (MT )
25000	13.58	0.9448
50000	18.45	1.5856
75000	30.45	2.0952
1,00,000	39.31	2.7072
1,50,000	54.699	3.778
2,00,000	73.313	6.577
3,00,000	95.092	9.874
5,00,000	143.277	11.90
10,00,000	222.441	15.418
<p>( For WTP/STP works.quantities of completed/ongoing works shall be considered.)</p> <p>For Capacities beyond the mentioned capacities of ESR and GSR as well as for all capacities of WTP &amp; STPs , the Quantities shall be considered with respect to the already completed/ on going work in the region. all the concrete items for water retaining structures are taken as M-300 grade.Hence aggregate quantity shall be 0.90cum/cum of concrete and sand quantity shall be 0.45cum/cum of concrete for RCC ESR,GSR, all Treatment Plants.</p>		

- 6 These rates are applicable to water supply and sewerage schemes and its allied works only. Rates for Items required for general construction, buildings, roads, Irrigation Works etc. shall be adopted from the current schedule of rates of P.W.D. or Irrigation Deptt. in respective areas. For bore wells, CSR of GSDA shall be followed. Increase in percentage over normal schedule of rates will also be as per norms of respective C.S.R.
- 7 For mechanical and electrical items related to water supply and sewerage schemes, CSR for 2016-17 prepared by Superintending Engineer (Mechanical), Maharashtra Jeevan Pradhikaran shall be adopted.
- 8 Following increase in % over normal schedule of rates of M.J.P. for 2018-19 will be applicable. (Ref. PWD GR. No. DSR/1091/CR-6577/Planning-3, dated 08/07/2003).

	Area	% Increase
a	Works in Corporation area	5%
b	Works in Municipal areas	2%
c	Works in tribal area/ hilly and inaccessible areas	10%
d	Suger cane area (within 10.0 Km radius)	5%
e	Prison/ Jail area	15%
f	Defense area	20%
g	Excavation for pipeline work along National Highway	10%
h	Excavation for Dist. system pipe lines, Sewerage system in towns	10%

Note:-The superintending engineer should specify sugar factory areas.

- 9 In case more than one percentage increase on basic rates becomes admissible, instead of adding both, the higher percentage only be taken. (e.g. if any Municipal Council falls in hilly area, then additional percentage in rates will be only 10 % and not with 2 % +10 %). This additional percentage is only on completed item of work and not applicable to items of providing of materials like steel, pipes, valves, specials etc.



- 10 For hilly and inaccessible areas / tribal areas approved by Government, Planning Department's Circular Nos. (1) 1089/CR-66/Plan-19, dt.23/11/1990 and (2) 1094/P-36/K-1455 dt.02/09/1994, shall be followed. In addition to amendment notified by the Planning Deptt. from time to time.
- 11 For Action Plan Notified Area, Government's Circular in force from time to time shall be followed.
- 12 Whenever basic rates of completed items are increased by percentage given at Sr. No. 8, the issue rates of materials to be supplied by the Department (if any) shall be increased by same percentage.
- 13 This schedule of rates is based on following basic rates for important materials.

	Material	Rate in Rs. Per MT.
a	Cement	4200/-
b	Mild Steel	31500/-
c	Tor Steel/CTD bars	33425/-
d	Structural Steel	34834/-
e	Corrosion Resistant Steel (Fe 500)	35975/-

- 14 Details of standard cement consumption are incorporated in this CSR.
- 15 Rates for supply of various types of pipes, specials and valves are exclusive of GST but Inclusive of , third party inspection charges, storage charges, overhead charges and transportation of materials upto divisional stores and stacking.
- 16 Cost of carting of pipes and valves from departmental stores to site of work is not considered in rate analysis, hence this item must be incorporated in each scheme. While inviting tenders if supply is from departmental store, then this item shall appear in the tender, and if the supply is by contractor then this item shall not appear in the tender, even though same is provided in sanctioned scheme, because the contractor is supposed to bring the pipes and valves directly at site.
- 17 Though the contractor is required to do refilling before hydraulic testing to avoid traffic hurdle, no payment for refilling of the trenches of pipeline shall be payable till satisfactory hydraulic testing is given. Re-excavation required if any, during testing, shall be done by the contractor at his own cost.
- 18 10 % of cost of items of water retaining structures, such as GSR/ESR/MBR shall be retained till satisfactory hydraulic testing is given as per IS code.
- 19 10 % of cost of total sub-work of pipeline work shall be retained, till satisfactory hydraulic testing is given as per IS code or as per tender condition.
- 20 In case of supply of pipes/valves etc. by contractor, only 85% payment shall be released after supply and 15% after satisfactory hydraulic testing or as per tender condition.
- 21 AC/PVC Pipes shall not be used in urban areas with respect to circular No. 130 Dtd. 09.03.2009 of MS MJP. HDPE Pipes may be used in distribution system of urban areas with diameter restricted upto 300 mm only provided that area where these pipes are to be laid shall not be rocky area.
- 22 For use of ready mix cement concrete prior permission of Chief Engineer must be obtained in writing.
- 23 For Dams, Balancing Tanks, Aerated Lagoons and similar structures, the rates for Film membranes as per prevailing rates for Irrigation Department will be followed.
- 24 Capacity of ESR / GSR to be constructed shall be rounded to nearest 1000 litres always on higher side i.e. if required capacity is 1,23,570 litre, it shall be rounded to 1,24,000 litre. Similarly, if required capacity is 8,26,070 litre, it shall be rounded to 8,27,000 litre.
- 25 Capacity of Unconventional / conventional Treatment Plants shall be rounded to nearest 0.5 Mld- always on higher side i.e. if WTP of 2.37 Mld is required; it shall be rounded to 2.5 Mld. For WTP having capacity less than 0.5 mld, package type WTP should be considered.
- 26 Provision for insurance at 1% is considered in Rate analysis of CSR 2018-19. These rates are applicable only for tendered works, these rates should be reduced by 1 % of total rate when works are to be carried out on piecemeal works and other small works without tendering.



- 27 Rates given in this CSR are for estimation purpose only.
- 28 The makes of Sluice / Butterfly valves etc. to be used for inlet / outlets of ESRs / GSRs / MBRs / Pumping main / Rising main and WTP should be from approved makes of M.J.P.
- 29 Mechanical CSR rates for respective items shall be followed while estimation and the list of approved makes shall be given in the item.
- 30 The royalty charges are considered in the rate analysis of CSR 2018-19 As per Government Resolution No. Rev and forest Dept Gaukhani 10/1009/ Pra.Kra.309/Kha. Mantralaya dt.11.2.2010.
- 31 As per Govt. circular no DSR-1090/CR 6453/PLN3 Dtd. 14.07.1992. 1% for labour amenities is considered while arriving the rates.
- 32 As per Govt. in Industries and Power GR No. BCA 2009/CR 108/Labour 7A Dtd. 17.06.2010. 1% cess on labour welfare is considered while arriving the rates.
- 33 (1) Item of hydraulic testing should be measured separately, as per detail item in respective sub work.  
(2) In case of water Supplied by the MJP, amount of Water Supplied should be deducted from the Item of the hydraulic testing, with prevailing rates of Non Domestic (Bulk Supply) of the WSS, as per MJPs latest notification..





**SECTION - A**

**MATERIALS**



Sr. No	Description	Unit	Rate (Rs.) 2018-2019	Rate (Rs.) 2019-2020
	<b>MATERIAL</b>			
1	Acetylene Gas	No	650.00	
2	Alum Grade IV Ex-factory	MT	7017.00	
3	Binding Wire	Kg	53.00	
4	Black enamel paint Anti corrosive	Lit	153.50	
5	Bricks	No	5.00	
6	Bullies, Struts (125 mm dia 1.5 M long)	Rmt	162.00	
7	C.C.Teak wood planks(3" X 6")	Cum	62055.00	
8	Cement (Bags)	Bag	210.00	
9	Cement (M.T.)	MT	4200.00	
10	Cement Sulphar Resistant	MT	5452.00	
11	Charcoal	Kg	31.00	
12	Corrosion Resistant steel	MT	35975.00	
13	Diesel	Lit	59.97	
14	Epoxy paint	Kg	344.00	
15	Fuse	No	20.00	
16	Gun Powder	Kg	62.00	
17	Liquid chlorine 100 kg supplier Container	No	1993.00	
18	Liquid chlorine 900 kg Deptt Container	No	12757.00	
19	Lubricant Oil	lit	185.00	
20	M.S.angle(50x50x6mm)	Kg	35.00	
21	M.S.Bars (Delivery at site)	MT	31500.00	
22	M.S.Bars (in kgs)	Kg	32.00	
23	M.S.Flats (40 mm x 3 mm)	Kg	37.00	
24	M.S.plate	Kg	36.00	
25	Mild steel Grill ready	Kg	51.00	
26	Mildsteel grill railing	Kg	56.00	
27	Mobile oil	Lit	214.00	
28	Murum	cum	222.00	
29	Nails	Kg	60.00	
30	Nutbolts	Kg	71.00	
31	Oxygen Gas (Refill)	Cylinder	270.00	
32	Polling board	cum	15663.00	
33	Quarry spalls	cum	188.50	
34	R.S.Joist channel etc	MT	38540.00	
35	Rapid sand Gravity filter sand At Source (Godhara, Gokak, Kanhan, Yesagi sand)	Cum	1509.00	
36	Rapid sand Gravity filter Gravel At Source	Cum	1509.00	
37	Ready mixed lead/zinc paint	Lit	183.00	
38	Ready mix oil paint	Lit	183.00	

## SECTION - A : MATERIAL





Sr. No	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
39	Ready mix primer for steel	Lit	131.00			
40	Rubber Gasket (6 mm thick)	Kg	78.00			
41	Sand	cum	1139.00			
42	Kasarde sand (for mortar lining work) @ source	cum	1585.00			
43	Spun Yarn	Kg	74.00			
44	Stone Aggregate 10 mm	cum	750.00			
45	Stone Aggregate 20 mm	cum	750.00			
46	Stone Aggregate 40 mm	cum	750.00			
47	Rubble (Stone at quarry)	cum	377.00			
48	Structural Steel	MT	34834.00			
49	T.C.L.(bleaching powder Gr.I) (5kg pack)	Kg				
50	T.C.L.(bleaching powder Gr.I) (10kg pack)	Kg				
51	T.C.L.(bleaching powder Gr.I) (25kg pack)	Kg	19.00			
52	Teak wood	Cum	57171.00			
53	Tor Steel	MT	33425.00			
54	Walling ( 100x100mm)	cum	13509.00			
55	Welding Rod Having weight 5.25 kg	Box	1124.00			
56	White cement	Kg	22.00			
57	White lead	Kg	129.00			
58	Wire	Kg	61.00			
59	Plywood Commercial 12 mm thick Waterproof for centering (Taken in analysis for RCC items only)	Sqm	424.00			
60	Coarse Sand	Cum	821.00			
61	PAC Powder High Basacity	MT	24877.00			
62	PAC Powder High Basacity Liquid	MT	9090.00			
63	Ready mixed Synthetic Enamel paint	Lit	121.00			
64	Ready mixed Aluminium paint	Lit	226.00			



**SECTION - B**

**LABOUR & MACHINERY**





Sr. No	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
	<b>LABOUR AND MACHINERY</b>					
1	Asst Fitter	No.	431.00			
2	Bhandhani	No.	429.00			
3	Bhisti with pakahal	No.	326.00			
4	Blacksmith IInd class	No.	369.00			
5	Breaker	No.	414.00			
6	Carpainter 1st class	No.	488.00			
7	Carpainter 2nd class	No.	443.00			
8	Chiseller	No.	414.00			
9	Excavator	No.	369.00			
10	Fitter 1st class	No.	488.00			
11	Glazier	No.	369.00			
12	Helper	No.	326.00			
13	Hole Driller	No.	414.00			
14	Mason 1st class	No.	533.00			
15	Mason 2nd class	No.	488.00			
16	MAZDOOR (FEMALE)	No.	326.00			
17	Mazdoor(Heavy)	No.	369.00			
18	Mazdoor (Light)	No.	326.00			
19	MAZDOOR (MALE)	No.	326.00			
20	Maistry	No.	443.00			
21	Mukadam	No.	443.00			
22	Painter (for coloring)	No.	406.00			
23	Painter	No.	429.00			
24	Polisher	No.	406.00			
25	Pump Driver	No.	414.00			
26	StoneCutter or dresser	No.	488.00			
27	Tile layer	No.	488.00			
28	Welder	No.	488.00			
29	Welder for pipe line	No.	488.00			
30	WhiteWasher	No.	0.00			
31	TileTurner	No.	443.00			
32	L.M.V. Driver	No.	414.00			
33	Electrician	No.	414.00			
	<b>HIRE CHARGES OF MACHINERIES</b>					
1	Rent for polishing machine with crew	Day	338.00			
2	Rent for chain pully block with tripod	Day	523.00			
3	Rent for pump including operator & excluding fuel	BHP-Day	195.00			
4	Rent for Mech.Mixer with fuel & crew	Day	2798.00			
5	Rent for vibrator with fuel and crew	Day	915.00			
6	Plate Bender	Day	871.00			

## SECTION - B : LABOUR & MACHINERY







**SECTION - C**

**TRANSPORTATION**



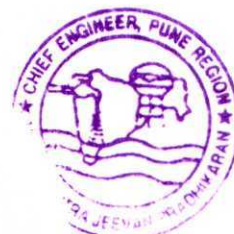
## STATEMENT - I

**Rate (Rs.)  
2018-2019**

Sr. No.	Item of Work	Unit	Collecting the railway receipt etc & unloading the consignment from railway wagon & keeping on railway platform consignment booked in	Lifting the material from railway platform, loading into truck.	Loading the material into truck from departmental store or site of work.	Unloading the material from truck including stacking in departmental stores or site of work.
1	2	3	4	5	6	7
<b>(A)</b>	<b>MANUAL HANDLING</b> (Weight upto & including 300 kg.)					
1	C.I. / D.I. / M.S./H.D.P.E. pipes of all classes upto & including 200 mm dia. Pipes of any length.	M.T.	297.00	365.00	94.00	94.00
2	R.C.C. pipes of all classes upto & including 350mm dia.	M.T.	297.00	365.00	94.00	94.00
3	A.C. pipes of all classes & dia.	M.T.	157.00	221.00	56.00	56.00
4	P.V.C. pipes of all classes & dia.	M.T.	157.00	221.00	56.00	56.00
5	All other materials such as C.I. Specials of individual weight upto 300 kg.	M.T.	297.00	365.00	94.00	94.00
6	Mild steel / for steel / R.S.J.	M.T.	187.00	253.00	141.00	141.00
7	Cement / bleaching powder / alum.	M.T.	91.00	137.00	70.00	70.00
<b>(B)</b>	<b>CRANE HANDLING</b> (Materials having individual weight above 300 kg.)					
1	C.I./D.I./B.W.S.C./ M.S./ R.C.C. pipes of all classes having individual weight more than 300 kg. & alsoother heavy materials, valves, machinery having individual weight more than 300 kg.	M.T.	201.00	254.00	181.00	181.00

- 1) The above rates in col. 1 to 5 are applicable only for Railway clearance purpose and not for other carting.
- 2) The rates given in col. 6 to 7 shall be adopted for estimate purpose only, however actual quotations / D- tender will prevail.
- 3) Irrespective of supply of C.I./D.I. Pipes as per rate contract when pipes are directly supplied by the firms by road railway freight upto destination station and carting as per schedule from Railway Station to work site is allowed In such cases rate of Mathadi Kamgar shall not be applicable for carting and normal loading, unloading carting shall be allowed.

## SECTION - C : TRANSPORTATION





**STATEMENT - II**  
**INCLUDING LOADING, UNLOADING AND STACKING**

Lead in km L	Av. Speed S	No. of Trips(N) = 8/ ((2L/S) +1)	Km. Done (2NL+6)	Litres of diesel consumed	cost of diesel @ 59.97	Lit. of Mobile oil consumed	cost of M.Oil @ 214	cost of 6 mazdoor 369/ day	Hire charges of truck Rs.2758 Per day	Total cost (6+8+9+10)	Add 10% overhead charges	Total 11+12	cost per trip (13/3)
1	2	3	4	5	6	7	8	9	10	11	12	13	14
0.5	15	7.5	13.5	4.5	269.88	0.096	20.54	2430	2758	5539.51	553.95	6093.46	812.46
1	16	7.11	20.22	6.74	404.22	0.144	30.82	2430	2758	5684.13	568.41	6252.54	879.4
1.5	16.5	6.77	26.31	8.77	525.97	0.188	40.23	2430	2758	5815.29	581.53	6396.82	944.88
2	17	6.48	31.92	10.64	638.12	0.228	48.79	2430	2758	5936.00	593.6	6529.60	1007.65
2.5	17.25	6.2	37	12.33	739.47	0.264	56.50	2430	2758	6045.06	604.51	6649.57	1072.51
3	17.5	5.96	41.76	13.92	834.83	0.298	63.77	2430	2758	6147.69	614.77	6762.46	1134.64
3.5	17.75	5.74	46.18	15.39	922.99	0.33	70.62	2430	2758	6242.70	624.27	6866.97	1196.34
4	18	5.54	50.32	16.77	1005.75	0.359	76.83	2430	2758	6331.67	633.17	6964.84	1257.19
4.5	18.25	5.36	54.24	18.08	1084.32	0.387	82.82	2430	2758	6416.23	641.62	7057.85	1316.76
5	18.5	5.19	57.9	19.3	1157.48	0.414	88.60	2430	2758	6495.17	649.52	7144.69	1376.63
6	18.75	4.88	64.56	21.52	1290.62	0.461	98.65	2430	2758	6638.36	663.84	7302.20	1496.35
7	19	4.61	70.54	23.51	1409.97	0.504	107.86	2430	2758	6766.92	676.69	7443.61	1614.67
8	19.183	4.36	75.76	25.25	1514.32	0.541	115.77	2430	2758	6879.18	687.92	7567.10	1735.57
9	19.6	4.17	81.06	27.02	1620.48	0.579	123.91	2430	2758	6993.48	699.35	7692.83	1844.8
10	20	4	86	28.67	1719.43	0.614	131.40	2430	2758	7099.92	709.99	7809.91	1952.48
15	25	3.64	115.2	38.4	2302.97	0.823	176.12	2430	2758	7728.18	772.82	8501.00	2335.44
20	25	3.08	129.2	43.07	2583.05	0.923	197.52	2430	2758	8029.66	802.97	8832.63	2867.74
25	25	2.67	139.5	46.5	2788.75	0.996	213.14	2430	2440	7932.71	793.27	8725.98	3268.16
30	25	2.35	147	49	2938.69	1.05	224.70	2430	2440	8094.21	809.42	8903.63	3788.78
35	30	2.4	174	58	3478.45	1.243	266.00	2430	2440	8675.27	867.53	9542.80	3976.17
40	30	2.18	180.4	60.13	3606.19	1.289	275.85	2430	2440	8812.86	881.29	9694.15	4446.86
45	30	2	186	62	3718.34	1.329	284.41	2430	2440	8933.57	893.36	9826.93	4913.47
50	30	1.85	191	63.67	3818.49	1.364	291.90	2430	2440	9041.21	904.12	9945.33	5375.85
60	30	1.6	198	66	3958.23	1.414	302.60	2430	2175	8926.43	892.64	9819.07	6136.92
70	30	1.41	203.4	67.8	4066.18	1.453	310.94	2430	2175	9042.72	904.27	9946.99	7054.6
80	30	1.26	207.6	69.2	4150.15	1.483	317.36	2430	2175	9133.11	913.31	10046.42	7973.35





# SECTION - C : TRANSPORTATION

Lead in km L	Av. Speed S	No. of Trips(N) = 8/ ((2L/S) +1)	Km. Done (2NL+6)	Litres of diesel consumed	cost of diesel @ 59.97	Lit. of Mobile oil consumed	cost of M.Oil @ 214	cost of 6 mazdoor 369/ day	Hire charges of truck Rs.2758 Per day	Total cost (6+8+ 9+10)	Add 10% overhead charges	Total 11+12	cost per trip (13/3)
1	2	3	4	5	6	7	8	9	10	11	12	13	14
90	30	1.14	211.2	70.4	4222.11	1.509	322.93	2490.75	2175	9210.64	921.06	10131.70	8887.45
100	40	1.33	272	90.67	5437.77	1.943	415.80	2490.75	2175	10519.17	1051.92	11571.09	8700.06
125	40	1.1	281	93.67	5617.69	2.007	429.50	2490.75	2175	10712.79	1071.28	11784.07	10712.79
150	40	0.94	288	96	5757.43	2.057	440.20	2341.31	2175	10713.79	1071.38	11785.17	12537.41
175	40	0.82	293	97.67	5857.58	2.093	447.90	2042.42	2175	10522.75	1052.27	11575.02	14115.87
200	40	0.73	298	99.33	5957.14	2.129	455.61	1818.25	2175	10405.85	1040.58	11446.43	15680.03
250	40	0.59	301	100.33	6017.11	2.15	460.10	1469.54	2175	10121.60	1012.16	11133.76	18870.77
300	45	0.56	342	114	6836.95	2.443	522.80	1394.82	2175	10929.42	1092.94	12022.36	21468.49
420	45	0.41	350.4	116.8	7004.87	2.503	535.64	1021.21	2175	10736.57	1073.66	11810.23	28805.43
540	45	0.32	351.6	117.2	7028.86	2.511	537.35	797.04	2175	10538.10	1053.81	11591.91	36224.7
660	45	0.26	349.2	116.4	6980.88	2.494	533.72	647.6	2175	10337.05	1033.7	11370.75	43733.63
780	45	0.22	349.2	116.4	6980.88	2.494	533.72	547.97	2175	10237.42	1023.74	11261.16	51187.07
900	45	0.2	366	122	7316.73	2.614	559.40	498.15	2175	10549.13	1054.91	11604.04	58020.18
1020	45	0.17	352.8	117.6	7052.85	2.52	539.28	423.43	2175	10190.41	1019.04	11209.45	65937.91
1140	45	0.15	348	116	6956.89	2.486	532.00	373.61	2175	10037.35	1003.73	11041.08	73607.17

**Note:** 1) No. of trips in a working of 8 hours  $N=8 / (2(L+S) + 1)$  where L = Lead in km and S = speed, 1 hour is allowed for loading

2) Consumption of diesel taken as 3 km / litre

3) Consumption of Mobile oil taken as 140 km / litre

4) In col. 4, 6 hours has been added for movement from parking place to duty and back

5) Hire charges will remain Rs. 500.00 for 1200 and above km lead

6) Labour required for loading unloading and stacking after the No. of trips reduced below 1 is factorised with actual number of trip.





**STATEMENT - III**  
**EXCLUDING LOADING, UNLOADING AND STACKING**

Lead in km L	Av. Speed S	No. of Trips(N) = 8/((2L/S)+1)	Km. Done (2NL+6)	Litres of diesel consumed	cost of diesel @ 59.97	Lit. of Mobile oil consumed	cost of M. Oil @ 214	cost of 6 mazdoor 369/ day	Hire charges of truck Rs.2758 Per day	Total cost (6+8+9+10)	Add 10% overhead charges	Total 11+12	cost per trip (13/3)
1	2	3	4	5	6	7	8	9	10	11	12	13	14
0.5	15	7.5	13.5	4.5	269.88	0.096	20.54	0	2758.34	3048.76	304.88	3353.64	447.15
1	16	7.11	20.22	6.74	404.22	0.144	30.82	0	2758.34	3193.38	319.34	3512.72	494.05
1.5	16.5	6.77	26.31	8.77	525.97	0.188	40.23	0	2758.34	3324.54	332.45	3656.99	540.18
2	17	6.48	31.92	10.64	638.12	0.228	48.79	0	2758.34	3445.25	344.53	3789.78	584.84
2.5	17.25	6.2	37	12.33	739.47	0.264	56.50	0	2758.34	3554.31	355.43	3909.74	630.6
3	17.5	5.96	41.76	13.92	834.83	0.298	63.77	0	2758.34	3656.94	365.69	4022.63	674.94
3.5	17.75	5.74	46.18	15.39	922.99	0.33	70.62	0	2758.34	3751.95	375.2	4127.15	719.02
4	18	5.54	50.32	16.77	1005.75	0.359	76.83	0	2758.34	3840.92	384.09	4225.01	762.64
4.5	18.25	5.36	54.24	18.08	1084.32	0.387	82.82	0	2758.34	3925.48	392.55	4318.03	805.6
5	18.5	5.19	57.9	19.3	1157.48	0.414	88.60	0	2758.34	4004.42	400.44	4404.86	848.72
6	18.75	4.88	64.56	21.52	1290.62	0.461	98.65	0	2758.34	4147.61	414.76	4562.37	934.91
7	19	4.61	70.54	23.51	1409.97	0.504	107.86	0	2758.34	4276.17	427.62	4703.79	1020.34
8	19.183	4.36	75.76	25.25	1514.32	0.541	115.77	0	2758.34	4388.43	438.84	4827.27	1107.17
9	19.6	4.17	81.06	27.02	1620.48	0.579	123.91	0	2758.34	4502.73	450.27	4953.00	1187.77
10	20	4	86	28.67	1719.43	0.614	131.40	0	2758.34	4609.17	460.92	5070.09	1267.52
15	25	3.64	115.2	38.4	2302.97	0.823	176.12	0	2758.34	5237.43	523.74	5761.17	1582.74
20	25	3.08	129.2	43.07	2583.05	0.923	197.52	0	2758.34	5538.91	553.89	6092.80	1978.18
25	25	2.67	139.5	46.5	2788.75	0.996	213.14	0	2440.07	5441.96	544.2	5986.16	2242.01
30	25	2.35	147	49	2938.69	1.05	224.70	0	2440.07	5603.46	560.35	6163.81	2622.9
35	30	2.4	174	58	3478.45	1.243	266.00	0	2440.07	6184.52	618.45	6802.97	2834.57
40	30	2.18	180.4	60.13	3606.19	1.289	275.85	0	2440.07	6322.11	632.21	6954.32	3190.06
45	30	2	186	62	3718.34	1.329	284.41	0	2440.07	6442.82	644.28	7087.10	3543.55
50	30	1.85	191	63.67	3818.49	1.364	291.90	0	2440.07	6550.46	655.05	7205.51	3894.87
55	30	1.71	194.1	64.7	3880.27	1.386	296.60	0	2174.845	6351.72	635.17	6986.89	4085.9
65	30	1.5	201	67	4018.21	1.436	307.30	0	2174.845	6500.36	650.04	7150.40	4766.93
75	30	1.33	205.5	68.5	4108.17	1.468	314.15	0	2174.845	6597.17	659.72	7256.89	5456.3





Lead in km L	Av. Speed S	No. of Trips(N) = 8/((2L/S)+1)	Km. Done (2NL+6)	Litres of diesel consumed	cost of diesel @ 59.97	Lit. of Mobile oil consumed	cost of M.Oil @ 214	cost of 6 mazdoor 369/ day	Hire charges of truck Rs.2758 Per day	Total cost (6+8+9+10)	Add 10% overhead charges	Total 11+12	cost per trip (13/3)
1	2	3	4	5	6	7	8	9	10	11	12	13	14
85	30	1.2	210	70	4198.13	1.5	321.00	0	2174.85	6693.98	669.40	7363.38	6136.15
95	40	1.39	270.1	90.03	5399.39	1.929	412.81	0	2174.85	7987.05	798.70	8785.75	6320.68
105	40	1.28	274.8	91.6	5493.55	1.963	420.08	0	2174.85	8088.48	808.85	8897.33	6951.04
130	40	1.07	284.2	94.73	5681.26	2.03	434.42	0	2174.85	8290.53	829.05	9119.58	8522.97
155	40	0.91	288.1	96.03	5759.23	2.058	440.41	0	2174.85	8374.49	837.45	9211.94	10123.01
180	40	0.8	294	98	5877.38	2.1	449.40	0	2174.85	8501.63	850.16	9351.79	11689.73
230	40	0.64	300.4	100.13	6005.12	2.146	459.24	0	2174.85	8639.21	863.92	9503.13	14848.63
280	45	0.6	342	114	6836.95	2.443	522.80	0	2174.85	9534.60	953.46	10488.06	17480.09
400	45	0.43	350	116.67	6997.07	2.5	535.00	0	2174.85	9706.92	970.69	10677.61	24831.64
520	45	0.33	349.2	116.4	6980.88	2.494	533.72	0	2174.85	9689.45	968.94	10658.39	32298.14
640	45	0.27	351.6	117.2	7028.86	2.511	537.35	0	2174.85	9741.06	974.11	10715.17	39685.80
760	45	0.23	355.6	118.53	7108.63	2.54	543.56	0	2174.85	9827.04	982.70	10809.74	46998.85
880	45	0.2	358	119.33	7156.6	2.557	547.20	0	2174.85	9878.65	987.86	10866.51	54332.53
1000	45	0.18	366	122	7316.73	2.614	559.40	0	2174.85	10050.98	1005.10	11056.08	61422.64
1120	45	0.16	364.4	121.47	7284.95	2.603	557.04	0	2174.85	10016.84	1001.68	11018.52	68865.72

## SECTION - C : TRANSPORTATION





**STATEMENT - IV**  
**INCLUDING LOADING, UNLOADING AND STACKING**

Lead in km	Cost per trip	Cement pay load	Steel pay load 9.00 MT	Bulk Asphalt in Bouzer pay load 4.50 MT	M.S.Bar 9.0 MT	Sand 5.75 cum
1	2	3	4	5	6	7
0.5	812.46	90.27	90.27	180.55	90.27	141.30
1	879.4	97.71	97.71	195.42	97.71	152.94
1.5	944.88	104.99	104.99	209.97	104.99	164.33
2	1007.65	111.96	111.96	223.92	111.96	175.24
2.5	1072.51	119.17	119.17	238.34	119.17	186.52
3	1134.64	119.17	119.17	238.34	126.07	197.33
3.5	1196.34	132.93	132.93	265.85	132.93	208.06
4	1257.19	139.69	139.69	279.38	139.69	218.64
4.5	1316.76	146.31	146.31	292.61	146.31	229.00
5	1376.63	152.96	152.96	305.92	152.96	239.41
6	1496.35	166.26	166.26	332.52	166.26	260.23
7	1614.67	179.41	179.41	358.82	179.41	280.81
8	1735.57	192.84	192.84	385.68	192.84	301.84
9	1844.8	204.98	204.98	409.96	204.98	320.83
10	1952.48	216.94	216.94	433.88	216.94	339.56
15	2335.44	259.49	259.49	518.99	259.49	406.16
20	2867.74	318.64	318.64	637.28	318.64	498.74
25	3268.16	363.13	363.13	726.26	363.13	568.38
30	3788.78	420.98	420.98	841.95	420.98	658.92
35	3976.17	441.80	441.80	883.59	441.80	691.51
40	4446.86	494.10	494.10	988.19	494.10	773.37
45	4913.47	545.94	545.94	1091.88	545.94	854.52
50	5375.85	597.32	597.32	1194.63	597.32	934.93
60	6136.92	681.88	681.88	1363.76	681.88	1067.29
70	7054.6	783.84	783.84	1567.69	783.84	1226.89
80	7973.35	885.93	885.93	1771.86	885.93	1386.67
90	8887.45	987.49	987.49	1974.99	987.49	1545.64
100	8700.06	966.67	966.67	1933.35	966.67	1513.05
125	10712.79	1190.31	1190.31	2380.62	1190.31	1863.09
150	12537.41	1393.05	1393.05	2786.09	1393.05	2180.42
175	14115.87	1568.43	1568.43	3136.86	1568.43	2454.93
200	15680.03	1742.23	1742.23	3484.45	1742.23	2726.96
250	18870.77	2096.75	2096.75	4193.50	2096.75	3281.87
300	21468.49	2385.39	2385.39	4770.78	2385.39	3733.65
420	28805.43	3200.60	3200.60	6401.21	3200.60	5009.64
540	36224.7	4024.97	4024.97	8049.93	4024.97	6299.95
660	43733.63	4859.29	4859.29	9718.58	4859.29	7605.85
780	51187.07	5687.45	5687.45	11374.90	5687.45	8902.10
900	58020.18	6446.69	6446.69	12893.37	6446.69	10090.47
1020	65937.91	7326.43	7326.43	14652.87	7326.43	11467.46
1140	73607.17	8178.57	8178.57	16357.15	8178.57	12801.25





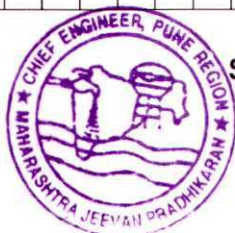
**STATEMENT - V**  
**EXCLUDING LOADING, UNLOADING AND STACKING**

Lead in km	Cost per trip	Cement pay load 9.00 MT	Steel pay load 9.00 MT	Bulk Asphalt in Bouzer pay load 4.50 MT
1	2	3	4	5
0.5	447.15	49.68	49.68	99.37
1	494.05	54.89	54.89	109.79
1.5	540.18	60.02	60.02	120.04
2	584.84	64.98	64.98	129.96
2.5	630.6	70.07	70.07	140.13
3	674.94	70.07	70.07	140.13
3.5	719.02	79.89	79.89	159.78
4	762.64	84.74	84.74	169.48
4.5	805.6	89.51	89.51	179.02
5	848.72	94.30	94.30	188.60
6	934.91	103.88	103.88	207.76
7	1020.34	113.37	113.37	226.74
8	1107.17	123.02	123.02	246.04
9	1187.77	131.97	131.97	263.95
10	1267.52	140.84	140.84	281.67
15	1582.74	175.86	175.86	351.72
20	1978.18	219.80	219.80	439.60
25	2242.01	249.11	249.11	498.22
30	2622.9	291.43	291.43	582.87
35	2834.57	314.95	314.95	629.90
40	3190.06	354.45	354.45	708.90
45	3543.55	393.73	393.73	787.46
50	3894.87	432.76	432.76	865.53
55	4085.9	453.99	453.99	907.98
65	4766.93	529.66	529.66	1059.32
75	5456.3	606.26	606.26	1212.51
85	6136.15	681.79	681.79	1363.59
95	6320.68	702.30	702.30	1404.60
105	6951.04	772.34	772.34	1544.68
130	8522.97	947.00	947.00	1893.99
155	10123.01	1124.78	1124.78	2249.56
180	11689.73	1298.86	1298.86	2597.72
230	14848.63	1649.85	1649.85	3299.70
280	17480.09	1942.23	1942.23	3884.46
400	24831.64	2759.07	2759.07	5518.14
520	32298.14	3588.68	3588.68	7177.36
640	39685.8	4409.53	4409.53	8819.07
760	46998.85	5222.09	5222.09	10444.19
880	54332.53	6036.95	6036.95	12073.90
1000	61422.64	6824.74	6824.74	13649.48
1120	68865.72	7651.75	7651.75	15303.49



**STATEMENT - VI**  
**INCLUDING LOADING, UNLOADING AND STACKING**

Lead in km	Cost / trip	Lime murum building	Earth	Manure or sludge	Excavated rock	Sand stone aggregate 40 mm & below	Aggregate 40 mm & above	Soling stone	Concrete block (form)	Timber
1	2	3	4	5	6	7	8	9	10	11
	Pay load	6.0 cum	4.8 cum	5.52 cum	3.0 cum	5.75 cum	5.5 cum	4.7 cum	6.0 cum	5.0 cum
0.5	812.46	135.41	169.26	147.18	270.82	141.30	147.72	172.86	135.41	141.30
1	879.40	146.57	183.21	159.31	293.13	152.94	159.89	187.11	146.57	152.94
1.5	944.88	157.48	196.85	171.17	314.96	164.33	171.80	201.04	157.48	164.33
2	1007.65	167.94	209.93	182.55	335.88	175.24	183.21	214.39	167.94	175.24
2.5	1072.51	178.75	223.44	194.30	357.50	186.52	195.00	228.19	178.75	186.52
3	1134.64	189.11	236.38	205.55	378.21	197.33	206.30	241.41	189.11	197.33
3.5	1196.34	199.39	249.24	216.73	398.78	208.06	217.52	254.54	199.39	208.06
4	1257.19	209.53	261.91	227.75	419.06	218.64	228.58	267.49	209.53	218.64
4.5	1316.76	219.46	274.33	238.54	438.92	229.00	239.41	280.16	219.46	229.00
5	1376.63	229.44	286.8	249.39	458.88	239.41	250.30	292.90	229.44	239.41
6	1496.35	249.39	311.74	271.08	498.78	260.23	272.06	318.37	249.39	260.23
7	1614.67	269.11	336.39	292.51	538.22	280.81	293.58	343.55	269.11	280.81
8	1735.57	289.26	361.58	314.41	578.52	301.84	315.56	369.27	289.26	301.84
9	1844.80	307.47	384.33	334.20	614.93	320.83	335.42	392.51	307.47	320.83
10	1952.48	325.41	406.77	353.71	650.83	339.56	355.00	415.42	325.41	339.56
15	2335.44	389.24	486.55	423.09	778.48	406.16	424.63	496.90	389.24	406.16
20	2867.74	477.96	597.45	519.52	955.91	498.74	521.41	610.16	477.96	498.74
25	3268.16	544.69	680.87	592.06	1089.39	568.38	594.21	695.35	544.69	568.38
30	3788.78	631.46	789.33	686.37	1262.93	658.92	688.87	806.12	631.46	658.92
35	3976.17	662.7	828.37	720.32	1325.39	691.51	722.94	845.99	662.70	691.51
40	4446.86	741.14	926.43	805.59	1482.29	773.37	808.52	946.14	741.14	773.37
45	4913.47	818.91	1023.64	890.12	1637.82	854.52	893.36	1045.42	818.91	854.52
50	5375.85	895.98	1119.97	973.89	1791.95	934.93	977.43	1143.80	895.98	934.93
60	6136.92	1022.82	1278.53	1111.76	2045.64	1067.29	1115.80	1305.73	1022.82	1067.29
70	7054.60	1175.77	1469.71	1278.01	2351.53	1226.89	1282.65	1500.98	1175.77	1226.89
80	7973.35	1328.89	1661.11	1444.45	2657.78	1386.67	1449.70	1696.46	1328.89	1386.67



Lead in km	Cost / trip	Lime murum building	Earth	Manure or sludge	Excavated rock	Sand stone aggregate 40 mm & below	Aggregate 40 mm & anpve	Soling stone	Concrete block (form)	Timber
1	2	3	4	5	6	7	8	9	10	11
	Pay load	6.0 cum	4.8 cum	5.52 cum	3.0 cum	5.75 cum	5.5 cum	4.7 cum	6.0 cum	5.0 cum
90	8887.45	1481.24	1851.55	1610.05	2962.48	1545.64	1615.90	1890.95	1481.24	1545.64
100	8700.06	1450.01	1812.51	1576.10	2900.02	1513.05	1581.83	1851.08	1450.01	1513.05
125	10712.79	1785.47	2231.83	1940.72	3570.93	1863.09	1947.78	2279.32	1785.47	1863.09
150	12537.41	2089.57	2611.96	2271.27	4179.14	2180.42	2279.53	2667.53	2089.57	2180.42
175	14115.87	2352.65	2940.81	2557.22	4705.29	2454.93	2566.52	3003.38	2352.65	2454.93
200	15680.03	2613.34	3266.67	2840.59	5226.68	2726.96	2850.91	3336.18	2613.34	2726.96
250	18870.77	3145.13	3931.41	3418.62	6290.26	3281.87	3431.05	4015.06	3145.13	3281.87
300	21468.49	3578.08	4472.6	3889.22	7156.16	3733.65	3903.36	4567.76	3578.08	3733.65
420	28805.43	4800.91	6001.13	5218.38	9601.81	5009.64	5237.35	6128.81	4800.91	5009.64
540	36224.70	6037.45	7546.81	6562.45	12074.90	6299.95	6586.31	7707.38	6037.45	6299.95
660	43733.63	7288.94	9111.17	7922.76	14577.88	7605.85	7951.57	9305.03	7288.94	7605.85
780	51187.07	8531.18	10663.97	9273.02	17062.36	8902.10	9306.74	10890.87	8531.18	8902.10
900	58020.18	9670.03	12087.54	10510.90	19340.06	10090.47	10549.12	12344.72	9670.03	10090.47
1020	65937.91	10989.65	13737.06	11945.27	21979.30	11467.46	11988.71	14029.34	10989.65	11467.46
1140	73607.17	12267.86	15334.83	13334.63	24535.72	12801.25	13383.12	15661.10	12267.86	12801.25

## SECTION - C : TRANSPORTATION





**STATEMENT - VII**  
**INCLUDING LOADING, UNLOADING AND STACKING**

Lead in km	Cost / trip	Cement stone block, GI CC AC Pipes below 120 mm dia	Tar bitumenn Asphalt roofing felt & Flooring Asphalt etc.	Steam coal	Matting thatching bamboo c/leaving board rubber PVC pipes fittings	Sheet & plate glass in packs Paints & Distempers AC Sheets & fittings iron fittings and iron sheets	Bricks modular bricks & Traditional bricks	Tiles half round tiles & Roofing tiles cement flooring tiles	Glass blocks (hollow) 200x200 x120 mm	Empty cement bages
1	2	3	4	5	6	7	8	9	10	11
	Pay load	7.0 Mt per 1 M.T.	4.5 MT per 1 M.T.	5.5 MT per 1 M.T.	3.0 MT per 1 M.T.	7.0 MT per 1 M.T.	3500 No. per 1000 Nos.	3200 No. per 1000 Nos.	1000 No. per 1000 Nos.	2000 No. per 1000 Nos.
0.5	812.46	116.07	180.55	147.72	270.82	116.07	232.13	253.89	81.25	406.23
1	879.40	125.63	195.42	159.89	293.13	125.63	251.26	274.81	87.94	439.70
1.5	944.88	134.98	209.97	171.80	314.96	134.98	269.97	295.28	94.49	472.44
2	1007.65	143.95	223.92	183.21	335.88	143.95	287.90	314.89	100.77	503.83
2.5	1072.51	153.22	238.34	195.00	357.50	153.22	306.43	335.16	107.25	536.26
3	1134.64	162.09	252.14	206.30	378.21	162.09	324.18	354.58	113.46	567.32
3.5	1196.34	170.91	265.85	217.52	398.78	170.91	341.81	373.86	119.63	598.17
4	1257.19	179.60	279.38	228.58	419.06	179.60	359.20	392.87	125.72	628.60
4.5	1316.76	188.11	292.61	239.41	438.92	188.11	376.22	411.49	131.68	658.38
5	1376.63	196.66	305.92	250.30	458.88	196.66	393.32	430.20	137.66	688.32
6	1496.35	213.76	332.52	272.06	498.78	213.76	427.53	467.61	149.64	748.18
7	1614.67	230.67	358.82	293.58	538.22	230.67	461.33	504.58	161.47	807.34
8	1735.57	247.94	385.68	315.56	578.52	247.94	495.88	542.37	173.56	867.79
9	1844.80	263.54	409.96	335.42	614.93	263.54	527.09	576.50	184.48	922.40
10	1952.48	278.93	433.88	355.00	650.83	278.93	557.85	610.15	195.25	976.24
15	2335.44	333.63	518.99	424.63	778.48	333.63	667.27	729.83	233.54	1167.72
20	2867.74	409.68	637.28	521.41	955.91	409.68	819.35	896.17	286.77	1433.87
25	3268.16	466.88	726.26	594.21	1089.39	466.88	933.76	1021.30	326.82	1634.08
30	3788.78	541.25	841.95	688.87	1262.93	541.25	1082.51	1183.99	378.88	1894.39
35	3976.17	568.02	883.59	722.94	1325.39	568.02	1136.05	1242.55	397.62	1988.09
40	4446.86	635.27	988.19	808.52	1482.29	635.27	1270.53	1389.64	444.69	2223.43





Lead in km	Cost / trip	Cement stone block, GICI CC AC Pipes below 120 mm dia	Tar bitumenn Asphalt roofing felt & Flooring Asphalt etc.	Steam coal	Matting thatching bambu clelling board rubber PVC pipes fittings	Sheet & plate glass in packs Paints & Distempers AC Sheets & fittings iron fittings and iron sheets	Bricks modular bricks & Traditional bricks	Tiles half round tiles & Roofing tiles cement flooring tiles	Glass blocks (hollow) 200x200 x120 mm	Empty cement bages
1	2	3	4	5	6	7	8	9	10	11
	Pay load	7.0 Mt	4.5 MT	5.5 MT	3.0 MT	7.0 MT	3500 No.	3200 No.	1000 No.	2000 No.
		per 1 M.T.	per 1 M.T.	per 1 M.T.	per 1 M.T.	per 1 M.T.	per 1000 Nos.	per 1000 Nos.	per 1000 Nos.	per 1000 Nos.
45	4913.47	701.92	1091.88	893.36	1637.82	701.92	1403.85	1535.46	491.35	2456.74
50	5375.85	767.98	1194.63	977.43	1791.95	767.98	1535.96	1679.95	537.59	2687.93
60	6136.92	876.70	1363.76	1115.80	2045.64	876.70	1753.41	1917.79	613.69	3068.46
70	7054.60	1007.80	1567.69	1282.65	2351.53	1007.80	2015.60	2204.56	705.46	3527.30
80	7973.35	1139.05	1771.86	1449.70	2657.78	1139.05	2278.10	2491.67	797.34	3986.68
90	8887.45	1269.64	1974.99	1615.90	2962.48	1269.64	2539.27	2777.33	888.75	4443.73
100	8700.06	1242.87	1933.35	1581.83	2900.02	1242.87	2485.73	2718.77	870.01	4350.03
125	10712.79	1530.40	2380.62	1947.78	3570.93	1530.40	3060.80	3347.75	1071.28	5356.40
150	12537.41	1791.06	2786.09	2279.53	4179.14	1791.06	3582.12	3917.94	1253.74	6268.71
175	14115.87	2016.55	3136.86	2566.52	4705.29	2016.55	4033.11	4411.21	1411.59	7057.94
200	15680.03	2240.00	3484.45	2850.91	5226.68	2240.00	4480.01	4900.01	1568.00	7840.02
250	18870.77	2695.82	4193.50	3431.05	6290.26	2695.82	5391.65	5897.12	1887.08	9435.39
300	21468.49	3066.93	4770.78	3903.36	7156.16	3066.93	6133.85	6708.90	2146.85	10734.25
420	28805.43	4115.06	6401.21	5237.35	9601.81	4115.06	8230.12	9001.70	2880.54	14402.72
540	36224.70	5174.96	8049.93	6586.31	12074.90	5174.96	10349.91	11320.22	3622.47	18112.35
660	43733.63	6247.66	9718.58	7951.57	14577.88	6247.66	12495.32	13666.76	4373.36	21866.82
780	51187.07	7312.44	11374.90	9306.74	17062.36	7312.44	14624.88	15995.96	5118.71	25593.54
900	58020.18	8288.60	12893.37	10549.12	19340.06	8288.60	16577.19	18131.31	5802.02	29010.09
1020	65937.91	9419.70	14652.87	11988.71	21979.30	9419.70	18839.40	20605.60	6593.79	32968.96
1140	73607.17	10515.31	16357.15	13383.12	24535.72	10515.31	21030.62	23002.24	7360.72	36803.59

## SECTION - C : TRANSPORTATION





**STATEMENT - VIII**  
**INCLUDING LOADING, UNLOADING AND STACKING**

Lead in km	Cost / trip	R.C.C. STEEL CYLINDER, R.C PIPES, C.I. PIPES,, UNREINFORCED CEMENT PIPES, PRECAST COCRETE PIPES											
		100 mm	125 mm	150 mm	200 mm	250 mm	300 mm	300 & 400 mm	450 & 500 mm	600, 700 & 750 mm	800, 900 & 1000 mm	1200 & 1800 MM	
1	2	3	4	5	6	7	8	9	10	11	12	13	
UNIT PER 100 RMT													
0.5	812.46	277.48	369.97	443.97	739.95	1009.02	1305.79	1479.89	2774.8	4439.67	5416.4	16249.2	
1	879.4	300.34	400.46	480.55	800.91	1092.15	1413.37	1601.82	3003.42	4805.46	5862.67	17588	
1.5	944.88	322.7	430.27	516.33	860.55	1173.47	1518.61	1721.09	3227.05	5163.28	6299.2	18897.6	
2	1007.65	344.14	458.86	550.63	917.71	1251.43	1619.5	1835.43	3441.43	5506.28	6717.67	20153	
2.5	1072.51	366.29	488.39	586.07	976.79	1331.98	1723.74	1953.57	3662.94	5860.71	7150.07	21450.2	
3	1134.64	387.51	516.68	620.02	1033.37	1409.14	1823.59	2066.74	3875.14	6200.22	7564.27	22692.8	
3.5	1196.34	408.59	544.78	653.74	1089.56	1485.77	1922.76	2179.13	4085.86	6537.38	7975.6	23926.8	
4	1257.19	429.37	572.49	686.99	1144.98	1561.34	2020.56	2289.96	4293.68	6869.89	8381.27	25143.8	
4.5	1316.76	449.71	599.62	719.54	1199.23	1635.32	2116.3	2398.47	4497.13	7195.41	8778.4	26335.2	
5	1376.63	470.16	626.88	752.26	1253.76	1709.67	2212.52	2507.52	4701.61	7522.57	9177.53	27532.6	
6	1496.35	511.05	681.4	817.68	1362.8	1858.36	2404.93	2725.59	5110.48	8176.78	9975.67	29927	
7	1614.67	551.46	735.28	882.33	1470.56	2005.3	2595.1	2941.11	5514.58	8823.33	10764.47	32293.4	
8	1735.57	592.75	790.33	948.4	1580.66	2155.45	2789.41	3161.33	5927.49	9483.99	11570.47	34711.4	
9	1844.8	630.05	840.07	1008.09	1680.15	2291.11	2964.96	3360.29	6300.55	10080.87	12298.67	36896	
10	1952.48	666.83	889.11	1066.93	1778.21	2424.84	3138.03	3556.43	6668.31	10669.29	13016.53	39049.6	
15	2335.44	797.62	1063.5	1276.2	2126.99	2900.45	3753.52	4253.99	7976.23	12761.97	15569.6	46708.8	
20	2867.74	979.42	1305.89	1567.07	2611.79	3561.53	4609.03	5223.57	9794.19	15670.71	19118.27	57354.8	
25	3268.16	1116.17	1488.23	1785.88	2976.47	4058.82	5252.59	5952.93	11161.75	17858.8	21787.73	65363.2	
30	3788.78	1293.98	1725.31	2070.37	3450.62	4705.39	6089.33	6901.24	12939.82	20703.72	25258.53	75775.6	
35	3976.17	1357.98	1810.64	2172.77	3621.28	4938.11	6390.5	7242.57	13579.82	21727.7	26507.8	79523.4	
40	4446.86	1518.74	2024.98	2429.98	4049.96	5522.68	7146.99	8099.93	15187.36	24299.78	29645.73	88937.2	
45	4913.47	1678.1	2237.46	2684.96	4474.93	6102.17	7896.93	8949.85	16780.98	26849.56	32756.47	98269.4	
50	5375.85	1836.01	2448.02	2937.62	4896.04	6676.42	8640.07	9792.08	18360.14	29376.23	35839	107517	
60	6136.92	2095.94	2794.59	3353.51	5589.18	7621.61	9863.26	11178.36	20959.43	33535.08	40912.8	122738.4	





Lead in km	Cost / trip	R.C.C. STEEL CYLINDER, R.C PIPES, C.I. PIPES., UNREINFORCED CEMENT PIPES, PRECAST COCRETE PIPES										
		100 mm	125 mm	150 mm	200 mm	250 mm	300 mm	300 & 400 mm	450 & 500 mm	600, 700 & 750 mm	800, 900 & 1000 mm	1200 & 1800 MM
	Pay load in Rmt	292.8	219.6	183	109.8	80.52	62.22	54.9	29.28	18.183	15	5
1	2	3	4	5	6	7	8	9	10	11	12	13
UNIT PER 100 RMT												
70	7054.6	2409.36	3212.48	3854.97	6424.95	8761.3	11338.15	12849.91	24093.58	38549.73	47030.67	141092
80	7973.35	2723.14	3630.85	4357.02	7261.7	9902.32	12814.77	14523.41	27231.39	43570.22	53155.67	159467
90	8887.45	3035.33	4047.11	4856.53	8094.22	11037.57	14283.91	16188.43	30353.31	48565.3	59249.67	177749
100	8700.06	2971.33	3961.78	4754.13	7923.55	10804.84	13982.74	15847.1	29713.32	47541.31	58000.4	174001.2
125	10712.79	3658.74	4878.32	5853.98	9756.64	13304.51	17217.6	19513.28	36587.4	58539.84	71418.6	214255.8
150	12537.41	4281.9	5709.2	6851.04	11418.41	15570.55	20150.13	22836.81	42819.02	68510.44	83582.73	250748.2
175	14115.87	4820.99	6427.99	7713.59	12855.98	17530.89	22687.03	25711.97	48209.94	77135.9	94105.8	282317.4
200	15680.03	5355.2	7140.27	8568.32	14280.54	19473.46	25200.95	28561.07	53552.02	85683.22	104533.5	313600.6
250	18870.77	6444.94	8593.25	10311.9	17186.49	23436.13	30329.11	34372.99	64449.35	103118.96	125805.1	377415.4
300	21468.49	7332.13	9776.18	11731.42	19552.36	26662.31	34504.16	39104.72	73321.35	117314.15	143123.3	429369.8
420	28805.43	9837.92	13117.23	15740.67	26234.45	35774.25	46296.09	52468.91	98379.2	157406.72	192036.2	576108.6
540	36224.7	12371.82	16495.77	19794.92	32991.53	44988.45	58220.35	65983.06	123718.24	197949.18	241498	724494
660	43733.63	14936.35	19915.13	23898.16	39830.26	54314	70288.7	79660.53	149363.49	238981.58	291557.5	874672.6
780	51187.07	17481.92	23309.23	27971.08	46618.46	63570.63	82267.87	93236.92	174819.23	279710.77	341247.1	1023741
900	58020.18	19815.64	26420.85	31705.02	52841.69	72056.86	93250.05	105683.39	198156.35	317050.16	386801.2	1160404
1020	65937.91	22519.78	30026.37	36031.64	60052.74	81890.1	105975.43	120105.48	225197.78	360316.45	439586.1	1318758
1140	73607.17	25139.06	33518.75	40222.5	67037.5	91414.77	118301.46	134074.99	251390.61	402224.97	490714.5	1472143

## SECTION - C : TRANSPORTATION





**STATEMENT - IX**  
**INCLUDING LOADING, UNLOADING AND STACKING**  
**STONEWARE PIPES**

Lead in km	Cost/trip	100 mm	150 mm	200 mm	230 mm	250 mm	300 mm	350 mm	400 mm
	Pay Load	480 m	240 m	135 m	105 m	84 m	66 m	43 m	27 m
1	2	3	4	5	6	7	8	9	10
Unit Per 100 Rmt									
0.5	812.46	169.26	338.53	601.82	773.77	967.21	1231	1889.44	3009.11
1	879.4	183.21	366.42	651.41	837.52	1046.9	1332.42	2045.12	3257.04
1.5	944.88	196.85	393.7	699.91	899.89	1124.86	1431.64	2197.4	3499.56
2	1007.65	209.93	419.85	746.41	959.67	1199.58	1526.74	2343.37	3732.04
2.5	1072.51	223.44	446.88	794.45	1021.44	1276.8	1625.02	2494.21	3972.26
3	1134.64	236.38	472.77	840.47	1080.61	1350.76	1719.15	2638.7	4202.37
3.5	1196.34	249.24	498.48	886.18	1139.37	1424.21	1812.64	2782.19	4430.89
4	1257.19	261.91	523.83	931.25	1197.32	1496.65	1904.83	2923.7	4656.26
4.5	1316.76	274.33	548.65	975.38	1254.06	1567.57	1995.09	3062.23	4876.89
5	1376.63	286.8	573.6	1019.73	1311.08	1638.85	2085.8	3201.47	5098.63
6	1496.35	311.74	623.48	1108.41	1425.1	1781.37	2267.2	3479.88	5542.04
7	1614.67	336.39	672.78	1196.05	1537.78	1922.23	2446.47	3755.05	5980.26
8	1735.57	361.58	723.15	1285.61	1652.92	2066.15	2629.65	4036.21	6428.04
9	1844.8	384.33	768.67	1366.52	1756.95	2196.19	2795.15	4290.23	6832.59
10	1952.48	406.77	813.53	1446.28	1859.5	2324.38	2958.3	4540.65	7231.41
15	2335.44	486.55	973.1	1729.96	2224.23	2780.29	3538.55	5431.26	8649.78
20	2867.74	597.45	1194.89	2124.25	2731.18	3413.98	4345.06	6669.16	10621.26
25	3268.16	680.87	1361.73	2420.86	3112.53	3890.67	4951.76	7600.37	12104.3
30	3788.78	789.33	1578.66	2806.5	3608.36	4510.45	5740.58	8811.12	14032.52
35	3976.17	828.37	1656.74	2945.31	3786.83	4733.54	6024.5	9246.91	14726.56
40	4446.86	926.43	1852.86	3293.97	4235.1	5293.88	6737.67	10341.53	16469.85
45	4913.47	1023.64	2047.28	3639.61	4679.5	5849.37	7444.65	11426.67	18198.04
50	5375.85	1119.97	2239.94	3982.11	5119.86	6399.82	8145.23	12501.98	19910.56
60	6136.92	1278.53	2557.05	4545.87	5844.69	7305.86	9298.36	14271.91	22729.33
70	7054.6	1469.71	2939.42	5225.63	6718.67	8398.33	10688.79	16406.05	26128.15
80	7973.35	1661.11	3322.23	5906.19	7593.67	9492.08	12080.83	18542.67	29530.93
90	8887.45	1851.55	3703.1	6583.3	8464.24	10580.3	13465.83	20668.49	32916.48
100	8700.06	1812.51	3625.03	6444.49	8285.77	10357.21	13181.91	20232.7	32222.44
125	10712.79	2231.83	4463.66	7935.4	10202.66	12753.32	16231.5	24913.47	39677
150	12537.41	2611.96	5223.92	9286.97	11940.39	14925.49	18996.08	29156.77	46434.85
175	14115.87	2940.81	5881.61	10456.2	13443.69	16804.61	21387.68	32827.6	52281
200	15680.03	3266.67	6533.35	11614.84	14933.36	18666.7	23757.62	36465.19	58074.19
250	18870.77	3931.41	7862.82	13978.35	17972.16	22465.2	28592.08	43885.51	69891.74
300	21468.49	4472.6	8945.2	15902.59	20446.18	25557.73	32528.02	49926.72	79512.93
420	28805.43	6001.13	12002.26	21337.36	27433.74	34292.18	43644.59	66989.37	106686.78
540	36224.7	7546.81	15093.63	26833.11	34499.71	43124.64	54885.91	84243.49	134165.56
660	43733.63	9111.17	18222.35	32395.28	41651.08	52063.85	66263.08	101706.12	161976.41
780	51187.07	10663.97	21327.95	37916.35	48749.59	60936.99	77556.17	119039.7	189581.74
900	58020.18	12087.54	24175.08	42977.91	55257.31	69071.64	87909.36	134930.65	214889.56
1020	65937.91	13737.06	27474.13	48842.9	62798.01	78497.51	99905.92	153343.98	244214.48
1140	73607.17	15334.83	30669.65	54523.83	70102.07	87627.58	111526.02	171179.47	272619.15





**STATEMENT SHOWING STANDARD WEIGHT OF PIPES TO BE FOLLOWED  
FOR CARTING OF VARIOUS DIAMETERS AND TYPES OF PIPES**

**I) C.I. Pipes ( IS : 1536-1989 )**

Diameter of Pipe in mm	Class of Pipes and Its Weight in Kg. per Metre Length		
	LA	A	B
80	16.00	17.38	18.46
100	19.82	21.82	23.27
125	25.82	28.18	30.36
150	32.10	35.27	38.00
200	47.09	51.09	55.27
250	63.45	69.09	74.73
300	81.82	89.45	96.91
350	103.09	111.82	121.27
400	125.45	137.09	140.00
450	151.27	166.10	179.27
500	177.09	192.91	208.73
600	236.00	257.64	335.01
700	304.55	335.73	359.45
750	341.09	372.91	404.55
800	381.00	416.00	450.00
900	465.09	507.45	549.80
1000	558.73	610.36	659.64

**II) M.S. Pipes**

Note : Weight of M.S. Pipes is to be computed by considering density of steel as 7850 Kg./Cum considering the diameter and thickness of plate used for manufacturing of M.S. Pipes.

**III) A.C. Pressure Pipes ( ISO-160 )**

Diameter of Pipe in mm	Class of pipes and its weight in Kg. per meter length			
	Class - 5	Class - 10	Class - 15	Class - 20
80	6.00	6.20	6.40	6.80
100	7.60	7.70	8.20	10.30
125	9.57	9.80	11.00	13.30
150	11.87	12.20	15.30	19.00
200	15.57	19.30	25.60	32.70
250	19.25	25.20	32.70	41.50
300	24.97	32.30	45.10	58.10
350	39.77	47.52	55.27	71.42
400	49.20	60.20	71.36	93.10
450	56.92	70.27	83.63	111.37
500	72.84	89.54	104.25	136.52
600	102.50	137.32	148.35	193.16





#### IV) D.I. K-9 PIPES INCLUDING WEIGHT OF MORTAR LINING PER M LENGTH

(1) Barrel Mass as per IS-8329-1994 (2) Socket Mass as per IS-8329-1994 (3) Cement Mortar Lining Wt as per ISO-4179-1985

Nominal Diameter	Weight / M Length of D.I. K-9 Pipes of			
	4 M	5 M	5.50 M	6 M
80 mm wt. of DI pipe / M	13.00	13.00	12.91	12.67
Weight Mortar / M	1.56	1.56	1.56	1.56
Total Weight / M	14.56	14.56	14.47	14.23
100 mm wt. of DI pipe / M	16.25	16.00	16.00	15.86
Weight Mortar / M	1.93	1.93	1.93	1.93
Total Weight / M	18.18	17.93	17.93	17.79
125 mm wt. of DI pipe / M	20.50	20.00	20.00	19.83
Weight Mortar / M	2.42	2.42	2.42	2.42
Total Weight / M	22.92	22.42	22.42	22.25
150 mm wt. of DI pipe / M	24.75	24.20	24.18	24.00
Weight Mortar / M	2.90	2.90	2.90	2.90
Total Weight / M	27.65	27.10	27.08	26.90
200 mm wt. of DI pipe / M	33.25	32.60	32.54	32.33
Weight Mortar / M	3.88	3.88	3.88	3.88
Total Weight / M	37.13	36.48	36.42	36.21
250 mm wt. of DI pipe / M	43.75	43.00	42.73	42.50
Weight Mortar / M	4.84	4.84	4.84	4.84
Total Weight / M	48.59	47.84	47.57	47.34
300 mm wt. of DI pipe / M	55.50	54.60	54.18	53.83
Weight Mortar / M	5.80	5.80	5.80	5.80
Total Weight / M	61.30	60.40	59.98	59.63
350 mm wt. of DI pipe / M	69.25	68.00	67.45	67.17
Weight Mortar / M	12.12	12.12	12.12	12.12
Total Weight / M	81.37	80.12	79.57	79.29
400 mm wt. of DI pipe / M	82.75	81.40	80.91	80.33
Weight Mortar / M	13.82	13.82	13.82	13.82
Total Weight / M	96.57	95.22	94.73	94.15
450 mm wt. of DI pipe / M	98.75	97.00	96.36	95.83
Weight Mortar / M	15.53	15.53	15.53	15.53
Total Weight / M	114.28	112.53	111.89	111.36
500 mm wt. of DI pipe / M	115.00	112.80	112.00	111.50
Weight Mortar / M	17.26	17.26	17.26	17.26
Total Weight / M	132.26	130.06	129.26	128.76
600 mm wt. of DI pipe / M	152.00	149.00	147.82	147.00
Weight Mortar / M	20.75	20.75	20.75	20.75
Total Weight / M	172.75	169.73	168.57	167.75
700 mm wt. of DI pipe / M	193.75	189.80	188.36	187.70
Weight Mortar / M	29.45	29.45	29.45	29.45
Total Weight / M	223.20	219.25	217.81	211.15
750 mm wt. of DI pipe / M	217.50	213.00	211.45	210.00
Weight Mortar / M	31.56	31.56	31.56	31.56
Total Weight / M	249.06	244.56	243.01	241.56
800 mm wt. of DI pipe / M	240.75	235.80	233.82	232.33
Weight Mortar / M	33.69	33.69	33.69	33.69
Total Weight / M	274.44	269.49	267.51	266.02
900 mm wt. of DI pipe / M	292.75	286.20	283.82	281.83
Weight Mortar / M	37.89	37.89	37.89	37.89
Total Weight / M	330.64	324.09	321.71	319.72
1000 mm wt. of DI pipe / M	349.75	341.60	338.55	336.17
Weight Mortar / M	42.08	42.08	42.08	42.08
Total Weight / M	391.83	383.68	380.63	378.25

Note : These weights are as per the circular issued by Superintending Engineer (HQ) vide  
Lt No. MJP / 10 - 2000 / SE (H/Q) / DI / 15 / AMDT / Stores / 255 dt. 26.06.2000





**V) P.V.C. Pipes ( IS : 4985-1988 )**

Diameter of Pipe in mm	Class of Pipes and its weight in Kg. per meter length		
	4.00 Kg./Sq.cm.	6.00 Kg./Sq.cm.	10.00 Kg./Sq.cm.
63	0.47	0.67	1.01
75	0.67	0.93	1.44
90	0.92	1.33	2.05
110	1.32	1.89	3.08
140	2.13	3.10	4.99
160	2.78	3.92	6.56
180	3.56	5.07	8.10
200	4.26	7.00	10.20
225	5.48	7.84	12.56
250	6.63	10.19	15.31
280	8.34	12.16	19.80
315	10.55	15.37	25.00

**VI) R.C.C. Pipes**

Diameter of Pipe in mm	Class of Pipes and its weight in Kg. per meter length					
	P - 1	P - 2	P - 3	NP - 2	NP - 3	NP - 4
100	23.56	23.56	23.56	21.20	21.20	21.20
150	33.00	33.00	33.00	29.40	29.40	29.40
200	42.10	42.10	42.10	37.90	37.90	37.90
250	51.84	63.40	75.18	57.10	67.60	77.20
300	74.64	102.50	117.10	92.25	105.40	119.10
350	92.28	134.30	168.10	120.80	151.30	170.20
400	104.16	169.60	208.10	152.60	187.30	212.40
450	127.92	188.70	235.23	169.90	211.70	240.80
500	141.36	229.90	261.37	206.90	235.23	270.50
600	192.96	305.70	313.64	275.10	282.27	320.20
700	225.59	325.80	365.92	293.20	329.32	370.90
800	257.82	345.19	418.19	310.60	376.30	425.40
900	290.00	389.58	470.47	350.60	423.00	482.30
1000	322.28	443.98	510.00	399.80	459.00	531.40

**VII) P.S.C. Pipes of all classes and B.W.S.C. Pipes of all classes**

Diameter of Pipe in mm	Weight of pipe per meter length for all classes in Kg/m	Diameter of Pipe in mm	Weight of pipe per meter length for all classes in Kg/m
350	197.50	1100	947.50
400	240.00	1200	1115.00
450	257.50	1300	1190.00
500	292.50	1400	1370.00
600	375.00	1500	1560.00
700	432.50	1600	1767.50
800	582.50	1700	1987.50
900	705.00	1800	2205.50
1000	825.00	1000	



**SECTION - D**

**CEMENT CONSUMPTION**



Sr. No.	Description	Unit	Quantity	
	<b>STANDARD CEMENT CONSUMPTION TO BE FOLLOWED FOR VARIOUS ITEMS OF WORK</b>			
<b>A</b>	<b>P.C.C. / R.C.C. Works</b>			
1	1 : 1½ : 1 (M-300) with finishing in CM 1:3 proportion	Cum	9.20	bags
2	1: 1: 2 (M-250) with finishing in CM 1:3 proportion	Cum	8.50	bags
3	1: 1½ : 3 (M-200) with finishing in CM 1:3 proportion	Cum	6.90	bags
4	1: 1½ : 3 (M-200) without finishing	Cum	6.80	bags
5	1 : 2 : 4 (M-150) with finishing in CM 1:3 proportion	Cum	5.90	bags
6	1 : 2 : 4 (M-150) without finishing	Cum	5.80	bags
<b>B</b>	<b>Brick Masonry Works</b>			
1	BB Masonry - IInd sort in CM 1:6 proportion	Cum	1.44	bags
2	BB Masonry - IInd sort in CM 1:5 proportion	Cum	1.62	bags
3	BB Masonry - IInd sort in CM 1:4 proportion	Cum	2.30	bags
4	Half brick walls in CM 1:4 proportion	Cum	0.22	bags
<b>C</b>	<b>Stone Masonry Works</b>			
1	U.C.R. Masonry - IInd sort in CM 1:6 proportion	Cum	1.77	bags
2	U.C.R. Masonry - IInd sort in CM 1:4 proportion	Cum	2.65	bags
3	Random Rubble Masonry - IInd sort in CM 1:6 proportion	Cum	1.77	bags
4	Random Rubble Masonry - IInd sort in CM 1:4 proportion	Cum	2.65	bags
5	C.R. Masonry - IInd sort in CM 1:4 proportion	Cum	2.65	bags
6	C.R. Masonry - IInd sort in CM 1:6 proportion	Cum	1.50	bags
<b>D</b>	<b>Waterproofing Works</b>			
1	Damp-proof course 50 mm thick in 1:2:4 proportion with bitumen layer W.P. compound.	Sqm	0.35	bags
2	Integral finishing to newly laid slab in CM 1:3 proportion with W.P. compound.	Sqm	0.06	bags
3	Waterproofing treatment over old slab with W.P. cement slurry as tack coat 12 mm thick, W.P. plaster in CM 1:3 proportion, brickbat coba average 9.50 cm thick in CM 1:6 proportion and 20 mm thick W.P. cement plaster over it in CM 1:3 proportion and finishing with cement slurry with novelling.	Sqm.	0.37	bags
<b>E</b>	<b>Plastering and Pointing Works</b>			
1	<b>12 mm thick plaster</b>			
	a) CM 1:2 proportion	Sqm	0.16	bags
	b) CM 1:3 proportion	Sqm	0.12	bags
	c) CM 1:4 proportion	Sqm	0.10	bags



Sr. No.	Description	Unit	Quantity	
2	<b>20 mm thick plaster</b>			
	a) CM 1:2 proportion	Sqm	0.27	bags
	b) CM 1:3 proportion	Sqm	0.19	bags
	c) CM 1:4 proportion	Sqm	0.15	bags
3	<b>25 mm thick plaster</b>			
	a) CM 1:2 proportion	Sqm	0.34	bags
	b) CM 1:3 proportion	Sqm	0.25	bags
	c) CM 1:4 proportion	Sqm	0.19	bags
4	Cement pointing in CM 1:3 proportion	Sqm	0.03	bags
5	Tuck cement pointing in CM 1:3 proportion	Sqm	0.05	bags
6	Sand faced plaster in CM 1:4 proportion including base coat 15 mm thick in CM 1:4 proportion with W.P. compound.	Sqm	0.22	bags
7	Rough cast cement plaster in CM 1:4 proportion in two coats.	Sqm	0.22	bags
<b>F</b>	<b>Flooring Works</b>			
1	I.P.S. flooring - 40 mm thick	Sqm	0.30	bags
2	I.P.S. flooring - 50 mm thick	Sqm	0.37	bags
3	Rough Shahabad - any other similar flooring in CM 1:4 proportion bedding	Sqm	0.15	bags
4	All types of cement / kadappa / polished / mosaic tiles flooring or skirting / dado set on CM 1:4 proportion bedding	Sqm	0.18	bags
5	Glazed / ceramic tiles flooring or skirting / dado fixed with plain cement slurry	Sqm	0.22	bags

**SECTION - E**

**EXCAVATION**





No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-020	
			Complete	Labour	Complete	Labour
1	Excavation for foundation / pipe trenches in earth, <u>soils of all types, sand, gravel and soft murum</u> , including removing the excavated material upto a distance of 50 metres and lifts as below, stacking and spreading as directed, normal dewatering, preparing the bed for foundation and <u>excluding backfilling</u> , etc. complete. (Bd-A-1/259)					
	Lift 0 to 1.5 M	Cum	145.00	145.00		
2	Excavation for foundation / pipe trenches in <u>hard murum</u> including removing the excavated material upto a distance of 50 M and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and <u>excluding backfilling</u> , etc. complete. (Bd-A-2/259)					
	Lift 0 to 1.5 M	Cum	165.00	165.00		
3	Excavation for foundation / pipe trenches in <u>hard murum and boulders</u> , W.B.M. road including removing the excavated material upto a distance of 50 M beyond the area and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and <u>excluding backfilling</u> , etc. complete. (Bd-A-3/259)					
	Lift 0 to 1.5 M	Cum	185.00	185.00		
4	Add for every <u>additional lift of 1.5 M</u> beyond initial lift of 1.5 M for Item Nos. 1 to 3	Cum	12.00	12.00		
5	Excavation for foundation / pipe trenches in <u>soft rock and old cement and lime masonry foundation</u> asphalt road including removing the excavated material upto a distance of 50 M beyond the area and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and <u>excluding backfilling</u> , etc. complete. (Bd-A-4/259)					
	Lift 0 to 1.5 M	Cum	454.00	411.00		

#### SECTION - E : EXCAVATION



Sr. No.	Description	Unit	Rate (Rs.) 2018-19		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
6	Excavation for foundation / pipe trenches in <u>hard rock by controlled blasting</u> , including trimming and levelling the bed by chiselling where necessary and removing the excavated material and stacking it in measurable heaps within a distance of 50 metres from the area and lifts as below, normal dewatering, <u>excluding backfilling</u> , etc. complete. (Bd-A-5/259)					
	Lift 0 to 1.5 M	Cum	585.00	496.00		
7	Excavation for foundation / pipe trenches in <u>hard rock and concrete road by chiselling, wedging, line drilling by mechanical means or by all means other than blasting</u> including trimming and levelling the bed, removing the excavated material upto a distance of 50 metres beyond the area and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, <u>excluding backfilling</u> , etc. complete by all means. (Bd-A-6/259)					
	Lift 0 to 1.5 M	Cum	770.00	763.00		
8	Excavation for foundation / pipe trenches in <u>slush muddy / marshy / slushy / soil including use of poclain</u> , labour for dewatering during execution including removing the excavated material upto a distance of 50 metres and lifts as below, stacking and spreading as directed, preparing the bed by cleaning the mud, labour required for execution for shuttering item but <u>excluding backfilling</u> , etc. complete. Providing and fixing shuttering shall be paid separately.					
	Lift 0 to 1.5 M	Cum	341.00	185.00		
9	Add for every <u>additional lift beyond initial lift of 1.5 M</u> for Item Nos. 5 to 10	Cum	21.00	21.00		





No.	Description	Unit	Rate (Rs.) 2018-19		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
	<u>HEAD WORKS</u>					
10	Excavation in general in <u>soft material comprising of soft soil, soft murum, sand, hard murum with boulders in wet or dry condition</u> for Head Works i.e. Intake Well, Connecting Pipe, Jack Well, Pump House, Supply Well, etc. for <u>lift 0 to 1.5M</u> and lead of 150 M including barricading, guarding, disposing off surplus excavated stuff within a radius of 0.5 km. as directed by Engineer-in-charge, etc. complete <u>excluding refilling.</u>					
a)	For Head Works <u>on river or dam submergence</u> for initial lift of 0 to 1.5 M	Cum	387.00	382.00		
b)	For Head Works <u>on nalla or any other site of GSDA</u> for initial lift of 0 to 1.5 M	Cum	222.00	219.00		
c)	Add for each <u>additional lift of 1.5 M</u> beyond initial lift 1.5 M	Cum	22.00	22.00		
11	Excavation in general in <u>hard material comprising of soft rock, hard rock, Manjara rock, etc. by blasting / controlled blasting, chiselling</u> as required in wet or dry condition for Head Works i.e. Intake Well, Connecting Pipe, Jack Well, Pump House, Supply Well, etc. for <u>lift 0 to 1.5 M</u> and lead of 150 M including barricading, guarding, disposing off surplus excavated stuff within a radius of 0.5 km. as directed by Engineer-in-charge, <u>excluding refilling.</u>					
a)	For Head Works <u>on river or dam submergence</u> for initial lift of 0 to 1.5 M	Cum	822.00	665.00		
b)	For Head Works <u>on nalla or any other site of GSDA</u> for initial lift of 0 to 1.5 M	Cum	585.00	446.00		
c)	Add for each <u>additional lift of 1.5 M</u> beyond initial lift 1.5 M	Cum	22.00	22.00		
12	Excavation in general in <u>soft material comprising of soft soil, soft murum, sand, hard murum with boulders in wet or dry condition</u> for Head Works and allied works by <u>well sinking process</u> for average depth of 12 M and lead of 150 M including shoring, barricading, guarding, refilling, disposing off surplus excavated stuff as directed by Engineer-in-charge, etc. complete.					
a)	Diameter <u>upto and including 3 M</u>	Cum	770.00	730.00		
b)	Diameter <u>more than 3 M</u>	Cum	625.00	592.00		

#### SECTION - E : EXCAVATION



Sr. No.	Description	Unit	Rate (Rs.) 2018-19		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
13	<u>Desilting</u> the Supply Well, Intake Well / Head Works, Sump of water supply / sewerage works etc. in wet or dry condition including <u>lifts upto 9 M</u> and lead upto 150 M as required beyond the work site, stacking, spreading, including necessary guarding, etc. complete, as directed by Engineer-in-charge.	Cum	592.00	562.00		
	Add for each <u>additional lift of 1.5 M beyond initial lift 9.0 M</u>	Cum	21.00	19.00		
14	<u>Dewatering</u> the excavated trenches and pools of water in the building trenches / pipeline trenches, well works by using pumps and other devices including disposing off water to safe distance as directed by Engineer-in-charge (including cost of machinery, labour, fuel), etc. complete. (Bd-A-9/261)	HP/ Hr.	64.00	8.00		
	(i) The Contractor at his request may be allowed to start construction of masonry steining so as not to allow silting of well in oncoming monsoon and while paying masonry, <u>25% amount shall be withheld and released only when excavation to the full depth is completed.</u>					
	(ii) <u>Dewatering</u> : Total dewatering charges are to be proposed in the tender as lumpsum amount and 75% is payable for excavation and 25% is payable for construction of well / gallery. Out of 75% excavation, break-up shall be as under					
	<u>25% for last 1 M depth.</u>					
	<u>20% for 2 M depth which is just above last 1 M depth.</u>					
	<u>15% for 2 M depth which is just above last 3 M depth.</u>					
	<u>15% for the rest of depth from water table level.</u>					
	The above conditions will restrict the tendencies of agencies to avoid deepening of wells, etc. to the required depth.					
15	<u>Refilling the trenches with available excavated stuff</u> with soft material first over pipeline and then hard material in 15 cm layers with all leads and lifts including consolidation, surcharging, etc. complete.	Cum	66.00	64.00		





No.	Description	Unit	Rate (Rs.) 2018-19		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
16	Filling in plinth and floors <u>murum bedding</u> in trenches with <u>approved murum from excavated materials</u> from foundation in 15 cm to 20 cm layers including watering and compaction, etc. complete. (Bd-A-10/263)	Cum	66.00	66.00		
17	Filling in plinth and floors / trenches with <u>contractor's murum</u> for bedding in 15 cm to 20 cm layers including watering and compaction, etc. complete. (Bd-A-11/263)	Cum	691.00	145.00		
18	Providing dry trap/ granite/ quartzite/ gneiss, <u>rubble stone soling</u> in 15 cm to 20 cm thick layers including hand packing and compacting, etc. complete. (Bd-A-12/264)	Cum	935.00	341.00		
19	Providing and filling in <u>sand boxing</u> in pipeline or for foundation with sand of approved quality including watering and compaction, etc. complete. (Bd-A-13/264)	Cum	954.00	160.00		
20	<u>Open timbering in trenches</u> of depth more than 1.5 M for shoring and strutting including use of and waste of all necessary timber works including walling, struts, open polling boards / horizontal sheeting, runners, etc. as may be necessary and fixing and removal complete. (Measurements to be taken of the face area timbered) (N.B.O. Item No. 4-15, P.No. 59)					
	a) Lift 0 to 1.5 M for non-water logged area	Sqm	124.00	10.00		
	Additional per Sqm for further lifts of 1.5 M each	Sqm	31.00	21.00		
	b) Lift 0 to 1.5 for water logged area	Sqm	134.00	14.00		
	Additional per Sqm for further lifts of 1.5 M each	Sqm	20.90	28.00		
	<u>Note</u> : For the trenches with more than 1.5 M depth, shoring if required from GL is to be done and is payable from GL.					

**SECTION - F**

**IRON & STRUCTURAL STEEL WORKS**





No.	Description	Unit	Rate (Rs.) 2018-19		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
1	Providing and fixing <u>mild steel grill work</u> for windows/ ventilators of 20 Kg/Sqm. as per drawings including necessary welding and painting with one coat of anticorrosive paint and two coats of oil painting, etc. complete. (Bd-U-1/537)	Sqm	1376.00	121.00		
2	Providing and fixing <u>mild steel grill railing</u> of 20 Kg/Sqm with teak wood hand railing, still and newel posts for staircase and including fabricating, fixtures, erecting, painting the grill work with approved oil paint and polishing the hand rail and newel posts with French polish two coats, etc. complete. (Bd-U-2/537)	Sqm	2108.00	313.00		
3	Providing <u>structural steel work in rolled stanchions fixed with connecting plates or angle cleats</u> as in main and cross beams, hip and jack rafters, purlins connecting to truss members and like as per detailed designs and drawings or as directed by Engineer-in-charge including cutting, fabricating, hoisting, erecting, fixing in position, making riveted / bolted / welded connections and one coat of anticorrosive paint and over it two coats of oil painting, etc. complete. (Bd-C-3/275)	MT	54213.00			
4	Providing <u>structural steel work in single stanchions composed of RSJ, channel, etc. with caps, bases, mild steel plates, angles, brackets, cleats, gusset plates, anchor bolts, etc.</u> as per detailed design and drawing or as directed by Engineer-in-charge including cutting, fabrication, hoisting, erecting, fixing in position, making riveted / bolted / welded connections and one coat of anticorrosive paint and over it two coats of oil painting, etc. complete. (Bd-C-6/277)	MT	53383.00			

Sr. No.	Description	Unit	Rate (Rs.) 2018-19		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
5	Providing <u>structural steel work in rolled sections like joists, channels, angles, tees</u> , etc. as per detailed designs and drawings including fixing in position without connecting plates, braces, etc. and one coat of anticorrosive paint and over it two coats of oil painting of approved quality and shade, etc. complete. (Bd-C-2/275)	MT	55998.00			
6	Providing <u>structural steel work in trusses, other similar trussed purlins and members with all bracing, gusset plates</u> , etc. as per detailed design and drawing or as directed by Engineer-in-charge including cutting, fabricating, hoisting, erecting and fixing in position, making riveted / bolted / welded connections and one coat of anticorrosive paint and over it two coats of oil painting, etc. complete. (Bd-C-8/278)	MT	69573.00			





**SECTION - G**

**PLAIN & REINFORCED CEMENT  
CONCRETE, READY MIX CONCRETE**



No.	Description	Unit	Rate (Rs.) 2018-19		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
1	<u>Providing and laying in situ Cement Concrete M-15 of trap/ granite / quartzite / gneiss metal for foundation and bedding including bailing out water, form work, compaction, curing, etc. complete.</u> (Cement 5.90 bags / cum)					
	Spec. No. - Bd E /1 Page No. 287 and B-7, Page No. 38					
	a) In PCC M-100	Cum	3751.00	1028.00		
	b) In PCC M-150	Cum	4079.00	1025.00		
2	<u>Providing and laying in situ Cement Concrete of trap/ granite / quartzite / gneiss metal for RCC work in foundation like raft, grillage, strip foundation and footing of RCC columns and steel stanchions including normal dewatering, form work, compaction, finishing and curing, etc. complete. (By weigh batching and mix design for M-250 and M-300 only. Use of L&amp;T, A.C.C., Ambuja, Birla Gold, Manikgad, Rajashree, etc. cement is permitted.)</u> (Excluding M.S. or Tor reinforcement)					
	a) In RCC M-150	Cum	4748.00	1233.00		
	b) In RCC M-200	Cum	4783.00	1228.00		
	c) In RCC M-250	Cum	5183.00	1231.00		
	d) In RCC M-300	Cum	5358.00	1233.00		
3	<u>Providing and casting in situ Cement Concrete of trap/ granite / quartzite / gneiss metal of approved quality for RCC works as per detailed drawings and designs or as directed by Engineer-in-charge including normal dewatering, centering, form work, compaction, finishing the formed surfaces with CM 1:3 of sufficient minimum thickness if special finish is to be provided and curing, etc. complete. (By weigh batching and mix design for M-250 and M-300 only. Use of L&amp;T, A.C.C., Ambuja, Birla Gold, Manikgad, Rajashree, etc. cement is permitted.)</u> (Excluding M.S. or Tor reinforcement)					
	<u>For all types of Columns</u>					
	a) In RCC M-150	Cum	5774.00	1233.00		
	b) In RCC M-200	Cum	5932.00	1228.00		
	c) In RCC M-250	Cum	6332.00	1231.00		
	d) In RCC M-300	Cum	6527.00	1233.00		

**SECTION - G : PLAIN & REINFORCED CEMENT CONCRETE, READY MIX CONCRETE**





Sr. No.	Description	Unit	Rate (Rs.) 2018-19		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
4	Providing and casting in situ C.C. of trap / granite/ quartzite / gneiss metal of approved quality for RCC works as per detailed drawings and designs or as directed by Engineer-in-charge including normal dewatering, centering, form work, compaction, finishing the formed surfaces with C.M. 1:3 of sufficient minimum thickness to give a smooth and even surface wherever necessary or roughening if special finish is to be provided and curing, etc. complete. (By weigh batching and mix design for M-250 and M-300 only. Use of L&T, A.C.C., Ambuja, Birla Gold, Manikgad, Rajashree, etc. cement is permitted.) (Excluding M.S. or Tor reinforcement)					
	<u>For Beams / Braces / Lintels</u>					
	a) In RCC M-150	Cum	5663.00	1233.00		
	b) In RCC M-200	Cum	5841.00	1228.00		
	c) In RCC M-250	Cum	6242.00	1231.00		
	d) In RCC M-300	Cum	6417.00	1233.00		
5	Providing and casting in situ C.C. of trap / granite/ quartzite / gneiss metal of approved quality for RCC works as per detailed drawings and designs or as directed by Engineer-in-charge including normal dewatering, centering, form work, compaction, finishing the formed surfaces with C.M. 1:3 of sufficient minimum thickness to give a smooth and even surface wherever necessary or roughening if special finish is to be provided and curing, etc. complete. (By weigh batching and mix design for M-250 and M-300 only. Use of L&T, A.C.C., Ambuja, Birla Gold, Manikgad, Rajashree, etc. cement is permitted.) (Excluding M.S. or Tor reinforcement)					
	<u>Slabs / Landings / Vertical Walls / Waist Slabs / Steps for Staircase</u>					
	a) In RCC M-150	Cum	6093.00	1187.00		
	b) In RCC M-200	Cum	6378.00	1228.00		
	c) In RCC M-250	Cum	6779.00	1231.00		
	d) In RCC M-300	Cum	6954.00	1233.00		



No.	Description	Unit	Rate (Rs.) 2018-19		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
6	Providing and casting in situ C.C. of trap / granite/ quartzite / gneiss metal of approved quality for RCC works as per detailed drawings and designs or as directed by Engineer-in-charge including normal dewatering, centering, form work, compaction, finishing the formed surfaces with C.M. 1:3 of sufficient minimum thickness to give a smooth and even surface wherever necessary or roughening if special finish is to be provided and curing, etc. complete. (By weigh batching and mix design for M-250 and M-300 only. Use of L&T, A.C.C., Ambuja, Birla Gold, Manikgad, Rajashree, etc. cement is permitted.) (Excluding M.S. or Tor reinforcement)					
	<u>Chajjas / Parapets / Curtain Walls / Partition Walls / Pardies</u>					
	a) In RCC M-150	Cum	6168.00	1233.00		
	b) In RCC M-200	Cum	6346.00	1228.00		
	c) In RCC M-250	Cum	6746.00	1231.00		
	d) In RCC M-300	Cum	6921.00	1233.00		
7	Providing and laying in situ R.C.C. of trap / granite/ quartzite / gneiss metal of approved quality for RCC works of <u>domes</u> as per detailed drawings and designs approved by Engineer-in-charge including centering, finishing, roughening the surfaces with special finish or plaster to be provided separately, curing, etc. complete. (By weigh batching and mix design for M-250 and M-300 only. Use of L&T, A.C.C., Ambuja, Birla Gold, Manikgad, Rajashree, etc. cement is permitted.) (Excluding M.S. or Tor reinforcement)					
	<u>Domes</u>					
	a) In RCC M-150	Cum	6462.00	1233.00		
	b) In RCC M-200	Cum	6640.00	1228.00		
	c) In RCC M-250 - Bottom Domes only	Cum	7041.00	1231.00		
	d) In RCC M-300 - Bottom Domes only	Cum	7216.00	1233.00		

**SECTION - G : PLAIN & REINFORCED CEMENT CONCRETE, READY MIX CONCRETE**



Sr. No.	Description	Unit	Rate (Rs.) 2018-19		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
8	Providing and fixing in position <u>steel bar reinforcement</u> of various diameters for RCC piles, caps, footings, foundations, slabs, beams, columns, canopies, staircases, newels, chajjas, lintels, pardies, copings, fins, arches, etc. as per detailed designs, drawings and schedules; including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required, etc. complete <u>(including cost of binding wire)</u> . (Bd-F-17/306)					
	a) Mild Steel	MT	45671.00	7634.00		--
	b) Tor Steel	MT	48500.00	7634.00		--
	c) Corrosion Resistant Steel (Fe 500)	MT	51590.00	7850.00		
	d) Only fabrication (Labour) (For all types of steel)	MT	6979.00	--		--
9	Providing <u>fusion bonded epoxy coating</u> to reinforcement bars as per IS-13620/1993 specification for a thickness of 175 (±50) microns including extra cost on account of careful handling, extra cost on account of using PVC coated binding wire instead of G.I. wire, extra cost on account of touch-up material supplied by coating agency and repair work, extra cost on account of transportation to and fro from steel yard at Regional Centre to plant at Daman and plant at Daman to work site by trailer, loading, unloading, including all taxes (Central and local), etc. complete.					
A	<u>For Reinforcement Diameterwise Rates</u>					
	1) 8 mm dia	MT	15935.00			
	2) 10 mm dia	MT	14059.00			
	3) 12 mm dia	MT	12828.00			
	4) 16 mm dia	MT	12359.00			
	5) 20 mm dia	MT	11361.00			
	6) 25 mm dia	MT	10305.00			
	7) 28 mm dia	MT	9836.00			
	8) 32 mm dia	MT	9132.00			
B	<u>Average Rates ( For estimation only)</u>					
	1) For 8 mm to 20 mm dia	MT	13308.00			
	2) For above 20 mm dia	MT	9758.00			



No.	Description	Unit	Rate (Rs.) 2018-19		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour

	<u>Notes for Estimation</u>					
	1) All the rates of Reinforced Cement Concrete Items from 1 to 6 shall be increased by 10% for each brace height above 1st brace for R.C.C. E.S.R.s. e.g. For a R.C.C. E.S.R. with 7 M staging and first brace at 3.50 M above ground, the concrete in columns above first brace, concrete of ring beam and bottom slab is entitled for 10% increase, concrete of vertical wall, roof slab and roof beams, columns in container are entitled for 20% increase.					
	2) All the rates of Reinforced Cement Concrete Items from 1 to 6 shall be increased by 2% for every floor height above ground floor for building works.					
	3) These rates are applicable for R.C.C. well works also. These rates shall be increased by 10% for every 5 M depth below initial 5 M depth.					
	4) Rates for Item Nos. 7 and 8 shall be increased by 5% for each brace height above first brace for R.C.C. E.S.R.s. By 5% for every ring beam below first ring beam for R.C.C. wells. By 1% building works for every floor height.					
	5) Volumetric mix as per 1:1½:3 shall be adopted with 56.5 kg of cement for RCC-250 and 59.5 kg of cement for RCC-300, per load of mixer of 1 bag capacity.					
	6) Fusion bonded epoxy coating to be proposed only in Coastal Area with prior approval of the Chief Engineer.					
	7) For estimation purpose, average rates as per Item No. 8b shall be considered wherever necessary.					

**SECTION - G : PLAIN & REINFORCED CEMENT CONCRETE, READY MIX CONCRETE**





Sr. No.	Description	Unit	Rate (Rs.) 2018-19		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
	<u>READY MIX CONCRETE</u>					
10	Providing and laying in situ <u>Ready Mix Cement Concrete</u> grade of trap / granite / quartzite / gneiss metal for <u>RCC works in foundation</u> like raft, grillage, strip foundation and footing of RCC column and steel stanchions including normal dewatering, form work, compaction, finishing and curing including transporting from mixing plant upto distance of 25 km., pouring the concrete at work site for 1.5 M lift above G.L. and 5.0 M lift below G.L., etc. complete. <u>(Excluding reinforcement and structural steel)</u>					
	<u>For Foundation</u>					
	a) In RCC M-150	Cum	4615.00			
	b) In RCC M-200	Cum	4851.00			
	c) In RCC M-250	Cum	5075.00			
	d) In RCC M-300	Cum	5324.00			
11	Providing and casting in situ <u>Ready Mix Cement Concrete</u> grade of trap / granite / quartzite / gneiss metal of approved quality for <u>RCC works</u> as per detailed drawings and designs or as directed by Engineer-in-charge including normal dewatering, centering, form work, compaction, finishing the formed surfaces with CM 1:3 of sufficient minimum thickness to give a smooth and even surface wherever necessary or roughening if special finish is to be provided and curing including transporting from mixing plant upto distance of 25 km., pouring the concrete at work site for 1.5 M lift above G.L. and 5.0 M lift below G.L., etc. complete. <u>(Excluding reinforcement and structural steel)</u>					
	<u>For all types of Columns</u>					
	a) In RCC M-150	Cum	5720.00			
	b) In RCC M-200	Cum	5956.00			
	c) In RCC M-250	Cum	6179.00			
	d) In RCC M-300	Cum	6429.00			



No.	Description	Unit	Rate (Rs.) 2018-19		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
12	Providing and casting in situ <u>Ready Mix Cement Concrete</u> grade of trap / granite / quartzite / gneiss metal of approved quality for <u>RCC works</u> as per detailed drawings and designs or as directed by Engineer-in-charge including normal dewatering, centering, form work, compaction, finishing the formed surfaces with CM 1:3 of sufficient minimum thickness to give a smooth and even surface wherever necessary or roughening if special finish is to be provided and curing including transporting from mixing plant upto distance of 25 km., pouring the concrete at work site for 1.5 M lift above G.L. and 5.0 M lift below G.L., etc. complete. <u>(Excluding reinforcement and structural steel)</u>					
	<u>For Beams / Braces / Lintels</u>					
	a) In RCC M-150	Cum	5706.00			
	b) In RCC M-200	Cum	5942.00			
	c) In RCC M-250	Cum	6021.00			
	d) In RCC M-300	Cum	6415.00			
13	Providing and casting in situ <u>Ready Mix Cement Concrete</u> grade of trap / granite / quartzite / gneiss metal of approved quality for <u>RCC works</u> as per detailed drawings and designs or as directed by Engineer-in-charge including normal dewatering, centering, form work, compaction, finishing the formed surfaces with CM 1:3 of sufficient minimum thickness to give a smooth and even surface wherever necessary or roughening if special finish is to be provided and curing including transporting from mixing plant upto distance of 25 km., pouring the concrete at work site for 1.5 M lift above G.L. and 5.0 M lift below G.L., etc. complete. <u>(Excluding reinforcement and structural steel)</u>					
	<u>Slabs / Landings / Vertical Walls / Waist Slabs / Steps for Staircase</u>					
	a) In RCC M-150	Cum	6093.00			
	b) In RCC M-200	Cum	6330.00			
	c) In RCC M-250	Cum	6553.00			
	d) In RCC M-300	Cum	6802.00			

**SECTION - G : PLAIN & REINFORCED CEMENT CONCRETE, READY MIX CONCRETE**





Sr. No.	Description	Unit	Rate (Rs.) 2018-19		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
14	Providing and casting in situ <u>Ready Mix Cement Concrete</u> grade of trap / granite / quartzite / gneiss metal of approved quality for <u>RCC works</u> as per detailed drawings and designs or as directed by Engineer-in-charge including normal dewatering, centering, form work, compaction, finishing the formed surfaces with CM 1:3 of sufficient minimum thickness to give a smooth and even surface wherever necessary or roughening if special finish is to be provided and curing including transporting from mixing plant upto distance of 25 km., pouring the concrete at work site for 1.5 M lift above G.L. and 5.0 M lift below G.L., etc. complete. <u>(Excluding reinforcement and structural steel)</u>					
	<u>Chajjas / Parapets / Curtain Walls / Partition Walls / Pardies</u>					
	a) In RCC M-150	Cum	6171.00			
	b) In RCC M-200	Cum	6408.00			
	c) In RCC M-250	Cum	6631.00			
	d) In RCC M-300	Cum	6885.00			
15	Providing and casting in situ <u>Ready Mix Cement Concrete</u> grade of trap / granite / quartzite / gneiss metal of approved quality for <u>RCC works</u> as per detailed drawings and designs or as directed by Engineer-in-charge including normal dewatering, centering, form work, compaction, finishing the formed surfaces with CM 1:3 of sufficient minimum thickness to give a smooth and even surface wherever necessary or roughening if special finish is to be provided and curing including transporting from mixing plant upto distance of 25 km., pouring the concrete at work site for 1.5 M lift above G.L. and 5.0 M lift below G.L., etc. complete. <u>(Excluding reinforcement and structural steel)</u>					
	<u>Domes</u>					
	a) In RCC M-150	Cum	6393.00			
	b) In RCC M-200	Cum	6629.00			
	c) In RCC M-250	Cum	6853.00			
	d) In RCC M-300	Cum	7102.00			



No.	Description	Unit	Rate (Rs.) 2018-19		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
	<u>Notes</u>					
	1) Add Rs. 10/- per Cum for transportation beyond 25 km. for every additional lead of 1 km.					
	2) Beyond 1.5 M above G.L. and 5.0 M below G.L., concreting is to be done by pumping by the Company.					
	3) Additional rate of pumping is					
	a) Static Pump : Rs. 175/- per Cum					
	b) Mobile Pump : Rs. 250/- per Cum					
	4) For Ready Mix Concrete, prior permission from Chief Engineer must be obtained.					
	Note : Completed rates are inclusive of 12.5% EPF and 1% Insurance Charges.					

**SECTION - G : PLAIN & REINFORCED CEMENT CONCRETE, READY MIX CONCRETE**





**SECTION - H**

**MISCELLANEOUS**



No.	Description	Unit	Rate (Rs.) 2018-19		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
1	Providing and fixing <u>G.I. pipe railing</u> having 1.0 M height consisting 50 x 50 x 6 mm thick M.S. angles as verticals at 1.5 M c/c and additional posts at every corner with <u>3 rows</u> of 25 mm dia G.I. pipes of medium class variety as horizontal and painting 3 coats of oil paint over 1 coat of anticorrosive paint of approved colour and shade including cost of all labour, transporting bends to curved shape, etc. complete.	RM	808.00	138.00		
A	As above but with only 2 rows.	RM	642.00	98.00		
2	<u>Dismantling of ESRs</u> of various capacities and heights using crane (10 MT capacity) and handing over M.S./ C.I./G.I. pipes, valves, bends, etc. to the Department. However taking steel reinforcement by the dismantling agency including removing dismantled materials from site and disposing them at suitable place as directed, etc. complete.					
A	Capacity of E.S.R. upto 2 lakh litres and staging upto 12 M height.					
	i) Congested Area	Lit	2.20	2.05		
	ii) Open Area	Lit	1.10	1.02		
B	Capacity of E.S.R. above 2 lakh litres and staging upto 12 M height.					
	i) Congested Area	Lit	1.10	1.02		
	ii) Open Area	Lit	1.10	1.02		
	<u>Note</u> : Above 12 M staging height, add 5% per metre staging of E.S.R. of any capacity.					
3	Providing and fixing <u>M.S. gate</u> 2.5 M wide for compound with 40 mm dia G.I. pipe, approved grill work, RCC M-150 side pillars of 25 cm x 40 cm x 2.5 M height, its foundation, finishing, painting, etc. complete.	No.	23198.00	3033.00		
4	Providing and fixing <u>Wicket gate</u> 1.0 M wide for compound with 40 mm dia G.I. pipe, approved grill work, RCC M-150 side pillars of 25 cm x 40 cm x 2.5 M height, its foundation, finishing, painting, etc. complete.	No.	6524.00	913.00		



Sr. No.	Description	Unit	Rate (Rs.) 2018-19		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
5	<u>Taking trial bore</u> (Core Bore Sampling) by Callyx machine with TCT/NX bits to gather undisturbed strata samples for investigation in all types of strata, soft soil, murum, hard murum with boulders, soft rock, hard rock and quartzite, etc. The item includes all hire and running cost of Callyx machine, conveying all materials to site of work excluding conveyance of callyx machine and back sampling all over burden strata in glass jar and core samples serially numbered at site in a wooden core box, samples to be taken at 1.0 M interval and conveying to the place as directed by Engineer-in-charge. The diameter of bore in overburden shall be 100 mm and of NX size (50 mm) in other strata. The item shall also include M.S. casing pipe of 2.5 mm thick plate in overburden only and shall be 1.0 M above GL with cap over it.					
	a) In overburden (soft soil, murum)	RMT	1364.00	202.00		
	b) In weathered rock with boulders	RMT	5728.00	1219.00		
	c) In weathered rock / soft rock	RMT	2938.00	609.00		
	d) In hard rock other than quartzite	RMT	3874.00	862.00		
	e) In hard rock quartzite	RMT				
6	Providing <u>pressure grouting</u> at a pressure of 5.6 kg/sqcm in required row / zigzag fashion as specified at 1.5 M interval as per site conditions to stop leakages through water retaining structures to the entire satisfaction of the Engineer-in-charge including material compound, hardening materials, compressor equipment including scaffolding, smooth finishing, etc. complete.					
	i) For masonry structure	Bag	639.00	179.00		
	ii) For concrete structure	Bag	629.00	176.00		
7	<u>Drilling 40 mm dia holes</u> in masonry or concrete structure with providing and fixing 0.5 M long G.I. pipeline for pressure grouting including all material, labour cost and machinery charges, etc. complete.	RM	731.00	67.00		



No.	Description	Unit	Rate (Rs.) 2018-19		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
8	Providing and casting <u>ferrocrate water tank</u> at site including all cost of labour and material, etc. complete upto 25,000 litres (for foundation and providing and fixing taps, etc. shall be considered separately).	Lit	4.30	1.00		
9	Providing and applying one coat of <u>gamma coating</u> or equivalent such as Dr.Bake, Krishna Conchem, Asian Paint, Atul Limited, Burger Paint, epoxy primer 50 to 60 microns thick and covering two coats of gamma coatings or equivalent such as Dr. Bake, Krishna Conchem, Asian Paint, Atul Limited, Burger Paints 30 microns thick each to new M.S. pipes and structural steel or concrete surface including repainting the surface by finishing by solvent degreasing and de-rusting by applying chemical method and scaffolding if necessary, etc. complete as per manufacturer's specifications.	Sqm	292.00	116.00		
10	Making <u>cross connection to existing distribution main</u> of any type including excavation, breaking and removing existing pipes, lowering, laying of specials and pipes in their position, refilling, closing the water supply in that area, dewatering and restarting the water supply, etc. complete as directed by Engineer-in-charge for following diameters of existing pipeline, irrespective of diameter of branch line. (The number of joints involved will be paid separately depending upon the nature of joints and required pipes, valves and specials will be supplied free of cost at stores.)					
i)	80 mm	No	1845.00			
ii)	100 mm	No	2105.00			
iii)	125 mm	No	2334.00			
iv)	150 mm	No	2602.00			
v)	200 mm	No	2709.00			
vi)	250 mm	No	3191.00			
vii)	300 mm	No	3871.00			
viii)	350 mm	No	4712.00			
ix)	400 mm	No	5542.00			
x)	450 mm	No	6368.00			
xi)	500 mm	No	7894.00			

#### SECTION - H : MISCELLANEOUS





Sr. No.	Description	Unit	Rate (Rs.) 2018-19		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
xii)	600 mm	No	13668.00			
xiii)	700 mm	No	16905.00			
xiv)	750 mm	No	21385.00			
xv)	800 mm	No	27405.00			
xvi)	900 mm	No	36056.00			
xvii)	1000 mm	No	50613.00			
	<u>Note</u> : Only 75% rate shall be payable till satisfactory hydraulic testing is given.					
11	Dismantling dead pipeline of M.S./ R.C.C./ C.I./ P.S.C. and G.I./ A.C./ P.V.C./ S.W./ H.D.P.E. pipe including cost of necessary excavation and refilling of trenches, breaking the joints, lifting the pipes and stacking to the place as directed by Engineer-in-charge with all leads and lifts including cleaning the surface, etc. complete.					
A	<u>For M.S. / R.C.C. / C.I. / P.S.C.</u>					
i)	80 mm	RMT	150.00			--
ii)	100 mm	RMT	165.00			--
iii)	125 mm	RMT	168.00			--
iv)	150 mm	RMT	171.00			--
v)	200 mm	RMT	191.00			--
vi)	250 mm	RMT	211.00			--
vii)	300 mm	RMT	229.00			--
viii)	350 mm	RMT	257.00			--
ix)	400 mm	RMT	281.00			--
x)	450 mm	RMT	317.00			--
xi)	500 mm	RMT	332.00			--
xii)	600 mm	RMT	408.00			--
xiii)	700 mm	RMT	478.00			--
xiv)	750 mm	RMT	536.00			--
B	<u>For G.I. / A.C. / P.V.C. / S.W. / H.D.P.E.</u>					
i)	80 mm	RMT	89.00			--
ii)	100 mm	RMT	99.00			--
iii)	125 mm	RMT	101.00			--
iv)	150 mm	RMT	104.00			--
v)	200 mm	RMT	114.00			--
vi)	250 mm	RMT	127.00			--
vii)	300 mm	RMT	136.00			--



No.	Description	Unit	Rate (Rs.) 2018-19		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
viii)	350 mm	RMT	155.00			--
ix)	400 mm	RMT	168.00			--
x)	450 mm	RMT	191.00			--
xi)	500 mm	RMT	199.00			--
xii)	600 mm	RMT	245.00			--
xiii)	700 mm	RMT	287.00			--
xiv)	750 mm	RMT	321.00			--
12	Providing and constructing two taps standpost as per type design with excavation 15 cm thick PCC 1:3:6 bedding 20 mm thick PCC 1:2:4 concrete for platform of 1.75 M dia. with side curb and bucket rest, 80 mm dia, heavy duty GI pipe central post duly filled therein with C.C. 1:2:4, 5 M long, 20 mm dia. medium G.I. pipe from point of tapping to standpost, additional 20 mm dia G.I. pipe fixed vertically upto 15 mm dia self closing water taps, one brass ferrule, etc. complete together with all labour and material charges as per drawing and as directed by Engineer-in-charge <u>when good foundation is available.</u> Rate includes draining arrangement by excavating open gutters.	No	8358.00			--
A	As above but when <u>precast RCC platform or precast standpost is issued free of cost</u> at departmental stores including cost of transportation and fixing, etc. complete.	No	5012.00			--
13	Providing and constructing two taps standpost as per type design with excavation 30 cm thick boulder filling 15 cm thick PCC in 1:3:6, 20 mm thick RCC, 1:2:4 platform of 1.75 M dia. with side curb and bucket rest, 80 mm dia, heavy duty GI pipe central post duly filled therein with C.C. 1:2:4, 5 M long, 20 mm dia. medium G.I. pipe from point of tapping to standpost, additional 20 mm dia G.I. pipe fixed horizontally and providing and fixing two 15 mm dia GI self closing water taps, one brass ferrule, etc. complete together with all labour and material charges as per drawing and as directed by Engineer-in-charge <u>when B.C. soil is available.</u> Rate includes draining arrangement by excavating open gutters.	No	8857.00			--



Sr. No.	Description	Unit	Rate (Rs.) 2018-19		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
A	As above but when <u>precast RCC platform or precast standpost is issued free of cost</u> at departmental stores including cost of transportation and fixing, etc. complete.	No	5227.00	--		--
14	Pushing of M.S. pipes of following dia for road crossing and railway crossing by push through method in all types of strata by using hydraulic jack and drilling machine of required diameter of below M.S. casing pipes, lowering, laying, jointing of material, required welding machinery, tripod, shain-pulley block, crain, blower, compressor, loading and unloading of machinery into the trench, etc. transportation and dewatering, etc. complete, as directed by engineer-in-charge but excluding the cost of M.S. pipes.					
	a) 200 mm to 499 mm dia MS pipe	RMT	22781.00	--		--
	b) 500 mm to 1000 mm dia MS pipe	RMT	28476.00	--		--
15	Providing and erecting slip form shuttering including dismantling after completion for constructing vertical shutters, such as jackwell, balancing tank, bridge column and for horizontal structure in R.C.C. The item includes lifting arrangement, centering, form work, normal dewatering, electrical arrangement with generator set and with all equipments for slip form shuttering work with labour, material and machinery, all rents, fuels, insurance charges. The rate is for various dia, depth and various sizes of structures, etc. complete.  Note : A) All risks and costs lie with the contractor itself. B) The arrangement for lighting with cables till top height to be provided by the contractor. C) Any accident arising out of the work will be responsibility of the contractor. D) No idle charges for machinery and labour will be paid. E) Insurance for all types of machinery and workers will be borne by contractor.	Sq.M.	2940.00	735.00		



No.	Description	Unit	Rate (Rs.) 2018-19		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
16	Providing and Laying HDPE Geo-membrane sheet of following thickness 100% acid, alkali proof, 100% reinforced sealing quality, every joint electronically welded, as per relevant IS specification and placing in proper position on prepared bed on foundation/ embankment with welding the joints of sheet using hot sedge and extrusion welding techniques according to the leanier manufaturers specifications at ambient temperaturesnof 5qC to 45qC including all taxes and labour for jointing and placing etc. complete.					
	500 micron	Sq.M.	235.00	59.00		
	250 micron	Sq.M.	162.50	41.00		
17	Providing and supplying Poly Aluminium Chloride (PAC) of medium basicity, confirming to IS : 15573 : 2005, and ISI mark and manufacture from vergin raw material in liquid / powder form with PH of 5%, having specific gravity 1.204 for use in water treatment plant for treatment of low to high turbidity water for drinking purpose including all mlocal and central taxes, insurance charges, transportation and freight charges, third party charges, with material testing charges (from VJTI/ IIT/ DPH lab.), loading and unloading charges and conveyance to water works and R.R. schemes sites in Maharashtra etc. complete as per MJP approved.					
	PAC medium high basicity in powder form	M.T.	31150.00			
	PAC medium high basicity in liquid form	M.T.	11425.00			



## **SECTION - I (I)**

### **C.I./D.I. PIPES**



# SECTION - I : C. I. PIPES

Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
1.	<p><b>1. C.I. PIPES</b></p> <p><b>Providing and supplying ISI mark C.I. S/S pipe</b> (push on joints pressure pipes of following class and diameters confirming to the I. S. specification inclusive cost of jointing materials (Rubber gasket of EPDM Quality) excluding GST levied by GOI &amp; GOM in all respect including Third party inspection charges of TPI Agency approved by MJP including Transit insurance, Railway Freight, Unloading from railway wagon, Loading into Truck, Transportation to departmental store, unloading, stacking etc. completed as directed by Engineer in charge (IS 1536/2001 for pipes and IS 158/1969 and IS 12820/1989 or latest edition/revision with amendments for Rubber Gaskets. <i>(IS-1536 / 2001)</i>) (Suitable for Tyton / Pig lead joints)</p> <p><b>a) Class 'LA'</b></p> <p>i) 80 mm</p> <p>ii) 100 mm</p> <p>iii) 150 mm</p> <p>iv) 200 mm</p> <p>v) 250 mm</p> <p>vi) 300 mm</p>	<p>Rmt</p> <p>Rmt</p> <p>Rmt</p> <p>Rmt</p> <p>Rmt</p> <p>Rmt</p>	<p>759.00</p> <p>951.00</p> <p>1545.00</p> <p>2224.00</p> <p>2997.00</p> <p>3865.00</p>	





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019		Rate (in Rs.) 2019-2020	
1	2	3	4		5	
	<b>1. C.I. PIPES 'A' Class Continued</b>					
	<b>B) Class 'A'</b>					
	i) 80 mm	Rmt	769.00			
	ii) 100 mm	Rmt	961.00			
	iii) 125 mm	Rmt	1250.00			
	iv) 150 mm	Rmt	1539.00			
	v) 200 mm	Rmt	2224.00			
	vi) 250 mm	Rmt	3006.00			
	vii) 300 mm	Rmt	3891.00			
	viii) 350 mm	Rmt	4864.00			
	ix) 400 mm	Rmt	5965.00			
	x) 450 mm	Rmt	7226.00			
	xi) 500 mm	Rmt	8285.00			
	xii) 600 mm	Rmt	11063.00			
	xiii) 700 mm	Rmt	14418.00			
	xiv) 750 mm	Rmt	16014.00			
	xv) 800 mm	Rmt	17903.00			
	xvi) 900 mm	Rmt	21791.00			
	xvii) 1000 mm	Rmt	26211.00			



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>c) Class 'B'</b>			
	i) 80 mm	Rmt	818.00	
	ii) 100 mm	Rmt	1024.00	
	iii) 125 mm	Rmt	1346.00	
	iv) 150 mm	Rmt	1657.00	
	v) 200 mm	Rmt	2404.00	
	vi) 250 mm	Rmt	3250.00	
	vii) 300 mm	Rmt	4215.00	
	viii) 350 mm	Rmt	5276.00	
	xiv) 400 mm	Rmt	6092.00	
	x) 450 mm	Rmt	7797.00	
	xi) 500 mm	Rmt	8963.00	
	xii) 600 mm	Rmt	11809.00	
	xiii) 700 mm	Rmt	15436.00	
	xiv) 750 mm	Rmt	17374.00	
	xv) 800 mm	Rmt	19366.00	
	xvi) 900 mm	Rmt	23609.00	
	xvii) 1000 mm	Rmt	28325.00	

**SECTION - I: C.I./D.I. PIPES**





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019		Rate (in Rs.) 2019-2020	
1	2	3	4		5	
2.	<p><b>Lowering laying and jointing with SBR ruber gaskets C.I. S/S pipes</b> of various classes with CI / MS specials of following diameter in proper position, grade and alignment as directed by Engineer-in-charge including conveyance of material from stores to site of work, <b>including cost of jointing materials and rubber rings labour</b> etc. complete.</p> <p><b>Note : Only SBR Rubber gaskets to be used as per IS-5382 and IS-12820.</b></p> <p><b>a) C.I. 'L.A.' Class / Mortar inlined DI K-9/K-7</b></p> <p>i) 80 mm.</p> <p>ii) 100 mm.</p> <p>iii) 125 mm.</p> <p>iv) 150 mm.</p> <p>v) 200 mm.</p> <p>vi) 250 mm.</p> <p>vii) 300 mm.</p> <p>viii) 350 mm.</p> <p>ix) 400 mm.</p> <p>x) 450 mm.</p> <p>xi) 500 mm.</p> <p>xii) 600 mm.</p> <p>xiii) 700 mm.</p> <p>xiv) 750 mm.</p> <p>xv) 800 mm.</p> <p>xvi) 900 mm.</p> <p>xvii) 1000 mm.</p> <p><b>B) C.I. 'A' Class</b></p> <p>i) 80 mm.</p> <p>ii) 100 mm.</p> <p>iii) 125 mm.</p> <p>iv) 150 mm.</p> <p>v) 200 mm.</p> <p>vii) 250 mm.</p> <p>viii) 300 mm.</p>					
			Without Rubber Rings	With Rubber Rings	Without Rubber Rings	With Rubber Rings
		Rmt	44.00	50.00		
		Rmt	53.00	58.00		
		Rmt	66.00	73.00		
		Rmt	71.00	79.00		
		Rmt	94.00	104.00		
		Rmt	123.00	135.00		
		Rmt	133.00	152.00		
		Rmt	165.00	186.00		
		Rmt	199.00	230.00		
		Rmt	199.00	242.00		
		Rmt	230.00	280.00		
		Rmt	302.00	372.00		
		Rmt	390.00	524.00		
		Rmt	436.00	573.00		
		Rmt	534.00	672.00		
		Rmt	638.00	844.00		
		Rmt	754.00	1023.00		
		Rmt	45.00	56.00		
		Rmt	56.00	66.00		
		Rmt	72.00	79.00		
		Rmt	78.00	85.00		
		Rmt	101.00	111.00		
		Rmt	133.00	146.00		
		Rmt	145.00	163.00		

**SECTION - I : C. I. / D. I. PIPES**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019		Rate (in Rs.) 2019-2020	
1	2	3	4		5	
			Without Rubber Rings	With Rubber Rings	Without Rubber Rings	With Rubber Rings
	viii) 350 mm.	Rmt	178.00	200.00		
	ix) 400 mm.	Rmt	201.00	231.00		
	x) 450 mm.	Rmt	211.00	244.00		
	xi) 500 mm.	Rmt	248.00	297.00		
	xii) 600 mm	Rmt	328.00	397.00		
	xiii) 700 mm.	Rmt	422.00	555.00		
	xiv) 750 mm.	Rmt	475.00	609.00		
	xv) 800 mm.	Rmt	560.00	696.00		
	xvi) 900 mm.	Rmt	674.00	879.00		
	xvii) 1000 mm.	Rmt	787.00	1056.00		
	<b>c) CI 'B' Class</b>					
	i) 80 mm.	Rmt	50.00	58.00		
	ii) 100 mm.	Rmt	59.00	72.00		
	iii) 125 mm.	Rmt	77.00	85.00		
	iv) 150 mm.	Rmt	86.00	96.00		
	v) 200 mm.	Rmt	111.00	124.00		
	vi) 250 mm.	Rmt	144.00	163.00		
	vii) 300 mm.	Rmt	157.00	175.00		
	viii) 350 mm.	Rmt	193.00	224.00		
	ix) 400 mm.	Rmt	224.00	254.00		
	x) 450 mm.	Rmt	228.00	261.00		
	xi) 500 mm.	Rmt	267.00	316.00		
	xii) 600 mm.	Rmt	355.00	422.00		
	xiii) 700 mm.	Rmt	456.00	586.00		
	xiv) 750 mm.	Rmt	515.00	649.00		
	xv) 800 mm.	Rmt	601.00	735.00		
	xvi) 900 mm.	Rmt	712.00	916.00		
	xvii) 1000 mm.	Rmt	813.00	1079.00		
	<b>Note : Only 85% rate shall be payable till satisfactory hydraulic testing is given.</b>					

**SECTION - I : C.I./D.I. PIPES**





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
3.	<p><b>Providing D.I. pipes</b> (push on joints pressure pipes of D. I. of following class and diameters confirming to the I. S. specification inclusive cost of jointing materials (Rubber gasket of EPDM Quality) excluding GST levied by GOI &amp; GOM in all respect including Third party inspection charges of TPI Agency approved by MJP including Transit insurance, Railway Freight, Unloading from railway wagon, Loading into Truck, Transportation to departmental store, unloading, stacking etc. completed as directed by Engineer in charges (IS 1536/2001 for pipes and IS 158/1969 and IS 12820/1989 or latest edition/revision with amendments for Rubber Gaskets.</p> <p><b>(IS:8329-2000 Latest Version)</b></p>			
			<b>D. I. K-7</b>	<b>D. I. K-9</b>
	i) 100 mm.	Rmt	739.00	793.00
	ii) 150 mm.	Rmt	1070.00	1151.00
	iii) 200 mm.	Rmt	1328.00	1565.00
	iv) 250 mm.	Rmt	1807.00	2081.00
	v) 300 mm.	Rmt	2245.00	2576.00
	vi) 350 mm.	Rmt	2947.00	3268.00
	vii) 400 mm.	Rmt	3390.00	3810.00
	viii) 450 mm.	Rmt	4100.00	4640.00
	ix) 500 mm.	Rmt	4785.00	5314.00
	x) 600 mm.	Rmt	6245.00	7081.00



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019		Rate (in Rs.) 2019-2020	
1	2	3	4		5	
	xi) 700 mm.	Rmt	8530.00	9001.00		
	xii) 750 mm.	Rmt	9760.00	10525.00		
	xiii) 800 mm.	Rmt	10805.00	11467.00		
	xiv) 900 mm.	Rmt	13240.00	14180.00		
	xv) 1000 mm.	Rmt	16400.00	17007.00		
	xvi) 1100 mm	Rmt	20930.00	21159.00		
	xvii) 1200 mm	Rmt	23475.00	23315.00		





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
4.	<p><b>Providing and making lead caulked joint with molten lead to Cast Iron pipes</b> and / or specials of all classes and fitting of following dia including cost of lead and all jointing material, labour, hydraulic testing etc. complete.</p> <p>i) 80 mm.</p> <p>ii) 100 mm.</p> <p>iii) 125 mm.</p> <p>iv) 150 mm.</p> <p>v) 200 mm.</p> <p>vi) 250 mm.</p> <p>vii) 300 mm.</p> <p>viii) 350 mm.</p> <p>ix) 400 mm.</p> <p>x) 450 mm.</p> <p>xi) 500 mm.</p> <p>xii) 600 mm.</p> <p>xiii) 700 mm.</p> <p>xiv) 750 mm.</p> <p>xv) 800 mm.</p> <p>xvi) 900 mm.</p> <p>xvii) 1000 mm.</p> <p><b>Note : Only 85 % rate shall be payable till satisfactory Hydraulic testing is given.</b></p>	<p>Joint</p> <p>Joint</p> <p>Joint</p> <p>Joint</p> <p>Joint</p> <p>Joint</p> <p>Joint</p> <p>Joint</p> <p>Joint</p> <p>Joint</p> <p>Joint</p> <p>Joint</p> <p>Joint</p> <p>Joint</p> <p>Joint</p> <p>Joint</p> <p>Joint</p>	<p>720.00</p> <p>891.00</p> <p>1060.00</p> <p>1316.00</p> <p>1919.00</p> <p>2330.00</p> <p>2810.00</p> <p>3185.00</p> <p>3715.00</p> <p>5159.00</p> <p>5546.00</p> <p>7126.00</p> <p>8372.00</p> <p>9508.00</p> <p>10211.00</p> <p>10891.00</p> <p>11613.00</p>	
5.	<p><b>Providing and supplying ISI standard CI double flanged pipes</b> excluding GST levied by GOI &amp; GOM in all respect including railway freight, insurance, unloading from railway wagon, loading into truck transport to stores, unloading etc. complete as directed by Engineer-in-charge.</p> <p>i) 80 mm.</p> <p>ii) 100 mm.</p> <p>iii) 125 mm.</p> <p>iv) 150 mm.</p> <p>v) 200 mm.</p>	<p>Rmt</p> <p>Rmt</p> <p>Rmt</p> <p>Rmt</p> <p>Rmt</p>	<p>1246.00</p> <p>1540.00</p> <p>2005.00</p> <p>2502.00</p> <p>3839.00</p>	

**SECTION -I: C.I./D.I. PIPES**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	vi) 250 mm. vii) 300 mm. viii) 350 mm. ix) 400 mm. x) 450 mm. xi) 500 mm. xii) 600 mm. xiii) 700 mm. xix) 750 mm.	Rmt Rmt Rmt Rmt Rmt Rmt Rmt Rmt Rmt	5173.00 6651.00 8681.00 10585.00 12710.00 14917.00 21220.00 28429.00 30932.00	
6.	<p><b>Providing and supplying ISI standard CI flanged / S&amp; S specials</b> excluding GST levied by GOI &amp; GOM in all respect including railway freight, insurance, unloading from railway wagon, loading into truck transport to departmental store, unloading stacking etc. complete.</p> <p><b>a) D/F Specials</b> i) 80 to 300 mm dia ii) 350 to 600 mm dia iii) Above 600 mm dia <b>b) S/S Specials / Socketed Branch Flanged Specials</b> i) 80 to 300 mm dia ii) 350 to 600 mm dia iii) Above 600 mm dia <b>C) Plain ended/ plain ended branch flanged specials</b> i) 80 to 300 mm dia ii) 350 to 600 mm dia iii) Above 600 mm dia</p>	Kg. Kg. Kg. Kg. Kg. Kg. Kg.	62.00 66.00 71.00 60.00 64.00 68.00	
7.	<p>Providing and supplying ISI standard <b>MS specials</b> of required thickness with 3 coats of approved make epoxy paint (Shalimar, Ciba or Mahindra &amp; Mahindra make) from inside and outside excluding GST levied by GOI &amp; GOM in all respect including inspection charges, transportation to stores and stacking, etc. complete.</p> <p>a) Machine ends suitable for PSC pipes of all diameters as per detailed drawing with 10 mm thick x 0.7 M long barrel welded to it.</p> <p>b) Only flanges with machining and drilling holes, etc. complete more than 40 mm thick.</p>	Kg. Kg.	70.00 68.00	

**SECTION-I: C.I./D.I. PIPES**





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
8.	c) Double flanged specials of all diameters	Kg.	66.00	
	d) All socketed specials or socketed branch flanged specials of all diameters.	Kg.	66.00	
	e) Plain ended specials or plain ended branch flanged specials of all diameters.	Kg.	66.00	
	f) MS barrels (pipe pieces) locally manufactured (for small quantities)	Kg.	64.00	
	<b>Providing and making flanged joints to flanged C.I./ M.S. pipes</b> of all classes/specials etc. including cost of all jointing materials (rubber packing, nut bolts, etc.), labour, hydraulic testing etc. complete.			
	i) 80 mm.	Joint	199.00	
	ii) 100 mm.	Joint	343.00	
	iii) 125 mm.	Joint	359.00	
	iv) 150 mm.	Joint	689.00	
	v) 200 mm.	Joint	714.00	
	vi) 250 mm.	Joint	1024.00	
	vii) 300 mm.	Joint	1063.00	
	viii) 350 mm.	Joint	1385.00	
	ix) 400 mm.	Joint	1726.00	
	x) 450 mm.	Joint	2109.00	
	xi) 500 mm.	Joint	2183.00	
	xii) 600 mm.	Joint	2344.00	
	xiii) 700 mm.	Joint	3531.00	
	xiv) 750 mm.	Joint	3630.00	
	xv) 800 mm.	Joint	5023.00	
	xvi) 900 mm	Joint	5207.00	
	xvii) 1000 mm	Joint	5390.00	
	<b>Note : Only 85 % rate shall be payable till satisfactory Hydraulic testing is given.</b>			

**SECTION - I: C.I./D.I. PIPES**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
9.	<b>Erecting and hoisting in position and jointing, testing M.S./ C.I. D/F pipes and specials</b> in vertical position including cost of all jointing materials (rubber packing, nut bolts, etc.) labour, scaffolding, hydraulic testing etc. complete.			
	i) 80 mm.	Joint	220.00	
	ii) 100 mm.	Joint	372.00	
	iii) 125 mm.	Joint	393.00	
	iv) 150 mm.	Joint	731.00	
	v) 200 mm.	Joint	776.00	
	vi) 250 mm.	Joint	1109.00	
	vii) 300 mm.	Joint	1170.00	
	viii) 350 mm.	Joint	1520.00	
	ix) 400 mm.	Joint	1890.00	
	x) 450 mm.	Joint	2309.00	
	xi) 500 mm.	Joint	2416.00	
	xii) 600 mm.	Joint	2652.00	
	xiii) 700 mm.	Joint	3934.00	
	xiv) 750 mm.	Joint	4084.00	
	xv) 800 mm.	Joint	5530.00	
	xvi) 900 mm	Joint	5821.00	
	xvii) 1000 mm	Joint	6135.00	
	<b>Note : Only 85 % rate shall be payable till satisfactory hydraulic testing is given.</b>			





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
10.	Providing and supplying ISI standard D. I. specials & fitting with sealing rubber gasket of S.B.R, complete with cast iron follower gland and M. S. nut bolts coated or otherwise protected from rusting and suitable for D.I.pipes including cost of labour, materials, and transportation to stores, loading and unloading excluding GST levied by GOI & GOM in all respect etc. complete as per IS-9523. <b>For all types of specials, bends tees etc.</b>			
	a) 80 to 300 mm dia.	Kg.	96.00	
	b) 350 mm & above dia.	Kg.	117.00	
11.	Providing and supplying ISI standard welded DI double flanged pipe excluding GST levied by GOI & GOM in all respect but including railway freight, insurance, unloading from railway wagon, loading into truck transport to store, unloading, stacking etc. complete as directed by Engineer-in- charge. (for 2.75 m bare pipe)			
	i) 100 mm	Rmt.	1643.00	
	ii) 150 mm	Rmt.	2231.00	
	iii) 200 mm	Rmt.	2854.00	
	iv) 250 mm	Rmt.	3875.00	
	v) 300 mm	Rmt.	4876.00	
	vi) 350 mm	Rmt.	6351.00	
	vii) 400 mm	Rmt.	7688.00	
	viii) 450 mm	Rmt.	9187.00	
	ix) 500 mm	Rmt.	10678.00	
	x) 600 mm	Rmt.	14059.00	
	xi) 700 mm	Rmt.	18918.00	
	xii) 800 mm	Rmt.	23125.00	
	xiii) 900 mm	Rmt.	28704.00	
	xiv) 1000 mm	Rmt.	33703.00	

**SECTION -I: C. I./D. I. PIPES**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019		Rate (in Rs.) 2019-2020	
1	2	3	4		5	
12.	Hydraulic testing of C.I./D.I. pipe line to specified pressure including cost of all materials and labour and water for testing for specified length including cutting, placing end cap making arrangement for filling safe water using reciprocating type pumps which should be able to provide specified test pressure gauges and other necessary equipments, labour, operation charges, etc. required for testing. The rate under this item shall also include cost of retesting, if necessary and reinstating to original position using water supplied by the contractor.					
	A) C.I. L.A. Class / Mortar lined D.I.K-9/ K-7		Without Rubber Rings	With Rubber Rings		
	i) 80 mm.	Km	4856.00	5595.00		
	ii) 100 mm.	Km	5912.00	6546.00		
	iii) 125 mm.	Km	7285.00	8129.00		
	iv) 150 mm.	Km	7813.00	8763.00		
	v) 200 mm.	Km	10452.00	11508.00		
	vii) 250 mm.	Km	13619.00	14992.00		
	vii) 300 mm.	Km	14781.00	16892.00		
	viii) 350 mm.	Km	18370.00	20587.00		
	ix) 400 mm.	Km	22065.00	25549.00		
	x) 450 mm.	Km	22065.00	26922.00		
	xi) 500 mm.	Km	25549.00	31039.00		
	xii) 600 mm.	Km	33573.00	41385.00		
	xiii) 700 mm.	Km	43286.00	58169.00		
	xiv) 750 mm.	Km	48459.00	63662.00		
	xv) 800 mm.	Km	59333.00	74747.00		
	xvi) 900 mm.	Km	70841.00	93751.00		
	xvii) 1000 mm.	Km	83827.00	113704.00		





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019		Rate (in Rs.) 2019-2020	
1	2	3	4		5	
	B) C.I. "A" Class		Without Rubber Rings	With Rubber Rings		
	i) 80 mm.	Rmt	5068.00	6229.00		
	ii) 100 mm.	Rmt	6229.00	7285.00		
	iii) 125 mm.	Rmt	7918.00	8763.00		
	iv) 150 mm.	Rmt	8657.00	9502.00		
	v) 200 mm.	Rmt	11297.00	12247.00		
	vii) 250 mm.	Rmt	14781.00	16153.00		
	vii) 300 mm.	Rmt	16047.00	18053.00		
	viii) 350 mm.	Rmt	19848.00	22171.00		
	ix) 400 mm.	Rmt	22276.00	25655.00		
	x) 450 mm.	Rmt	23438.00	27133.00		
	xi) 500 mm.	Rmt	27555.00	33045.00		
	xii) 600 mm.	Rmt	36423.00	44130.00		
	xiii) 700 mm.	Rmt	46875.00	61656.00		
	xiv) 750 mm.	Rmt	52682.00	67674.00		
	xv) 800 mm.	Rmt	62184.00	77386.00		
	xvi) 900 mm.	Rmt	74958.00	97762.00		
	xvii) 1000 mm.	Rmt	87416.00	117294.00		
	B) C.I. "B" Class					
	i) 80 mm.	Rmt	5595.00	6546.00		
	ii) 100 mm.	Rmt	6651.00	7918.00		
	iii) 125 mm.	Rmt	8552.00	9502.00		
	iv) 150 mm.	Rmt	9607.00	10663.00		
	v) 200 mm.	Rmt	12247.00	13725.00		
	vii) 250 mm.	Rmt	15942.00	18159.00		
	vii) 300 mm.	Rmt	17420.00	19426.00		
	viii) 350 mm.	Rmt	21432.00	24916.00		
	ix) 400 mm.	Rmt	24916.00	28294.00		
	x) 450 mm.	Rmt	25232.00	29033.00		
	xi) 500 mm.	Rmt	29667.00	35051.00		
	xii) 600 mm.	Rmt	39379.00	46875.00		
	xiii) 700 mm.	Rmt	50676.00	65140.00		
	xiv) 750 mm.	Rmt	57222.00	72108.00		
	xv) 800 mm.	Rmt	66723.00	81715.00		
	xvi) 900 mm.	Rmt	79181.00	101774.00		
	xvii) 1000 mm.	Rmt	90267.00	119933.00		



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
13.	<p><b>Providing and supplying C.I. detachable joints</b> suitable for A. C. pressure pipes manufactured as per IS-1538-1993 standards of following class and diameter including cost of insurance, railway freight, inspection charges, unloading from railway wagon, loading into truck, transporting to departmental store, unloading, stacking and cost of rubber rings, nut bolts. excluding GST levied by GOI &amp; GOM in all respect etc. complete (IS-1538-1993)</p> <p><b>Class 10/15</b></p> <p>i) 80 mm. Rmt. 242.00</p> <p>ii) 100 mm. Rmt. 306.00</p> <p>iii) 125 mm. Rmt. 411.00</p> <p>iv) 150 mm. Rmt. 512.00</p> <p>v) 200 mm. Rmt. 773.00</p> <p>vii) 250 mm. Rmt. 969.00</p> <p>vii) 300 mm. Rmt. 1329.00</p> <p><b>Class 20</b></p> <p>i) 80 mm. Rmt. 373.00</p> <p>ii) 100 mm. Rmt. 389.00</p> <p>iii) 125 mm. Rmt. 483.00</p> <p>iv) 150 mm. Rmt. 579.00</p> <p>v) 200 mm. Rmt. 778.00</p> <p>vii) 250 mm. Rmt. 1098.00</p> <p>vii) 300 mm. Rmt. 1572.00</p>			





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>II. P. V. C. PIPES</b>			
1.	<p><b>Providing and supplying in standard lengths ISI mark rigid unplasticised PVC pipes</b> suitable for potable water with solvent cement joints including cost of couplers, as per IS specification no. 4985 / 1988 excluding GST levied by GOI and GOM in all respect, including transportation, freight charges, inspection charges, loading, unloading, conveyance to the departmental stores and stacking the same in closed shed duly protected from sun rays and rains including cost of jointing material i.e. solvent cement, etc. complete (selffit type to be jointed with cement solvent).</p> <p><b>Note :</b> 1) 10% of cost of pipes shall be considered for cost of PVC specials for estimate purpose only. 2) One coupler and required cement solvent shall be provided with each full length pipe cost of which is included in rates below.</p> <p><b>a) Working Pressure 4 Kg./Sq.cm</b></p> <p>i) 63 mm.</p> <p>ii) 75 mm.</p> <p>iii) 90 mm.</p> <p>iv) 110 mm.</p> <p>v) 140 mm.</p> <p>vi) 160 mm.</p> <p>vii) 180 mm.</p> <p>viii) 200 mm.</p> <p>ix) 225 mm.</p> <p>x) 250 mm.</p> <p>xi) 280 mm.</p>			
		Rmt	48.00	
		Rmt	68.00	
		Rmt	94.00	
		Rmt	129.00	
		Rmt	215.00	
		Rmt	283.00	
		Rmt	387.00	
		Rmt	477.00	
		Rmt	610.00	
		Rmt	746.00	
		Rmt	991.00	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	xii) 315 mm.	Rmt	1261.00	
	<b>b) Working Pressure 6 Kg. / Sq.cm</b>			
	i) 63 mm.	Rmt	68.00	
	ii) 75 mm.	Rmt	96.00	
	iii) 90 mm.	Rmt	140.00	
	iv) 110 mm.	Rmt	191.00	
	v) 140 mm.	Rmt	319.00	
	vi) 160 mm.	Rmt	412.00	
	vii) 180 mm.	Rmt	548.00	
	viii) 200 mm.	Rmt	701.00	
	ix) 225 mm.	Rmt	884.00	
	x) 250 mm.	Rmt	1103.00	
	xi) 280 mm.	Rmt	1454.00	
	xii) 315 mm.	Rmt	1856.00	





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>C) Working Pressure 8 Kg/Sq.cm</b>			
	i) 63 mm.	Rmt	93.00	
	ii) 75 mm.	Rmt	133.00	
	iii) 90 mm.	Rmt	189.00	
	iv) 110 mm.	Rmt	268.00	
	v) 140 mm.	Rmt	443.00	
	vi) 160 mm.	Rmt	581.00	
	vii) 180 mm.	Rmt	769.00	
	viii) 200 mm.	Rmt	967.00	
	ix) 225 mm.	Rmt	1228.00	
	x) 250 mm.	Rmt	1535.00	
	xi) 280 mm.	Rmt	2022.00	
	xii) 315 mm.	Rmt	2561.00	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>d) Working Pressure 10 Kg./Sq.cm</b>			
	ii) 63 mm.	Rmt	113.00	
	ii) 75 mm.	Rmt	161.00	
	iii) 90 mm.	Rmt	230.00	
	iv) 110 mm.	Rmt	326.00	
	v) 140 mm.	Rmt	528.00	
	vi) 160 mm.	Rmt	690.00	
	vii) 180 mm.	Rmt	951.00	
	viii) 200 mm.	Rmt	1176.00	
	ix) 225 mm.	Rmt	1500.00	
	x) 250 mm.	Rmt	1895.00	
	xi) 280 mm.	Rmt	2384.00	
	xii) 315 mm.	Rmt	3028.00	





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>e) Working Pressure 12.50 Kg./Sq.cm</b>			
	ii) 63 mm.	Rmt	144.00	
	ii) 75 mm.	Rmt	202.00	
	iii) 90 mm.	Rmt	292.00	
	iv) 110 mm.	Rmt	413.00	
	v) 140 mm.	Rmt	673.00	
	vi) 160 mm.	Rmt	886.00	
	vii) 180 mm.	Rmt	1210.00	
	viii) 200 mm.	Rmt	1501.00	
	ix) 225 mm.	Rmt	1908.00	
	x) 250 mm.	Rmt	2412.00	
	xi) 280 mm.	Rmt	3036.00	
	xii) 315 mm.	Rmt	3870.00	

**SECTION - I : P. V. C. PIPES**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019		Rate (in Rs.) 2019-2020	
1	2	3	4		5	
2.	<p><b>Providing and supplying in standard lengths ISI mark rigid unplasticised PVC for potable water with rubber ring joints including cost of rubber ring as per IS-4985-1998, excluding GST levied by GOI and GOM in all respect, including transportation, freight charges, transit insurance, inspection charges, loading, unloading, conveyance to store and stacking the same in closed shed duly protected from sun rays and rains, etc. complete (with third party inspection) (socketed)</b></p> <p><b>a) Working Pressure 4 Kg/Sq.cm</b></p> <p>i) 63 mm Rmt 50.00</p> <p>ii) 75 mm Rmt 70.00</p> <p>iii) 90 mm Rmt 100.00</p> <p>iv) 110 mm Rmt 137.00</p> <p>v) 125 mm Rmt 188.00</p> <p>vi) 140 mm Rmt 228.00</p> <p>vii) 160 mm Rmt 301.00</p> <p>viii) 180 mm Rmt 409.00</p> <p>ix) 200 mm Rmt 504.00</p> <p>x) 225 mm Rmt 647.00</p> <p>xi) 250 mm Rmt 793.00</p> <p>xii) 280 mm Rmt 1051.00</p> <p>xiii) 315 mm Rmt 1335.00</p> <p><b>b) Working Pressure 6 Kg/Sq.cm</b></p> <p>i) 63 mm Rmt 71.00</p> <p>ii) 75 mm Rmt 103.00</p> <p>iii) 90 mm Rmt 148.00</p> <p>iv) 110 mm Rmt 202.00</p> <p>v) 125 mm Rmt 279.00</p> <p>vi) 140 mm Rmt 339.00</p> <p>vii) 160 mm Rmt 436.00</p> <p>viii) 180 mm Rmt 583.00</p> <p>ix) 200 mm Rmt 741.00</p> <p>x) 225 mm Rmt 936.00</p> <p>xi) 250 mm Rmt 1170.00</p> <p>xii) 280 mm Rmt 1542.00</p> <p>xiii) 315 mm Rmt 1966.00</p>					

**SECTION - I : P. V. C. PIPES**





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>c) Working Pressure 8 Kg./Sq.cm</b>			
	i) 63 mm.	Rmt	97.00	
	ii) 75 mm.	Rmt	143.00	
	iii) 90 mm.	Rmt	200.00	
	iv) 110 mm.	Rmt	283.00	
	v) 125 mm.	Rmt	390.00	
	vi) 140 mm.	Rmt	469.00	
	vii) 160 mm.	Rmt	615.00	
	viii) 180 mm.	Rmt	816.00	
	ix) 200 mm.	Rmt	1025.00	
	x) 225 mm.	Rmt	1301.00	
	xi) 250 mm.	Rmt	1626.00	
	xii) 280 mm.	Rmt	2144.00	
	xiii) 315 mm.	Rmt	2716.00	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>d) Working Pressure 10 Kg./Sq.cm</b>			
	i) 63 mm.	Rmt	120.00	
	ii) 75 mm.	Rmt	171.00	
	iii) 90 mm.	Rmt	244.00	
	iv) 110 mm.	Rmt	346.00	
	v) 125 mm	Rmt	475.00	
	vi) 140 mm.	Rmt	559.00	
	vii) 160 mm.	Rmt	732.00	
	viii) 180 mm.	Rmt	1008.00	
	ix) 200 mm.	Rmt	1246.00	
	x) 225 mm.	Rmt	1590.00	
	xi) 250 mm.	Rmt	2011.00	
	xii) 280 mm.	Rmt	2527.00	
	xiii) 315 mm	Rmt	3211.00	
	<b>e) Working Pressure 12.5 Kg./Sq.cm</b>			
	i) 63 mm.	Rmt	151.00	
	ii) 75 mm.	Rmt	214.00	
	iii) 90 mm.	Rmt	310.00	
	iv) 110 mm.	Rmt	440.00	
	v) 125 mm	Rmt	606.00	
	vi) 140 mm.	Rmt	714.00	
	vii) 160 mm.	Rmt	937.00	
	viii) 180 mm.	Rmt	1283.00	
	ix) 200 mm.	Rmt	1591.00	
	x) 225 mm.	Rmt	2023.00	
	xi) 250 mm.	Rmt	2556.00	
	xii) 280 mm.	Rmt	3217.00	
	xiii) 315 mm	Rmt	4100.00	

**SECTION - I : P. V. C. PIPES**







Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>c) Class - 500 PN - 25</b>			
	i) 110 mm.	Rmt	738.00	
	ii) 160 mm.	Rmt	1072.00	
	iii) 200 mm.	Rmt	1459.00	
	iv) 250 mm.	Rmt	2042.00	
	v) 315 mm	Rmt	3185.00	
	vi) 400 mm.	Rmt	4830.00	
	vii) 450 mm.	Rmt	6187.00	
	viii) 500 mm.	Rmt	7657.00	
	ix) 560 mm.	Rmt	9588.00	
	x) 630 mm.	Rmt	12124.00	
4.	<b>Lowering, laying and jointing with P.V.C. pipes and specials</b> of following class and diameter including cost of conveyance from stores to site of works including cost of all labour, material, except cement solvent, rubber ring, as per IS code, etc. complete (with cement solvent joint / ring fit joint). Note: For PVC O pipes of all pressure 4 (b) rates applied.			
	<b>a) Working Pressure 4 Kg./Sq.cm.</b>			
	i) 63 mm.	Rmt	16.00	
	ii) 75 mm.	Rmt	21.00	
	iii) 90 mm.	Rmt	25.00	
	iv) 110 mm.	Rmt	29.00	
	v) 125 mm.	Rmt	31.00	
	vi) 140 mm.	Rmt	34.00	
	vii) 160 mm.	Rmt	38.00	
	viii) 180 mm.	Rmt	42.00	
	xi) 200 mm	Rmt	45.00	
	x) 225 mm	Rmt	53.00	
	xi) 250 mm	Rmt	57.00	
	xii) 280 mm	Rmt	63.00	
	xiii) 315 mm	Rmt	71.00	





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>b) Working Pressure 6 to 12.5 Kg./Sq.cm.</b>			
	i) 63 mm.	Rmt	22.00	
	ii) 75 mm.	Rmt	29.00	
	iii) 90 mm.	Rmt	33.00	
	iv) 110 mm.	Rmt	37.00	
	v) 125 mm.	Rmt	40.00	
	vi) 140 mm.	Rmt	44.00	
	vii) 160 mm	Rmt	46.00	
	viii) 180 mm	Rmt	53.00	
	ix) 200 mm	Rmt	58.00	
	x) 225 mm	Rmt	63.00	
	xi) 250 mm	Rmt	69.00	
	xii) 280 mm	Rmt	78.00	
	xiii) 315 mm	Rmt	86.00	
	xiv) 400 mm.	Rmt	95.00	
	xv) 450 mm.	Rmt	104.00	
	xiv) 500 mm.	Rmt	114.00	
	xiiv) 560 mm.	Rmt	124.00	
	xiiiv) 630 mm.	Rmt	135.00	

**SECTION - I: P. V. C. PIPES**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
5.	<p><b>Hydraulic testing</b> of PVC pipe line to specified pressure including cost of all materials and labour and water for testing for specified length including cutting, placing end cap making arrangement for filling safe water using reciprocating type pumps which should be able to provide specified test pressure gauges and other necessary equipments, labour, operation charges, etc. required for testing. The rate under this item shall also include cost of retesting, if necessary and reinstating to original position.</p> <p><b>a) Working Pressure 4 Kg./Sq.cm.</b></p> <p>i) 63 mm.</p> <p>ii) 75 mm.</p> <p>iii) 90 mm.</p> <p>iv) 110 mm.</p> <p>v) 125 mm</p> <p>vi) 140 mm.</p> <p>vii) 160 mm.</p> <p>viii) 180 mm.</p> <p>ix) 200 mm</p> <p>x) 225 mm</p> <p>xi) 250 mm</p> <p>xii) 280 mm</p> <p>xiii) 315 mm</p>	<p>Km</p> <p>Km</p> <p>Km</p> <p>Km</p> <p>Km</p> <p>Km</p> <p>Km</p> <p>Km</p> <p>Km</p> <p>Km</p> <p>Km</p> <p>Km</p> <p>Km</p> <p>Km</p>	<p>2050.00</p> <p>2050.00</p> <p>3075.00</p> <p>3075.00</p> <p>3588.00</p> <p>4100.00</p> <p>4100.00</p> <p>5125.00</p> <p>5125.00</p> <p>6150.00</p> <p>6150.00</p> <p>7175.00</p> <p>8200.00</p>	





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>b) Working Pressure 6 to 12.5 Kg./Sq.cm.</b>			
	i) 63 mm.	Km	2050.00	
	ii) 75 mm.	Km	3075.00	
	iii) 90 mm.	Km	4100.00	
	iv) 110 mm.	Km	4100.00	
	v) 125 mm	Km	4613.00	
	vi) 140 mm.	Km	5125.00	
	vii) 160 mm.	Km	5125.00	
	viii) 180 mm.	Km	6150.00	
	is) 200 mm.	Km	6150.00	
	x) 225 mm.	Km	7175.00	
	xi) 250 mm.	Km	7175.00	
	xii) 280 mm	Km	8200.00	
	xiii) 315 mm	Km	9225.00	
	xiv) 400 mm.	Km	9225.00	
	xv) 450 mm.	Km	10250.00	
	xiv) 500 mm.	Km	10250.00	
	xiiiv) 560 mm.	Km	11275.00	
	xiiiiv) 630 mm.	Km	12300.00	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<p>1) Only 85% rate shall be payable till satisfactory hydraulic testing is given.</p> <p>2) Third party inspecting agency shall invariably carry out.</p> <p>I) Specific Gravity Test.</p> <p>II) Weight / Rmt.</p> <p>III) Ash Content Test and confirm in writing that those are within prescribed limits. This condition shall appear in tender conditions.</p> <p>3) After receipt of pipes at site, concerned Deputy Engineer shall confirm that weight of pipe for every class and diameter is not less than the prescribed standard weight as per IS-4985/1998 (Which is given in CSR), Under weight pipes shall be rejected. This condition shall appear in the tender conditions.</p>			





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>III. G. I. PIPES</b>			
1.	<p><b>Providing ISI mark G.I. pipe</b> of following class and dia. excluding GST levied by GOI and GOM in all respect including inspection charges, transportation to stores, etc. complete as per IS-1239/2004.</p> <p><b>Note : One coupler shall be provided with each full length of pipe cost of which is included in rates below.</b></p> <p><b>a) LIGHT</b></p> <p>i) 15 mm. ( 0.96 kg./m ) Rmt 58.00</p> <p>ii) 20 mm. ( 1.42 kg./m ) Rmt 86.00</p> <p>iii) 25 mm. ( 2.03 kg./m ) Rmt 118.00</p> <p>iv) 32 mm. ( 2.61 kg./m ) Rmt 150.00</p> <p>v) 40 mm. ( 3.29 kg./m ) Rmt 188.00</p> <p>vi) 50 mm. ( 4.18 kg./m ) Rmt 230.00</p> <p>vii) 65 mm. ( 5.92 kg./m ) Rmt 316.00</p> <p>viii) 80 mm. ( 6.98 kg./m ) Rmt 380.00</p> <p>ix) 100 mm. ( 10.20 kg./m ) Rmt 539.00</p> <p><b>b) MEDIUM</b></p> <p>i) 15 mm. ( 1.23 kg./m ) Rmt 69.00</p> <p>ii) 20 mm. ( 1.59 kg./m ) Rmt 89.00</p> <p>iii) 25 mm. ( 2.40 kg./m ) Rmt 136.00</p> <p>iv) 32 mm. ( 3.17 kg./m ) Rmt 171.00</p> <p>v) 40 mm. ( 3.65 kg./m ) Rmt 197.00</p>			

**SECTION - I: G. I. PIPES**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	vi) 50 mm. ( 5.16 kg./m )	Rmt	273.00	
	vii) 65 mm. ( 6.63 kg./m )	Rmt	346.00	
	viii) 80 mm. ( 8.64 kg./m )	Rmt	455.00	
	ix) 100 mm. ( 12.40 kg./m )	Rmt	649.00	
	xx) 125 mm ( 16.70 kg/m )	Rmt	884.00	
	xxi) 150 mm.( 19.70 kg./m )	Rmt	1039.00	
	<b>c) HEAVY</b>			
	i) 15 mm. ( 1.46 kg./m )	Rmt	79.00	
	ii) 20 mm. ( 1.91 kg./m )	Rmt	102.00	
	iii) 25 mm. ( 2.99 kg./m )	Rmt	159.00	
	iv) 32 mm. ( 3.97 kg./m )	Rmt	202.00	
	v) 40 mm. ( 4.47 kg./m )	Rmt	234.00	
	vi) 50 mm. ( 6.24 kg./m )	Rmt	324.00	
	vii) 65 mm. ( 8.02 kg./m )	Rmt	416.00	

**SECTION - I : G. I. PIPES**





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	viii) 80 mm. ( 10.30 kg./m )	Rmt	532.00	
	ix) 100 mm. ( 14.70 kg./m )	Rmt	768.00	
	x) 125 mm ( 18.30 kg/m )	Rmt	951.00	
	xi) 150 mm ( 21.80 kg./m )	Rmt	1143.00	
2.	<b>Lowering, laying and jointing G. I. pipes and specials</b> of following class and diameter including conveyance from stores to site of works, all labour, etc. complete either underground or in vertical position, as di- rected by Engineer-in-charge.			
	<b>a) LIGHT</b>			
	i) 15 mm.	Rmt	24.00	
	ii) 20 mm.	Rmt	26.00	
	iii) 25 mm.	Rmt	33.00	
	iv) 32 mm.	Rmt	37.00	
	v) 40 mm.	Rmt	45.00	
	vi) 50 mm.	Rmt	55.00	
	vii) 65 mm.	Rmt	80.00	
	viii) 80 mm.	Rmt	88.00	
	ix) 100 mm.	Rmt	106.00	

**SECTION - I : G. I. PIPES**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>b) MEDIUM</b>			
	i) 15 mm.	Rmt	25.00	
	ii) 20 mm.	Rmt	28.00	
	iii) 25 mm.	Rmt	34.00	
	iv) 32 mm.	Rmt	39.00	
	v) 40 mm	Rmt	51.00	
	vi) 50 mm	Rmt	59.00	
	vii) 65 mm	Rmt	86.00	
	viii) 80 mm	Rmt	97.00	
	ix) 100 mm	Rmt	106.00	
	x) 125 mm	Rmt	114.00	
	xi) 150 mm	Rmt	119.00	
	<b>c) HEAVY</b>			
	i) 15 mm.	Rmt	27.00	
	ii) 20 mm.	Rmt	31.00	
	iii) 25 mm.	Rmt	36.00	
	iv) 32 mm.	Rmt	42.00	
	v) 40 mm.	Rmt	54.00	
	vi) 50 mm.	Rmt	67.00	
	vii) 65 mm.	Rmt	94.00	
	viii) 80 mm.	Rmt	114.00	
	ix) 100 mm.	Rmt	106.00	
	x) 125 mm	Rmt	118.00	
	xi) 150 mm	Rmt	127.00	
	<b>Note : Only 85% rate shall be payable till satisfactory hydraulic testing is given.</b>			

**SECTION - I : G. I. PIPES**





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
3	<p><b>Hydraulic testing of G. I. pipe line to specified</b> pressure including cost of all materials and labour and water for testing for the length upto 1km using reciprocating type pumps which should be able to provide specified test pressure gauges and other necessary equipments, labour operation charges etc. required for testing, The rates under this item shall also include cost of retesting if necessary and reinstating to original position.</p> <p><b>a) LIGHT</b></p> <p>i) 15 mm.</p> <p>ii) 20 mm.</p> <p>iii) 25 mm.</p> <p>iv) 32 mm.</p> <p>v) 40 mm.</p> <p>vi) 50 mm.</p> <p>vii) 65 mm.</p> <p>viii) 80 mm.</p> <p>ix) 100 mm.</p>	<p>Km</p> <p>Km</p> <p>Km</p> <p>Km</p> <p>Km</p> <p>Km</p> <p>Km</p> <p>Km</p> <p>Km</p>	<p>2050.00</p> <p>3075.00</p> <p>3075.00</p> <p>4100.00</p> <p>5125.00</p> <p>6150.00</p> <p>9225.00</p> <p>10250.00</p> <p>11275.00</p>	

**SECTION - I : G. I. PIPES**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>b) MEDIUM</b>			
	i) 15 mm.	Km	3075.00	
	ii) 20 mm.	Km	3075.00	
	iii) 25 mm.	Km	4100.00	
	iv) 32 mm.	Km	4100.00	
	v) 40 mm	Km	5125.00	
	vi) 50 mm	Km	6150.00	
	vii) 65 mm	Km	9225.00	
	viii) 80 mm	Km	10250.00	
	ix) 100 mm	Km	11275.00	
	x) 125 mm	Km	12300.00	
	xi) 150 mm	Km	13325.00	
	<b>c) HEAVY</b>			
	i) 15 mm.	Km	3075.00	
	ii) 20 mm.	Km	3075.00	
	iii) 25 mm.	Km	4100.00	
	iv) 32 mm.	Km	5125.00	
	v) 40 mm.	Km	6150.00	
	vi) 50 mm.	Km	7175.00	
	vii) 65 mm.	Km	10250.00	
	viii) 80 mm.	Km	12300.00	
	ix) 100 mm.	Km	11275.00	
	x) 125 mm	Km	13325.00	
	xi) 150 mm	Km	14350.00	





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>(IV) D.I. Specials &amp; D.I. Mechanical Joints :</b>			
	<b>D.I. Socket and flanged fittings :-</b>			
1	<b>Providing and supplying D.I. fitting</b> with ISI mark socket push on joints or flanged joints confirming to table 12 to 31 of IS 9523/2000 upto latest amendments including cost of SBR/EDPM tyton rings. Fittings should be with internally ordinary portland cement mortar lined and externally metallic zinc coating/zinc rich paint with finishing layer of black bitumen coating including transportation upto store excluding GST levied by GOI & GOM in all respect etc. complete.			
	Diameter in mm	Unit		
I	<b>Double socket bend 90 degree</b>			
	80 mm dia	Nos	1039.00	
	100 mm dia	Nos	1295.00	
	150 mm dia	Nos	2333.00	
	200 mm dia	Nos	2968.00	
	250 mm dia	Nos	5674.00	
	300 mm dia	Nos	7875.00	
	350 mm dia	Nos	11123.00	
	400 mm dia	Nos	14703.00	
	450 mm dia	Nos	19177.00	
	500 mm dia	Nos	24178.00	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
II	600 mm dia	Nos	39257.00	
	700 mm dia	Nos	61007.00	
	<b>Double socket bend 45 degree</b>			
	80 mm dia	Nos	962.00	
	100 mm dia	Nos	1167.00	
	150 mm dia	Nos	1805.00	
	200 mm dia	Nos	3068.00	
	250 mm dia	Nos	4317.00	
	300 mm dia	Nos	6045.00	
	350 mm dia	Nos	8310.00	
	400 mm dia	Nos	10867.00	
	450 mm dia	Nos	13807.00	
	500 mm dia	Nos	16990.00	
	600 mm dia	Nos	25877.00	
	700 mm dia	Nos	39527.00	

**SECTION - I : D.I. Specials & D.I. Mechanical Joints**





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
III	<b>Double socket bend 22.50 degree</b>			
	80 mm dia	Nos	842.00	
	100 mm dia	Nos	1082.00	
	150 mm dia	Nos	1677.00	
	200 mm dia	Nos	2589.00	
	250 mm dia	Nos	3515.00	
	300 mm dia	Nos	5181.00	
	350 mm dia	Nos	6832.00	
	400 mm dia	Nos	8474.00	
	450 mm dia	Nos	10867.00	
	500 mm dia	Nos	13330.00	
	600 mm dia	Nos	20649.00	
	700 mm dia	Nos	30999.00	

SECTION - I : D.I. Specials & D.I. Mechanical Joints



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
IV	<b>Double socket bend 11.25 degree</b>			
	80 mm dia	Nos	842.00	
	100 mm dia	Nos	1039.00	
	150 mm dia	Nos	1550.00	
	200 mm dia	Nos	2461.00	
	250 mm dia	Nos	3410.00	
	300 mm dia	Nos	4593.00	
	350 mm dia	Nos	5448.00	
	400 mm dia	Nos	7350.00	
	450 mm dia	Nos	9716.00	
	500 mm dia	Nos	11762.00	
	600 mm dia	Nos	17251.00	
	700 mm dia	Nos	24910.00	

**SECTION - I : D.I. Specials & D.I. Mechanical Joints**





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
V	<b>Double socket concentric reducer</b>			
	100 x 80 mm dia	Nos	962.00	
	150 x 80 mm dia	Nos	1550.00	
	150 x 100 mm dia	Nos	1677.00	
	200 x 80 mm dia	Nos	2406.00	
	200 x 100 mm dia	Nos	2406.00	
	200 x 150 mm dia	Nos	2552.00	
	250 x 80 mm dia	Nos	3330.00	
	250 x 100 mm dia	Nos	3206.00	
	250 x 150 mm dia	Nos	3536.00	
	250 x 200 mm dia	Nos	3410.00	
	300 x 100 mm dia	Nos	4687.00	
	300 x 150 mm dia	Nos	4811.00	
	300 x 200 mm dia	Nos	4721.00	
	300 x 250 mm dia	Nos	4440.00	

**SECTION - I : D.I. Specials & D.I. Mechanical Joints**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	350 x 200 mm dia	Nos	6571.00	
	350 x 250 mm dia	Nos	6399.00	
	350 x 300 mm dia	Nos	6312.00	
	400 x 200 mm dia	Nos	8694.00	
	400 x 250 mm dia	Nos	7926.00	
	400 x 300 mm dia	Nos	7671.00	
	400 x 350 mm dia	Nos	6832.00	
	450 x 350 mm dia	Nos	9205.00	
	450 x 400 mm dia	Nos	8474.00	
	500 x 350 mm dia	Nos	12430.00	
	500 x 400 mm dia	Nos	11762.00	
	500 x 450 mm dia	Nos	11108.00	
	600 x 300 mm dia	Nos	18819.00	
	600 x 350 mm dia	Nos	19369.00	
	600 x 400 mm dia	Nos	18296.00	

**SECTION - I : D.I. Specials & D.I. Mechanical Joints**





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
VI	600 x 450 mm dia	Nos	17774.00	
	600 x 500 mm dia	Nos	16205.00	
	700 x 450 mm dia	Nos	30846.00	
	700 x 500 mm dia	Nos	27446.00	
	700 x 600 mm dia	Nos	29235.00	
	800 x 600 mm dia	Nos	38284.00	
	800 x 700 mm dia	Nos	28706.00	
	<b>All Socket Tee</b>			
	80 x 80 mm dia	Nos	1422.00	
	100 x 80 mm dia	Nos	1677.00	
	100 x 100 mm dia	Nos	1805.00	
	150 x 80 mm dia	Nos	2406.00	
	150 x 100 mm dia	Nos	2589.00	
	150 x 150 mm dia	Nos	2972.00	

**SECTION - I : D.I. Specials & D.I. Mechanical Joints**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	200 x 80 mm dia	Nos	3373.00	
	200 x 100 mm dia	Nos	3628.00	
	200 x 150 mm dia	Nos	4139.00	
	200 x 200 mm dia	Nos	4814.00	
	250 x 80 mm dia	Nos	4564.00	
	250 x 100 mm dia	Nos	4849.00	
	250 x 150 mm dia	Nos	5250.00	
	250 x 200 mm dia	Nos	6168.00	
	250 x 250 mm dia	Nos	7031.00	
	300 x 80 mm dia	Nos	5779.00	
	300 x 100 mm dia	Nos	5906.00	
	300 x 150 mm dia	Nos	7092.00	
	300 x 200 mm dia	Nos	7875.00	
	300 x 250 mm dia	Nos	8635.00	
	300 x 300 mm dia	Nos	9621.00	
	350 x 80 mm dia	Nos	7414.00	

SECTION - I : D.I. Specials & D.I. Mechanical Joints





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	350 x 100 mm dia	Nos	7543.00	
	350 x 150 mm dia	Nos	8694.00	
	350 x 200 mm dia	Nos	9588.00	
	350 x 250 mm dia	Nos	11507.00	
	350 x 300 mm dia	Nos	12785.00	
	350 x 350 mm dia	Nos	13040.00	
	400 x 80 mm dia	Nos	9333.00	
	400 x 100 mm dia	Nos	9205.00	
	400 x 150 mm dia	Nos	11507.00	
	400 x 200 mm dia	Nos	11762.00	
	400 x 250 mm dia	Nos	13424.00	
	400 x 300 mm dia	Nos	15045.00	
	400 x 400 mm dia	Nos	16621.00	
	450 x 100 mm dia	Nos	11507.00	

**SECTION - I : D.I. Specials & D.I. Mechanical Joints**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	450 x 150 mm dia	Nos	13424.00	
	450 x 200 mm dia	Nos	14703.00	
	450 x 250 mm dia	Nos	15305.00	
	450 x 300 mm dia	Nos	17121.00	
	450 x 350 mm dia	Nos	19177.00	
	450 x 400 mm dia	Nos	21096.00	
	450 x 450 mm dia	Nos	21479.00	
	500 x 100 mm dia	Nos	14041.00	
	500 x 150 mm dia	Nos	16336.00	
	500 x 200 mm dia	Nos	16990.00	
	500 x 250 mm dia	Nos	19603.00	
	500 x 300 mm dia	Nos	20911.00	
	500 x 400 mm dia	Nos	24178.00	

**SECTION - I : D.I. Specials & D.I. Mechanical Joints**





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
VII	<b>Double Socket Tee with Flange branch-PN-10</b>			
	80 x 80 mm dia	Nos	1685.00	
	100 x 80 mm dia	Nos	1805.00	
	100 x 100 mm dia	Nos	1925.00	
	150 x 80 mm dia	Nos	2527.00	
	150 x 100 mm dia	Nos	2587.00	
	150 x 150 mm dia	Nos	3249.00	
	200 x 80 mm dia	Nos	3489.00	
	200 x 100 mm dia	Nos	3729.00	
	200 x 150 mm dia	Nos	4332.00	
	200 x 200 mm dia	Nos	4994.00	
	250 x 80 mm dia	Nos	4564.00	
	250 x 100 mm dia	Nos	4626.00	
	250 x 150 mm dia	Nos	5674.00	
	250 x 200 mm dia	Nos	6414.00	

**SECTION - I : D.I. Specials & D.I. Mechanical Joints**

11 126



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	250 x 250 mm dia	Nos	7401.00	
	300 x 80 mm dia	Nos	5921.00	
	300 x 100 mm dia	Nos	6168.00	
	300 x 150 mm dia	Nos	7031.00	
	300 x 200 mm dia	Nos	8018.00	
	300 x 250 mm dia	Nos	9129.00	
	300 x 300 mm dia	Nos	9868.00	
	350 x 80 mm dia	Nos	7414.00	
	350 x 100 mm dia	Nos	7543.00	
	350 x 150 mm dia	Nos	8948.00	
	350 x 200 mm dia	Nos	9716.00	
	350 x 250 mm dia	Nos	11507.00	
	350 x 300 mm dia	Nos	14063.00	
	350 x 350 mm dia	Nos	14574.00	

**SECTION - I : D.I. Specials & D.I. Mechanical Joints**





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	400 x 80 mm dia	Nos	8948.00	
	400 x 100 mm dia	Nos	9333.00	
	400 x 150 mm dia	Nos	10228.00	
	400 x 200 mm dia	Nos	11762.00	
	400 x 250 mm dia	Nos	14063.00	
	400 x 300 mm dia	Nos	14574.00	
	400 x 400 mm dia	Nos	18538.00	
	450 x 80 mm dia	Nos	11123.00	
	450 x 100 mm dia	Nos	11250.00	
	450 x 150 mm dia	Nos	12529.00	
	450 x 200 mm dia	Nos	13807.00	
	450 x 250 mm dia	Nos	15342.00	
	450 x 300 mm dia	Nos	17132.00	
	450 x 350 mm dia	Nos	21734.00	
	450 x 400 mm dia	Nos	21863.00	

**SECTION - I : D.I. Specials & D.I. Mechanical Joints**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
VIII	450 x 450 mm dia	Nos	22260.00	
	500 x 80 mm dia	Nos	13330.00	
	500 x 100 mm dia	Nos	13461.00	
	500 x 150 mm dia	Nos	16075.00	
	500 x 200 mm dia	Nos	16467.00	
	500 x 250 mm dia	Nos	19603.00	
	500 x 300 mm dia	Nos	20126.00	
	500 x 400 mm dia	Nos	23655.00	
	<b>Flange Socket-PN-10</b>			
	80 mm dia	Nos	866.00	
	100 mm dia	Nos	974.00	
	150 mm dia	Nos	1516.00	
	200 mm dia	Nos	2272.00	
	250 mm dia	Nos	2988.00	
	300 mm dia	Nos	3922.00	

**SECTION - I : D.I. Specials & D.I. Mechanical Joints**





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
IX	350 mm dia	Nos	5062.00	
	400 mm dia	Nos	6213.00	
	450 mm dia	Nos	6961.00	
	500 mm dia	Nos	8469.00	
	600 mm dia	Nos	12351.00	
	700 mm dia	Nos	21344.00	
	<b>Flange Spigot-PN-10</b>			
	80 mm dia	Nos	854.00	
	100 mm dia	Nos	1075.00	
	150 mm dia	Nos	1723.00	
	200 mm dia	Nos	2473.00	
	250 mm dia	Nos	3490.00	
	300 mm dia	Nos	4462.00	

**SECTION - I : D.I. Specials & D.I. Mechanical Joints**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
X	350 mm dia	Nos	6558.00	
	400 mm dia	Nos	7479.00	
	450 mm dia	Nos	9549.00	
	500 mm dia	Nos	8760.00	
	600 mm dia	Nos	18349.00	
	700 mm dia	Nos	27654.00	
	<b>Blank Flange -PN-1</b>			
	80 mm dia	Nos	444.00	
	100 mm dia	Nos	536.00	
	150 mm dia	Nos	887.00	
	200 mm dia	Nos	1220.00	
	250 mm dia	Nos	1933.00	
	300 mm dia	Nos	2775.00	

**SECTION - I : D.I. Specials & D.I. Mechanical Joints**





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
XI	350 mm dia	Nos	3966.00	
	400 mm dia	Nos	4927.00	
	450 mm dia	Nos	6730.00	
	500 mm dia	Nos	7977.00	
	600 mm dia	Nos	11537.00	
	700 mm dia	Nos	23999.00	
	<b>Double Flange Bend 90 Deg -PN-'10</b>			
	80 mm dia	Nos	1110.00	
	100 mm dia	Nos	1332.00	
	150 mm dia	Nos	2398.00	
	200 mm dia	Nos	3495.00	
	250 mm dia	Nos	6213.00	
	300 mm dia	Nos	8407.00	
	350 mm dia	Nos	11057.00	
	400 mm dia	Nos	14181.00	

**SECTION - I : D.I. Specials & D.I. Mechanical Joints**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
XII	450 mm dia	Nos	20431.00	
	500 mm dia	Nos	22584.00	
	600 mm dia	Nos	36331.00	
	700 mm dia	Nos	69616.00	
	<b>Double Flange Bend 45 Deg -PN-10</b>			
	80 mm dia	Nos	1054.00	
	100 mm dia	Nos	1332.00	
	150 mm dia	Nos	2109.00	
	200 mm dia	Nos	3053.00	
	250 mm dia	Nos	4647.00	
	300 mm dia	Nos	8734.00	
	350 mm dia	Nos	9254.00	
	400 mm dia	Nos	11778.00	
	450 mm dia	Nos	14421.00	

**SECTION - I : D.I. Specials & D.I. Mechanical Joints**





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
XIII	500 mm dia	Nos	22673.00	
	600 mm dia	Nos	33716.00	
	700 mm dia	Nos	48098.00	
	<b>Double Flange Duck Foot Bend -PN-10</b>			
	80 mm dia	Nos	1705.00	
	100 mm dia	Nos	2130.00	
	150 mm dia	Nos	3674.00	
	200 mm dia	Nos	5766.00	
	250 mm dia	Nos	9213.00	
	300 mm dia	Nos	12817.00	
	350 mm dia	Nos	18688.00	
	400 mm dia	Nos	23075.00	
	450 mm dia	Nos	32688.00	
	500 mm dia	Nos	41630.00	
	600 mm dia	Nos	58301.00	

**SECTION - I : D.I. Specials & D.I. Mechanical Joints**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
XIV	700 mm dia	Nos	101822.00	
	<b>All Flange Tee -PN-10</b>			
	80 x 80 mm dia	Nos	1776.00	
	100 x 80 mm dia	Nos	1998.00	
	100 x 100 mm dia	Nos	2109.00	
	150 x 80 mm dia	Nos	3108.00	
	150 x 100 mm dia	Nos	3219.00	
	150 x 150 mm dia	Nos	3552.00	
	200 x 80 mm dia	Nos	4551.00	
	200 x 100 mm dia	Nos	4796.00	
	200 x 150 mm dia	Nos	4996.00	
	200 x 200 mm dia	Nos	5440.00	
	250 x 80 mm dia	Nos	6177.00	
	250 x 100 mm dia	Nos	7392.00	
	250 x 150 mm dia	Nos	7011.00	
	250 x 200 mm dia	Nos	8643.00	

**SECTION - I : D.I. Specials & D.I. Mechanical Joints**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	250 x 250 mm dia	Nos	8757.00	
	300 x 80 mm dia	Nos	7407.00	
	300 x 100 mm dia	Nos	9848.00	
	300 x 150 mm dia	Nos	8648.00	
	300 x 200 mm dia	Nos	10803.00	
	300 x 250 mm dia	Nos	10580.00	
	300 x 300 mm dia	Nos	12851.00	
	350 x 80 mm dia	Nos	10957.00	
	350 x 100 mm dia	Nos	13460.00	
	350 x 150 mm dia	Nos	12562.00	
	350 x 200 mm dia	Nos	14132.00	
	350 x 250 mm dia	Nos	15200.00	
	350 x 300 mm dia	Nos	16462.00	
	350 x 350 mm dia	Nos	18387.00	
	400 x 80 mm dia	Nos	13178.00	
	400 x 100 mm dia	Nos	16748.00	

**SECTION - I : D.I. Specials & D.I. Mechanical Joints**





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	400 x 150 mm dia	Nos	15045.00	
	400 x 200 mm dia	Nos	17426.00	
	400 x 250 mm dia	Nos	18156.00	
	400 x 300 mm dia	Nos	18988.00	
	400 x 400 mm dia	Nos	20431.00	
	450 x 100	Nos	21279.00	
	450 x 150 mm dia	Nos	17031.00	
	450 x 200 mm dia	Nos	22353.00	
	450 x 250 mm dia	Nos	20170.00	
	450 x 300 mm dia	Nos	20964.00	
	450 x 350 mm dia	Nos	24035.00	
	450 x 400 mm dia	Nos	23971.00	
	450 x 450 mm dia	Nos	27041.00	
	500 x 100 mm dia	Nos	25775.00	
	500 x 150 mm dia	Nos	26143.00	

**SECTION - I : D.I. Specials & D.I. Mechanical Joints**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	500 x 200 mm dia	Nos	26389.00	
	500 x 250 mm dia	Nos	27002.00	
	500 x 300 mm dia	Nos	32398.00	
	500 x 400 mm dia	Nos	32876.00	
	500 x 500 mm dia	Nos	35823.00	
	600 x 100 mm dia	Nos	42550.00	
	600 x 150 mm dia	Nos	42991.00	
	600 x 200 mm dia	Nos	42647.00	
	600 x 250 mm dia	Nos	45658.00	
	600 x 300 mm dia	Nos	44254.00	
	600 x 400 mm dia	Nos	45976.00	
	600 x 500 mm dia	Nos	46011.00	
	600 x 600 mm dia	Nos	50863.00	

**SECTION - I : D.I. Specials & D.I. Mechanical Joints**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
XV	<b>Double Socket Level Invert Flange Branch Tee PN10</b>			
	200 x 80 mm dia	Nos	3175.00	
	250 x 80 mm dia	Nos	4140.00	
	300 x 80 mm dia	Nos	5526.00	
	350 x 80 mm dia	Nos	6904.00	
	350 x 100 mm dia	Nos	7549.00	
	400 x 100 mm dia	Nos	9027.00	
	450 x 80 mm dia	Nos	10973.00	
	450 x 100 mm dia	Nos	11206.00	
	500 x 80 mm dia	Nos	12585.00	
	500 x 100 mm dia	Nos	13775.00	
XVI	<b>Cap</b>			
	80 mm dia	Nos	424.00	
	100 mm dia	Nos	546.00	
	150 mm dia	Nos	969.00	
	200 mm dia	Nos	1726.00	
	250 mm dia	Nos	2075.00	

SECTION - I : D.I. Specials & D.I. Mechanical Joints





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
XVII	300 mm dia	Nos	3271.00	
	350 mm dia	Nos	5292.00	
	400 mm dia	Nos	6904.00	
	450 mm dia	Nos	8744.00	
	500 mm dia	Nos	10703.00	
	600 mm dia	Nos	14937.00	
	700 mm dia	Nos	26502.00	
	<b>Plug</b>			
	80 mm dia	Nos	310.00	
	100 mm dia	Nos	530.00	
	150 mm dia	Nos	942.00	
	200 mm dia	Nos	1458.00	
	250 mm dia	Nos	2017.00	
	300 mm dia	Nos	3180.00	
	350 mm dia	Nos	5062.00	
	400 mm dia	Nos	5983.00	
	450 mm dia	Nos	7922.00	
	500 mm dia	Nos	9645.00	
	600 mm dia	Nos	14281.00	

**SECTION - I : D.I. Specials & D.I. Mechanical Joints**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>D.I. FITTINGS (Mechanical Joints)</b>			
1.	Providing and supplying D.I. fittings with ISI mark Mechanical joint confirming to tables 12 to table 31 of IS 9523/2000 upto latest amendments including cost of SBR/ EDPM gaskets, Nuts, Bolts, Washers and Ductile iron follower glands. Fittings should be with internally Ordinary portland cement mortar lined and externally metallic zinc coating/zinc rich paint with finishing layer of black bitumen coating including transportation upto store excluding GST levied by GOI & GOM in all respect etc. complete.			
I	<b>MJ Collar/Coupling</b>			
	80 mm dia	Nos	1998.00	
	100 mm dia	Nos	2183.00	
	150 mm dia	Nos	2671.00	
	200 mm dia	Nos	4776.00	
	250 mm dia	Nos	6319.00	
	300 mm dia	Nos	8190.00	
	350 mm dia	Nos	11588.00	
	400 mm dia	Nos	14498.00	
	450 mm dia	Nos	16780.00	

**SECTION - I : D.I. Specials & D.I. Mechanical Joints**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
II	500 mm dia	Nos	21687.00	
	600 mm dia	Nos	27391.00	
	700 mm dia	Nos	37588.00	
	<b>Double Socket Bend 90 degree</b>			
	80 mm dia	Nos	1072.00	
	100 mm dia	Nos	1350.00	
	150 mm dia	Nos	2329.00	
	200 mm dia	Nos	3494.00	
	250 mm dia	Nos	4952.00	
	300 mm dia	Nos	6618.00	
	350 mm dia	Nos	9632.00	
	400 mm dia	Nos	12403.00	
	450 mm dia	Nos	16042.00	
	500 mm dia	Nos	18296.00	
	600 mm dia	Nos	26724.00	

**SECTION - I : D.I. Specials & D.I. Mechanical Joints**





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
III	<b>Double Socket Bend 45 degree</b>			
	80 mm dia	Nos	1072.00	
	100 mm dia	Nos	1257.00	
	150 mm dia	Nos	1968.00	
	200 mm dia	Nos	3004.00	
	250 mm dia	Nos	4040.00	
	300 mm dia	Nos	5648.00	
	350 mm dia	Nos	8399.00	
	400 mm dia	Nos	10718.00	
	450 mm dia	Nos	12254.00	
	500 mm dia	Nos	14273.00	
	600 mm dia	Nos	20499.00	

**SECTION - I : D.I. Specials & D.I. Mechanical Joints**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
<b>IV</b>	<b>Double Socket Bend 22.5 degree</b>			
	80 mm dia	Nos	990.00	
	100 mm dia	Nos	1257.00	
	150 mm dia	Nos	1886.00	
	200 mm dia	Nos	2690.00	
	250 mm dia	Nos	3587.00	
	300 mm dia	Nos	5019.00	
	350 mm dia	Nos	7266.00	
	400 mm dia	Nos	8863.00	
	450 mm dia	Nos	11130.00	
	500 mm dia	Nos	13286.00	
	600 mm dia	Nos	17157.00	

**SECTION - I : D.I. Specials & D.I. Mechanical Joints**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
V	<b>Double Socket Bend 11.25 degree</b>			
	80 mm dia	Nos	990.00	
	100 mm dia	Nos	1300.00	
	150 mm dia	Nos	1793.00	
	200 mm dia	Nos	2597.00	
	250 mm dia	Nos	3411.00	
	300 mm dia	Nos	4576.00	
	350 mm dia	Nos	6287.00	
	400 mm dia	Nos	8090.00	
	450 mm dia	Nos	10478.00	
	500 mm dia	Nos	12522.00	
	600 mm dia	Nos	15563.00	

**SECTION - I : D.I. Specials & D.I. Mechanical Joints**





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
VI	<b>Double socket concentric reducer</b>			
	100 x 80 mm dia	Nos	1765.00	
	150 x 80 mm dia	Nos	2543.00	
	150 x 100 mm dia	Nos	2771.00	
	200 x 80 mm dia	Nos	3578.00	
	200 x 100 mm dia	Nos	3590.00	
	200 x 150 mm dia	Nos	3994.00	
	250 x 80 mm dia	Nos	4679.00	
	250 x 100 mm dia	Nos	4891.00	
	250 x 150 mm dia	Nos	5214.00	
	250 x 200 mm dia	Nos	5214.00	
	300 x 100 mm dia	Nos	6486.00	
	300 x 150 mm dia	Nos	6805.00	
	300 x 200 mm dia	Nos	6540.00	

**SECTION - I : D.I. Specials & D.I. Mechanical Joints**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	300 x 250 mm dia	Nos	7018.00	
	350 x 200 mm dia	Nos	9885.00	
	350 x 300 mm dia	Nos	10284.00	
	400 x 200 mm dia	Nos	12255.00	
	400 x 300 mm dia	Nos	12487.00	
	400 x 350 mm dia	Nos	11741.00	
	450 x 400 mm dia	Nos	14252.00	
	500 x 300 mm dia	Nos	19029.00	
	500 x 350 mm dia	Nos	17657.00	
	500 x 400 mm dia	Nos	17419.00	
	600 x 350 mm dia	Nos	24483.00	
	600 x 400 mm dia	Nos	24219.00	
	600 x 500 mm dia	Nos	22547.00	

**SECTION - I : D.I. Specials & D.I. Mechanical Joints**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
VII	<b>All Socket Tee</b>			
	80 x 80 mm dia	Nos	2398.00	
	100 x 80 mm dia	Nos	2818.00	
	100 x 100 mm dia	Nos	3029.00	
	150 x 80 mm dia	Nos	4081.00	
	150 x 100 mm dia	Nos	4292.00	
	150 x 150 mm dia	Nos	4939.00	
	200 x 80 mm dia	Nos	5311.00	
	200 x 100 mm dia	Nos	5701.00	
	200 x 150 mm dia	Nos	6478.00	
	200 x 200 mm dia	Nos	7573.00	
	250 x 80 mm dia	Nos	6899.00	
	250 x 100 mm dia	Nos	7256.00	
	250 x 150 mm dia	Nos	7887.00	
	250 x 200 mm dia	Nos	9167.00	

**SECTION - I : D.I. Specials & D.I. Mechanical Joints**





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	250 x 250 mm dia	Nos	10138.00	
	300 x 80 mm dia	Nos	8730.00	
	300 x 100 mm dia	Nos	8940.00	
	300 x 150 mm dia	Nos	10430.00	
	300 x 200 mm dia	Nos	11418.00	
	300 x 250 mm dia	Nos	12680.00	
	300 x 300 mm dia	Nos	13814.00	
	350 x 80 mm dia	Nos	12551.00	
	350 x 100 mm dia	Nos	12794.00	
	350 x 150 mm dia	Nos	14252.00	
	350 x 200 mm dia	Nos	15385.00	
	350 x 250 mm dia	Nos	17896.00	
	350 x 300 mm dia	Nos	19839.00	
	350 x 350 mm dia	Nos	21135.00	
	400 x 80 mm dia	Nos	16033.00	

**SECTION - I : D.I. Specials & D.I. Mechanical Joints**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	400 x 100 mm dia	Nos	15952.00	
	400 x 150 mm dia	Nos	18767.00	
	400 x 200 mm dia	Nos	19351.00	
	400 x 250 mm dia	Nos	20972.00	
	400 x 300 mm dia	Nos	22836.00	
	400 x 400 mm dia	Nos	26803.00	
	450 x 100 mm dia	Nos	19373.00	
	450 x 150 mm dia	Nos	21941.00	
	450 x 200 mm dia	Nos	22408.00	
	450 x 250 mm dia	Nos	23484.00	
	450 x 300 mm dia	Nos	25831.00	
	450 x 350 mm dia	Nos	30811.00	
	450 x 400 mm dia	Nos	31424.00	
	450 x 450 mm dia	Nos	32553.00	
	500 x 100 mm dia	Nos	20281.00	

**SECTION - I : D.I. Specials & D.I. Mechanical Joints**

130 151



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
VIII	500 x 150 mm dia	Nos	23263.00	
	500 x 200 mm dia	Nos	23741.00	
	500 x 250 mm dia	Nos	28565.00	
	500 x 300 mm dia	Nos	29467.00	
	500 x 400	Nos	32927.00	
	<b>Double Socket Tee with Flange branch-PN-10</b>			
	80 x 80 mm dia	Nos	2615.00	
	100 x 80 mm dia	Nos	3074.00	
	100 x 100	Nos	3304.00	
	150 x 80 mm dia	Nos	4452.00	
	150 x 100 mm dia	Nos	4682.00	
	150 x 150 mm dia	Nos	5388.00	
	200 x 80 mm dia	Nos	5794.00	
	200 x 100 mm dia	Nos	6219.00	
	200 x 150 mm dia	Nos	7067.00	

**SECTION - I : D.I. Specials & D.I. Mechanical Joints**





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	200 x 200 mm dia	Nos	8262.00	
	250 x 80 mm dia	Nos	7527.00	
	250 x 100	Nos	7915.00	
	250 x 150 mm dia	Nos	8604.00	
	250 x 200 mm dia	Nos	10000.00	
	250 x 250 mm dia	Nos	11060.00	
	300 x 80 mm dia	Nos	9523.00	
	300 x 100 mm dia	Nos	9752.00	
	300 x 150 mm dia	Nos	11378.00	
	300 x 200 mm dia	Nos	12455.00	
	300 x 250 mm dia	Nos	13833.00	
	300 x 300 mm dia	Nos	15070.00	
	350 x 80 mm dia	Nos	13692.00	
	350 x 100 mm dia	Nos	13957.00	
	350 x 150 mm dia	Nos	15547.00	

**SECTION - I : D.I. Specials & D.I. Mechanical Joints**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	350 x 200 mm dia	Nos	16784.00	
	350 x 250 mm dia	Nos	19523.00	
	350 x 300 mm dia	Nos	21642.00	
	350 x 350 mm dia	Nos	23056.00	
	400 x 80 mm dia	Nos	17491.00	
	400 x 100 mm dia	Nos	17402.00	
	400 x 150 mm dia	Nos	20473.00	
	400 x 200 mm dia	Nos	21110.00	
	400 x 250 mm dia	Nos	22879.00	
	400 x 300 mm dia	Nos	24912.00	
	400 x 400 mm dia	Nos	29240.00	
	450 x 80	Nos	21134.00	
	450 x 100 mm dia	Nos	23936.00	
	450 x 150 mm dia	Nos	24446.00	
	450 x 200 mm dia	Nos	25618.00	

**SECTION - I : D.I. Specials & D.I. Mechanical Joints**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	450 x 250 mm dia	Nos	28180.00	
	450 x 300 mm dia	Nos	33612.00	
	450 x 350 mm dia	Nos	34281.00	
	450 x 400 mm dia	Nos	35513.00	
	450 x 450 mm dia	Nos	22125.00	
	500 x 80 mm dia	Nos	25378.00	
	500 x 100 mm dia	Nos	25899.00	
	500 x 150 mm dia	Nos	31161.00	
	500 x 200 mm dia	Nos	32146.00	
	500 x 250 mm dia	Nos	35920.00	
	500 x 300 mm dia	Nos	30594.00	
	500 x 400 mm dia	Nos	34489.00	
	500 x 500 mm dia	Nos	40476.00	

**SECTION - I : D.I. Specials & D.I. Mechanical Joints**





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
IX	<b>Flange Socket-PN-10</b>			
	80 mm dia	Nos	1383.00	
	100 mm dia	Nos	1518.00	
	150 mm dia	Nos	2302.00	
	200 mm dia	Nos	3209.00	
	250 mm dia	Nos	4421.00	
	300 mm dia	Nos	5784.00	
	350 mm dia	Nos	8587.00	
	400 mm dia	Nos	10415.00	
	450 mm dia	Nos	11686.00	
	500 mm dia	Nos	13992.00	
	600 mm dia	Nos	19478.00	

SECTION - I : D.I. Specials & D.I. Mechanical Joints



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
1.	<p><b>V. R.C.C. PIPES</b></p> <p><b>Providing ISI standard R.C.C. pipes</b> in standard lengths of following class and diameter suitable for either collar joints or rubber ring joints, excluding GST levied by GOI &amp; GOM in all respect including inspection charges, transport to departmental stores, unloading and stacking etc. complete as per IS-458/1988.</p> <p><b>Note : One collar should be supplied with each full length plain ended RCC pipe, cost included in rates below. One rubber ring should be supplied with each full length of socketed pipe, cost included in rates below.</b></p> <p><b>a) Class 'P-I'</b></p> <p>i) 80 mm.</p> <p>ii) 100 mm.</p> <p>iii) 150 mm.</p> <p>iv) 200 mm.</p> <p>v) 225 mm.</p> <p>vi) 250 mm.</p> <p>vii) 300 mm.</p> <p>viii) 350 mm.</p> <p>ix) 400 mm.</p> <p>x) 450 mm.</p> <p>xi) 500 mm.</p> <p>xii) 600 mm.</p> <p>xiii) 700 mm.</p> <p>xiv) 800 mm.</p> <p>xv) 900 mm.</p> <p>xvi) 1000 mm.</p> <p>xvii) 1100 mm.</p> <p>xviii) 1200 mm.</p>			
			Collar Joints	Rubber Ring Joints
		Rmt	272.00	240.00
		Rmt	284.00	258.00
		Rmt	300.00	266.00
		Rmt	348.00	312.00
		Rmt	397.00	357.00
		Rmt	435.00	390.00
		Rmt	556.00	497.00
		Rmt	599.00	538.00
		Rmt	760.00	687.00
		Rmt	935.00	844.00
		Rmt	1126.00	1013.00
		Rmt	1419.00	1280.00
		Rmt	1849.00	1663.00
		Rmt	2134.00	1919.00
		Rmt	2685.00	2417.00
		Rmt	3147.00	2834.00
		Rmt	3574.00	3218.00
		Rmt	4294.00	3869.00



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019		Rate (in Rs.) 2019-2020
1	2	3	4		5
	<b>b) Class 'P-II'</b>		Collar Joints	Rubber Ring Joints	
i)	80 mm.	Rmt	290.00	256.00	
ii)	100 mm.	Rmt	308.00	277.00	
iii)	150 mm.	Rmt	369.00	333.00	
iv)	200 mm.	Rmt	496.00	450.00	
v)	225 mm.	Rmt	588.00	530.00	
vi)	250 mm.	Rmt	637.00	579.00	
vii)	300 mm.	Rmt	841.00	802.00	
viii)	350 mm.	Rmt	1050.00	950.00	
ix)	400 mm.	Rmt	1171.00	1066.00	
x)	450 mm.	Rmt	1420.00	1274.00	
xi)	500 mm.	Rmt	1983.00	1807.00	
xii)	600 mm.	Rmt	2459.00	2217.00	
xiii)	700 mm.	Rmt	3350.00	3047.00	
xiv)	800 mm.	Rmt	4028.00	3671.00	
xv)	900 mm.	Rmt	4538.00	4572.00	
xvi)	1000 mm.	Rmt	5491.00	4944.00	
	<b>c) Class 'P-III'</b>				
i)	80 mm.	Rmt	312.00	307.00	
ii)	100 mm.	Rmt	338.00	332.00	
iii)	150 mm.	Rmt	384.00	384.00	
iv)	200 mm.	Rmt	522.00	522.00	
v)	225 mm.	Rmt	622.00	622.00	
vi)	250 mm.	Rmt	728.00	727.00	

**SECTION - I : R.C.C. PIPES**





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
			Collar Joints	Rubber Ring Joints
	vii) 300 mm.	Rmt	1013.00	1012.00
	viii) 350 mm.	Rmt	1320.00	1320.00
	ix) 400 mm.	Rmt	1817.00	1817.00
	x) 450 mm.	Rmt	2112.00	2086.00
	xi) 500 mm.	Rmt	2545.00	2544.00
	xii) 600 mm.	Rmt	3268.00	3268.00
	xiii) 700 mm.	Rmt	4663.00	4662.00
	xiv) 800 mm.	Rmt	5921.00	5921.00
	<b>d) Class 'NP-II'</b>		Collar Joints	Rubber Ring Joints
	<b>( For 2.00 m. length )</b>			
	i) 80 mm.	Rmt	234.00	236.00
	ii) 100 mm.	Rmt	240.00	245.00
	iii) 150 mm.	Rmt	262.00	262.00
	iv) 200 mm.	Rmt	327.00	327.00
	v) 225 mm.	Rmt	366.00	373.00
	vi) 250 mm.	Rmt	394.00	402.00
	vii) 300 mm.	Rmt	510.00	510.00
	<b>( For 2.50 m. length )</b>			
	viii) 350 mm.	Rmt	644.00	657.00
	ix) 400 mm.	Rmt	743.00	743.00
	x) 450 mm.	Rmt	878.00	891.00
	xi) 500 mm.	Rmt	941.00	941.00
	xii) 600 mm.	Rmt	1188.00	1188.00
	xiii) 700 mm.	Rmt	1584.00	1584.00
	xiv) 800 mm.	Rmt	1782.00	1782.00
	xv) 900 mm.	Rmt	2277.00	2277.00

**SECTION - I: R.C.C. PIPES**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019		Rate (in Rs.) 2019-2020	
1	2	3	4		5	
			Collar Joints	Rubber Ring Joints	Collar Joints	Rubber Ring Joints
	xvi) 1000 mm.	Rmt	2772.00	2772.00		
	xvii) 1100 mm.	Rmt	3780.00	3780.00		
	xviii) 1200 mm.	Rmt	4512.00	4512.00		
	xix) 1400 mm.	Rmt	5465.00	5574.00		
	xx) 1600 mm.	Rmt	6275.00	6400.00		
	xxi) 1800 mm.	Rmt	8789.00	8965.00		
	<b>e) Class NP-III (For 2.00 m. length)</b>					
	) 80 mm	Rmt	265.00	269.00		
	ii) 100 mm	Rmt	291.00	306.00		
	iii) 150 mm	Rmt	331.00	337.00		
	iv) 200 mm	Rmt	455.00	372.00		
	v) 225 mm	Rmt	510.00	434.00		
	vi) 250 mm	Rmt	540.00	510.00		
	vii) 300 mm.	Rmt	701.00	714.00		
	viii) 350 mm.	Rmt	1239.00	1188.00		
	ix) 400 mm.	Rmt	1388.00	1267.00		
	x) 450 mm.	Rmt	1651.00	1366.00		
	xi) 500 mm.	Rmt	1833.00	1683.00		
	xii) 600 mm.	Rmt	2415.00	1980.00		
	xiii) 700 mm.	Rmt	3218.00	2772.00		
	xiv) 800 mm.	Rmt	3911.00	2970.00		
	xv) 900 mm.	Rmt	4518.00	3466.00		
	xvi) 1000 mm.	Rmt	5148.00	3862.00		
	xvii) 1100 mm.	Rmt	6394.00	6522.00		
	xviii) 1200 mm.	Rmt	7435.00	7435.00		
	xix) 1400 mm	Rmt	8742.00	8742.00		
	xx) 1600 mm	Rmt	13135.00	13263.00		
	xxi) 1800 mm	Rmt	16233.00	16233.00		

**SECTION - I : R.C.C. PIPES**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019		Rate (in Rs.) 2019-2020	
1	2	3	4		5	
	<b>f) Class 'NP-IV'</b>		Collar Joints	Rubber RingJoints	Collar Joints	Rubber RingJoints
	i) 80 mm.	Rmt	285.00	290.00		
	ii) 100 mm.	Rmt	334.00	340.00		
	iii) 150 mm.	Rmt	378.00	386.00		
	iv) 200 mm.	Rmt	528.00	421.00		
	v) 225 mm.	Rmt	582.00	495.00		
	vi) 250 mm.	Rmt	639.00	582.00		
	vii) 300 mm.	Rmt	896.00	891.00		
	viii) 350 mm.	Rmt	1361.00	1267.00		
	ix) 400 mm.	Rmt	1457.00	1386.00		
	x) 450 mm.	Rmt	1718.00	1485.00		
	xi) 500 mm.	Rmt	2100.00	1832.00		
	xii) 600 mm.	Rmt	2568.00	2376.00		
	xiii) 700 mm.	Rmt	3844.00	2970.00		
	xiv) 800 mm.	Rmt	4390.00	3218.00		
	xv) 900 mm.	Rmt	5140.00	3763.00		
	xvi) 1000 mm.	Rmt	7278.00	4159.00		
	xvii) 1100 mm.	Rmt	7895.00	7981.00		
	xviii) 1200 mm.	Rmt	7931.00	8089.00		
	xix) 1400 mm.	Rmt	12383.00	11522.00		
	xx) 1600 mm.	Rmt	15439.00	15481.00		
	xxi) 1800 mm.	Rmt	21164.00	19980.00		
	<b>Note :</b> Only 85% rate is payable till satisfactory hydraulic testing is given.					

**SECTION - I : R.C.C. PIPES**





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019		Rate (in Rs.) 2019-2020	
1	2	3	4		5	
2.	<b>Lowering, laying and jointing</b> in proper grade and alignment R.C.C. pipes with collar joints in C.M.1:1 proportion or socketed R.C.C. pipes with rubber joints (excluding cost of rubber ring or R.C.C. collar,) including cost of conveyance from stores to site of work, cost of jointing material, labour, etc. complete as directed by Engineer-in-charge <b>(For all class of pipes.) as per IS-783-1985.</b>					
			Collar Joints	Rubber Ring Joints		
	i) 80 mm.	Rmt	44.00	32.00		
	ii) 100 mm.	Rmt	52.00	37.00		
	iii) 150 mm.	Rmt	80.00	56.00		
	iv) 200 mm.	Rmt	106.00	75.00		
	v) 225 mm.	Rmt	124.00	87.00		
	vi) 250 mm.	Rmt	139.00	97.00		
	vii) 300 mm.	Rmt	168.00	118.00		
	viii) 350 mm.	Rmt	172.00	121.00		
	ix) 400 mm.	Rmt	219.00	155.00		
	x) 450 mm.	Rmt	267.00	185.00		
	xi) 500 mm.	Rmt	290.00	202.00		
	xii) 600 mm.	Rmt	367.00	254.00		
	xiii) 700 mm.	Rmt	415.00	288.00		
	xiv) 800 mm.	Rmt	481.00	333.00		
	xv) 900 mm.	Rmt	529.00	368.00		
	xvi) 1000 mm.	Rmt	579.00	403.00		
	xvii) 1100 mm.	Rmt	805.00	545.00		
	xviii) 1200 mm.	Rmt	854.00	580.00		
	xix) 1400 mm.	Rmt	951.00	651.00		
	xx) 1600 mm.	Rmt	1049.00	721.00		
	xxi) 1800 mm.	Rmt	1147.00	790.00		

**SECTION - I : R.C.C. PIPES**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019		Rate (in Rs.) 2019-2020	
1	2	3	4		5	
3.	Hydraulic testing of RCC pipe line to specified pressure including cost of all materials and labour and water for testing for specified length including cutting, placing end cap making arrangement for filling safe water using reciprocating type pumps which should be able to provide specified test pressure gauges and other necessary equipments, labour, operation charges, etc. required for testing. The rate under this item shall also include cost of retesting, if necessary and reinstating to original position.		Collar Joints	Rubber Ring Joints		
i)	80 mm.					
ii)	100 mm.	Km	5125.00	3075.00		
iii)	150 mm.	Km	6150.00	4100.00		
iv)	200 mm.	Km	9225.00	6150.00		
v)	225 mm.	Km	11275.00	8200.00		
		Km	13325.00	9225.00		
vi)	250 mm.					
vii)	300 mm.	Km	15375.00	11275.00		
viii)	350 mm.	Km	18450.00	13325.00		
ix)	400 mm.	Km	19475.00	13325.00		
x)	450 mm.	Km	24600.00	17425.00		
		Km	29725.00	20500.00		
xi)	500 mm.					
xii)	600 mm.	Km	31775.00	22550.00		
xiii)	700 mm.	Km	41000.00	28700.00		
xiv)	800 mm.	Km	46125.00	31775.00		
xv)	900 mm.	Km	53300.00	36900.00		
		Km	58425.00	41000.00		
xvi)	1000 mm.					
xvii)	1100 mm.	Km	64575.00	45100.00		
xviii)	1200 mm.	Km	89175.00	60475.00		
xix)	1400 mm.	Km	95325.00	64575.00		
xx)	1600 mm.	Km	105575.00	72775.00		
xxi)	1800 mm.	Km	116850.00	79950.00		
		Km	127100.00	88150.00		



### SECTION - I : P. S. C. PIPES



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>b) Factory Test Pressure 4 kg/Sqcm</b>			
	i) 350 mm.	Rmt	2913.00	
	ii) 400 mm.	Rmt	3135.00	
	iii) 450 mm.	Rmt	3287.00	
	iv) 500 mm.	Rmt	3619.00	
	v) 600 mm.	Rmt	4352.00	
	vi) 700 mm.	Rmt	4846.00	
	vii) 800 mm.	Rmt	5982.00	
	viii) 900 mm.	Rmt	7440.00	
	ix) 1000 mm.	Rmt	8675.00	
	x) 1100 mm.	Rmt	9906.00	
	xi) 1200 mm.	Rmt	11445.00	
	xii) 1300 mm.	Rmt	13236.00	
	xiii) 1400 mm.	Rmt	14561.00	
	xiv) 1500 mm.	Rmt	16668.00	
	xv) 1600 mm.	Rmt	18486.00	
	xvi) 1700 mm.	Rmt	20306.00	
	xvii) 1800 mm.	Rmt	22125.00	
	<b>c) Factory Test Pressure 6 kg/Sqcm</b>			
	i) 350 mm.	Rmt	2918.00	
	ii) 400 mm.	Rmt	3152.00	
	iii) 450 mm.	Rmt	3297.00	
	iv) 500 mm.	Rmt	3646.00	
	v) 600 mm.	Rmt	4409.00	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	vi) 700 mm.	Rmt	5014.00	
	vii) 800 mm.	Rmt	6203.00	
	viii) 900 mm.	Rmt	7734.00	
	ix) 1000 mm.	Rmt	9020.00	
	x) 1100 mm.	Rmt	10271.00	
	xi) 1200 mm.	Rmt	11897.00	
	xii) 1300 mm.	Rmt	13744.00	
	xiii) 1400 mm.	Rmt	15122.00	
	xiv) 1500 mm.	Rmt	17322.00	
	xv) 1600 mm.	Rmt	19238.00	
	xvi) 1700 mm.	Rmt	21154.00	
	xvii) 1800 mm.	Rmt	23070.00	
	<b>d) Factory Test Pressure 8 kg/Sqcm</b>			
	i) 350 mm.	Rmt	2921.00	
	ii) 400 mm.	Rmt	3175.00	
	iii) 450 mm.	Rmt	3317.00	
	iv) 500 mm.	Rmt	3697.00	
	v) 600 mm.	Rmt	4558.00	
	vi) 700 mm.	Rmt	5267.00	
	vii) 800 mm.	Rmt	6466.00	
	viii) 900 mm.	Rmt	8062.00	
	ix) 1000 mm.	Rmt	9426.00	
	x) 1100 mm.	Rmt	10786.00	
	xi) 1200 mm.	Rmt	12489.00	
	xii) 1300 mm.	Rmt	14446.00	
	xiii) 1400 mm.	Rmt	15966.00	
	xiv) 1500 mm.	Rmt	18295.00	
	xv) 1600 mm.	Rmt	20642.00	
	xvi) 1700 mm.	Rmt	22990.00	
	xvii) 1800 mm.	Rmt	25340.00	

**SECTION - I : P. S. C. PIPES**

1cc



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>e) Factory Test Pressure 10 kg/Sqcm</b>			
	i) 350 mm.	Rmt	2937.00	
	ii) 400 mm.	Rmt	3217.00	
	iii) 450 mm.	Rmt	3433.00	
	iv) 500 mm.	Rmt	3845.00	
	v) 600 mm.	Rmt	4754.00	
	vi) 700 mm.	Rmt	5478.00	
	vii) 800 mm.	Rmt	6796.00	
	viii) 900 mm.	Rmt	8469.00	
	ix) 1000 mm.	Rmt	9919.00	
	x) 1100 mm.	Rmt	11382.00	
	xi) 1200 mm.	Rmt	13186.00	
	xii) 1300 mm.	Rmt	15267.00	
	xiii) 1400 mm.	Rmt	17257.00	
	xiv) 1500 mm.	Rmt	19784.00	
	xv) 1600 mm.	Rmt	22045.00	
	xvi) 1700 mm.	Rmt	24308.00	
	xvii) 1800 mm.	Rmt	26570.00	
	<b>f) Factory Test Pressure 12 kg/Sqcm</b>			
	i) 350 mm.	Rmt	3008.00	
	ii) 400 mm.	Rmt	3303.00	
	iii) 450 mm.	Rmt	3542.00	
	iv) 500 mm.	Rmt	3976.00	
	v) 600 mm.	Rmt	4943.00	





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	vi) 700 mm.	Rmt	5726.00	
	vii) 800 mm.	Rmt	7120.00	
	viii) 900 mm.	Rmt	8852.00	
	ix) 1000 mm.	Rmt	10373.00	
	x) 1100 mm.	Rmt	11890.00	
	xi) 1200 mm.	Rmt	14014.00	
	xii) 1300 mm.	Rmt	16138.00	
	xiii) 1400 mm.	Rmt	17958.00	
	xiv) 1500 mm.	Rmt	20563.00	
	xv) 1600 mm.	Rmt	22914.00	
	xvi) 1700 mm.	Rmt	25263.00	
	xvii) 1800 mm.	Rmt	27613.00	
	<b>g) Factory Test Pressure 14 kg./Sqcm.</b>			
	i) 350 mm.	Rmt	3082.00	
	ii) 400 mm.	Rmt	3391.00	
	iii) 450 mm.	Rmt	3650.00	
	iv) 500 mm.	Rmt	4105.00	
	v) 600 mm.	Rmt	5134.00	
	vi) 700 mm.	Rmt	5973.00	
	vii) 800 mm.	Rmt	7442.00	
	viii) 900 mm.	Rmt	9275.00	
	ix) 1000 mm.	Rmt	11064.00	
	x) 1100 mm.	Rmt	12714.00	
	xi) 1200 mm.	Rmt	14739.00	
	xii) 1300 mm.	Rmt	17015.00	
	xiii) 1400 mm.	Rmt	19390.00	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	xiv) 1500 mm.	Rmt	22219.00	
	xv) 1600 mm.	Rmt	24848.00	
	xvi) 1700 mm.	Rmt	27477.00	
	xvii) 1800 mm.	Rmt	30105.00	
	<b>h) Factory Test Pressure 16 kg./Sqcm.</b>			
	i) 350 mm.	Rmt	3150.00	
	ii) 400 mm.	Rmt	3482.00	
	iii) 450 mm.	Rmt	3764.00	
	iv) 500 mm.	Rmt	4242.00	
	v) 600 mm.	Rmt	5322.00	
	vi) 700 mm.	Rmt	6225.00	
	vii) 800 mm.	Rmt	7764.00	
	viii) 900 mm.	Rmt	10306.00	
	ix) 1000 mm.	Rmt	11598.00	
	x) 1100 mm.	Rmt	13919.00	
	xi) 1200 mm.	Rmt	16067.00	
	xii) 1300 mm.	Rmt	18493.00	
	xiii) 1400 mm.	Rmt	20412.00	
	xiv) 1500 mm.	Rmt	24245.00	
	xv) 1600 mm.	Rmt	27195.00	
	xvi) 1700 mm.	Rmt	30144.00	
	xvii) 1800 mm.	Rmt	33091.00	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>i) Factory Test Pressure 18 kg/Sqcm</b>			
	i) 350 mm.	Rmt	3222.00	
	ii) 400 mm.	Rmt	3578.00	
	iii) 450 mm.	Rmt	3871.00	
	iv) 500 mm.	Rmt	4373.00	
	v) 600 mm.	Rmt	5512.00	
	vi) 700 mm.	Rmt	6808.00	
	vii) 800 mm.	Rmt	8495.00	
	viii) 900 mm.	Rmt	10744.00	
	ix) 1000 mm.	Rmt	12626.00	
	x) 1100 mm.	Rmt	14570.00	
	xi) 1200 mm.	Rmt	16841.00	
	xii) 1300 mm.	Rmt	19397.00	
	xiii) 1400 mm.	Rmt	25596.00	
	xiv) 1500 mm.	Rmt	28861.00	
	xv) 1600 mm.	Rmt	32531.00	
	xvi) 1700 mm.	Rmt	36198.00	
	xvii) 1800 mm.	Rmt	39866.00	

SECTION - I : P. S. C. PIPES

Page 150 170





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>J) Factory Test pressure 20 kg/Sqcm.</b>			
	i) 350 mm.	Rmt	3297.00	
	ii) 400 mm.	Rmt	3664.00	
	iii) 450 mm.	Rmt	3984.00	
	iv) 500 mm.	Rmt	4509.00	
	v) 600 mm.	Rmt	5707.00	
	vi) 700 mm.	Rmt	7541.00	
	vii) 800 mm.	Rmt	10033.00	
	viii) 900 mm.	Rmt	11859.00	
	ix) 1000 mm.	Rmt	14267.00	
	x) 1100 mm.	Rmt	16960.00	
	xi) 1200 mm.	Rmt	21329.00	
	xii) 1300 mm.	Rmt	23468.00	
	xiii) 1400 mm.	Rmt	27416.00	
	xiv) 1500 mm.	Rmt	31080.00	
	xv) 1600 mm.	Rmt	34760.00	
	xvi) 1700 mm.	Rmt	38439.00	
	xvii) 1800 mm.	Rmt	42119.00	
	<b>Note : 1) Only 85% rates of providing item shall be payable till satisfactory hydraulic testing is given.</b>			



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
2.	Lowering, laying and jointing in proper grade and alignment Pre-Stressed Cement Concrete Pipes with rubber ring joints including cost of conveyance from stores to site of works, all labour involved, etc. complete but excluding cost of rubber rings (for all class of pipes)			
	i) 350 mm.	Rmt	105.00	
	ii) 400 mm.	Rmt	148.00	
	iii) 450 mm.	Rmt	179.00	
	iv) 500 mm.	Rmt	202.00	
	v) 600 mm.	Rmt	271.00	
	vi) 700 mm.	Rmt	296.00	
	vii) 800 mm.	Rmt	334.00	
	viii) 900 mm.	Rmt	344.00	
	ix) 1000 mm.	Rmt	444.00	
	x) 1100 mm	Rmt	583.00	
	xi) 1200 mm	Rmt	624.00	
	xii) 1300 mm	Rmt	741.00	
	xiii) 1400 mm	Rmt	782.00	
	xiv) 1500 mm	Rmt	986.00	
	xv) 1600 mm	Rmt	1110.00	
	xvi) 1700 mm.	Rmt	1236.00	
	xvii) 1800 mm.	Rmt	1202.00	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
3.	<p>Hydraulic testing of Pre-Stressed Cement Concrete Pipes with rubber ring joints to specified pressure including cost of all materials and labour and water for testing for the length upto 1 km., using reciprocating type pumps which should be able to provide specified test pressure guages and other necessary equipments, labour, operation charges, etc. required for testing. The rate under this item shall also include cost of retesting, if necessary.</p>			
	i) 350 mm.	Km	11275.00	
	ii) 400 mm.	Km	16400.00	
	iii) 450 mm.	Km	19475.00	
	iv) 500 mm.	Km	22550.00	
	v) 600 mm.	Km	29725.00	
	vi) 700 mm.	Km	32800.00	
	vii) 800 mm.	Km	36900.00	
	viii) 900 mm.	Km	37925.00	
	ix) 1000 mm.	Km	49200.00	
	x) 1100 mm	Km	64575.00	
	xi) 1200 mm	Km	69700.00	
	xii) 1300 mm	Km	82000.00	
	xiii) 1400 mm	Km	87125.00	
	xiv) 1500 mm	Km	109675.00	
	xv) 1600 mm	Km	123000.00	
	xvi) 1700 mm.	Km	137350.00	
	xvii) 1800 mm.	Km	145550.00	





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
1.	<p><b>VII. BAR WRAPPED STEEL CYLINDER PIPES (BWSC)</b></p> <p><b>Providing and supplying European Standard EN 639/1994 and EN 641/1994 or AWWA C-303 standard and reinforced concrete pressure pipes cylinder type or IS-15155-2002</b> (Bar wrapped steel cylinder pipes suitable for overlapping steel welded joint or butt welded steel joints) of following class and diameter including cost of all material and labour required, inspection charges, transportation to stores, transit insurance, loading, unloading and stacking excluding GST levied by GOI &amp; GOM in all respect, etc. complete.</p> <p><b>i) Factory test pressure</b>  a) Site test pressure + 01N/mm<sup>2</sup>, For working pressure upto 1 N/mm<sup>2</sup>  b) Site test pressure + 02N/mm<sup>2</sup>, For working pressure upto 1 N/mm<sup>2</sup></p> <p><b>ii) Site test pressure</b> - 1.5 times working pressure pertaining to the section or 1.1 times static pressure, which ever is more (such pressure is to be control within 25% of pumphead incase of pumping main)</p> <p><b>iii) Working pressure</b> - The maximum sustained internal pressure excluding surge to which each portion of pipeline may be subjected when installed.</p> <p><b>Note :</b> 1) Class mentioned below represents the working pressure of pipe.  2) For external coating at site to the joints, necessary polythene wrapping for pouring cement slurry shall also be given free with each pipe.</p>			

**SECTION - I : BAR WRAPPED STEEL  
CYLINDER PIPES**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>a) Factory Test Pressure 4 kg / Sqcm</b>			
	i) 300 mm	Rmt	2948.00	
	ii) 350 mm.	Rmt	3316.00	
	iii) 400 mm.	Rmt	3637.00	
	iv) 450 mm.	Rmt	4027.00	
	v) 500 mm.	Rmt	4479.00	
	vi) 600 mm.	Rmt	5824.00	
	vii) 700 mm.	Rmt	6731.00	
	viii) 800 mm.	Rmt	7310.00	
	ix) 900 mm.	Rmt	10215.00	
	x) 1000 mm.	Rmt	11772.00	
	xi) 1100 mm.	Rmt	16919.00	
	xii) 1200 mm.	Rmt	18868.00	
	xiii) 1300 mm.	Rmt	22035.00	
	xiv) 1400 mm.	Rmt	23634.00	
	xv) 1500 mm.	Rmt	25222.00	
	xvi) 1600 mm.	Rmt	27172.00	
	xvii) 1700 mm.	Rmt	28827.00	
	xviii) 1800 mm.	Rmt	30779.00	

**SECTION - I : BAR WRAPPED STEEL  
CYLINDER PIPES**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>b) Factory Test Pressure 6 kg / Sqcm</b>			
	i) 300 mm	Rmt	2951.00	
	ii) 350 mm.	Rmt	3319.00	
	iii) 400 mm.	Rmt	3641.00	
	iv) 450 mm.	Rmt	4029.00	
	v) 500 mm.	Rmt	4488.00	
	vi) 600 mm.	Rmt	5833.00	
	vii) 700 mm.	Rmt	6737.00	
	viii) 800 mm.	Rmt	7316.00	
	ix) 900 mm.	Rmt	10221.00	
	x) 1000 mm.	Rmt	11778.00	
	xi) 1100 mm.	Rmt	16927.00	
	xii) 1200 mm.	Rmt	18876.00	
	xiii) 1300 mm.	Rmt	22039.00	
	xiv) 1400 mm.	Rmt	23641.00	
	xv) 1500 mm.	Rmt	25229.00	
	xvi) 1600 mm.	Rmt	27180.00	
	xvii) 1700 mm.	Rmt	28833.00	
	xviii) 1800 mm.	Rmt	30784.00	

**SECTION - I : BAR WRAPPED STEEL  
CYLINDER PIPES**





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>c) Factory Test Pressure 8 kg / Sqcm</b>			
	i) 300 mm	Rmt	2954.00	
	ii) 350 mm.	Rmt	3324.00	
	iii) 400 mm.	Rmt	3644.00	
	iv) 450 mm.	Rmt	4032.00	
	v) 500 mm.	Rmt	4497.00	
	vi) 600 mm.	Rmt	5841.00	
	vii) 700 mm.	Rmt	6746.00	
	viii) 800 mm.	Rmt	7325.00	
	ix) 900 mm.	Rmt	10231.00	
	x) 1000 mm.	Rmt	11788.00	
	xi) 1100 mm.	Rmt	16936.00	
	xii) 1200 mm.	Rmt	18884.00	
	xiii) 1300 mm.	Rmt	22049.00	
	xiv) 1400 mm.	Rmt	23649.00	
	xv) 1500 mm.	Rmt	25238.00	
	xvi) 1600 mm.	Rmt	27190.00	
	xvii) 1700 mm.	Rmt	28842.00	
	xviii) 1800 mm.	Rmt	30795.00	
	<b>d) Factory Test Pressure 10 kg / Sqcm</b>			
	i) 300 mm.	Rmt	2955.00	
	ii) 350 mm.	Rmt	3325.00	

**SECTION - I: BAR WRAPPED STEEL  
CYLINDER PIPES**



Sr. No.	Description	Unit	Rate (in Rs.) 2013-2014	Rate (in Rs.) 2014-2015
1	2	3	4	5
	iii) 400 mm.	Rmt	3648.00	
	iv) 450 mm.	Rmt	4034.00	
	v) 500 mm.	Rmt	4510.00	
	vi) 600 mm.	Rmt	5856.00	
	vii) 700 mm.	Rmt	6761.00	
	viii) 800 mm.	Rmt	7340.00	
	ix) 900 mm.	Rmt	10245.00	
	x) 1000 mm.	Rmt	11801.00	
	xi) 1100 mm.	Rmt	16949.00	
	xii) 1200 mm.	Rmt	18899.00	
	xiii) 1300 mm.	Rmt	22064.00	
	xiv) 1400 mm.	Rmt	23662.00	
	xv) 1500 mm.	Rmt	25252.00	
	xvi) 1600 mm.	Rmt	27202.00	
	xvii) 1700 mm.	Rmt	28857.00	
	xviii) 1800 mm.	Rmt	30809.00	

**SECTION - I: BAR WRAPPED STEEL  
CYLINDER PIPES**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2015-2017
1	2	3	4	5
	<b>e) Factory Test Pressure 12 kg / Sqcm</b>			
	i) 300 mm	Rmt	2958.00	
	ii) 350 mm.	Rmt	3329.00	
	iii) 400 mm.	Rmt	3650.00	
	iv) 450 mm.	Rmt	4039.00	
	v) 500 mm.	Rmt	4530.00	
	vi) 600 mm.	Rmt	5873.00	
	vii) 700 mm.	Rmt	6778.00	
	viii) 800 mm.	Rmt	8382.00	
	ix) 900 mm.	Rmt	10245.00	
	x) 1000 mm.	Rmt	12736.00	
	xi) 1100 mm.	Rmt	16968.00	
	xii) 1200 mm.	Rmt	18917.00	
	xiii) 1300 mm.	Rmt	22082.00	
	xiv) 1400 mm.	Rmt	23683.00	
	xv) 1500 mm.	Rmt	25541.00	
	xvi) 1600 mm.	Rmt	28253.00	
	xvii) 1700 mm.	Rmt	30580.00	
	xviii) 1800 mm.	Rmt	34009.00	

**SECTION - I : BAR WRAPPED STEEL  
CYLINDER PIPES**





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>f) Factory Test Pressure 14 kg / Sqcm</b>			
	i) 300 mm	Rmt	2963.00	
	ii) 350 mm.	Rmt	3334.00	
	iii) 400 mm.	Rmt	3653.00	
	iv) 450 mm.	Rmt	4050.00	
	v) 500 mm.	Rmt	4610.00	
	vi) 600 mm.	Rmt	5980.00	
	vii) 700 mm.	Rmt	7782.00	
	viii) 800 mm.	Rmt	9123.00	
	ix) 900 mm.	Rmt	11253.00	
	x) 1000 mm.	Rmt	13549.00	
	xi) 1100 mm.	Rmt	17038.00	
	xii) 1200 mm.	Rmt	18910.00	
	xiii) 1300 mm.	Rmt	22628.00	
	xiv) 1400 mm.	Rmt	25570.00	
	xv) 1500 mm.	Rmt	28450.00	
	xvi) 1600 mm.	Rmt	31725.00	
	xvii) 1700 mm.	Rmt	34833.00	
	xviii) 1800 mm.	Rmt	38109.00	

**SECTION - I : BAR WRAPPED STEEL  
CYLINDER PIPES**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>g) Factory Test Pressure 16 kg / Sqcm</b>			
	i) 300 mm	Rmt	2965.00	
	ii) 350 mm.	Rmt	3337.00	
	iii) 400 mm.	Rmt	3658.00	
	iv) 450 mm.	Rmt	4193.00	
	v) 500 mm.	Rmt	4945.00	
	vi) 600 mm.	Rmt	6419.00	
	vii) 700 mm.	Rmt	8283.00	
	viii) 800 mm.	Rmt	9926.00	
	ix) 900 mm.	Rmt	12275.00	
	x) 1000 mm.	Rmt	14920.00	
	xi) 1100 mm.	Rmt	17971.00	
	xii) 1200 mm.	Rmt	20956.00	
	xiii) 1300 mm.	Rmt	24965.00	
	xiv) 1400 mm.	Rmt	28181.00	
	xv) 1500 mm.	Rmt	31428.00	
	xvi) 1600 mm.	Rmt	34950.00	
	xvii) 1700 mm.	Rmt	38793.00	
	xviii) 1800 mm.	Rmt	43287.00	
	<b>h) Factory Test Pressure 18 kg / Sqcm</b>			
	i) 300 mm.	Rmt	2970.00	
	ii) 350 mm.	Rmt	3342.00	
	iii) 400 mm.	Rmt	3712.00	

**SECTION - I: BAR WRAPPED STEEL  
CYLINDER PIPES**

181



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	iv) 450 mm.	Rmt	4325.00	
	v) 500 mm.	Rmt	5092.00	
	vi) 600 mm.	Rmt	6663.00	
	vii) 700 mm.	Rmt	8759.00	
	viii) 800 mm.	Rmt	10337.00	
	ix) 900 mm.	Rmt	12776.00	
	x) 1000 mm.	Rmt	15586.00	
	xi) 1100 mm.	Rmt	18754.00	
	xii) 1200 mm.	Rmt	21852.00	
	xiii) 1300 mm.	Rmt	25947.00	
	xiv) 1400 mm.	Rmt	29651.00	
	xv) 1500 mm.	Rmt	32749.00	
	xvi) 1600 mm.	Rmt	37150.00	
	xvii) 1700 mm.	Rmt	41202.00	
	xviii) 1800 mm.	Rmt	45603.00	
	<b>i) Factory Test Pressure 20 kg / Sqcm</b>			
	i) 300 mm.	Rmt	3030.00	
	ii) 350 mm.	Rmt	3329.00	
	iii) 400 mm.	Rmt	3920.00	
	iv) 450 mm.	Rmt	4477.00	
	v) 500 mm.	Rmt	5429.00	
	vi) 600 mm.	Rmt	7102.00	
	vii) 700 mm.	Rmt	9234.00	
	viii) 800 mm.	Rmt	11271.00	

**SECTION - I : BAR WRAPPED STEEL  
CYLINDER PIPES**

182





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	ix) 900 mm.	Rmt	13918.00	
	x) 1000 mm.	Rmt	17028.00	
	xi) 1100 mm.	Rmt	20437.00	
	xii) 1200 mm.	Rmt	23760.00	
	xiii) 1300 mm.	Rmt	28224.00	
	xiv) 1400 mm.	Rmt	32527.00	
	xv) 1500 mm.	Rmt	36633.00	
	xvi) 1600 mm.	Rmt	40916.00	
	xvii) 1700 mm.	Rmt	45709.00	
	xviii) 1800 mm.	Rmt	50598.00	

**Notes :**

1) For lowering, laying & pouring of cement mortar in the field on joints ( after laying and welding ), rates as per P. S. C. pipes lowering, laying and jointing shall be adopted.

2) For field welding rates applicable for similar welding in M. S. pipes given in that section shall be adopted.

3) Whenever manufacturer is separate and contractor for lowering laying, jointing and testing is separate, the principal contractor shall be enter into an agreement with B. W. S. C. pipe manufacturer for satisfactory manufacturing transporting, lowering, laying, jointing and testing of pipes.

**This footnote shall appear into the tender condition.**

4) Only 85% providing rates shall be payable till satisfactory Hydraulic testing is given.

5) No negative tolerance shall be accepted for the M. S. Shell thickness of B. W. S. C. pipes over the thickness mentioned in E. N. 641 of AWWA C 303.

**SECTION - I : BAR WRAPPED STEEL  
CYLINDER PIPES**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>VIII. GLASS REINFORCED PLASTIC PIPES (GRP)</b>			
1.	<p><b>Providing and supplying Glass fibre reinforced polyester pipes confirming to BIS - 12709 / BIS 14402 with double bell REKA GRP coupling EPDM rubber gaskets for sealing of following pressure diameter and stiffness class including cost of all material and labour required, insurance, transportation to store, unloading and stacking excluding GST levied by GOI &amp; GOM in all respect etc. complete.</b></p> <p><b>A. Class (SN) 2500</b></p> <p><b>a) 3 Kg/Sq. cm :</b></p> <p>i) 300 mm</p> <p>ii) 350 mm</p> <p>iii) 400 mm</p> <p>iv) 450 mm</p> <p>v) 500 mm</p> <p>vi) 600 mm</p> <p>vii) 700 mm</p> <p>viii) 800 mm</p> <p>ix) 900 mm</p> <p>x) 1000 mm</p> <p>xi) 1100 mm</p> <p>xii) 1200 mm</p>	<p>Rmt</p> <p>Rmt</p> <p>Rmt</p> <p>Rmt</p> <p>Rmt</p> <p>Rmt</p> <p>Rmt</p> <p>Rmt</p> <p>Rmt</p> <p>Rmt</p> <p>Rmt</p> <p>Rmt</p> <p>Rmt</p>	<p>1377.00</p> <p>1593.00</p> <p>1754.00</p> <p>1973.00</p> <p>2232.00</p> <p>2868.00</p> <p>3565.00</p> <p>4377.00</p> <p>5348.00</p> <p>6344.00</p> <p>7712.00</p> <p>8978.00</p>	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	xiii) 1300 mm	Rmt	10166.00	
	xiv) 1400 mm	Rmt	11739.00	
	xv) 1500 mm	Rmt	13342.00	
	xvi) 1600 mm	Rmt	15538.00	
	xvii) 1700 mm	Rmt	18570.00	
	xviii) 1800 mm	Rmt	20264.00	
	xix) 1900 mm	Rmt	22652.00	
	xx) 2000 mm	Rmt	24490.00	
	xxi) 2100 mm	Rmt	27367.00	
	xxii) 2200 mm	Rmt	29376.00	
	xxiii) 2300 mm	Rmt	31747.00	
	xiv) 2400 mm	Rmt	33936.00	
	<b>b) 6 Kg/Sq. cm :</b>			
	i) 300 mm	Rmt	1430.00	
	ii) 350 mm	Rmt	1634.00	
	iii) 400 mm	Rmt	1836.00	
	iv) 450 mm	Rmt	2038.00	
	v) 500 mm	Rmt	2317.00	
	vi) 600 mm	Rmt	3002.00	
	vii) 700 mm	Rmt	3732.00	
	viii) 800 mm	Rmt	4573.00	





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	ix) 900 mm	Rmt	5571.00	
	x) 1000 mm	Rmt	6626.00	
	xi) 1100 mm	Rmt	8030.00	
	xii) 1200 mm	Rmt	9292.00	
	xiii) 1300 mm	Rmt	10632.00	
	xiv) 1400 mm	Rmt	12166.00	
	xv) 1500 mm	Rmt	13878.00	
	xvi) 1600 mm	Rmt	16186.00	
	xvii) 1700 mm	Rmt	19352.00	
	xviii) 1800 mm	Rmt	21057.00	
	xix) 1900 mm	Rmt	23563.00	
	xx) 2000 mm	Rmt	25446.00	
	xxi) 2100 mm	Rmt	28448.00	
	xxii) 2200 mm	Rmt	30657.00	
	xxiii) 2300 mm	Rmt	33041.00	
	xiv) 2400 mm	Rmt	35283.00	

**SECTION - I : G. R. P. PIPES**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	c) 9 Kg/Sq. cm :			
	i) 300 mm	Rmt	1475.00	
	ii) 350 mm	Rmt	1714.00	
	iii) 400 mm	Rmt	1911.00	
	iv) 450 mm	Rmt	2166.00	
	v) 500 mm	Rmt	2456.00	
	vi) 600 mm	Rmt	3185.00	
	vii) 700 mm	Rmt	3967.00	
	viii) 800 mm	Rmt	4941.00	
	ix) 900 mm	Rmt	6036.00	
	x) 1000 mm	Rmt	7147.00	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	xi) 1100 mm	Rmt	8637.00	
	xii) 1200 mm	Rmt	10029.00	
	xiii) 1300 mm	Rmt	11581.00	
	xiv) 1400 mm	Rmt	13307.00	
	xv) 1500 mm	Rmt	15113.00	
	xvi) 1600 mm	Rmt	17644.00	
	xvii) 1700 mm	Rmt	21140.00	
	xviii) 1800 mm	Rmt	23119.00	
	xix) 1900 mm	Rmt	25683.00	
	xx) 2000 mm	Rmt	27868.00	
	xxi) 2100 mm	Rmt	31013.00	
	xxii) 2200 mm	Rmt	33341.00	
	xxiii) 2300 mm	Rmt	36000.00	
	xiv) 2400 mm	Rmt	38824.00	

**SECTION - I : G. R. P. PIPES**





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>d) 12 Kg/Sq. cm :</b>			
	i) 300 mm	Rmt	1563.00	
	ii) 350 mm	Rmt	1804.00	
	iii) 400 mm	Rmt	2009.00	
	iv) 450 mm	Rmt	2624.00	
	v) 500 mm	Rmt	2274.00	
	vi) 600 mm	Rmt	3421.00	
	vii) 700 mm	Rmt	4244.00	
	viii) 800 mm	Rmt	5258.00	
	ix) 900 mm	Rmt	6447.00	
	x) 1000 mm	Rmt	7685.00	
	xi) 1100 mm	Rmt	9420.00	
	xii) 1200 mm	Rmt	10987.00	
	xiii) 1300 mm	Rmt	12434.00	
	xiv) 1400 mm	Rmt	14311.00	
	xv) 1500 mm	Rmt	16363.00	
	xvi) 1600 mm	Rmt	18979.00	
	xvii) 1700 mm	Rmt	22784.00	
	xviii) 1800 mm	Rmt	24979.00	
	xix) 1900 mm	Rmt	27650.00	
	xx) 2000 mm	Rmt	30068.00	
	xxi) 2100 mm	Rmt	33521.00	
	xxii) 2200 mm	Rmt	36173.00	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>e) 15 Kg/Sq. cm :</b>			
	i) 300 mm	Rmt	1627.00	
	ii) 350 mm	Rmt	1879.00	
	iii) 400 mm	Rmt	2091.00	
	iv) 450 mm	Rmt	2409.00	
	v) 500 mm	Rmt	2769.00	
	vi) 600 mm	Rmt	3659.00	
	vii) 700 mm	Rmt	4563.00	
	viii) 800 mm	Rmt	5694.00	
	ix) 900 mm	Rmt	7019.00	
	x) 1000 mm	Rmt	8330.00	
	xi) 1100 mm	Rmt	10220.00	
	xii) 1200 mm	Rmt	11858.00	
	xiii) 1300 mm	Rmt	13611.00	
	xiv) 1400 mm	Rmt	15666.00	
	xv) 1500 mm	Rmt	17773.00	
	xvi) 1600 mm	Rmt	20622.00	
	xvii) 1700 mm	Rmt	25102.00	
	xviii) 1800 mm	Rmt	27433.00	
	xix) 1900 mm	Rmt	30632.00	
	xx) 2000 mm	Rmt	33337.00	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>B. Class (SN) 5000</b>			
	<b>a) 3 Kg/Sq. cm :</b>			
	i) 300 mm	Rmt	1476.00	
	ii) 350 mm	Rmt	1732.00	
	iii) 400 mm	Rmt	1973.00	
	iv) 450 mm	Rmt	2245.00	
	v) 500 mm	Rmt	2484.00	
	vi) 600 mm	Rmt	3237.00	
	vii) 700 mm	Rmt	4052.00	
	viii) 800 mm	Rmt	5021.00	
	ix) 900 mm	Rmt	6184.00	
	x) 1000 mm	Rmt	7354.00	
	xi) 1100 mm	Rmt	8915.00	
	xii) 1200 mm	Rmt	10449.00	
	xiii) 1300 mm	Rmt	11898.00	
	xiv) 1400 mm	Rmt	13674.00	
	xv) 1500 mm	Rmt	15605.00	
	xvi) 1600 mm	Rmt	18140.00	
	xvii) 1700 mm	Rmt	21737.00	
	xviii) 1800 mm	Rmt	23841.00	
	xix) 1900 mm	Rmt	26535.00	
	xx) 2000 mm	Rmt	28861.00	
	xxi) 2100 mm	Rmt	32133.00	
	xxii) 2200 mm	Rmt	34684.00	





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>b) 6 Kg/Sq. cm :</b>			
	i) 300 mm	Rmt	1499.00	
	ii) 350 mm	Rmt	1762.00	
	iii) 400 mm	Rmt	1946.00	
	iv) 450 mm	Rmt	2219.00	
	v) 500 mm	Rmt	2556.00	
	vi) 600 mm	Rmt	3307.00	
	vii) 700 mm	Rmt	4155.00	
	viii) 800 mm	Rmt	5142.00	
	ix) 900 mm	Rmt	6334.00	
	x) 1000 mm	Rmt	7519.00	
	xi) 1100 mm	Rmt	9197.00	
	xii) 1200 mm	Rmt	10690.00	
	xiii) 1300 mm	Rmt	12216.00	
	xiv) 1400 mm	Rmt	14017.00	
	xv) 1500 mm	Rmt	15969.00	
	xvi) 1600 mm	Rmt	18587.00	
	xvii) 1700 mm	Rmt	22268.00	
	xviii) 1800 mm	Rmt	24416.00	
	xix) 1900 mm	Rmt	27198.00	
	xx) 2000 mm	Rmt	29633.00	
	xxi) 2100 mm	Rmt	32964.00	
	xxii) 2200 mm	Rmt	35636.00	

**SECTION - I : G. R. P. PIPES**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>c) 9 Kg/Sq. cm :</b>			
	i) 300 mm	Rmt	1554.00	
	ii) 350 mm	Rmt	1821.00	
	iii) 400 mm	Rmt	2049.00	
	iv) 450 mm	Rmt	2333.00	
	v) 500 mm	Rmt	2669.00	
	vi) 600 mm	Rmt	3667.00	
	vii) 700 mm	Rmt	4355.00	
	viii) 800 mm	Rmt	5609.00	
	ix) 900 mm	Rmt	6621.00	
	x) 1000 mm	Rmt	7899.00	
	xi) 1100 mm	Rmt	12752.00	
	xii) 1200 mm	Rmt	14508.00	
	xiii) 1300 mm	Rmt	16346.00	
	xiv) 1400 mm	Rmt	18298.00	
	xv) 1500 mm	Rmt	20961.00	
	xvi) 1600 mm	Rmt	23813.00	
	xvii) 1700 mm	Rmt	28669.00	
	xviii) 1800 mm	Rmt	31240.00	

**SECTION - I : G. R. P. PIPES**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>d) 12 Kg/Sq. cm :</b>			
	i) 300 mm	Rmt	1598.00	
	ii) 350 mm	Rmt	1895.00	
	iii) 400 mm	Rmt	2095.00	
	iv) 450 mm	Rmt	2426.00	
	v) 500 mm	Rmt	2771.00	
	vi) 600 mm	Rmt	3659.00	
	vii) 700 mm	Rmt	4612.00	
	viii) 800 mm	Rmt	5692.00	
	ix) 900 mm	Rmt	7108.00	
	x) 1000 mm	Rmt	8360.00	
	xi) 1100 mm	Rmt	10275.00	
	xii) 1200 mm	Rmt	11941.00	
	xiii) 1300 mm	Rmt	13685.00	
	xiv) 1400 mm	Rmt	15770.00	
	xv) 1500 mm	Rmt	17912.00	
	xvi) 1600 mm	Rmt	20703.00	
	xvii) 1700 mm	Rmt	24921.00	
	xviii) 1800 mm	Rmt	27396.00	
	xix) 1900 mm	Rmt	30360.00	





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>e) 15 Kg/Sq. cm :</b>			
	i) 300 mm	Rmt	1655.00	
	ii) 350 mm	Rmt	1970.00	
	iii) 400 mm	Rmt	2203.00	
	iv) 450 mm	Rmt	2544.00	
	v) 500 mm	Rmt	2903.00	
	vi) 600 mm	Rmt	3853.00	
	vii) 700 mm	Rmt	4850.00	
	viii) 800 mm	Rmt	6068.00	
	ix) 900 mm	Rmt	7484.00	
	x) 1000 mm	Rmt	8922.00	
	xi) 1100 mm	Rmt	10852.00	
	xii) 1200 mm	Rmt	12715.00	
	xiii) 1300 mm	Rmt	14530.00	
	xiv) 1400 mm	Rmt	16765.00	
	xv) 1500 mm	Rmt	19068.00	
	xvi) 1600 mm	Rmt	22077.00	
	xvii) 1700 mm	Rmt	26510.00	
	xviii) 1800 mm	Rmt	29197.00	

**Note :** 1) For lowering, laying & jointing rates of GRP pipes 50 % rates for lowering, laying & jointing of PSC pipes of corresponding diameter shall be adopted.

2) Where manufacturer is separate & contractor for lowering, laying jointing & testing is separate the principal contractor shall enter into an agreement with G.R.P. pipe manufacture for satisfactory manufacturing, transporting, lowering, laying, jointing & testing of pipe.

**This foot Note shall appear in tender conditions.**

3) Only 85 % Payment shall be payable till satisfactory hydraulic testing is given.



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
1.	<b>IX. H. D. P. E. PIPES</b>  <b>Providing and supplying in standard lengths</b> Polyethelene Pipes, confirming to IS 4984 / 14151 / 12786 / 13488 with nesessary joint- ing material like mechanical connector i. e. thread / insert joint / quick release coupler joint / compression fitting joint or flanged joint ex- cluding coupler/specials, including transpor- tation and freight charges, inspection charges, loading / unloading charges, conveyance to the departmental stores & stacking the same in closed shade duly protecting from sunrays & rains, excluding GST levied by GI & GOM in all respect etc. complete.			
A.)	<b>PE-100</b> <b>a) 6 Kg/Sq. cm :</b>  i) 63 mm ii) 75 mm iii) 90 mm iv) 110 mm v) 125 mm vi) 140 mm vii) 160 mm viii) 180 mm  ix) 200 mm x) 225 mm xi) 250 mm xii) 280 mm  xiii) 315 mm xiv) 355 mm xv) 400 mm	Rmt Rmt Rmt Rmt Rmt Rmt Rmt Rmt  Rmt Rmt Rmt Rmt  Rmt Rmt Rmt Rmt	79.00 111.00 157.00 228.00 313.00 393.00 508.00 640.00  750.00 966.00 1188.00 1488.00  1885.00 2389.00 3130.00	

**SECTION - I : H. D. P. E. PIPES**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	xvi) 450 mm	Rmt	4124.00	
	xvii) 500 mm	Rmt	5099.00	
	xviii) 560 mm	Rmt	6383.00	
	xix) 630 mm	Rmt	8033.00	
	xx) 710 mm	Rmt	10372.00	
	xxi) 800 mm	Rmt	12504.00	
	xxii) 900 mm	Rmt	15841.00	
	xxiii) 1000 mm	Rmt	19534.00	
	<b>b) 8 Kg/Sq. cm :</b>			
	i) 63 mm	Rmt	100.00	
	ii) 75 mm	Rmt	134.00	
	iii) 90 mm	Rmt	191.00	
	iv) 110 mm	Rmt	279.00	
	v) 125 mm	Rmt	362.00	
	vi) 140 mm	Rmt	495.00	
	vii) 160 mm	Rmt	642.00	
	viii) 180 mm	Rmt	810.00	





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	ix) 200 mm	Rmt	953.00	
	x) 225 mm	Rmt	1224.00	
	xi) 250 mm	Rmt	1508.00	
	xii) 280 mm	Rmt	1891.00	
	xiii) 315 mm	Rmt	2395.00	
	xiv) 355 mm	Rmt	3031.00	
	xv) 400 mm	Rmt	3979.00	
	xvi) 450 mm	Rmt	5320.00	
	xvii) 500 mm	Rmt	6562.00	
	xviii) 560 mm	Rmt	8238.00	
	xix) 630 mm	Rmt	10365.00	
	xx) 710 mm	Rmt	13384.00	
	xxi) 800 mm	Rmt	16145.00	
	xxii) 900 mm	Rmt	19947.00	
	xxiii) 1000 mm	Rmt	20437.00	

**SECTION - I : H. D. P. E. PIPES**



	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>c) 10 Kg/Sq. cm :</b>			
	i) 63 mm	Rmt	123.00	
	ii) 75 mm	Rmt	174.00	
	iii) 90 mm	Rmt	250.00	
	iv) 110 mm	Rmt	368.00	
	v) 125 mm	Rmt	473.00	
	vi) 140 mm	Rmt	591.00	
	vii) 160 mm	Rmt	768.00	
	viii) 180 mm	Rmt	973.00	
	ix) 200 mm	Rmt	1141.00	
	x) 225 mm	Rmt	1461.00	
	xi) 250 mm	Rmt	1823.00	
	xii) 280 mm	Rmt	2252.00	
	xiii) 315 mm	Rmt	2891.00	
	xiv) 355 mm	Rmt	3628.00	
	xv) 400 mm	Rmt	4833.00	







Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	xvi) 450 mm	Rmt	6430.00	
	xvii) 500 mm	Rmt	7948.00	
	xviii) 560 mm	Rmt	9559.00	
	xix) 630 mm	Rmt	12547.00	
	xx) 710 mm	Rmt	15938.00	
	xxi) 800 mm	Rmt	19210.00	
	xxii) 900 mm	Rmt	19439.00	
	xxiii) 1000 mm	Rmt	21840.00	
	<b>d) 12.5 Kg/Sq. cm :</b>			
	i) 63 mm	Rmt	146.00	
	ii) 75 mm	Rmt	205.00	
	iii) 90 mm	Rmt	295.00	
	iv) 110 mm	Rmt	435.00	
	v) 125 mm	Rmt	562.00	
	vi) 140 mm	Rmt	705.00	
	vii) 160 mm	Rmt	917.00	
	viii) 180 mm	Rmt	1159.00	
	ix) 200 mm	Rmt	1363.00	
	x) 225 mm	Rmt	1758.00	
	xi) 250 mm	Rmt	2162.00	
	xii) 280 mm	Rmt	2712.00	
	xiii) 315 mm	Rmt	3433.00	
	xiv) 355 mm	Rmt	4359.00	
	xv) 400 mm	Rmt	5729.00	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	xii) 280 mm	Rmt	4277.00	
	xiii) 315 mm	Rmt	5407.00	
	xiv) 355 mm	Rmt	6857.00	
	xv) 400 mm	Rmt	8885.00	
	xvi) 450 mm	Rmt	11261.00	
	xvii) 500 mm	Rmt	13887.00	
	xviii) 560 mm	Rmt	15277.00	
	xix) 630 mm	Rmt	16040.00	
	xx) 710 mm	Rmt	17124.00	
	xxi) 800 mm	Rmt	20631.00	
	xxii) 900 mm	Rmt	26112.00	
	xxiii) 1000 mm	Rmt	32061.00	

**SECTION - I : H. D. P. E. PIPES**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
2.	<p><b>Lowering, Laying and Jointing H. D. P. E./M. D. P. E. pipes</b> in proper position including all specials by compression fitting/electrofusion and butt fusion jointing procedure as per relevent IS Code complete with all materials for jointing procedure like Electrofusion machine, Electric heater/butt fusion welding machine with hydraulic jack, top loading clamp etc. and all labours as directed by engineer in charge as per IS-7634 Part II</p> <p><b>For all classes.</b></p> <p>i) 20 mm</p> <p>ii) 25 mm</p> <p>iii) 32 mm</p> <p>iv) 40 mm</p> <p>v) 50 mm</p> <p>vi) 63 mm</p> <p>vii) 75 mm</p> <p>viii) 90 mm</p> <p>ix) 110 mm</p> <p>x) 125 mm</p> <p>xi) 140 mm</p> <p>xii) 160 mm</p> <p>xiii) 180 mm</p> <p>xiv) 200 mm</p> <p>xv) 225 mm</p> <p>xvi) 250 mm</p> <p>xvii) 280 mm</p>	<p>Rmt.</p> <p>Rmt.</p> <p>Rmt.</p> <p>Rmt.</p> <p>Rmt.</p> <p>Rmt.</p> <p>Rmt.</p> <p>Rmt.</p> <p>Rmt.</p> <p>Rmt.</p> <p>Rmt.</p> <p>Rmt.</p> <p>Rmt.</p> <p>Rmt.</p> <p>Rmt.</p> <p>Rmt.</p> <p>Rmt.</p>	<p>10.00</p> <p>15.00</p> <p>19.00</p> <p>25.00</p> <p>31.00</p> <p>37.00</p> <p>40.00</p> <p>55.00</p> <p>58.00</p> <p>66.00</p> <p>88.00</p> <p>95.00</p> <p>95.00</p> <p>106.00</p> <p>136.00</p> <p>140.00</p> <p>174.00</p>	





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	xviii) 315 mm xix) 355 mm xx) 400 mm xxi) 450 mm xxii) 500 mm xxiii) 560 mm xxiv) 630 mm	Rmt. Rmt. Rmt. Rmt. Rmt. Rmt. Rmt.	191.00 208.00 211.00 238.00 306.00 344.00 386.00	
3.	<b>Hydraulic testing of H. D. P. E./ M. D. P. E. pipe line</b> to specified pressure including cost of all materials and labour and water for testing for specified length including cutting, placing end cap making arrangement for filling safe water using reciprocating type pumps which should be able to provide specified test pressure gauges and other necessary equipments, labour, operation charges, etc. required for testing. The rate under this item shall also include cost of retesting, if necessary and reinstating to original position..			
	i) 20 mm dia	Km.	1025.00	
	ii) 25 mm dia	Km.	2050.00	
	iii) 32 mm dia	Km.	2050.00	
	iv) 40 mm dia	Km.	3075.00	
	v) 50 mm dia	Km.	3075.00	
	vi) 63 mm dia	Km.	4100.00	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	vii) 75 mm dia	Km.	4100.00	
	viii) 90 mm dia	Km.	6150.00	
	ix) 110 mm dia	Km.	6150.00	
	x) 125 mm dia	Km.	7175.00	
	xi) 140 mm dia	Km.	10250.00	
	xii) 160 mm dia	Km.	10250.00	
	xiii) 180 mm dia	Km.	10250.00	
	xiv) 200 mm dia	Km.	11275.00	
	xv) 225 mm dia	Km.	15375.00	
	xvi) 250 mm dia	Km.	15375.00	
	xvii) 280 mm dia	Km.	19475.00	
	xviii) 315 mm dia	Km.	21525.00	
	xix) 355 mm dia	Km.	23575.00	
	xx) 400 mm dia	Km.	23575.00	
	xxi) 450 mm dia	Km.	26650.00	
	xxii) 500 mm dia	Km.	33825.00	
	xxiii) 560 mm dia	Km.	37925.00	
	xxiv) 630 mm dia	Km.	43050.00	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020																																																							
1	2	3	4	5																																																							
4.	<p><b>Providing supplying in standard length (PE material)</b> HDPE Double wall corrugated pipe for non pressure underground drainage and sewerage with smooth internal &amp; corrugated external surface conforming to IS 16098:Part-2 2013 with spigot or plain end with necessary jointing material coupler including transportation and freight charges, inspection charges, loading and unloading charges, conveyance to departmental store and stacking the same in closed shade duly protecting from direct sun ray and rains excluding GST levied by Gol and GoM in all respect, etc. complete.</p> <p><b>Rate for SN 4 and SN 8</b></p> <table><tr><td></td><td></td><td></td><td><b>Class SN4</b></td><td><b>Class SN 8</b></td></tr><tr><td>i)</td><td>ID 135 mm dia</td><td>Rmt.</td><td>262.00</td><td>314.00</td></tr><tr><td>ii)</td><td>ID 150 mm dia</td><td>Rmt.</td><td>335.00</td><td>401.00</td></tr><tr><td>iii)</td><td>ID 170 mm dia</td><td>Rmt.</td><td>389.00</td><td>466.00</td></tr><tr><td>iv)</td><td>ID 200 mm dia</td><td>Rmt.</td><td>533.00</td><td>640.00</td></tr><tr><td>v)</td><td>ID 250 mm dia</td><td>Rmt.</td><td>879.00</td><td>1055.00</td></tr><tr><td>vi)</td><td>ID 300 mm dia</td><td>Rmt.</td><td>1357.00</td><td>1629.00</td></tr><tr><td>vii)</td><td>ID 400 mm dia</td><td>Rmt.</td><td>1832.00</td><td>2198.00</td></tr><tr><td>viii)</td><td>ID 500 mm dia</td><td>Rmt.</td><td>3025.00</td><td>3630.00</td></tr><tr><td>ix)</td><td>ID 600 mm dia</td><td>Rmt.</td><td>4604.00</td><td>5525.00</td></tr><tr><td>x)</td><td>ID 800 mm dia</td><td>Rmt.</td><td>7466.00</td><td>8958.00</td></tr></table>				<b>Class SN4</b>	<b>Class SN 8</b>	i)	ID 135 mm dia	Rmt.	262.00	314.00	ii)	ID 150 mm dia	Rmt.	335.00	401.00	iii)	ID 170 mm dia	Rmt.	389.00	466.00	iv)	ID 200 mm dia	Rmt.	533.00	640.00	v)	ID 250 mm dia	Rmt.	879.00	1055.00	vi)	ID 300 mm dia	Rmt.	1357.00	1629.00	vii)	ID 400 mm dia	Rmt.	1832.00	2198.00	viii)	ID 500 mm dia	Rmt.	3025.00	3630.00	ix)	ID 600 mm dia	Rmt.	4604.00	5525.00	x)	ID 800 mm dia	Rmt.	7466.00	8958.00			
			<b>Class SN4</b>	<b>Class SN 8</b>																																																							
i)	ID 135 mm dia	Rmt.	262.00	314.00																																																							
ii)	ID 150 mm dia	Rmt.	335.00	401.00																																																							
iii)	ID 170 mm dia	Rmt.	389.00	466.00																																																							
iv)	ID 200 mm dia	Rmt.	533.00	640.00																																																							
v)	ID 250 mm dia	Rmt.	879.00	1055.00																																																							
vi)	ID 300 mm dia	Rmt.	1357.00	1629.00																																																							
vii)	ID 400 mm dia	Rmt.	1832.00	2198.00																																																							
viii)	ID 500 mm dia	Rmt.	3025.00	3630.00																																																							
ix)	ID 600 mm dia	Rmt.	4604.00	5525.00																																																							
x)	ID 800 mm dia	Rmt.	7466.00	8958.00																																																							





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
5.	<p><b>Lowering, Laying and Jointing</b> (PE material) HDPE double wall corrugated pipe for non pressure underground by heating to the ends of pipes with the help of teflon coated electric heater to the required temperature and then pressing the ends together against each other, to form a monolithic &amp; leak proof joint by thermosetting process. The pressing may be required to be done with Jacks/ Hydraulic Jacks/Butt fusion machine etc. complete with all materials labours as directed by Engineer - in - charge. including</p> <p><b>Rate for SN 4 and SN 8</b></p> <p>i) ID 135 mm dia</p> <p>ii) ID 150 mm dia</p> <p>iii) ID 170 mm dia</p> <p>iv) ID 200 mm dia</p> <p>v) ID 250 mm dia</p> <p>vi) ID 300 mm dia</p> <p>vii) ID 400 mm dia</p> <p>viii) ID 500 mm dia</p> <p>ix) ID 600 mm dia</p> <p>x) ID 800 mm dia</p>	<p>Rmt.</p> <p>Rmt.</p> <p>Rmt.</p> <p>Rmt.</p> <p>Rmt.</p> <p>Rmt.</p> <p>Rmt.</p> <p>Rmt.</p> <p>Rmt.</p> <p>Rmt.</p>	<p>31.00</p> <p>33.00</p> <p>36.00</p> <p>39.00</p> <p>48.00</p> <p>59.00</p> <p>72.00</p> <p>85.00</p> <p>98.00</p> <p>114.00</p>	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
6.	<p><b>Hydraulic testing of HDPE double wall corrugated pipe for non pressure underground line to specified pressure including cost of all materials and labour and water for testing for specified length including cutting, placing end cap making arrangement for filling safe water using reciprocating type pumps which should be able to provide specified test pressure gauges and other necessary equipments, labour, operation charges, etc. required for testing. The rate under this item shall also include cost of retesting, if necessary and reinstating to original position</b></p> <p><b>Rate for SN 4 and SN 8</b></p> <p>i) ID 135 mm dia</p> <p>ii) ID 150 mm dia</p> <p>iii) ID 170 mm dia</p> <p>iv) ID 200 mm dia</p> <p>v) ID 250 mm dia</p> <p>vi) ID 300 mm dia</p> <p>vii) ID 400 mm dia</p> <p>viii) ID 500 mm dia</p> <p>ix) ID 600 mm dia</p> <p>x) ID 800 mm dia</p> <p><b>Only 85% rates of providing item shall be payable till satisfactory hydraulic testing is given.</b></p>			
		Km.	3075.00	
		Km.	3075.00	
		Km.	4100.00	
		Km.	4100.00	
		Km.	5125.00	
		Km.	6150.00	
		Km.	7175.00	
		Km.	8200.00	
		Km.	10250.00	
		Km.	11275.00	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
1.	<p><b>X. M. D. P. E. PIPES</b></p> <p>Providing and Supplying Blue MDPE pipes conforming to ISO 4427:1996 manufactured from virgin resin PE 80 Food grade compounded Raw Material having Blue Colour only with quality assurance certificate from quality agencies like WRC / CIPET (India) / DVGM / KIWA / SPGN etc. for usage in Drinking Water system. The cost shall include testing of all materials, Inspection charges, transportation up to store, transit insurance, loading, as specified and directed, unloading, stacking excluding GST levied by GOI &amp; GOM in all respect, etc. complete as specified and directed.</p> <p><b>a) PN 16 (SDR 9)</b></p> <p>i) 20 mm Rmt 23.00</p> <p>ii) 25 mm Rmt 31.00</p> <p>iii) 32 mm Rmt 51.00</p> <p>iv) 40 mm Rmt 75.00</p> <p>v) 50 mm Rmt 113.00</p> <p>vi) 63 mm Rmt 167.00</p> <p>vii) 75 mm Rmt 225.00</p> <p>viii) 90 mm Rmt 326.00</p> <p>ix) 110 mm Rmt 483.00</p> <p>x) 125 mm Rmt 624.00</p> <p>xi) 140 mm Rmt 784.00</p> <p>xii) 160 mm Rmt 1039.00</p> <p>xiii) 180 mm Rmt 1316.00</p> <p>xiv) 200 mm Rmt 1627.00</p> <p>xv) 225 mm Rmt 2060.00</p> <p>xvi) 250 mm Rmt 2534.00</p> <p>xvii) 280 mm Rmt 3184.00</p> <p>xviii) 315 mm Rmt 4095.00</p>			





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>b) PN 12.5 (SDR 11)</b>			
	i) 25 mm	Rmt	29.00	
	ii) 32 mm	Rmt	48.00	
	iii) 40 mm	Rmt	71.00	
	iv) 50 mm	Rmt	100.00	
	v) 63 mm	Rmt	135.00	
	vi) 75 mm	Rmt	188.00	
	vii) 90 mm	Rmt	273.00	
	viii) 110 mm	Rmt	401.00	
	ix) 125 mm	Rmt	523.00	
	x) 140 mm	Rmt	652.00	
	xi) 160 mm	Rmt	854.00	
	xii) 180 mm	Rmt	1108.00	
	xiii) 200 mm	Rmt	1357.00	
	xiv) 225 mm	Rmt	1718.00	
	xv) 250 mm	Rmt	2128.00	
	xvi) 280 mm	Rmt	2652.00	
	xvii) 315 mm	Rmt	3362.00	
	<b>c) PN 10 (SDR 13.6)</b>			
	i) 63 mm	Rmt	115.00	
	ii) 75 mm	Rmt	162.00	
	iii) 90 mm	Rmt	233.00	
	iv) 110 mm	Rmt	344.00	
	v) 125 mm	Rmt	443.00	
	vi) 140 mm	Rmt	556.00	
	vii) 160 mm	Rmt	726.00	
	viii) 180 mm	Rmt	919.00	
	ix) 200 mm	Rmt	1133.00	
	x) 225 mm	Rmt	1436.00	
	xi) 250 mm	Rmt	1767.00	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	xii) 280 mm	Rmt	2215.00	
	xiii) 315 mm	Rmt	2798.00	
	<b>d) PN 8 (SDR 17)</b>			
	i) 63 mm.	Rmt	92.00	
	ii) 75 mm	Rmt	131.00	
	iii) 90 mm	Rmt	189.00	
	iv) 110 mm	Rmt	280.00	
	v) 125 mm	Rmt	358.00	
	vi) 140 mm	Rmt	450.00	
	vii) 160 mm	Rmt	588.00	
	viii) 180 mm	Rmt	747.00	
	ix) 200 mm	Rmt	919.00	
	x) 225 mm	Rmt	1167.00	
	xi) 250 mm	Rmt	1463.00	
	xii) 280 mm	Rmt	1832.00	
	xiii) 315 mm	Rmt	2321.00	
	<b>e) PN 6 (SDR 21)</b>			
	i) 63 mm.	Rmt	71.00	
	ii) 75 mm.	Rmt	104.00	
	iii) 90 mm	Rmt	146.00	
	iv) 110 mm	Rmt	221.00	
	v) 125 mm	Rmt	279.00	
	vi) 140 mm	Rmt	353.00	
	vii) 160 mm	Rmt	461.00	
	viii) 180 mm	Rmt	576.00	
	ix) 200 mm	Rmt	717.00	
	x) 225 mm	Rmt	907.00	
	xi) 250 mm	Rmt	1110.00	
	xii) 280 mm	Rmt	1403.00	
	xiii) 315 mm	Rmt	1764.00	

**SECTION - I : M. D. P. E. PIPES**

210



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	
2.	Providing & Supply of Electro Fusion Fittings in accordance with BS EN12201: Part-3 suitable for drinking water with in black/ blue colour manufactured from compounded PE80/ PE100 virgin polymer and compatible with PE80/PE100 pipes, in pressure rating SDR11 with min PN12.5 rated for water application and shall be inclusive of all cost such as testing, inspection charges, transportation up to store, transit insurance, loading, unloading, stacking excluding GST levied by GOI & GOM in all respect, etc. complete.			
	Couplers 20	No.	84.00	
	Couplers 25	No.	84.00	
	Couplers 32	No.	84.00	
	Couplers 40	No.	145.00	
	Couplers 50	No.	181.00	
	Couplers 63	No.	215.00	
	Couplers 75	No.	364.00	
	Couplers 90	No.	399.00	
	Couplers 110	No.	555.00	
	Couplers 125	No.	565.00	
	Couplers 140	No.	1209.00	
	Couplers 160	No.	1313.00	
	Couplers 180	No.	1885.00	
	Couplers 200	No.	2117.00	
	Couplers 225	No.	2668.00	
	Couplers 250	No.	4159.00	
	Couplers 280	No.	4684.00	
	Couplers 315	No.	5116.00	





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>Equal or Reducing Tee</b>			
	Equal Tee 20	No.	176.00	
	Equal Tee 25	No.	176.00	
	Equal Tee 32	No.	176.00	
	Equal Tee 40	No.	388.00	
	Equal Tee 50	No.	396.00	
	Equal Tee 63	No.	648.00	
	Equal Tee 75	No.	950.00	
	Equal Tee 90	No.	1355.00	
	Equal Tee 110	No.	1882.00	
	Equal Tee 125	No.	2596.00	
	Equal Tee 160	No.	4500.00	
	Equal Tee 180	No.	5652.00	
	Equal Tee 200	No.	9060.00	
	Equal Tee 225	No.	10217.00	
	Equal Tee 250	No.	14968.00	
	Elbow 90 Deg. 20	No.	93.00	
	Elbow 90 Deg. 25	No.	93.00	
	Elbow 90 Deg. 32	No.	94.00	
	Elbow 90 Deg. 40	No.	128.00	
	Elbow 90 Deg. 50	No.	152.00	
	Elbow 90 Deg. 63	No.	211.00	
	Elbow 90 Deg. 75	No.	330.00	
	Elbow 90 Deg. 90	No.	389.00	
	Elbow 90 Deg. 110	No.	536.00	
	Elbow 90 Deg. 125	No.	683.00	
	Elbow 90 Deg. 160	No.	1494.00	
	Elbow 90 Deg. 180	No.	1732.00	
	Elbow 90 Deg. 200	No.	2241.00	
	Elbow 90 Deg. 225	No.	4885.00	
	Elbow 90 Deg. 250	No.	9153.00	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	Elbow 45 Deg. 32	No.	100.00	
	Elbow 45 Deg. 40	No.	121.00	
	Elbow 45 Deg. 50	No.	144.00	
	Elbow 45 Deg. 63	No.	201.00	
	Elbow 45 Deg. 75	No.	313.00	
	Elbow 45 Deg. 90	No.	370.00	
	Elbow 45 Deg. 110	No.	536.00	
	Elbow 45 Deg. 125	No.	683.00	
	Elbow 45 Deg. 160	No.	1258.00	
	Elbow 45 Deg. 180	No.	1648.00	
	Elbow 45 Deg. 200	No.	1732.00	
	Elbow 45 Deg. 225	No.	2241.00	
	Elbow 45 Deg. 250	No.	4885.00	
	Reducer 25 x 20	No.	126.00	
	Reducer 32 x 20	No.	132.00	
	Reducer 32 x 25	No.	138.00	
	Reducer 40 x 32	No.	150.00	
	Reducer 50 x 32	No.	150.00	
	Reducer 50 x 40	No.	150.00	
	Reducer 63 x 32	No.	181.00	
	Reducer 63 x 40	No.	181.00	
	Reducer 63 x 50	No.	181.00	
	Reducer 90 x 63	No.	449.00	
	Reducer 110 x 75	No.	583.00	
	Reducer 110 x 90	No.	583.00	
	Reducer 125 x 90	No.	647.00	
	Reducer 160 x 110	No.	1145.00	
	Reducer 180 x 125	No.	1426.00	
	Reducer 200 x 160	No.	1690.00	
	Reducer 225 x 160	No.	2472.00	
	Reducer 250 x 160	No.	3414.00	
	Reducer 250 x 200	No.	3734.00	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	End Cap 20	No.	33.00	
	End Cap 25	No.	33.00	
	End Cap 32	No.	46.00	
	End Cap 40	No.	50.00	
	End Cap 50	No.	53.00	
	End Cap 63	No.	70.00	
	End Cap 75	No.	258.00	
	End Cap 90	No.	293.00	
	End Cap 110	No.	412.00	
	End Cap 125	No.	522.00	
	End Cap 140	No.	854.00	
	End Cap 160	No.	925.00	
	End Cap 180	No.	1014.00	
	End Cap 200	No.	1719.00	
	End Cap 225	No.	2953.00	
	End Cap 250	No.	3806.00	
	End Cap 315	No.	6296.00	
	Ferrule tapping tee 63 x 1/2"	No.	633.00	
	Ferrule tapping tee 63 x 3/4"	No.	633.00	
	Ferrule tapping tee 63 x 1"	No.	633.00	
	Ferrule tapping tee 75 x 1/2"	No.	633.00	
	Ferrule tapping tee 75 x 3/4"	No.	633.00	
	Ferrule tapping tee 75 x 1"	No.	633.00	
	Ferrule tapping tee 90 x 1/2"	No.	633.00	
	Ferrule tapping tee 90 x 3/4"	No.	624.00	
	Ferrule tapping tee 90 x 1"	No.	624.00	
	Ferrule tapping tee 90 x 1 1/4"	No.	822.00	
	Ferrule tapping tee 90 x 1 1/2"	No.	822.00	
	Ferrule tapping tee 90 x 2"	No.	822.00	





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	Ferrule tapping tee 110 x 1/2"	No.	633.00	
	Ferrule tapping tee 110 x 3/4"	No.	633.00	
	Ferrule tapping tee 110 x 1"	No.	633.00	
	Ferrule tapping tee 110 x 1 1/4"	No.	822.00	
	Ferrule tapping tee 100 x 1 1/2"	No.	822.00	
	Ferrule tapping tee 110 x 2"	No.	822.00	
	Ferrule tapping tee 160 x 1/2"	No.	633.00	
	Ferrule tapping tee 160 x 3/4"	No.	633.00	
	Ferrule tapping tee 160 x 1"	No.	633.00	
	Ferrule tapping tee 160 x 1 1/4"	No.	895.00	
	Ferrule tapping tee 160 x 1 1/2"	No.	895.00	
	Ferrule tapping tee 160 x 2"	No.	895.00	
	Ferrule tapping tee 200 x 1/2"	No.	893.00	
	Ferrule tapping tee 200 x 3/4"	No.	893.00	
	Ferrule tapping tee 200 x 1"	No.	893.00	
	Ferrule tapping tee 200 x 1 1/4"	No.	1288.00	
	Ferrule tapping tee 200 x 1 1/2"	No.	1288.00	
	Ferrule tapping tee 200 x 2"	No.	1288.00	
	Ferrule tapping tee 250 x 1/2"	No.	893.00	
	Ferrule tapping tee 250 x 3/4"	No.	893.00	
	Ferrule tapping tee 250 x 1"	No.	893.00	
	Ferrule tapping tee 250 x 1 1/4"	No.	1288.00	
	Ferrule tapping tee 250 x 1 1/2"	No.	1288.00	
	Ferrule tapping tee 250 x 2"	No.	1288.00	
	Ferrule tapping tee 315 x 1/2"	No.	1063.00	
	Ferrule tapping tee 315 x 3/4"	No.	1063.00	
	Ferrule tapping tee 315 x 1"	No.	1063.00	
	Ferrule tapping tee 315 x 1 1/4"	No.	1444.00	
	Ferrule tapping tee 315 x 1 1/2"	No.	1444.00	
	Ferrule tapping tee 315 x 2"	No.	1444.00	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
3.	<b>Providing &amp; Supply of Compression fittings, PN16 rated in conformation to ISO:14236-2000 and shall be tested as per ISO:3459, ISO:3501 &amp; ISO:3503, suitable for drinking water &amp; approved by WRAS, UK/ KIWA etc, in food grade polypropylene and shall be inclusive of all cost such as testing, inspection charges, transportation up to store, transit insurance, loading, unloading, stacking excluding GST levied by GOI &amp; GOM in all respect, etc. complete.</b>			
	Male Adaptor 20 x 1/2"	No.	57.00	
	Male Adaptor 25 x 3/4"	No.	65.00	
	Male Adaptor 32 x 1"	No.	84.00	
	Male Adaptor 40 x 1 1/4"	No.	154.00	
	Male Adaptor 50 x 1 1/2"	No.	202.00	
	Male Adaptor 63 x 2"	No.	287.00	
	Female Adaptor 20 x 1/2"	No.	61.00	
	Female Adaptor 25 x 3/4"	No.	72.00	
	Female Adaptor 32 x 1"	No.	91.00	
	Female Adaptor 40 x 1 1/4"	No.	169.00	
	Female Adaptor 50 x 1 1/2"	No.	216.00	
	Female Adaptor 63 x 2"	No.	305.00	
	Coupling 20 x 20	No.	59.00	
	Coupling 25 x 25	No.	64.00	
	Coupling 32 x 32	No.	82.00	
	Coupling 40 x 40	No.	156.00	
	Coupling 50 x 50	No.	201.00	
	Coupling 63 x 63	No.	290.00	
	Reducing Coupling 25 x 20	No.	107.00	
	Reducing Coupling 32 x 20	No.	142.00	
	Reducing Coupling 32 x 25	No.	142.00	
	Reducing Coupling 40 x 25	No.	242.00	
	Reducing Coupling 40 x 32	No.	242.00	
	Reducing Coupling 50 x 32	No.	313.00	
	Reducing Coupling 50 x 40	No.	313.00	
	Reducing Coupling 63 x 50	No.	444.00	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	90 Deg. Elbow 20	No.	109.00	
	90 Deg. Elbow 25	No.	130.00	
	90 Deg. Elbow 32	No.	159.00	
	90 Deg. Elbow 40	No.	261.00	
	90 Deg. Elbow 50	No.	371.00	
	90 Deg. Elbow 63	No.	502.00	
	90 Deg. Elbow threaded male off take 20 x 1/2"	No.	65.00	
	90 Deg. Elbow threaded male off take 25 x 3/4"	No.	80.00	
	90 Deg. Elbow threaded male off take 32 x 1"	No.	103.00	
	90 Deg. Elbow threaded male off take 40 x 1/4"	No.	164.00	
	90 Deg. Elbow threaded male off take 50 x 1/2"	No.	225.00	
	90 Deg. Elbow threaded male off take 63 x 2"	No.	313.00	
	90 Deg. Elbow threaded Female off take 20 x 1/2"	No.	75.00	
	90 Deg. Elbow threaded Female off take 25 x 3/4"	No.	92.00	
	90 Deg. Elbow threaded Female off take 32 x 1"	No.	110.00	
	90 Deg. Elbow threaded Female off take 40 x 1 1/4"	No.	215.00	
	90 Deg. Elbow threaded Female off take 50 x 1 1/2"	No.	281.00	
	90 Deg. Elbow threaded Female off take 63 x 2"	No.	371.00	
	Equal Tee 20 x 20 x 20	No.	130.00	
	Equal Tee 25 x 25 x 25	No.	170.00	
	Equal Tee 32 x 32 x 32	No.	220.00	
	Equal Tee 40 x 40 x 40	No.	365.00	
	Equal Tee 50 x 50 x 50	No.	494.00	
	Equal Tee 63 x 63 x 63	No.	312.00	
	End Cap 20	No.	33.00	
	End Cap 25	No.	33.00	
	End Cap 32	No.	46.00	
	End Cap 40	No.	50.00	
	End Cap 50	No.	53.00	
	End Cap 63	No.	70.00	





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
1.	<p><b>XI. P. C. C. PIPES</b></p> <p><b>Providing and Supplying Prestressed Concrete Cylinder Pipes</b> suitable for sliding overlap weld joint or confined rubber ring joint with necessary rubber ring of following class and diameter including cost of transportation, inspection charges to store, transit insurance, unloading and stacking excluding GST levied by GOI &amp; GOM in all respect etc. complete.</p> <p><b>i) Factory test pressure</b></p> <p>a) Site test pressure + 01N/mm<sup>2</sup>, For working pressure upto 1 N/mm<sup>2</sup></p> <p>b) Site test pressure + 02N/mm<sup>2</sup>, For working pressure upto 1 N/mm<sup>2</sup></p> <p><b>ii) Site test pressure</b> - 1.5 times working pressure pertaining to the section or 1.1 times static pressure, which ever is more (such pressure is to be control within 25% of pumphead incase of pumping main)</p> <p><b>iii) Working pessure</b> - The maximum sustained internal pressure excluding surge to which each portion of pipeline my be subjected when installed.</p> <p><b>As Per 784 : 2001</b></p> <p><b>a) F T P - 4 Kg/Sq. cm</b></p> <p>i) 350 mm</p> <p>ii) 400 mm</p> <p>iii) 450 mm</p> <p>iv) 500 mm</p>	<p>Rmt</p> <p>Rmt</p> <p>Rmt</p> <p>Rmt</p>	<p>4041.00</p> <p>4442.00</p> <p>4880.00</p> <p>5400.00</p>	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	v) 600 mm	Rmt	6530.00	
	vi) 700 mm	Rmt	7544.00	
	vii) 800 mm	Rmt	8495.00	
	viii) 900 mm	Rmt	10411.00	
	ix) 1000 mm	Rmt	12023.00	
	x) 1100 mm	Rmt	13461.00	
	xi) 1200 mm	Rmt	14799.00	
	xii) 1300 mm	Rmt	17099.00	
	xiii) 1400 mm	Rmt	18568.00	
	xiv) 1500 mm	Rmt	20775.00	
	xv) 1600 mm	Rmt	22175.00	
	xvi) 1700 mm.	Rmt	23577.00	
	xvii) 1800 mm.	Rmt	24975.00	
	<b>b) T P - 5.5 Kg/Sq. cm</b>			
	i) 350 mm	Rmt	4041.00	
	ii) 400 mm	Rmt	4463.00	
	iii) 450 mm	Rmt	4906.00	
	iv) 500 mm	Rmt	5431.00	

**SECTION - I : P. C. C. PIPES**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	v) 600 mm	Rmt	6575.00	
	vi) 700 mm	Rmt	7604.00	
	vii) 800 mm	Rmt	8594.00	
	viii) 900 mm	Rmt	10507.00	
	ix) 1000 mm	Rmt	12141.00	
	x) 1100 mm	Rmt	13616.00	
	xi) 1200 mm	Rmt	15533.00	
	xii) 1300 mm	Rmt	17351.00	
	xiii) 1400 mm	Rmt	18890.00	
	xiv) 1500 mm	Rmt	21112.00	
	xv) 1600 mm	Rmt	22513.00	
	xvi) 1700 mm.	Rmt	23913.00	
	xvii) 1800 mm.	Rmt	25314.00	
	<b>c) F T P - 7 Kg/Sq. cm</b>			
	i) 350 mm	Rmt	4050.00	
	ii) 400 mm	Rmt	4481.00	





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	iii) 450 mm	Rmt	4928.00	
	iv) 500 mm	Rmt	5460.00	
	v) 600 mm	Rmt	6619.00	
	vi) 700 mm	Rmt	7675.00	
	vii) 800 mm	Rmt	8716.00	
	viii) 900 mm	Rmt	10642.00	
	ix) 1000 mm	Rmt	12325.00	
	x) 1100 mm	Rmt	13841.00	
	xi) 1200 mm	Rmt	15802.00	
	xii) 1300 mm	Rmt	17670.00	
	xiii) 1400 mm	Rmt	19419.00	
	xiv) 1500 mm	Rmt	21143.00	
	xv) 1600 mm	Rmt	22544.00	
	xvi) 1700 mm.	Rmt	23946.00	
	xvii) 1800 mm.	Rmt	25345.00	

SECTION - I : P. C. C. PIPES



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>d) F T P - 8.5 Kg/Sq. cm</b>			
	i) 350 mm	Rmt	4066.00	
	ii) 400 mm	Rmt	4506.00	
	iii) 450 mm	Rmt	4954.00	
	iv) 500 mm	Rmt	5491.00	
	v) 600 mm	Rmt	6678.00	
	vi) 700 mm	Rmt	7765.00	
	vii) 800 mm	Rmt	8840.00	
	viii) 900 mm	Rmt	10793.00	
	ix) 1000 mm	Rmt	12510.00	
	x) 1100 mm	Rmt	14065.00	
	xi) 1200 mm	Rmt	16208.00	
	xii) 1300 mm	Rmt	18135.00	
	xiii) 1400 mm	Rmt	19789.00	
	xiv) 1500 mm	Rmt	21528.00	
	xv) 1600 mm	Rmt	22928.00	
	xvi) 1700 mm.	Rmt	24329.00	
	xvii) 1800 mm.	Rmt	25729.00	

**SECTION - I : P. C. C. PIPES**

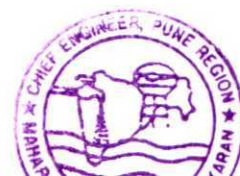


Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>e) F T P - 10 Kg/Sq. cm</b>			
	i) 350 mm	Rmt	4081.00	
	ii) 400 mm	Rmt	4524.00	
	iii) 450 mm	Rmt	4985.00	
	iv) 500 mm	Rmt	5537.00	
	v) 600 mm	Rmt	6742.00	
	vi) 700 mm	Rmt	7853.00	
	vii) 800 mm	Rmt	8973.00	
	viii) 900 mm	Rmt	10943.00	
	ix) 1000 mm	Rmt	12694.00	
	x) 1100 mm	Rmt	14418.00	
	xi) 1200 mm	Rmt	16482.00	
	xii) 1300 mm	Rmt	18459.00	
	xiii) 1400 mm	Rmt	20167.00	
	xiv) 1500 mm	Rmt	21923.00	
	xv) 1600 mm	Rmt	23326.00	
	xvi) 1700 mm.	Rmt	24726.00	
	xvii) 1800 mm.	Rmt	26126.00	
	<b>f) F T P - 11.5 Kg/Sq. cm</b>			
	i) 350 mm	Rmt	4097.00	
	ii) 400 mm	Rmt	4552.00	
	iii) 450 mm	Rmt	5022.00	
	iv) 500 mm	Rmt	5584.00	





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	v) 600 mm	Rmt	6810.00	
	vi) 700 mm	Rmt	7942.00	
	vii) 800 mm	Rmt	9223.00	
	viii) 900 mm	Rmt	10127.00	
	ix) 1000 mm	Rmt	12880.00	
	x) 1100 mm	Rmt	14648.00	
	xi) 1200 mm	Rmt	16758.00	
	xii) 1300 mm	Rmt	18786.00	
	xiii) 1400 mm	Rmt	20550.00	
	xiv) 1500 mm	Rmt	22322.00	
	xv) 1600 mm	Rmt	23722.00	
	xvi) 1700 mm.	Rmt	25123.00	
	xvii) 1800 mm.	Rmt	26524.00	
	<b>g) F T P - 13 Kg/Sq. cm</b>			
	i) 350 mm	Rmt	4129.00	
	ii) 400 mm	Rmt	4589.00	
	iii) 450 mm	Rmt	5064.00	
	iv) 500 mm	Rmt	5630.00	
	v) 600 mm	Rmt	6875.00	
	vi) 700 mm	Rmt	8032.00	
	vii) 800 mm	Rmt	9376.00	
	viii) 900 mm	Rmt	11243.00	
	ix) 1000 mm	Rmt	13150.00	
	x) 1100 mm	Rmt	14881.00	
	xi) 1200 mm	Rmt	17040.00	
	xii) 1300 mm	Rmt	19117.00	
	xiii) 1400 mm	Rmt	20927.00	
	xiv) 1500 mm	Rmt	22716.00	
	xv) 1600 mm	Rmt	24118.00	
	xvi) 1700 mm.	Rmt	25517.00	
	xvii) 1800 mm.	Rmt	26907.00	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>h) F T P - 14.5 Kg/Sq. cm</b>			
	i) 350 mm	Rmt	4165.00	
	ii) 400 mm	Rmt	4631.00	
	iii) 450 mm	Rmt	5115.00	
	iv) 500 mm	Rmt	5684.00	
	v) 600 mm	Rmt	6945.00	
	vi) 700 mm	Rmt	8561.00	
	vii) 800 mm	Rmt	9528.00	
	viii) 900 mm	Rmt	11504.00	
	ix) 1000 mm	Rmt	13343.00	
	x) 1100 mm	Rmt	15113.00	
	xi) 1200 mm	Rmt	17316.00	
	xii) 1300 mm	Rmt	19443.00	
	xiii) 1400 mm	Rmt	21872.00	
	xiv) 1500 mm	Rmt	23702.00	
	xv) 1600 mm	Rmt	25104.00	
	xvi) 1700 mm.	Rmt	26504.00	
	xvii) 1800 mm.	Rmt	27904.00	
	<b>i) F T P - 17 Kg/Sq. cm</b>			
	i) 350 mm	Rmt	4198.00	
	ii) 400 mm	Rmt	4674.00	
	iii) 450 mm	Rmt	5166.00	
	iv) 500 mm	Rmt	5746.00	
	v) 600 mm	Rmt	7035.00	
	vi) 700 mm	Rmt	8216.00	
	vii) 800 mm	Rmt	9713.00	
	viii) 900 mm	Rmt	11667.00	
	ix) 1000 mm	Rmt	13537.00	
	x) 1100 mm	Rmt	15358.00	
	xi) 1200 mm	Rmt	17599.00	
	xii) 1300 mm	Rmt	19775.00	







Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	vii) 800 mm	Rmt	10272.00	
	viii) 900 mm	Rmt	12142.00	
	ix) 1000 mm	Rmt	14088.00	
	x) 1100 mm	Rmt	15967.00	
	xi) 1200 mm	Rmt	18816.00	
	xii) 1300 mm	Rmt	21171.00	
	xiii) 1400 mm	Rmt	23377.00	
	xiv) 1500 mm	Rmt	24775.00	
	xv) 1600 mm	Rmt	26176.00	
	xvi) 1700 mm.	Rmt	27577.00	
	xvii) 1800 mm.	Rmt	28977.00	
	<b>D) F T P - 21.5 Kg/Sq. cm</b>			
	i) 350 mm	Rmt	4302.00	
	ii) 400 mm	Rmt	4802.00	
	iii) 450 mm	Rmt	5322.00	
	iv) 500 mm	Rmt	5937.00	
	v) 600 mm	Rmt	7318.00	
	vi) 700 mm	Rmt	8943.00	
	vii) 800 mm	Rmt	10435.00	
	viii) 900 mm	Rmt	12413.00	
	ix) 1000 mm	Rmt	14410.00	
	x) 1100 mm	Rmt	16771.00	
	xi) 1200 mm	Rmt	19283.00	
	xii) 1300 mm	Rmt	21663.00	
	xiii) 1400 mm	Rmt	24660.00	
	xiv) 1500 mm	Rmt	26114.00	
	xv) 1600 mm	Rmt	27517.00	
	xvi) 1700 mm.	Rmt	28917.00	
	xvii) 1800 mm.	Rmt	30319.00	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>m) F T P - 23 Kg/Sq. cm</b>			
	i) 350 mm	Rmt	4334.00	
	ii) 400 mm	Rmt	4843.00	
	iii) 450 mm	Rmt	5376.00	
	iv) 500 mm	Rmt	6000.00	
	v) 600 mm	Rmt	7472.00	
	vi) 700 mm	Rmt	9225.00	
	vii) 800 mm	Rmt	10755.00	
	viii) 900 mm	Rmt	12681.00	
	ix) 1000 mm	Rmt	14730.00	
	x) 1100 mm	Rmt	17215.00	
	xi) 1200 mm	Rmt	19759.00	
	xii) 1300 mm	Rmt	22277.00	
	xiii) 1400 mm	Rmt	25118.00	
	xiv) 1500 mm	Rmt	26591.00	
	xv) 1600 mm	Rmt	27993.00	
	xvi) 1700 mm.	Rmt	29394.00	
	xvii) 1800 mm.	Rmt	30792.00	
	<b>n) F T P - 24.5 Kg/Sq. cm</b>			
	i) 350 mm	Rmt	4367.00	
	ii) 400 mm	Rmt	4887.00	
	iii) 450 mm	Rmt	5429.00	
	iv) 500 mm	Rmt	6065.00	

**SECTION - I : P. C. C. PIPES**

228



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	v) 600 mm	Rmt	7772.00	
	vi) 700 mm	Rmt	9352.00	
	vii) 800 mm	Rmt	10767.00	
	viii) 900 mm	Rmt	12896.00	
	ix) 1000 mm	Rmt	15421.00	
	x) 1100 mm	Rmt	17661.00	
	xi) 1200 mm	Rmt	20238.00	
	xii) 1300 mm	Rmt	24044.00	
	xiii) 1400 mm	Rmt	25597.00	
	xiv) 1500 mm	Rmt	27089.00	
	xv) 1600 mm	Rmt	28490.00	
	xvi) 1700 mm.	Rmt	29889.00	
	xvii) 1800 mm.	Rmt	31291.00	
	<b>Note :</b> 1) For PCCP pipes lowering, laying, and pouring of cement mortar in the field on joints (after laying and welding), rates as per PSC pipes lowering, laying and jointing shall be adopted. 2) For field welding rates applicable for similar welding in MS pipes given in that section shall be adopted. 3) Whenever manufacturer is separate and contractor for lowering, laying, jointing and testing is separate the principal contractor shall enter into an agreement with PCCP pipe manufacturer for satisfactory manufacturing transporting, lowering, laying, jointing and testing of pipes. <b>This foot notes shall appear in the tender conditions.</b> 4) Only 85% providing rates shall be payable til satisfactory Hydraulic testing is given.			





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>XII. PIPES APPURTENANCES</b>			
1.	<p><b>Providing and supplying ISI mark CI D/F reflux valves (non-return valves ) of following dia including railway freight, inspection charges, unloading from railway wagon, loading into truck, transportation upto departmental stores, unloading, stacking excluding GST levied by GOI &amp; GOM in all respect etc. complete.</b></p> <p>Reflux valves as per I.S.5312 Part I (1984)</p> <p><b>a) Without by pass arrangement - PN -1</b></p> <p>i) 50 mm.</p> <p>ii) 65 mm.</p> <p>iii) 80 mm.</p> <p>iv) 100 mm.</p> <p>v) 125 mm.</p> <p>vi) 150 mm.</p> <p>vii) 200 mm.</p> <p>viii) 250 mm.</p> <p>ix) 300 mm.</p> <p>x) 350 mm.</p> <p>xi) 400 mm.</p> <p>xii) 450 mm.</p> <p>xiii) 500 mm.</p> <p>xiv) 600 mm.</p> <p>xv) 700 mm.</p>	<p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p>	<p>2820.00</p> <p>3301.00</p> <p>3476.00</p> <p>4854.00</p> <p>6930.00</p> <p>8391.00</p> <p>15082.00</p> <p>25738.00</p> <p>35267.00</p> <p>54857.00</p> <p>65252.00</p> <p>93828.00</p> <p>139026.00</p> <p>170246.00</p> <p>399341.00</p>	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>b) With by pass arrangement - PN -1</b>			
	i) 80 mm.	No.	4014.00	
	ii) 100 mm.	No.	5718.00	
	iii) 125 mm.	No.	7786.00	
	iv) 150 mm.	No.	9246.00	
	v) 200 mm.	No.	17239.00	
	vi) 250 mm.	No.	28178.00	
	vii) 300 mm.	No.	37824.00	
	viii) 350 mm.	No.	62013.00	
	ix) 400 mm.	No.	75041.00	
	x) 450 mm.	No.	97362.00	
	xi) 500 mm.	No.	158011.00	
	xii) 600 mm.	No.	195783.00	
	xiii) 700 mm.	No.	604532.00	
	xiv) 750 mm.	No.	661716.00	
	xv) 800 mm.	No.	718902.00	
	xvi) 900 mm.	No.	784257.00	
	xvii) 1000 mm.	No.	914967.00	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>c) Without by pass arrangement - PN -1.6</b>			
	i) 50 mm.	No.	2750.00	
	ii) 65 mm	No.	2971.00	
	iii) 80 mm.	No.	4874.00	
	iv) 100 mm.	No.	6243.00	
	v) 125 mm.	No.	8697.00	
	vi) 150 mm	No.	11823.00	
	vii) 200 mm.	No.	20700.00	
	viii) 250 mm.	No.	33231.00	
	ix) 300 mm.	No.	44927.00	
	x) 350 mm.	No.	68572.00	
	xi) 400 mm.	No.	81565.00	
	xii) 450 mm.	No.	109044.00	
	xiii) 500 mm.	No.	173782.00	
	xiv) 600 mm.	No.	212807.00	
	xv) 700 mm.	No.	314540.00	
	xvi) 750 mm.	No.	361079.00	
	xvii) 800 mm.	No.	410829.00	
	xviii) 900 mm.	No.	519954.00	
	xix) 1000 mm.	No.	641919.00	
	xx) 1100 mm	No.	776720.00	
	xxi) 1200 mm	No.	924703.00	

**SECTION - I : PIPES APPURTENANCES**

232





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>d) With by pass arrangement - PN -1.6</b>			
	i) 50 mm.	No.	2823.00	
	ii) 65 mm	No.	3177.00	
	iii) 80 mm.	No.	4675.00	
	iv) 100 mm.	No.	6045.00	
	v) 125 mm.	No.	8448.00	
	vi) 150 mm	No.	10254.00	
	vii) 200 mm.	No.	20711.00	
	viii) 250 mm.	No.	31296.00	
	ix) 300 mm.	No.	47284.00	
	x) 350 mm.	No.	73061.00	
	xi) 400 mm.	No.	93801.00	
	xii) 450 mm.	No.	111966.00	
	xiii) 500 mm.	No.	181743.00	
	xiv) 600 mm.	No.	244728.00	
	xv) 700 mm.	No.	320373.00	
	xvi) 750 mm.	No.	367775.00	
	xvii) 800 mm.	No.	418447.00	
	xviii) 900 mm.	No.	529597.00	
	xix) 1000 mm.	No.	653822.00	
	xx) 1100 mm	No.	791125.00	
	xxi) 1200 mm	No.	941504.00	





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>b) Sluice valves - PN -1.0 (With by pass arrangement)</b>			
	i) 50 mm.	No.	3743.00	
	ii) 65 mm.	No.	4228.00	
	iii) 80 mm.	No.	4360.00	
	iv) 100 mm.	No.	5807.00	
	v) 125 mm.	No.	7263.00	
	vi) 150 mm.	No.	9172.00	
	vii) 200 mm.	No.	15815.00	
	viii) 250 mm.	No.	24435.00	
	ix) 300 mm.	No.	31014.00	
	x) 350 mm.	No.	47277.00	
	xi) 400 mm.	No.	60102.00	
	xii) 450 mm.	No.	74101.00	
	xiii) 500 mm.	No.	93130.00	
	xiv) 600 mm.	No.	137974.00	
	xv) 700 mm.	No.	260397.00	
	xvi) 750 mm.	No.	290392.00	
	xvii) 800 mm.	No.	354233.00	
	xviii) 900 mm.	No.	464492.00	
	xix) 1000 mm.	No.	704599.00	
	xx) 1100 mm.	No.	890611.00	
	xxi) 1200 mm.	No.	1052945.00	





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>c) Sluice valve - PN - 1.6</b>			
	<b>(Without by pass arrangement)</b>			
	i) 50 mm.	No.	4470.00	
	ii) 65 mm.	No.	5273.00	
	iii) 80 mm.	No.	5742.00	
	iv) 100 mm.	No.	7651.00	
	v) 125 mm.	No.	9559.00	
	vi) 150 mm.	No.	10138.00	
	vii) 200 mm.	No.	19737.00	
	viii) 250 mm.	No.	30517.00	
	ix) 300 mm.	No.	38754.00	
	x) 350 mm.	No.	59009.00	
	xi) 400 mm.	No.	74912.00	
	xii) 450 mm.	No.	92572.00	
	xiii) 500 mm.	No.	116176.00	
	xiv) 600 mm.	No.	172171.00	
	xv) 700 mm.	No.	260783.00	
	xvi) 750 mm.	No.	290822.00	
	xvii) 800 mm.	No.	354759.00	
	xviii) 900 mm.	No.	465181.00	
	xix) 1000 mm.	No.	717574.00	
	xx) 1100 mm.	No.	891934.00	
	xxi) 1200 mm.	No.	1054544.00	

**SECTION - I : PIPES APPURTENANCES**

425 236



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>d) Sluice valve - PN - 1.6</b>			
	<b>(With by pass arrangement)</b>			
	i) 50 mm.	No.	4947.00	
	ii) 65 mm.	No.	5283.00	
	iii) 80 mm.	No.	5752.00	
	iv) 100 mm.	No.	7665.00	
	v) 125 mm.	No.	9573.00	
	vi) 150 mm.	No.	11464.00	
	vii) 200 mm.	No.	19765.00	
	viii) 250 mm.	No.	30546.00	
	ix) 300 mm.	No.	38781.00	
	x) 350 mm.	No.	59096.00	
	xi) 400 mm.	No.	75024.00	
	xii) 450 mm.	No.	92709.00	
	xiii) 500 mm.	No.	116348.00	
	xiv) 600 mm.	No.	172427.00	
	xv) 700 mm.	No.	261105.00	
	xvi) 750 mm.	No.	291181.00	
	xvii) 800 mm.	No.	355198.00	
	xviii) 900 mm.	No.	465756.00	
	xix) 1000 mm.	No.	718459.00	
	xx) 1100 mm.	No.	893034.00	
	xxi) 1200 mm.	No.	1055847.00	







Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>b) Butterfly valve - PN - 1.6 (With by pass arrangement)</b>			
	i) 80 mm.	No.	5493.00	
	ii) 100 mm.	No.	7192.00	
	iii) 125 mm.	No.	7941.00	
	iv) 150 mm.	No.	10727.00	
	v) 200 mm.	No.	14299.00	
	vii) 250 mm.	No.	17870.00	
	viii) 300 mm.	No.	28275.00	
	viii) 350 mm.	No.	50429.00	
	ix) 400 mm.	No.	61777.00	
	x) 450 mm.	No.	71373.00	
	xi) 500 mm.	No.	78368.00	
	xii) 600 mm	No.	92385.00	
	xiii) 700 mm	No.	138524.00	
	xiv) 750 mm	No.	164052.00	
	xv) 800 mm	No.	174724.00	
	xvi) 900 mm	No.	224316.00	
	xvii) 1000 mm	No.	289184.00	
	xviii) 1100 mm	No.	586552.00	
	xix) 1200 mm	No.	619847.00	
	xx) 1400 mm	No.	894335.00	
	xxi) 1500 mm	No.	1103741.00	

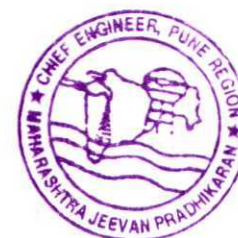
**SECTION - I : PIPES APPURTENANCES**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5

4.	<b>Lowering, laying and jointing in position following C.I.D/F Reflex valves, Butterfly valves and Sluice valves</b> including cost of all labour jointing material, including nut bolts and giving satisfactory hydraulic testing etc. complete. (Rate for all class of valves.)			
i)	50 mm.	No.	688.00	
ii)	65 mm.	No.	1034.00	
iii)	80 mm.	No.	1436.00	
iv)	100 mm.	No.	1877.00	
v)	125 mm.	No.	2337.00	
vi)	150 mm.	No.	2950.00	
vii)	200 mm.	No.	3069.00	
viii)	250 mm.	No.	3999.00	
ix)	300 mm.	No.	4148.00	
x)	350 mm.	No.	5112.00	
xi)	400 mm.	No.	6167.00	
xii)	450 mm.	No.	7338.00	
xiii)	500 mm.	No.	7598.00	
xiv)	600 mm.	No.	8065.00	
xv)	700 mm.	No.	8695.00	
xvi)	750 mm.	No.	9576.00	
xvii)	800 mm.	No.	11411.00	
xviii)	900 mm.	No.	12108.00	
xix)	1000 mm.	No.	14274.00	
xx)	1100 mm.	No.	16482.00	
xxi)	1200 mm.	No.	18112.00	

## SECTION - I : PIPES APPURTENANCES



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5

b.	<b>Giving satisfactory hydraulic testing of following C. I. D / F Reflex valves, Butterfly valves and Sluice valves.</b>			
	i) 50 mm.	No.	77.00	
	ii) 65 mm.	No.	115.00	
	iii) 80 mm.	No.	160.00	
	iv) 100 mm.	No.	208.00	
	v) 125 mm.	No.	259.00	
	vi) 150 mm.	No.	328.00	
	vii) 200 mm.	No.	341.00	
	viii) 250 mm.	No.	444.00	
	ix) 300 mm.	No.	461.00	
	x) 350 mm.	No.	568.00	
	xi) 400 mm.	No.	686.00	
	xii) 450 mm.	No.	815.00	
	xiii) 500 mm.	No.	845.00	
	xiv) 600 mm.	No.	896.00	
	xv) 700 mm.	No.	967.00	
	xvi) 750 mm.	No.	1064.00	
	xvii) 800 mm.	No.	1268.00	
	xviii) 900 mm.	No.	1346.00	
	xix) 1000 mm.	No.	1586.00	
	xx) 1100 mm.	No.	1832.00	
	xxi) 1200 mm. to 1500 mm.	No.	2012.00	

**SECTION - I : PIPES APPURTENANCES**





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
5.	<p><b>Providing and supplying Air Valves</b> as per IS-14845-2000 and MJP's standard specifications of approved make and quality of following diameters including railway freight, inspection charges, unloading from railway wagons, loading into truck, transportation upto departmental stores, unloading and stacking excluding GST levied by GOI &amp; GOM in all respect etc. complete.</p> <p><b>a) Air Valve Single Ball Flanged / Screwed Type - PN -1</b></p> <p>i) 12/15 mm. No. 538.00</p> <p>ii) 20 mm. No. 649.00</p> <p>iii) 25 mm. No. 895.00</p> <p>iv) 32 mm. No. 978.00</p> <p>v) 40 mm. No. 1076.00</p> <p>vi) 50 mm. No. 1182.00</p> <p><b>b) Air Valve Single Ball Flanged / Screwed Type - PN -1.6</b></p> <p>i) 12/15 mm. No. 630.00</p> <p>ii) 20 mm. No. 895.00</p> <p>iii) 25 mm. No. 1076.00</p> <p>iv) 32 mm. No. 1160.00</p> <p>v) 40 mm. No. 1243.00</p> <p>vi) 50 mm. No. 1622.00</p>			



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
6.	<p><b>Providing and supplying Air Valves</b> as per IS-14845 and MJP's standard specifications double orifice type combined with screw down isolating valve, small orifice elastic ball resting on a gun metal orifice nipple, large orifice vulcanite ball seating on moulded seat ring, inlet face and drilled, including insurance, third party inspection charges, loading, unloading, transportation upto departmental stores, excluding GST levied by GOI &amp; GOM in all respect etc. complete.</p> <p><b>a) Air Valve Double Ball Flanged Type - PN -1</b></p> <p>i) 50 mm.</p> <p>ii) 65 mm.</p> <p>iii) 80 mm.</p> <p><b>b) Air Valve Double Ball Flanged Type - PN -1.6</b></p> <p>i) 50 mm.</p> <p>ii) 65 mm.</p> <p>iii) 80 mm.</p>	<p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p>	<p>4970.00</p> <p>5799.00</p> <p>6624.00</p> <p>6584.00</p> <p>7455.00</p> <p>9225.00</p>	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
7.	<p><b>Providing and supplying Air Valves</b> as per IS-14845-2000 and MJP's standard specifications double orifice type combined with isolating sluice valve, mounted in horizontal position and operated by wheel gearing, small orifice elastic ball resting on a gun metal orifice nipple, large orifice vulcanite ball seating on moulded seat ring, inlet face and drilled, including insurance, third party inspection charges, loading, unloading, transportation upto departmental store, excluding GST levied by GOI &amp; GOM in all respect etc. complete.</p> <p><b>a) Air Valve Double Ball Flanged Type - PN -1</b></p> <p>i) 100 mm.</p> <p>ii) 150 mm.</p> <p>iii) 200 mm.</p> <p><b>b) Air Valve Double Ball Flanged Type - PN -1.6</b></p> <p>i) 100 mm.</p> <p>ii) 150 mm.</p> <p>iii) 200 mm.</p>			
		No.	8376.00	
		No.	15265.00	
		No.	25672.00	
		No.	12806.00	
		No.	18041.00	
		No.	30341.00	





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5

8.	<p><b>Providing and supplying Kinetic Double Orifice type Air Valves confirming to IS 14845</b> as per MJP's standard specifications combined with screw down isolating valve, small orifice elastic ball resting on a gun metal orifice nipple, large orifice vulcanite ball seating on moulded seat ring, inlet face and drilled, including insurance, third party inspection charges, loading, unloading, transportation upto departmental stores, excluding GST levied by GOI &amp; GOM in all respect etc. complete.</p> <p><b>a) Kinetic Air Valve Flanged Type - PN -1</b></p> <p>i) 40 mm.</p> <p>ii) 50 mm.</p> <p>iii) 80 mm.</p> <p><b>b) Kinetic Air Valve Flanged Type - PN -1.6</b></p> <p>i) 40 mm.</p> <p>ii) 50 mm.</p> <p>iii) 80 mm.</p>	<p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p>	<p>7701.00</p> <p>8705.00</p> <p>10212.00</p> <p>9625.00</p> <p>10881.00</p> <p>12764.00</p>	
----	---	--	--	--

**SECTION - I : PIPES APPURTENANCES**

245



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
9.	<p><b>Providing and supplying Kinetic Double Orifice type Air Valves confirming to IS 14845</b> as per MJP's standard specifications having small orifice elastic ball resting on a gun metal orifice nipple, large orifice vulcanite ball seating on moulded seat ring, with built-in Kinetic features, isolating sluice valve mounted in horizontal position and operated by wheel gearing, inlet face and drilled, including insurance, third party inspection charges, loading, unloading, transportation upto departmental stores, excluding GST levied by GOI &amp; GOM in all respect etc. complete.</p> <p><b>a) Kinetic Air Valve Flanged Type - PN -1</b></p> <p>i) 100 mm.</p> <p>ii) 150 mm.</p> <p>iii) 200 mm.</p> <p><b>b) Kinetic Air Valve Flanged Type - PN -1.6</b></p> <p>i) 100 mm.</p> <p>ii) 150 mm.</p> <p>iii) 200 mm.</p>	<p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p>	<p>11132.00</p> <p>15569.00</p> <p>24273.00</p> <p>13916.00</p> <p>19460.00</p> <p>30341.00</p>	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
10.	<p><b>Lowering, laying and fixing in proper alignment and position all types of C.I. air valves</b> as directed by Engineer-in-charge including cost of conveyance from stores to site of work, cost of all material and giving satisfactory hydraulic testing, etc. complete. <b>(for all class of valves).</b></p> <p><b>a) Air Valve Single Ball (PN-1 and PN - 1.6)</b></p> <p>i) 15 mm. No. 110.00</p> <p>ii) 20 mm. No. 139.00</p> <p>iii) 25 mm. No. 180.00</p> <p>iv) 32 mm. No. 199.00</p> <p>v) 40 mm. No. 213.00</p> <p>vi) 50 mm. No. 231.00</p> <p>vii) 65 mm. No. 243.00</p> <p>viii) 80 mm. No. 254.00</p> <p>ix) 100 mm. No. 284.00</p> <p>x) 125 mm. No. 344.00</p> <p>xi) 150 mm. No. 382.00</p> <p>xii) 200 mm. No. 420.00</p> <p><b>b) Air Valve Double Ball (PN-1 and PN - 1.6)</b></p> <p>i) 15 mm. No. 120.00</p> <p>ii) 20 mm. No. 149.00</p> <p>iii) 25 mm. No. 180.00</p> <p>iv) 32 mm. No. 204.00</p> <p>v) 40 mm. No. 238.00</p> <p>vi) 50 mm. No. 275.00</p> <p>vii) 65 mm. No. 317.00</p> <p>viii) 80 mm. No. 378.00</p> <p>ix) 100 mm. No. 400.00</p> <p>x) 125 mm. No. 440.00</p> <p>xi) 150 mm. No. 602.00</p> <p>xii) 200 mm. No. 662.00</p>			





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>c) Kinetic Air Valve (PN-1 and PN - 1.6)</b>			
	i) 40 mm.	No.	273.00	
	ii) 50 mm.	No.	315.00	
	iii) 65 mm.	No.	344.00	
	iv) 80 mm.	No.	378.00	
	v) 100 mm.	No.	416.00	
	vi) 125 mm.	No.	454.00	
	vii) 150 mm.	No.	651.00	
	viii) 200 mm.	No.	709.00	
11.	<b>Providing erecting Cast Steel/ Spheroidal Graphite (S.G) Iron D/F Sluice Valves / Butterfly Valves with jointing to pipe work</b> (including all hardware and packing) water works quality, having non-rising spindle with hand wheel and without bypass arrangement, spindle of stainless steel as per requirement, inspection charges, transportation upto departmental store, unloading, stacking, excluding GST levied by GOI & GOM in all respect etc. excluding C. C. foundation / structural steel support.			
<b>A)</b>	<b>For Rating Class 150 (Working Pressure 20 kg/cm<sup>2</sup> and Test Pressure 30 kg/cm<sup>2</sup>)</b>			
	<b>a) Sluice Valves</b>			
	i) 80 mm dia.	No.	12840.00	
	ii) 100 mm dia.	No.	17119.00	
	iii) 150 mm dia.	No.	25679.00	
	iv) 200 mm dia.	No.	40048.00	
	v) 250 mm dia.	No.	57633.00	
	vi) 300 mm dia.	No.	73741.00	
	vii) 350 mm dia.	No.	98322.00	
	viii) 400 mm dia.	No.	164071.00	
	ix) 450 mm dia.	No.	223857.00	
	x) 500 mm dia.	No.	263361.00	
	xi) 600 mm dia.	No.	300669.00	

Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
12.	<b>b) Butterfly Valves. CS-150</b>			
	i) 300 mm	No.	92726.00	
	ii) 350 mm	No.	98851.00	
	iii) 400 mm	No.	111031.00	
	iv) 450 mm	No.	118281.00	
	v) 500 mm	No.	136919.00	
	vi) 600 mm	No.	154087.00	
	<b>Providing erecting Cast Steel D/F Sluice Valves / Butterfly Valves with jointing to pipe work (including all hardware and packing) water works quality having non-rising spindle with hand wheel and without bypass arrangement, spindle of stainless steel as per requirement, inspection charges, transportation upto departmental store, unloading, stacking, excluding GST levied by GOI &amp; GOM in all respect etc. excluding C. C. foundation / structural steel support.</b>			
	<b>For Rating Class 300 (Working Pressure 52 kg/cm2 and Test Pressure 78 kg/cm2)</b>			
	<b>a) Sluice Valves CS-300</b>			
	i) 80 mm	No.	13821.00	
	ii) 100 mm	No.	21821.00	
	iii) 150 mm	No.	33269.00	
	iv) 200 mm	No.	52177.00	
	v) 250 mm	No.	56324.00	
	vi) 300 mm	No.	94950.00	
	vii) 350 mm	No.	160135.00	
	viii) 400 mm	No.	233610.00	
	ix) 450 mm	No.	281268.00	
	x) 500 mm	No.	438190.00	
	xi) 600 mm	No.	662312.00	
	<b>b) Butterfly Valves CS-300</b>			
	i) 300 mm	No.	113125.00	
	ii) 350 mm	No.	120599.00	

**SECTION - I : PIPES APPURTENANCES**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	iii) 400 mm iv) 450 mm v) 500 mm vi) 600 mm	No. No. No. No.	135457.00 144303.00 167043.00 187986.00	
13.	<p>Providing erecting Cast Steel /Spheroidal Graphite (S.G.) Iron D/F Reflux Valves Single Door with jointing to pipe work (including all hardware and packing) water works quality with jointing to pipe without bypass arrangement, with gunmetal seats including inspection charges, transportation upto departmental store, unloading, stacking excluding GST levied by GOI &amp; GOM in all respect etc. completed but excluding C. C. foundation / structural steel support.</p> <p><b>For Rating Class 150 (Working Pressure 20 kg/cm<sup>2</sup> and Test Pressure 30 kg/cm<sup>2</sup>)</b>  <b>Reflux valve CS-150</b></p> i) 80 mm ii) 100 mm iii) 150 mm iv) 200 mm v) 250 mm vi) 300 mm	No. No. No. No. No. No.	8960.00 13719.00 23242.00 44191.00 76946.00 101373.00	
14.	<p>Providing erecting Cast Steel D/F Reflux Valves Single door with jointing to pipe work (including all hardware and packing) water works quality with jointing to pipe without bypass arrangement, with gunmetal seat including inspection charges, transportation upto departmental store, unloading, stacking excluding GST levied by GOI &amp; GOM in all respect etc. completed but excluding excluding C. C. foundation / structural steel support.</p> <p><b>For Rating Class 300 (Working Pressure 52 kg/cm<sup>2</sup> and Test Pressure 78 kg/cm<sup>2</sup>)</b>  <b>Reflux valve CS-300</b></p> i) 80 mm	No.	13349.00	

**SECTION - I : PIPES APPURTENANCES**

250





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	ii) 100 mm iii) 150 mm iv) 200 mm v) 250 mm vi) 300 mm	No. No. No. No. No.	18815.00 31290.00 55432.00 100357.00 122192.00	
15.	Providing, erecting Kinetic Double Orifice Cast Steel Air Valves with an isolating Sluice Valve mounted in horizontal position operated by wheel gear suitable for working pressure of Class-150 rating (20 kg/cm <sup>2</sup> )  <b>Air valve CS-150</b>			
	i) 80 mm ii) 100 mm iii) 150 mm iv) 200 mm	No. No. No. No.	25885.00 36081.00 69139.00 89371.00	
16.	Providing, erecting Kinetic Double Orifice Cast Steel Air Valves with an isolating Sluice Valve mounted in horizontal position operated by wheel gear suitable for working pressure of Class 300 rating (52 kg/cm <sup>2</sup> )  <b>KDB Air valve CS-300</b>			
	i) 80 mm ii) 100 mm iii) 150 mm iv) 200 mm	No. No. No. No.	31535.00 36048.00 84240.00 101686.00	

**SECTION - I : PIPES APPURTENANCES**

210 251



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
17.	<p>Providing and fixing in position air valve shaft including providing and fixing GI Medium Class or 6 mm thick M.S. pipe shaft 2.70 M long over branch flange of air valve tee, providing PCC block of M-150 concrete, 150 mm thick around the air valve tee including encasing of vertical shaft in PCC M-150 as shown in type design together with providing and making flanged joints wherever required and fixing of air valve tee, etc. complete as per type design and as directed by Engineer -in- charge for following diameters of pipe lines (type design attached.)</p> <p><b>a) Foundation on Murum and Harder Strata.</b></p> <p>i) upto 150mm</p> <p>ii) 200 to 400 mm</p> <p>iii) 450 to 900mm</p> <p>iv) 1000 to 1200 mm</p> <p><b>b) Foundation in B. C. Soil or Any Other Soil.</b></p> <p>i) upto 150 mm</p> <p>ii) 200 to 400 mm</p> <p>iii) 450 to 900 mm</p> <p>iv) 1000 to 1200 mm</p>			
18.	<p>Providing and supplying C.I. D/F angle type spring loaded pressure relief valves of approved make and quality including inspection charges, transportation to departmental stores excluding GST levied by GOI &amp; GOM in all respect etc. complete.</p> <p><b>a) Type PN-1</b></p> <p>i) 25 mm</p> <p>ii) 40 mm</p> <p>iii) 50 mm</p> <p>iv) 80 mm</p> <p>v) 100 mm</p> <p>vi) 125 mm</p> <p>vii) 150 mm</p> <p>viii) 200 mm</p>			

**SECTION - I : PIPES APPURTENANCES**

252



## SECTION - I : PIPES APPURTENANCES



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
20.	Cutting and champhering of pipes of following diameters including cost of all materials and labour involved, etc. complete as directed by Engineer-in-charge (for all class of pipes).			
	<b>a) C.I.Pipes</b>			
	i) 80 mm	No.	37.00	
	ii) 100 mm	No.	43.00	
	iii) 150 mm	No.	66.00	
	iv) 200 mm	No.	84.00	
	v) 250 mm	No.	120.00	
	vi) 300 mm	No.	142.00	
	vii) 350 mm	No.	146.00	
	viii) 400 mm	No.	185.00	
	ix) 450 mm	No.	215.00	
	x) 500 mm	No.	257.00	
	xi) 600 mm	No.	314.00	
	xii) 700 mm	No.	370.00	
	xiii) 750 mm	No.	442.00	
	xiv) 800 mm	No.	483.00	
	xv) 900 mm	No.	531.00	
	xvi) 1000 mm	No.	577.00	
21.	Providing and supplying I.S.I. mark rubber gasket suitable for C.I. or D. I. pipe of all class for tyton joints including inspection charges, transportation upto departmental stores excluding GST levied by GOI & GOM in all respect etc. complete.			
	<b>a) S.B.R. Gaskets for C. I. / D.I. Pipes</b>			
	i) 80 mm	No.	37.00	
	ii) 100 mm	No.	41.00	
	III) 150 mm	No.	57.00	

**SECTION - I : PIPES APPURTENANCES**

254



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	iv) 200 mm	No.	97.00	
	v) 250 mm	No.	126.00	
	vi) 300 mm	No.	177.00	
	vii) 350 mm	No.	203.00	
	viii) 400 mm	No.	282.00	
	ix) 450 mm	No.	308.00	
	x) 500 mm	No.	420.00	
	xi) 600 mm	No.	583.00	
	xii) 700 mm	No.	1037.00	
	xiii) 750 mm	No.	1078.00	
	xiv) 800 mm	No.	1117.00	
	xv) 900 mm	No.	1615.00	
	xvi) 1000 mm	No.	2075.00	
	<b>b) Sealing 'O' Rings of SBR (for CID Joints)</b>			
	i) 80 mm	Set.	42.00	
	ii) 100 mm	Set.	51.00	
	iii) 125 mm	Set.	60.00	
	iv) 150 mm	Set.	71.00	
	<b>c) Flat Flanged Gaskets moulded out of SBR (For Flanged Joints)</b>			
	i) 80 mm	No.	78.00	
	ii) 100 mm	No.	103.00	
	iii) 125 mm	No.	122.00	
	iv) 150 mm	No.	168.00	
	v) 200 mm	No.	207.00	
	vi) 250 mm	No.	290.00	
	vii) 300 mm	No.	308.00	
	viii) 350 mm	No.	373.00	
	ix) 400 mm	No.	461.00	
	x) 450 mm	No.	504.00	
	xi) 500 mm	No.	590.00	
	xii) 600 mm	No.	794.00	

**SECTION - I : PIPES APPURTENANCES**

255



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>d) Providing Rubber Gasket - EPDM Gaskets for C. I. / D.I. Pipes</b>			
	i) 80 mm.	No.	43.00	
	ii) 100 mm.	No.	45.00	
	iii) 150 mm.	No.	67.00	
	iv) 200 mm.	No.	111.00	
	v) 250 mm.	No.	152.00	
	vi) 300 mm.	No.	201.00	
	vii) 350 mm.	No.	234.00	
	viii) 400 mm.	No.	320.00	
	ix) 450 mm.	No.	358.00	
	x) 500 mm.	No.	474.00	
	xi) 600 mm.	No.	666.00	
	xii) 700 mm.	No.	1250.00	
	xiii) 750 mm.	No.	1310.00	
	xiv) 800 mm.	No.	1598.00	
	xv) 900 mm.	No.	2063.00	
	xvi) 1000 mm	No.	2397.00	
22.	Providing and fixing in position and jointing high performance C. I. Air valves for water combination type ( Kinetic air valve along with automatic air valves ) double ball, double orifice with stainless steel ball, tamper proof air vents rolling seal mechanism for air release and anti vacuum application designed for 16 Kg. Per sq. cm. working pressure and tested for 20 for kg per sq. cm. pressure. ( Rate to include cost of gaskets, bolt, nut and any other material required for jointing and its transportation etc. excluding GST levied by GOI & GOM in all respect.			
	i) C. I. ARV FLFF PN 1.6 50mm Dia.	No.	8109.00	
	ii) 2. C. I. ARV FLFF PN 1.6 80mm Dia.	No.	11252.00	
	iii) 3. C. I. ARV FLFF PN 1.6 100mm Dia.	No.	18092.00	
	iv) 4. C. I. ARV FLFF PN 1.6 150mm Dia.	No.	30284.00	
	v) 5. C. I. ARV FLFF PN 1.6 200mm Dia.	No.	36683.00	

**SECTION - I : PIPES APPURTENANCES**





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019		Rate (in Rs.) 2019-2020
1	2	3	4		5
23.	<p><b>Providing and supplying</b> at site of ductile iron / spheroidal graphite (S.G.) iron D/F double eccentric resilient seated <b>short body butterfly valves</b> with gear box &amp; handwheel, without bypass arrangement. Valves in accordance with BS EN 593 of PN 10/16 rated, with body &amp; disc of ductile iron confirming to EN 1563/IS 1865 Gr.500/7 or Gr.400/15, Body seat of intergral SG Iron/S.S. AISI 316, seal retaining ring of steel C45/S.S. 1.4436, Shaft of S.S. 1.4021, Periferial disc seal and "O" rings of WRAS approved EPDM rubber (suitable for drinking water), Internal fasteners of stainless steel A2. Body &amp; disc coated inside &amp; outside with electrostatically applied epoxy powder coated blue colour.</p> <p>(suitable for drinking water.) as per DIN 30677- 2 &amp; GSK guidelines with a coating thickness of min. 250 microns. Valves should be 100% tight shut-off. Face to face is per IS 13095 short body. Flange drilling as per IS 1538 raised face &amp; pressure testing at manufactures works shall be done as per IS 13095. including transportation charges excluding GST levied by GOI &amp; GOM in all respect etc. complete.</p>				
			<b>PN-10</b>	<b>PN-16</b>	
	i) 200 mm.	No.	66441.00	80250.00	
	ii) 250 mm.	No.	83212.00	103845.00	
	iii) 300 mm.	No.	106815.00	137200.00	
	iv) 350 mm.	No.	132997.00	162189.00	
	v) 400 mm.	No.	158519.00	185089.00	
	vi) 450 mm.	No.	205398.00	250887.00	
	vii) 500 mm.	No.	224065.00	300737.00	
	viii) 600 mm.	No.	326204.00	459530.00	
	ix) 700 mm.	No.	542530.00	632951.00	
	x) 800 mm.	No.	644254.00	774235.00	
	xi) 900 mm.	No.	791188.00	938123.00	
	xii) 1000 mm	No.	1118966.00	1204873.00	

**SECTION - I : PIPES APPURTENANCES**

246 257



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
24.	<p><b>Providing and supplying</b> at site of ductile iron / spherical graphite (S.G.) iron D/F <b>non-rising spindle resilient seated glandless sluice valves</b> with handwheel &amp; without bypass arrangement. Valves in accordance with BS 5163 of PN-10/ 16 rated, with body and bonnet of ductile iron confirming to IS 1865 Gr. 500/7 or Gr.400/ 15. Wedge fully encapsulated WRAS approved EPDM rubber (approved for drinking water), Wedge nut of brass, shaft of stainless steel 1.4021/1.4104, stem seals min. 3 nos. of NBR, internal fasteners of stainless steel A2. Body &amp; Bonnet coated inside &amp; outside with electrostatically applied epoxy powder coated blue colour (suitable for drinking water) as per DIN 30677-2 &amp; GSK guidelines with a coating thickness of min. 250 microns. Valves should be full bore &amp; tight shut-off. Flange drilling as per IS 1538 raised face &amp; pressure testing at manufacturer's works shall be done as per IS 14846. including transportation charges excluding GST levied by GOI &amp; GOM in all respect etc. complete. (For PN 10 &amp; 16)</p> <p>i) 50 mm dia ii) 80 mm dia iii) 100 mm dia iv) 150 mm dia v) 200 mm dia vi) 250 mm dia vii) 300 mm dia viii) 350 mm dia ix) 400 mm dia x) 450 mm dia xi) 500 mm dia xii) 600 mm dia</p>	<p>No. No. No. No. No. No. No. No. No. No. No. No.</p>	<p>9319.00 11834.00 14661.00 20450.00 32456.00 57501.00 77079.00 176411.00 212873.00 290870.00 367331.00 531450.00</p>	

**SECTION - I : PIPES APPURTENANCES**

24. 258





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
25.	<p><b>Providing and supplying</b> at site ductile iron / Spheroidal Graphite (S.G.) iron single / Double chamber <b>tamper proof air valve without isolating sluice valve.</b> Valves in accordance with BSEN 1074-4 of PN 10/16 rated, with body and bonnet of ductile iron confirming to EN 1563/IS 1865 Gr. 500/7 or Gr.400/15 floats, float guide, seat ring of stainless steel 1.4436/1.4306, seat ring gasket of WRAS approved EPDM rubber (suitable for drinking water), internal fasteners of stainless steel A2. Body &amp; Bonnet coated inside &amp; outside with electrostatically applied epoxy powder coated blue colour (suitable for drinking water) as per DIN 30677-2 &amp; GSK guidelines with a coating thickness of min. 250 microns. Flange connections as per IS 1538 raised face &amp; pressure testing at manufactures works shall be done as per IS 14845. including transportation charges excluding GST levied by GOI &amp; GOM in all respect etc. complete. (For PN 10 &amp; 16)</p>			
	i) 50 mm dia	No.	21062.00	
	ii) 80 mm dia	No.	21613.00	
	iii) 100 mm dia	No.	26586.00	
	iv) 150 mm dia	No.	36976.00	
	v) 200 mm dia	No.	38462.00	





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
1.	<b>XIII. MECHANICAL JOINTS / FITTING</b> <b>Supply of C. I. Mechanical Compression Flanged / Socket Tailpiece</b> (Popularly known as I <sup>TM</sup> Flanged / Socket Tail-piece) suitable for making flanged connection with the plain barrel of C. I. Spun Pipes ( as per - IS - 1536 /2001) and D. I. Pipes ( as per IS: 8329 / 2000).The Tailpiec to be supplied complete with sealing rubber gasket of S.B.R, C.I. Follower Glands and M.S. Nut Bolts.The whole assembly should be mechanically and hydraulically tested to the provisions as laid down in IS:1538 /1993. The rates are inclusive of cost of material, freight charges, loading, transportation and unloading at departmental store, excluding GST levied by Gol and GoM in all respect, etc. complete as directed.			
	i) 80 mm dia.			
	ii) 100 mm dia.	No.	1192.00	
	iii) 125 mm dia.	No.	1300.00	
	iv) 150 mm dia.	No.	1636.00	
	v) 200 mm dia.	No.	2340.00	
	vi) 250 mm dia.	No.	3032.00	
	vii) 300 mm dia.	No.	4574.00	
		No.	5120.00	
	viii) 350 mm dia.			
	ix) 400 mm dia.	No.	6752.00	
	x) 450 mm dia.	No.	8813.00	
	xi) 500 mm dia.	No.	10345.00	
	xii) 600 mm dia.	No.	12999.00	
	xiii) 700 mm dia.	No.	16669.00	
	xiv) 750 mm dia.	No.	22735.00	
		No.	27627.00	
2.	<b>Supply of C. I. Mechanical Compression Collar Coupling</b> suitable for C. I. Spun Pipes ( as per - IS - 1536 /2001) and complete with sealing rubber gasket of SBR,,C.I. follower Glands and M.S. nut Bolts.The whole assembly should be mechanically and hydraulically tested to the provisions as laid down in IS:1538 /1993.			
	i) 80 mm dia.			
	ii) 100 mm dia.	No.	718.00	
	iii) 125 mm dia.	No.	770.00	
	iv) 150 mm dia.	No.	1027.00	
		No.	1385.00	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	v) 200 mm dia. vi) 250 mm dia. vii) 300 mm dia. viii) 350 mm dia. ix) 400 mm dia.  x) 450 mm dia. xi) 500 mm dia. xii) 600 mm dia. xiii) 700 mm dia. xiv) 750 mm dia.	No. No. No. No. No.  No. No. No. No. No.	1581.00 2534.00 3243.00 3997.00 6221.00  6985.00 9545.00 11906.00 15556.00 18252.00	
3.	<b>Supply of C. I. Mechanical Joint Double Socket 90° (1 1/4") Bends</b> as dimensionally described in Table-14 of IS-13382/1992 complete with sealing rubber gasket of SBR (dimensionally described in IS-12820/1989) with cast iron follower gland and mild steel nut bolts coated or otherwise protected from rusting and <b>suitable for C. I. pipes.</b>			
	i) 80 mm dia. ii) 100 mm dia. iii) 125 mm dia. iv) 150 mm dia. v) 200 mm dia.  vi) 250 mm dia. vii) 300 mm dia. viii) 350 mm dia. ix) 400 mm dia. x) 450 mm dia.  xi) 500 mm dia. xii) 600 mm dia. xiii) 700 mm dia. xiv) 750 mm dia.	No. No. No. No. No.  No. No. No. No.  No. No. No. No.	2043.00 2370.00 2768.00 4352.00 5775.00  8595.00 10461.00 17321.00 23607.00 30133.00  37497.00 52995.00 83651.00 95008.00	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
4.	<b>Supply of CI Mechanical joint Double Socket 45° (1 1/8") Bends</b> as dimensionally described in Table -15 of IS - 13382/1992 complete with sealing rubber gasket of S.B.R. (dimensionally described in IS-12820/1989) with cast iron follower gland mild steel nut bolts coated or otherwise protected from rusting and suitable for C. I. pipes.			
	i) 80 mm dia.	No.	1897.00	
	ii) 100 mm dia.	No.	2112.00	
	iii) 125 mm dia.	No.	2669.00	
	iv) 150 mm dia.	No.	3665.00	
	v) 200 mm dia.	No.	4828.00	
	vi) 250 mm dia.	No.	7083.00	
	vii) 300 mm dia.	No.	8545.00	
	viii) 350 mm dia.	No.	14255.00	
	ix) 400 mm dia.	No.	17590.00	
	x) 450 mm dia.	No.	24535.00	
	xi) 500 mm dia.	No.	27335.00	
	xii) 600 mm dia.	No.	37848.00	
	xiii) 700 mm dia.	No.	53935.00	
	xiv) 750 mm dia.	No.	71329.00	
5.	<b>Supply of C. I. Mechanical Joint Double Socket 22.5° (1 1/8") Bends</b> as dimensionally described in Table -16 of IS-13382/1992 complete with sealing rubber gasket of SBR (dimensionally described in IS-12820/1989) with cast iron follower gland and mild steel nut bolts coated or otherwise protected from rusting and suitable for C. I. pipes.			
	i) 80 mm dia.	No.	1821.00	
	ii) 100 mm dia.	No.	2027.00	
	iii) 125 mm dia.	No.	2434.00	
	iv) 150 mm dia.	No.	3441.00	
	v) 200 mm dia.	No.	4315.00	





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	vi) 250 mm dia.	No.	6526.00	
	vii) 300 mm dia.	No.	7876.00	
	viii) 350 mm dia.	No.	12434.00	
	ix) 400 mm dia.	No.	15940.00	
	x) 450 mm dia.	No.	20165.00	
	xi) 500 mm dia.	No.	23501.00	
	xii) 600 mm dia.	No.	31138.00	
	xiii) 700 mm dia.	No.	46840.00	
	xiv) 750 mm dia.	No.	51581.00	
6.	<b>Supply of CI Mechanical joint Double Socket 11.25<sup>0</sup> (1/32") Bends</b> as dimensionally described in Table -17 of IS - 13382/1992 complete with sealing rubber gasket of S.B.R.( dimensionally described in IS-12820/1989) with cast iron follower gland and mild steel nut bolts coated or otherwise protected from rusting and <b>suitable for C. I. pipes.</b>			
	i) 80 mm dia.	No.	1803.00	
	ii) 100 mm dia.	No.	1980.00	
	iii) 125 mm dia.	No.	2151.00	
	iv) 150 mm dia.	No.	3364.00	
	v) 200 mm dia.	No.	4142.00	
	vi) 250 mm dia.	No.	6123.00	
	vii) 300 mm dia.	No.	6784.00	
	viii) 350 mm dia.	No.	10706.00	
	ix) 400 mm dia.	No.	14501.00	
	x) 450 mm dia.	No.	18304.00	
	xi) 500 mm dia.	No.	19952.00	
	xii) 600 mm dia.	No.	27351.00	
	xiii) 700 mm dia.	No.	36872.00	
	xiv) 750 mm dia.	No.	41135.00	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5

7	<b>Supply of CI Mechanical joint All Socket Tees</b> as dimensionally described in Table -18 of IS - 13382/1992 complete with sealing rubber gasket of S.B.R. (dimensionally described in IS-12820/1989) with cast iron follower gland and mild steel nut bolts coated or otherwise protected from rusting and <b>suitable for C. I. pipes.</b>			
	i) 80 x 80 x 80 mm. dia.	No.	2763.00	
	ii) 100 x 100 x 80 mm. dia.	No.	2970.00	
	iii) 100 x 100 x 100 mm. dia.	No.	3293.00	
	iv) 150 x 150 x 80 mm. dia.	No.	4613.00	
	v) 150 x 150 x 100 mm. dia.	No.	4678.00	
	vi) 150 x 150 x 150 mm. dia.	No.	5802.00	
	vii) 200 x 200 x 80 mm. dia.	No.	5564.00	
	viii) 200 x 200 x 100 mm. dia.	No.	5625.00	
	ix) 200 x 200 x 150 mm. dia.	No.	6700.00	
	x) 200 x 200 x 200 mm. dia.	No.	7372.00	
	xi) 250 x 250 x 80 mm. dia.	No.	7835.00	
	xii) 250 x 250 x 100 mm. dia.	No.	8008.00	
	xiii) 250 x 250 x 150 mm. dia.	No.	9557.00	
	xiv) 250 x 250 x 200 mm. dia.	No.	10098.00	
	xv) 250 x 250 x 250 mm. dia.	No.	11326.00	
	xvi) 300 x 300 x 80 mm. dia.	No.	8592.00	
	xvii) 300 x 300 x 100 mm. dia.	No.	8785.00	
	xviii) 300 x 300 x 150 mm. dia.	No.	11266.00	
	xix) 300 x 300 x 200 mm. dia.	No.	11639.00	
	xx) 300 x 300 x 250 mm. dia.	No.	12323.00	
	xxi) 300 x 300 x 300 mm. dia.	No.	13600.00	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
8.	<p><b>Supply of CI Mechanical joint Double Socket with Flanged Tees</b> dimensionally described in Table -19 of IS - 13382/1992 complete with sealing rubber gasket of S.B.R.( dimensionally described in IS-12820/1989) with cast iron follower gland and mild steel nut bolts coated or galvanised coated or otherwise protected from rusting and <b>suitable for C. I. pipes.</b></p> <p>1) 80 x 80 x 80 mm. dia.</p> <p>2) 100 x 100 x 80 mm. dia.</p> <p>3) 100 x 100 x 100 mm. dia.</p> <p>4) 150 x 150 x 80 mm. dia.</p> <p>5) 150 x 150 x 100 mm. dia.</p> <p>6) 150 x 150 x 150 mm. dia.</p> <p>7) 200 x 200 x 80 mm. dia.</p> <p>8) 200 x 200 x 100 mm. dia.</p> <p>9) 200 x 200 x 150 mm. dia.</p> <p>10) 200 x 200 x 200 mm. dia.</p> <p>11) 250 x 250 x 80 mm. dia.</p> <p>12) 250 x 250 x 100 mm. dia.</p>	<p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p>	<p>2705.00</p> <p>2969.00</p> <p>3141.00</p> <p>4480.00</p> <p>4591.00</p> <p>5468.00</p> <p>5258.00</p> <p>5609.00</p> <p>6460.00</p> <p>7406.00</p> <p>7426.00</p> <p>7815.00</p>	





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	13) 250 x 250 x 150 mm. dia.	No.	9273.00	
	14) 250 x 250 x 200 mm. dia.	No.	9703.00	
	15) 250 x 250 x 250 mm. dia.	No.	10047.00	
	16) 300 x 300 x 80 mm. dia.	No.	8718.00	
	17) 300 x 300 x 100 mm. dia.	No.	8889.00	
	18) 300 x 300 x 150 mm. dia.	No.	10263.00	
	19) 300 x 300 x 200 mm. dia.	No.	10350.00	
	20) 300 x 300 x 250 mm. dia.	No.	11422.00	
	21) 300 x 300 x 300 mm. dia.	No.	13998.00	
	22) 350 x 350 x 80 mm. dia.	No.	12194.00	
	23) 350 x 350 x 100 mm. dia.	No.	12968.00	
	24) 350 x 350 x 150 mm. dia.	No.	13953.00	
	25) 350 x 350 x 200 mm. dia.	No.	16259.00	
	26) 350 x 350 x 300 mm. dia.	No.	16657.00	
	27) 350 x 350 x 350 mm. dia.	No.	19062.00	

**SECTION-I: MECHANICAL JOINTS/FITTING**

255 266



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	28) 400 x 400 x 80 mm.dia.	No.	15940.00	
	29) 400 x 400 x 100 mm.dia.	No.	16897.00	
	30) 400 x 400 x 150 mm.dia.	No.	18813.00	
	31) 400 x 400 x 200 mm.dia.	No.	19192.00	
	32) 400 x 400 x 300 mm.dia.	No.	23129.00	
	33) 400 x 400 x 400 mm.dia.	No.	26482.00	
	34) 450 x 450 x 80 mm.dia	No.	19012.00	
	35) 450 x 450 x 100 mm.dia	No.	19972.00	
	36) 450 x 450 x 200 mm.dia.	No.	23422.00	
	37) 450 x 450 x 300 mm.dia.	No.	29555.00	
	38) 450 x 450 x 350 mm.dia.	No.	31185.00	
	39) 450 x 450 x 450 mm.dia.	No.	33874.00	
	40) 500 x 500 x 100 mm.dia.	No.	21390.00	
	41) 500 x 500 x 250 mm.dia.	No.	29250.00	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	42) 500 x 500 x 300 mm.dia.	No.	30303.00	
	43) 500 x 500 x 400 mm.dia.	No.	36537.00	
	44) 500 x 500 x 500 mm.dia.	No.	44112.00	
	45) 600 x 600 x 100 mm.dia.	No.	30569.00	
	46) 600 x 600 x 300 mm.dia.	No.	41977.00	
	47) 600 x 600 x 400 mm.dia.	No.	47823.00	
	48) 600 x 600 x 500 mm.dia.	No.	51752.00	
	49) 600 x 600 x 600 mm.dia.	No.	63542.00	
	50) 700 x 700 x 100 mm.dia.	No.	40514.00	
	51) 700 x 700 x 200 mm.dia.	No.	46936.00	
	52) 700 x 700 x 350 mm.dia.	No.	56714.00	
	53) 700 x 700 x 400 mm.dia.	No.	60931.00	
	54) 750 x 750 x 150 mm.dia.	No.	48321.00	
	55) 750 x 750 x 250 mm.dia.	No.	55416.00	
	56) 750 x 750 x 750 mm.dia.	No.	106318.00	





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
9.	<b>Supply of CI Mechanical joint Double Socket Reducers</b> as described in Table -21 of IS - 13382/1992 complete with sealing rubber gasket of SBR( dimensionally described in IS-12820/1989) with cast iron follower gland and mild steel nut bolts coated or otherwise protected from rusting and <b>suitable for C. I. pipes.</b>			
	1) 100 x 80 mm. dia.	No.	1916.00	
	2) 150 x 80 mm. dia.	No.	3015.00	
	3) 150 x 100 mm. dia.	No.	3192.00	
	4) 200 x 100 mm. dia.	No.	3674.00	
	5) 200 x 150 mm. dia.	No.	4018.00	
	6) 250 x 200 mm. dia.	No.	5355.00	
	7) 250 x 150 mm. dia.	No.	5489.00	
	8) 300 x 150 mm. dia.	No.	6752.00	
	9) 300 x 200 mm. dia.	No.	6763.00	
	10) 300 x 250 mm. dia.	No.	6878.00	
	11) 350 x 200 mm. dia.	No.	9720.00	
	12) 350 x 250 mm. dia.	No.	9751.00	
	13) 350 x 300 mm. dia.	No.	9636.00	
	14) 400 x 250 mm. dia.	No.	14681.00	
	15) 400 x 300 mm. dia.	No.	13006.00	
	16) 400 x 350 mm. dia.	No.	13093.00	
	17) 450 x 300 mm. dia.	No.	16258.00	
	18) 450 x 350 mm. dia.	No.	16249.00	
	19) 450 x 400 mm. dia.	No.	16045.00	
	20) 500 x 350 mm. dia.	No.	19545.00	
	21) 500 x 400 mm. dia.	No.	19247.00	
	22) 500 x 450 mm. dia.	No.	18760.00	
	23) 600 x 400 mm. dia.	No.	28379.00	
	24) 600 x 450 mm. dia.	No.	27620.00	
	25) 600 x 500 mm. dia.	No.	25933.00	
	26) 700 x 500 mm. dia.	No.	38955.00	
	27) 700 x 600 mm. dia.	No.	35354.00	
	28) 750 x 600 mm. dia.	No.	41990.00	
	29) 750 x 700 mm. dia.	No.	38813.00	
	30) 800 x 450 mm. dia.	No.	57767.00	
	31) 800 x 700 mm. dia.	No.	49590.00	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
1.	<p><b>XIV. M. S. PIPES</b></p> <p><b>Manufacturing, providing and supplying spirally welded / ERW/ SAW / fabricated M. S. pipes</b> (Commercial Quality) including procurements of plates, gas cutting to required size rolling, tack welding assembling in suitable lengths to form pipes, welding on automatic welding machine and forming 'V' edge on both ends of pipes including railway freight, insurance, unloading from railway wagon, loading into truck, transport to stores, unloading, stacking excluding GST levied by GOI &amp; GOM in all respect, etc, complete as per IS - 3589 and IS-5504 as applicable as per specifications (No negative tolerance in thickness is permissible).</p> <p><b>a) Dia of Pipe : 219.10 mm (O. D.)</b> <b>Thickness of pipe :</b></p> <p>i) 4.8 mm ii) 5.6 mm iii) 6.4 mm iv) 7.0 mm v) 7.9 mm vi) 8.2 mm vii) 8.7 mm viii) 9.5 mm</p> <p><b>b) Dia of Pipe : 273.10 mm (O. D.)</b> <b>Thickness of pipe :</b></p> <p>i) 4.8 mm ii) 5.6 mm iii) 6.4 mm iv) 7.2 mm v) 7.8 mm vi) 8.7 mm. vii) 9.3 mm.</p>	<p>RMT RMT RMT RMT RMT RMT RMT RMT RMT</p> <p>RMT RMT RMT RMT RMT RMT RMT RMT</p>	<p>1314.00 1527.00 1739.00 1896.00 2131.00 2209.00 2338.00 2543.00</p> <p>1645.00 1913.00 2180.00 2445.00 2643.00 2938.00 3133.00</p>	

**SECTION - I : M. S. PIPES**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>c) Dia of Pipe : 323.90 mm (O. D.)</b> <b>Thickness of pipe :</b> i) 5.6 mm ii) 6.4 mm iii) 7.1 mm iv) 7.9 mm v) 8.4 mm vi) 8.7 mm. vii) 9.5 mm.	RMT RMT RMT RMT RMT RMT RMT	2277.00 2595.00 2872.00 3188.00 3385.00 3502.00 3815.00	
	<b>d) Dia of Pipe : 355.7 mm (O. D.)</b> <b>Thickness of pipe :</b> i) 5.6 mm. ii) 6.4 mm. iii) 7.1 mm. iv) 7.9 mm. v) 8.7 mm. vi) 9.5 mm.	RMT RMT RMT RMT RMT RMT	2503.00 2855.00 3161.00 3508.00 3854.00 4200.00	
	<b>e) Dia of Pipe : 406.00 mm (O. D.)</b> <b>Thickness of pipe :</b> i) 5.6 mm. ii) 6.4 mm. iii) 7.1 mm. iv) 7.9 mm. v) 8.7 mm. vi) 9.5 mm. vii) 10.00 mm.	RMT RMT RMT RMT RMT RMT RMT	2863.00 3266.00 3617.00 4017.00 4414.00 4811.00 5058.00	
	<b>f) Dia of Pipe : 457.00 mm (O. D.)</b> <b>Thickness of pipe :</b> i) 5.6 mm. ii) 6.4 mm. iii) 7.1 mm. iv) 7.9 mm. v) 8.7 mm. vi) 9.5 mm. vii) 10.00 mm.	RMT RMT RMT RMT RMT RMT RMT	3229.00 3683.00 4080.00 4531.00 4981.00 5430.00 5709.00	





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>g) Dia of Pipe : 508.00 mm (O. D.)</b> <b>Thickness of pipe :</b> i) 5.6 mm. ii) 6.4 mm. iii) 7.1 mm. iv) 7.9 mm. v) 8.7 mm. vi) 9.5 mm. vii) 10.00 mm.	RMT RMT RMT RMT RMT RMT RMT	3594.00 4100.00 4542.00 5046.00 5548.00 6049.00 6361.00	
	<b>h) Dia of Pipe : 559.00 mm (O. D.)</b> <b>Thickness of pipe :</b> i) 5.6 mm. ii) 6.4 mm. iii) 7.1 mm. iv) 7.9 mm. v) 8.7 mm. vi) 9.5 mm. vii) 10.00 mm.	RMT RMT RMT RMT RMT RMT RMT	3958.00 4517.00 5005.00 5561.00 6115.00 6668.00 7012.00	
	<b>i) Dia of Pipe : 610.00 mm (O. D.)</b> <b>Thickness of pipe :</b> i) 5.6 mm ii) 6.4 mm. iii) 7.1 mm. iv) 7.9 mm. v) 8.7 mm. vi) 9.5 mm. vii) 10.00 mm. viii) 12.00 mm	RMT RMT RMT RMT RMT RMT RMT RMT	4323.00 4934.00 5467.00 6075.00 6681.00 7286.00 7663.00 9165.00	
	<b>j) Dia of Pipe : 660.00 mm (O. D.)</b> <b>Thickness of pipe :</b> i) 5.6 mm ii) 6.4 mm. iii) 7.1 mm. iv) 7.9 mm. v) 8.7 mm. vi) 9.5 mm. vii) 10.00 mm.	RMT RMT RMT RMT RMT RMT RMT	4681.00 5342.00 5921.00 6579.00 7237.00 7893.00 8302.00	

**SECTION - I : M. S. PIPES**

202 - 272



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>k) Dia of Pipe : 711.00 mm (O. D.)</b> <b>Thickness of pipe :</b> i) 5.6 mm. ii) 6.4 mm. iii) 7.1 mm. iv) 7.9 mm. v) 8.7 mm. vi) 9.5 mm. vii) 10.00 mm. viii) 12.00 mm	RMT RMT RMT RMT RMT RMT RMT RMT	5045.00 5759.00 6383.00 7094.00 7803.00 8512.00 8953.00 10713.00	
	<b>l) Dia of Pipe : 762.00 mm (O. D.)</b> <b>Thickness of pipe :</b> i) 5.6 mm. ii) 6.4 mm. iii) 7.1 mm. iv) 7.9 mm. v) 8.7 mm. vi) 9.5 mm. vii) 10.00 mm.	RMT RMT RMT RMT RMT RMT RMT	5410.00 6177.00 6846.00 7608.00 8370.00 9131.00 9605.00	
	<b>m) Dia of Pipe : 813.00 mm (O. D.)</b> <b>Thickness of pipe :</b> i) 5.6 mm. ii) 6.4 mm. iii) 7.1 mm. iv) 7.9 mm. v) 8.7 mm. vi) 9.5 mm. vii) 10.00 mm. viii) 12.00 mm	RMT RMT RMT RMT RMT RMT RMT RMT	5775.00 6593.00 7308.00 8123.00 8937.00 9749.00 10256.00 12276.00	
	<b>n) Dia of Pipe : 864.00 mm (O. D.)</b> <b>Thickness of pipe :</b> i) 5.6 mm. ii) 6.4 mm. iii) 7.1 mm. iv) 7.9 mm. v) 8.7 mm. vi) 9.5 mm. vii) 10.00 mm.	RMT RMT RMT RMT RMT RMT RMT	6139.00 7010.00 7771.00 8638.00 9503.00 10367.00 10907.00	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>o) Dia of Pipe : 914.00 mm (O. D.)</b> <b>Thickness of pipe :</b> i) 5.6 mm. ii) 6.4 mm. iii) 7.1 mm. iv) 7.9 mm. v) 8.7 mm. vi) 9.5 mm. vii) 10.00 mm.	RMT RMT RMT RMT RMT RMT RMT	6497.00 7418.00 8223.00 9142.00 10059.00 10975.00 11545.00	
	<b>p) Dia of Pipe : 965.00 mm (O. D.)</b> <b>Thickness of pipe :</b> i) 5.6 mm. ii) 6.4 mm. iii) 7.1 mm. iv) 7.9 mm. v) 8.7 mm. vi) 9.5 mm. vii) 10.00 mm.	RMT RMT RMT RMT RMT RMT RMT	6861.00 7836.00 8686.00 9657.00 10626.00 11593.00 12197.00	
	<b>q) Dia of Pipe : 1016.00 mm (O. D.)</b> <b>Thickness of pipe :</b> i) 5.6 mm. ii) 6.4 mm. iii) 7.1 mm. iv) 7.9 mm. v) 8.7 mm. vi) 9.5 mm. vii) 10.00 mm. viii) 12.00 mm	RMT RMT RMT RMT RMT RMT RMT RMT	7226.00 8253.00 9148.00 10172.00 11193.00 12212.00 12848.00 15388.00	
	<b>r) Dia of Pipe : 1067.00 mm (O. D.)</b> <b>Thickness of pipe :</b> i) 5.6 mm. ii) 6.4 mm. iii) 7.1 mm. iv) 7.9 mm. v) 8.7 mm. vi) 9.5 mm. vii) 10.00 mm.	RMT RMT RMT RMT RMT RMT RMT	7592.00 8669.00 9611.00 10686.00 11759.00 12830.00 13499.00	





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>s) Dia of Pipe : 1118.00 mm (O. D.)</b> <b>Thickness of pipe :</b> i) 5.6 mm. ii) 6.4 mm. iii) 7.1 mm. iv) 7.9 mm. v) 8.7 mm. vi) 9.5 mm. vii) 10.00 mm.	RMT RMT RMT RMT RMT RMT RMT	7956.00 9086.00 10073.00 11201.00 12326.00 13449.00 14151.00	
	<b>t) Dia of Pipe : 1168.00 mm (O. D.)</b> <b>Thickness of pipe :</b> i) 5.6 mm. ii) 6.4 mm. iii) 7.1 mm. iv) 7.9 mm. v) 8.7 mm. vi) 9.5 mm. vii) 10.00 mm.	RMT RMT RMT RMT RMT RMT RMT	8314.00 9495.00 10527.00 11705.00 12882.00 14056.00 14790.00	
	<b>u) Dia of Pipe : 1219.00 mm (O. D.)</b> <b>Thickness of pipe :</b> i) 6.4 mm. ii) 7.1 mm. iii) 7.9 mm. iv) 8.7 mm. v) 9.5 mm. vi) 10.00 mm. vii) 12.00 mm.	RMT RMT RMT RMT RMT RMT RMT	9912.00 10989.00 12219.00 13448.00 14675.00 15441.00 18498.00	
	<b>v) Dia of Pipe : 1296.00 mm (O. D.)</b> <b>Thickness of pipe :</b> i) 9.5 mm. ii) 9.98 mm. iii) 10.00 mm.	RMT RMT RMT	15609.00 16391.00 16425.00	
	<b>w) Dia of Pipe : 1321.00 mm (O. D.)</b> <b>Thickness of pipe :</b> i) 6.4 mm. ii) 7.1 mm. iii) 7.9 mm. iv) 8.7 mm. v) 9.5 mm. vi) 10.00 mm.	RMT RMT RMT RMT RMT RMT	10745.00 11914.00 13249.00 14582.00 15912.00 16744.00	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>x) Dia of Pipe : 1422.00 mm (O. D.)</b> <b>Thickness of pipe :</b> i) 7.1 mm. ii) 7.9 mm. iii) 8.7 mm. iv) 9.5 mm. v) 10.00 mm. vi) 12.00 mm.	RMT RMT RMT RMT RMT RMT	12830.00 14268.00 15704.00 17138.00 18034.00 21610.00	
	<b>y) Dia of Pipe : 1473.00 mm (O. D.)</b> <b>Thickness of pipe :</b> i) 9.5 mm. ii) 9.98 mm.	RMT RMT	17757.00 18648.00	
	<b>z) Dia of Pipe : 1524.00 mm (O. D.)</b> <b>Thickness of pipe :</b> i) 7.1 mm. ii) 7.9 mm. iii) 8.7 mm. iv) 9.5 mm. v) 10.00 mm. vi) 11.90 mm. vii) 12.00 mm.	RMT RMT RMT RMT RMT RMT RMT	13755.00 15297.00 16837.00 18376.00 19337.00 22981.00 23173.00	
	<b>aa) Dia of Pipe : 1550.00 mm (O. D.)</b> <b>Thickness of pipe :</b> i) 10.00 mm. ii) 11.00 mm.	RMT RMT	19668.00 21621.00	
	<b>ab) Dia of Pipe : 1576.00 mm (O. D.)</b> <b>Thickness of pipe :</b> i) 9.5 mm. ii) 10.00 mm.	RMT RMT	19007.00 20001.00	
	<b>ac) Dia of Pipe : 1626.00 mm (O. D.)</b> <b>Thickness of pipe :</b> i) 7.1 mm. ii) 7.9 mm. iii) 8.7 mm. iv) 9.5 mm. v) 10.00 mm. vi) 12.00 mm.	RMT RMT RMT RMT RMT RMT	14680.00 16327.00 17971.00 19613.00 20639.00 24737.00	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>ad) Dia of Pipe : 1650.00 mm (O. D.) Thickness of pipe :</b>			
	i) 7.9 mm.	RMT	16569.00	
	ii) 8.7 mm.	RMT	18237.00	
	iii) 9.5 mm.	RMT	19904.00	
	iv) 10.00 mm.	RMT	20945.00	
	v) 12.00 mm.	RMT	25104.00	
	<b>ae) Dia of Pipe : 1700.00 mm (O. D.) Thickness of pipe :</b>			
	i) 7.9 mm.	RMT	17072.00	
	ii) 8.7 mm.	RMT	18792.00	
	iii) 9.5 mm.	RMT	20511.00	
	iv) 10.00 mm.	RMT	21584.00	
	v) 12.00 mm.	RMT	25870.00	
	<b>af) Dia of Pipe : 1750.00 mm (O. D.) Thickness of pipe :</b>			
	i) 7.9 mm.	RMT	17577.00	
	ii) 8.7 mm.	RMT	19348.00	
	iii) 9.5 mm.	RMT	21118.00	
	iv) 10.00 mm.	RMT	22223.00	
	v) 12.00 mm.	RMT	26637.00	
	<b>ag) Dia of Pipe : 1800.00 mm (O. D.) Thickness of pipe :</b>			
	i) 7.9 mm.	RMT	18082.00	
	ii) 8.7 mm.	RMT	19904.00	
	iii) 9.5 mm.	RMT	21725.00	
	iv) 10.00 mm.	RMT	22861.00	
	v) 12.00 mm.	RMT	27403.00	
	<b>ah) Dia of Pipe : 1850.00 mm (O. D.) Thickness of pipe :</b>			
	i) 7.9 mm.	RMT		
	ii) 8.7 mm.	RMT	20459.00	
	iii) 9.5 mm.	RMT	22331.00	
	iv) 10.00 mm.	RMT	23500.00	
	v) 12.00 mm.	RMT	28169.00	





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>ai) Dia of Pipe : 1900.00 mm (O. D.) Thickness of pipe :</b>			
	i) 7.9 mm.	RMT	19091.00	
	ii) 8.7 mm.	RMT	21015.00	
	iii) 9.5 mm.	RMT	22938.00	
	iv) 10.00 mm.	RMT	24139.00	
	v) 12.00 mm.	RMT	28936.00	
	<b>aj) Dia of Pipe : 1950.00 mm (O. D.) Thickness of pipe :</b>			
	i) 7.9 mm.	RMT	19595.00	
	ii) 8.7 mm.	RMT	21570.00	
	iii) 9.5 mm.	RMT	23544.00	
	iv) 10.00 mm.	RMT	24777.00	
	v) 12.00 mm.	RMT	29702.00	
	<b>ak) Dia of Pipe : 2000.00 mm (O. D.) Thickness of pipe :</b>			
	i) 7.9 mm.	RMT	20100.00	
	ii) 8.7 mm.	RMT	22126.00	
	iii) 9.5 mm.	RMT	24151.00	
	iv) 10.00 mm.	RMT	25416.00	
	v) 12.00 mm.	RMT	30469.00	
	<b>al) Dia of Pipe : 2050.00 mm (O. D.) Thickness of pipe :</b>			
	i) 7.9 mm.	RMT	20604.00	
	ii) 8.7 mm.	RMT	22682.00	
	iii) 9.5 mm.	RMT	24757.00	
	iv) 10.00 mm.	RMT	26054.00	
	v) 12.00 mm.	RMT	31235.00	
	<b>am) Dia of Pipe : 2100.00 mm (O. D.) Thickness of pipe :</b>			
	i) 7.9 mm.	RMT	21109.00	
	ii) 8.7 mm.	RMT	23237.00	
	iii) 9.5 mm.	RMT	25365.00	
	iv) 10.00 mm.	RMT	26693.00	
	v) 12.00 mm.	RMT	32001.00	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>an) Dia of Pipe : 2150.00 mm (O. D.)</b> <b>Thickness of pipe :</b>			
	i) 7.9 mm.	RMT	21614.00	
	ii) 8.7 mm.	RMT	23793.00	
	iii) 9.5 mm.	RMT	25971.00	
	iv) 10.00 mm.	RMT	27332.00	
	v) 12.00 mm.	RMT	32767.00	
	<b>ao) Dia of Pipe : 2200.00 mm (O. D.)</b> <b>Thickness of pipe :</b>			
	i) 7.9 mm.	RMT	22117.00	
	ii) 8.7 mm.	RMT	24348.00	
	iii) 9.5 mm.	RMT	26578.00	
	iv) 10.00 mm.	RMT	27970.00	
	v) 12.00 mm.	RMT	33534.00	
	<b>ap) Dia of Pipe : 2250.00 mm (O. D.)</b> <b>Thickness of pipe :</b>			
	i) 7.9 mm.	RMT	22622.00	
	ii) 8.7 mm.	RMT	24904.00	
	iii) 9.5 mm.	RMT	27184.00	
	iv) 10.00 mm.	RMT	28609.00	
	v) 12.00 mm.	RMT	34300.00	
	<b>aq) Dia of Pipe : 2300.00 mm (O. D.)</b> <b>Thickness of pipe :</b>			
	i) 7.9 mm.	RMT	23127.00	
	ii) 8.7 mm.	RMT	25460.00	
	iii) 9.5 mm.	RMT	27791.00	
	iv) 10.00 mm.	RMT	29247.00	
	v) 12.00 mm.	RMT	35066.00	
	<b>ar) Dia of Pipe : 2350.00 mm (O. D.)</b> <b>Thickness of pipe :</b>			
	i) 7.9 mm.	RMT	23631.00	
	ii) 8.7 mm.	RMT	26015.00	
	iii) 9.5 mm.	RMT	28397.00	
	iv) 10.00 mm.	RMT	29886.00	
	v) 12.00 mm.	RMT	35832.00	
	<b>as) Dia of Pipe : 2400.00 mm (O. D.)</b> <b>Thickness of pipe :</b>			
	i) 7.9 mm.	RMT	24136.00	
	ii) 8.7 mm.	RMT	26571.00	
	iii) 9.5 mm.	RMT	29004.00	
	iv) 10.00 mm.	RMT	30525.00	
	v) 12.00 mm.	RMT	36599.00	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>at) Dia of Pipe : 2450.00 mm (O. D.)</b> <b>Thickness of pipe :</b> i) 7.9 mm. ii) 8.7 mm. iii) 9.5 mm. iv) 10.00 mm. v) 12.00 mm.  <b>au) Dia of Pipe : 2500.00 mm (O. D.)</b> <b>Thickness of pipe :</b> i) 7.9 mm. ii) 8.7 mm. iii) 9.5 mm. iv) 10.00 mm. v) 12.00 mm. vi) 16.00 mm.	RMT RMT RMT RMT RMT  RMT RMT RMT RMT RMT RMT	24640.00 27126.00 29612.00 31163.00 37365.00  25144.00 27682.00 30218.00 31802.00 38131.00 50761.00	
2.	<p>Manufacturing, providing and supplying spirally welded / ERW/ SAW / fabricated M. S. pipes (Commercial Quality) including procurements of plates, gas cutting to required size rolling, tack welding assembling in suitable lengths to form pipes, welding on automatic welding machine and forming 'V' edge on both ends of pipes including railway freight, insurance, unloading from railway wagon, loading into truck, transport to stores, unloading, stacking, excluding GST levied by GOI &amp; GOM in all respect etc. complete as per IS - 3589 and IS-5504 as applicable as per specifications (No negative tolerance in thickness is permissible).</p>			
	<b>a) Dia of Pipe : 200.00 mm (I. D.)</b> <b>Thickness of pipe :</b> i) 5.00 mm. ii) 6.00 mm. iii) 7.00 mm. iv) 8.00 mm. v) 9.00 mm. vi) 10.00mm.	RMT RMT RMT RMT RMT RMT	1309.00 1578.00 1851.00 2125.00 2402.00 2682.00	





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>b) Dia of Pipe : 250.00 mm (I. D.)</b> <b>Thickness of pipe :</b> i) 5.00 mm. ii) 6.00 mm. iii) 7.00 mm. iv) 8.00 mm. v) 9.00 mm. vi) 10.00mm.	RMT RMT RMT RMT RMT RMT	1629.00 1962.00 2298.00 2636.00 2978.00 3321.00	
	<b>c) Dia of Pipe : 300.00 mm (I. D.)</b> <b>Thickness of pipe :</b> i) 5.00 mm. ii) 6.00 mm. iii) 7.00 mm. iv) 8.00 mm. v) 9.00 mm. vi) 10.00mm.	RMT RMT RMT RMT RMT RMT	1947.00 2345.00 2744.00 3147.00 3552.00 3960.00	
	<b>d) Dia of Pipe : 350.00 mm (I. D.)</b> <b>Thickness of pipe :</b> i) 5.00 mm. ii) 6.00 mm. iii) 7.00 mm. iv) 8.00 mm. v) 9.00 mm. vi) 10.00mm.	RMT RMT RMT RMT RMT RMT	2267.00 2728.00 3192.00 3658.00 4127.00 4598.00	
	<b>e) Dia of Pipe : 400.00 mm (I. D.)</b> <b>Thickness of pipe :</b> i) 5.00 mm. ii) 6.00 mm. iii) 7.00 mm. iv) 8.00 mm. v) 9.00 mm. vi) 10.00mm.	RMT RMT RMT RMT RMT RMT	2586.00 3111.00 3639.00 4168.00 4702.00 5237.00	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>f) Dia of Pipe : 450.00 mm (I. D.)</b> <b>Thickness of pipe :</b>  i) 5.00 mm. ii) 6.00 mm. iii) 7.00 mm. iv) 8.00 mm. v) 9.00 mm. vi) 10.00mm.	RMT RMT RMT RMT RMT RMT	2906.00 3494.00 4086.00 4680.00 5276.00 5875.00	
	<b>g) Dia of Pipe : 500.00 mm (I. D.)</b> <b>Thickness of pipe :</b>  i) 5.00 mm. ii) 6.00 mm. iii) 7.00 mm. iv) 8.00 mm. v) 9.00 mm. vi) 10.00mm.	RMT RMT RMT RMT RMT RMT	3225.00 3878.00 4532.00 5191.00 5851.00 6514.00	
	<b>h) Dia of Pipe : 550.00 mm (I. D.)</b> <b>Thickness of pipe :</b>  i) 5.00 mm. ii) 6.00 mm. iii) 7.00 mm. iv) 8.00 mm. v) 9.00 mm. vi) 10.00mm.	RMT RMT RMT RMT RMT RMT	3544.00 4261.00 4980.00 5701.00 6426.00 7152.00	
	<b>i) Dia of Pipe : 600.00 mm (I. D.)</b> <b>Thickness of pipe :</b>  i) 5.00 mm. ii) 6.00 mm. iii) 7.00 mm. iv) 8.00 mm. v) 9.00 mm. vi) 10.00mm. vii) 12.00 mm.	RMT RMT RMT RMT RMT RMT RMT	3863.00 4643.00 5427.00 6212.00 7000.00 7790.00 9379.00	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>j) Dia of Pipe : 650.00 mm (I. D.)</b> <b>Thickness of pipe :</b>  i) 5.00 mm. ii) 6.00 mm. iii) 7.00 mm. iv) 8.00 mm. v) 9.00 mm. vi) 10.00 mm. vii) 12.00 mm.	RMT RMT RMT RMT RMT RMT RMT	4183.00 5027.00 5873.00 6723.00 7575.00 8429.00 10146.00	
	<b>k) Dia of Pipe : 700.00 mm (I. D.)</b> <b>Thickness of pipe :</b>  i) 5.00 mm ii) 6.00 mm. iii) 7.00 mm. iv) 8.00 mm. v) 9.00 mm. vi) 10.00 mm. vii) 12.00 mm.	RMT RMT RMT RMT RMT RMT RMT	4502.00 5410.00 6321.00 7234.00 8149.00 9068.00 10913.00	
	<b>l) Dia of Pipe : 750.00 mm (I. D.)</b> <b>Thickness of pipe :</b>  i) 5.00 mm. ii) 6.00 mm. iii) 7.00 mm. iv) 8.00 mm. v) 9.00 mm. vi) 10.00 mm. vii) 12.00 mm.	RMT RMT RMT RMT RMT RMT RMT	4822.00 5793.00 6768.00 7745.00 8724.00 9706.00 11678.00	
	<b>m) Dia of Pipe : 800.00 mm (I. D.)</b> <b>Thickness of pipe :</b>  i) 5.00 mm ii) 6.00 mm. ii) 7.00 mm. iii) 8.00 mm. iv) 9.00 mm. v) 10.00 mm. vi) 12.00 mm.	RMT RMT RMT RMT RMT RMT RMT	5140.00 6177.00 7215.00 8256.00 9299.00 10345.00 12445.00	





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<p><b>n) Dia of Pipe : 850.00 mm (I. D.)</b> <b>Thickness of pipe :</b></p> <p>i) 5.00 mm.</p> <p>ii) 6.00 mm.</p> <p>iii) 7.00 mm.</p> <p>iv) 8.00 mm.</p> <p>v) 9.00 mm.</p> <p>vi) 10.00mm.</p> <p>vii) 12.00 mm.</p>	<p>RMT</p> <p>RMT</p> <p>RMT</p> <p>RMT</p> <p>RMT</p> <p>RMT</p> <p>RMT</p>	<p>5460.00</p> <p>6559.00</p> <p>7661.00</p> <p>8766.00</p> <p>9873.00</p> <p>10983.00</p> <p>13211.00</p>	
	<p><b>o) Dia of Pipe : 900.00 mm (I. D.)</b> <b>Thickness of pipe :</b></p> <p>i) 5.00 mm.</p> <p>ii) 6.00 mm.</p> <p>iii) 7.00 mm.</p> <p>iv) 8.00 mm.</p> <p>v) 9.00 mm.</p> <p>vi) 10.00mm.</p> <p>vii) 12.00 mm.</p>	<p>RMT</p> <p>RMT</p> <p>RMT</p> <p>RMT</p> <p>RMT</p> <p>RMT</p> <p>RMT</p>	<p>5779.00</p> <p>6943.00</p> <p>8109.00</p> <p>9277.00</p> <p>10448.00</p> <p>11622.00</p> <p>13978.00</p>	
	<p><b>p) Dia of Pipe : 950.00 mm (I. D.)</b> <b>Thickness of pipe :</b></p> <p>i) 5.00 mm</p> <p>ii) 6.00 mm.</p> <p>iii) 7.00 mm.</p> <p>iv) 8.00 mm.</p> <p>v) 9.00 mm.</p> <p>vi) 10.00mm.</p> <p>vii) 12.00 mm.</p>	<p>RMT</p> <p>RMT</p> <p>RMT</p> <p>RMT</p> <p>RMT</p> <p>RMT</p> <p>RMT</p>	<p>6099.00</p> <p>7326.00</p> <p>8556.00</p> <p>9788.00</p> <p>11024.00</p> <p>12261.00</p> <p>14743.00</p>	
	<p><b>q) Dia of Pipe : 1000.00 mm (I. D.)</b> <b>Thickness of pipe :</b></p> <p>i) 5.00 mm.</p> <p>ii) 6.00 mm.</p> <p>iii) 7.00 mm.</p> <p>iv) 8.00 mm.</p> <p>v) 9.00 mm.</p> <p>vi) 10.00mm.</p> <p>vii) 12.00 mm.</p>	<p>RMT</p> <p>RMT</p> <p>RMT</p> <p>RMT</p> <p>RMT</p> <p>RMT</p> <p>RMT</p>	<p>6418.00</p> <p>7709.00</p> <p>9003.00</p> <p>10300.00</p> <p>11598.00</p> <p>12899.00</p> <p>15510.00</p>	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<p>r) <b>Dia of Pipe : 1050.00 mm (I. D.)</b>  <b>Thickness of pipe :</b>  i) 5.00 mm.  ii) 6.00 mm.  iii) 7.00 mm.  iv) 8.00 mm.  v) 9.00 mm.  vi) 10.00 mm.  vii) 12.00mm.</p> <p>s) <b>Dia of Pipe : 1100.00 mm (I. D.)</b>  <b>Thickness of pipe :</b>  i) 5.00 mm.  ii) 6.00 mm.  iii) 7.00 mm.  iv) 8.00 mm.  v) 9.00 mm.  vi) 10.00mm.  vii) 12.00 mm.</p> <p>t) <b>Dia of Pipe : 1150.00 mm (I. D.)</b>  <b>Thickness of pipe :</b>  i) 5.00 mm.  ii) 6.00 mm.  iii) 7.00 mm.  iv) 8.00 mm.  v) 9.00 mm.  vi) 10.00mm.  vii) 12.00 mm.</p> <p>u) <b>Dia of Pipe : 1200.00 mm (I. D.)</b>  <b>Thickness of pipe :</b>  i) 5.00 mm.  ii) 6.00 mm.  iii) 7.00 mm.  iv) 8.00 mm.  v) 9.00 mm.  vi) 10.00mm.  vii) 12.00 mm.</p>	<p>RMT RMT RMT RMT RMT RMT RMT</p> <p>RMT RMT RMT RMT RMT RMT RMT</p> <p>RMT RMT RMT RMT RMT RMT RMT</p> <p>RMT RMT RMT RMT RMT RMT RMT</p>	<p>6737.00 8092.00 9449.00 10810.00 12173.00 13538.00 16276.00</p> <p>7056.00 8475.00 9897.00 11321.00 12748.00 14176.00 17043.00</p> <p>7376.00 8859.00 10344.00 11832.00 13322.00 14815.00 17809.00</p> <p>7695.00 9242.00 10791.00 12342.00 13897.00 15454.00 18575.00</p>	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>v) Dia of Pipe : 1250.00 mm (I. D.)</b> <b>Thickness of pipe :</b>  i) 6.00 mm. ii) 7.00 mm. iii) 8.00 mm. iv) 9.00 mm. v) 10.00mm. vi) 12.00 mm.	RMT RMT RMT RMT RMT RMT	9625.00 11238.00 12854.00 14472.00 16092.00 19342.00	
	<b>w) Dia of Pipe : 1300.00 mm (I. D.)</b> <b>Thickness of pipe :</b>  i) 6.00 mm. ii) 7.00 mm. iii) 8.00 mm. iv) 9.00 mm. v) 10.00mm. vi) 12.00 mm.	RMT RMT RMT RMT RMT RMT	10008.00 11685.00 13365.00 15046.00 16731.00 20108.00	
	<b>x) Dia of Pipe : 1350.00 mm (I. D.)</b> <b>Thickness of pipe :</b>  i) 7.00 mm. ii) 8.00 mm. iii) 9.00 mm. iv) 10.00mm. v) 12.00 mm.	RMT RMT RMT RMT RMT	12132.00 13875.00 15621.00 17370.00 20875.00	
	<b>y) Dia of Pipe : 1400.00 mm (I. D.)</b> <b>Thickness of pipe :</b>  i) 7.00 mm. ii) 8.00 mm. iii) 9.00 mm. iv) 10.00mm. v) 12.00 mm.	RMT RMT RMT RMT RMT	12578.00 14386.00 16196.00 18008.00 21640.00	





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>z) Dia of Pipe : 1450.00 mm (I. D.)</b> <b>Thickness of pipe :</b> i) 7.00 mm. ii) 8.00 mm. iii) 9.00 mm. iv) 10.00mm. v) 12.00 mm.	RMT RMT RMT RMT RMT	13026.00 14897.00 16770.00 18647.00 22407.00	
	<b>aa) Dia of Pipe : 1500.00 mm (I. D.)</b> <b>Thickness of pipe :</b> i) 7.00 mm. ii) 8.00 mm. iii) 9.00 mm. iv) 10.00mm. v) 12.00 mm.	RMT RMT RMT RMT RMT	13473.00 15407.00 17345.00 19285.00 23173.00	
	<b>ab) Dia of Pipe : 1550.00 mm (I. D.)</b> <b>Thickness of pipe :</b> i) 7.00 mm. ii) 8.00 mm. iii) 9.00 mm. iv) 10.00mm. v) 12.00 mm.	RMT RMT RMT RMT RMT	13920.00 15919.00 17920.00 19924.00 23940.00	
	<b>ac) Dia of Pipe : 1600.00 mm (I. D.)</b> <b>Thickness of pipe :</b> i) 7.00 mm. ii) 8.00 mm. iii) 9.00 mm. iv) 10.00mm. v) 12.00 mm.	RMT RMT RMT RMT RMT	14367.00 16430.00 18495.00 20563.00 24705.00	
	<b>ad) Dia of Pipe : 1650.00 mm (I. D.)</b> <b>Thickness of pipe :</b> i) 8.00 mm. ii) 9.00 mm. iii) 10.00mm. iv) 12.00 mm.	RMT RMT RMT RMT	16941.00 19070.00 21201.00 25472.00	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>ae) Dia of Pipe : 1700.00 mm (I. D.)</b> <b>Thickness of pipe :</b> i) 8.00 mm. ii) 9.00 mm. iii) 10.00 mm. iv) 12.00mm.	RMT RMT RMT RMT	17451.00 19645.00 21840.00 26238.00	
	<b>af) Dia of Pipe : 1750.00 mm (I. D.)</b> <b>Thickness of pipe :</b> i) 8.00 mm. ii) 9.00 mm. iii) 10.00 mm. iv) 12.00mm.	RMT RMT RMT RMT	17962.00 20219.00 22478.00 27005.00	
	<b>ag) Dia of Pipe : 1800.00 mm (I. D.)</b> <b>Thickness of pipe :</b> i) 8.00 mm. ii) 9.00 mm. iii) 10.00 mm. iv) 12.00mm.	RMT RMT RMT RMT	18473.00 20794.00 23117.00 27771.00	
	<b>ah) Dia of Pipe : 1850.00 mm (I. D.)</b> <b>Thickness of pipe :</b> i) 8.00 mm. ii) 9.00 mm. iii) 10.00 mm. iv) 12.00mm.	RMT RMT RMT RMT	18984.00 21369.00 23756.00 28537.00	
	<b>ai) Dia of Pipe : 1900.00 mm (I. D.)</b> <b>Thickness of pipe :</b> i) 8.00 mm. ii) 9.00 mm. iii) 10.00 mm. iv) 12.00mm.	RMT RMT RMT RMT	19495.00 21943.00 24394.00 29304.00	

**SECTION - I : M.S. PIPES**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>aj) Dia of Pipe : 1950.00 mm (I. D.)</b> <b>Thickness of pipe :</b>  i) 8.00 mm. ii) 9.00 mm. iii) 10.00mm. iv) 12.00 mm.	RMT RMT RMT RMT	20006.00 22518.00 25033.00 30070.00	
	<b>ak) Dia of Pipe : 2000.00 mm (I. D.)</b> <b>Thickness of pipe :</b>  i) 8.00 mm. ii) 9.00 mm. iii) 10.00mm. iv) 12.00 mm. v) 16.00 mm.	RMT RMT RMT RMT RMT	20516.00 23093.00 25672.00 30837.00 41197.00	
	<b>al) Dia of Pipe : 2050.00 mm (I. D.)</b> <b>Thickness of pipe :</b>  i) 8.00 mm. ii) 9.00 mm. iii) 10.00mm. iv) 12.00 mm. v) 16.00 mm.	RMT RMT RMT RMT RMT	21027.00 23667.00 26310.00 31602.00 42219.00	
	<b>am) Dia of Pipe : 2100.00 mm (I. D.)</b> <b>Thickness of pipe :</b>  i) 8.00 mm. ii) 9.00 mm. iii) 10.00mm. iv) 12.00 mm. v) 16.00 mm.	RMT RMT RMT RMT RMT	21539.00 24242.00 26949.00 32369.00 43240.00	





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>an) Dia of Pipe : 2150.00 mm (I. D.)</b> <b>Thickness of pipe :</b>  i) 8.00 mm. ii) 9.00 mm. iii) 10.00 mm. iv) 12.00mm. v) 16.00 mm.	RMT RMT RMT RMT RMT	22049.00 24816.00 27587.00 33135.00 44262.00	
	<b>ao) Dia of Pipe : 2200.00 mm (I. D.)</b> <b>Thickness of pipe :</b>  i) 8.00 mm. ii) 9.00 mm. iii) 10.00 mm. iv) 12.00mm. v) 16.00 mm	RMT RMT RMT RMT RMT	22560.00 25391.00 28226.00 33902.00 45284.00	
	<b>ap) Dia of Pipe : 2250.00 mm (I. D.)</b> <b>Thickness of pipe :</b>  i) 8.00 mm. ii) 9.00 mm. iii) 10.00 mm. iv) 12.00mm. v) 16.00 mm	RMT RMT RMT RMT RMT	23071.00 25967.00 28865.00 34667.00 46305.00	
	<b>aq) Dia of Pipe : 2300.00 mm (I. D.)</b> <b>Thickness of pipe :</b>  i) 8.00 mm. ii) 9.00 mm. iii) 10.00 mm. iv) 12.00mm. v) 16.00 mm.	RMT RMT RMT RMT RMT	23582.00 26541.00 29503.00 35434.00 47327.00	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>ar) Dia of Pipe : 2350.00 mm (I. D.)</b> <b>Thickness of pipe :</b>  i) 8.00 mm. ii) 9.00 mm. iii) 10.00mm. iv) 12.00 mm. v) 16.00 mm.	RMT RMT RMT RMT RMT	24092.00 27116.00 30142.00 36200.00 48349.00	
	<b>as) Dia of Pipe : 2400.00 mm (I. D.)</b> <b>Thickness of pipe :</b>  i) 8.00 mm. ii) 9.00 mm. iii) 10.00mm. iv) 12.00 mm. v) 16.00 mm.	RMT RMT RMT RMT RMT	24604.00 27691.00 30780.00 36967.00 49370.00	
	<b>at) Dia of Pipe : 2450.00 mm (I. D.)</b> <b>Thickness of pipe :</b>  i) 8.00 mm. ii) 9.00 mm. iii) 10.00mm. iv) 12.00 mm. v) 16.00 mm.	RMT RMT RMT RMT RMT	25115.00 28265.00 31418.00 37732.00 50393.00	
	<b>au) Dia of Pipe : 2500.00 mm (I. D.)</b> <b>Thickness of pipe :</b>  i) 8.00 mm. ii) 9.00 mm. iii) 10.00mm. iv) 12.00 mm. v) 16.00 mm.	RMT RMT RMT RMT RMT	25625.00 28840.00 32057.00 38499.00 51414.00	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>XV. FABRICATION OF M.S. PIPES &amp; SPECIALS</b>			
1.	<p><b>Providing, fabricating and fixing expansion joints</b> for pipe-lines as per the drawing. The rate to include machining the strakes and steel ring as shown in the drawing and welding on either automatic welding machine or manually, Rate includes plates and flats required for expansion joint and all other materials such as synthetic rubber, rubber ring, etc. including packing as per specifications, grease, bolts and nuts, local handling, excluding GST levied by GOI &amp; GOM in all respect etc. complete.</p> <p>Expansion joints suitable for pipe diameters.</p> <p>i) 300 mm. dia.</p> <p>ii) 400 mm. dia.</p> <p>iii) 450 mm. dia.</p> <p>iv) 500 mm. dia.</p> <p>v) 600 mm. dia.</p> <p>vi) 700 mm. dia.</p> <p>vii) 750 mm. dia.</p> <p>viii) 800 mm. dia.</p> <p>ix) 900 mm. dia.</p> <p>x) 1000 mm. dia.</p> <p>xi) 1200 mm. dia.</p>	<p>Each</p> <p>Each</p> <p>Each</p> <p>Each</p> <p>Each</p> <p>Each</p> <p>Each</p> <p>Each</p> <p>Each</p> <p>Each</p> <p>Each</p>	<p>24027.00</p> <p>34673.00</p> <p>45102.00</p> <p>60469.00</p> <p>71038.00</p> <p>88433.00</p> <p>97453.00</p> <p>113413.00</p> <p>131680.00</p> <p>157673.00</p> <p>209408.00</p>	

**SECTION - I : FABRICATION OF M. S. PIPES AND SPECIALS**





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
2.	<b>Blast cleaning</b> the surface of the old or new pipeline <b>internally</b> to remove all rust etc. complete, including providing sand, machinery, labour, cutting of pipes at required places and rewelding the same etc, complete as directed by Engineer-in-charge. (Pipes pieces if required for rewelding of old pipeline shall be paid separately.)	Sqm.	103.00	
3.	<b>Blast Cleaning of old or new pipeline surface internally</b> with mechanical cleaning machine having steel scraper blades with required passes including removing all rust, scaling etc. including cutting of pipes at required places, rewelding the same including cost of all materials and labour, etc, complete (Pipes pieces if required for rewelding of old pipeline shall be paid separately.)	Sqm.	103.00	
4.	<b>Blast Cleaning of old pipeline surface internally by using swabbing method by passing polyurethane foam "Pig"</b> with required hydraulic pressure, cutting of pipes at required places, rewelding the same including cost of all materials and labour, etc. complete. (Pipe pieces if required for rewelding of old pipeline shall be paid separately.)	Sqm.	122.00	

**SECTION -I : FABRICATION OF M. S. PIPES AND SPECIALS**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
5.	<b>Blast cleaning</b> the surface of the old or new pipeline <b>externally</b> to remove all rust including providing sand machinery etc. complete as directed by Engineer-in-charge.	Sqm.	122.00	
6.	<b>Providing and applying primer and one coat of red oxide</b> of iron paint internally to blast cleaned surface of the pipes.	Sqm.	33.00	
7.	<b>Providing and applying primer and one coat of red oxide of iron paint internally</b> including cleaning the surface of the pipes <b>with steel scrappers</b> , wire brushes, and metal cleaning solution, etc.	Sqm.	56.00	
8.	<b>Providing and applying primer and one coat of red oxide</b> of iron paint externally to blast cleaned surface of the pipes.	Sqm.	37.00	
9	<b>Providing and applying primer and one coat of red oxide of iron paint externally</b> including cleaning the surface of the pipes <b>with steel scrappers</b> , wire brushes, and metal cleaning solution, etc.	Sqm.	80.00	
10.	Providing and applying covering coat of grey graphite of approved quality including dusting the surface etc. complete.	Sqm.	41.00	
11.	Providing and applying one coat of zinc rich epoxy primer to the internal surface of pipe line at site.	Sqm.	87.00	
12.	Providing and applying primer first coat of intertol 49 W emaline 05/58 pipe coat or any other equivalent approved paint to the internal surface of pipe line at site.	Sqm.	67.00	
	b) Second coat	Sqm.	54.00	
	c) Third coat	Sqm.	53.00	

**SECTION -I : FABRICATION OF M. S. PIPES AND SPECIALS**

283 294



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
1.	<p><b>XVI. M. S. PIPES LAYING</b></p> <p><b>Lowering, laying in position</b> to correct line and level including M. S. pipes with / without any outcoating on pedestals or chairs upon prepared formation. The rate to include loading, unloading, hoisting, marginal cutting wherever required, assembling and tack welding, and transportation upto 500 M. etc. completed as specified.</p> <p><b>a) 5 mm to 8 mm thick</b></p> <p>i) Upto 250 mm. dia. Rmt 375.00</p> <p>ii) Above 250 mm. Upto 500 mm. dia. Rmt 442.00</p> <p>iii) Above 500 mm. Upto 750 mm. dia. Rmt 506.00</p> <p>iv) Above 750 mm. Upto 1000 mm. dia. Rmt 574.00</p> <p>v) Above 1000 mm. Upto 1250 mm. dia. Rmt 641.00</p> <p><b>b) Above 8 mm upto 12 mm thick</b></p> <p>i) From 750 mm. Upto 1000 mm. dia. Rmt 764.00</p> <p>ii) Above 1000 mm. Upto 1250 mm. dia. Rmt 851.00</p> <p>iii) Above 1250 mm. Upto 1500 mm. dia. Rmt 939.00</p> <p>iv) Above 1500 mm. Upto 1750 mm. dia. Rmt 1029.00</p> <p>v) Above 1750 mm. Upto 2000 mm. dia. Rmt 1117.00</p> <p>vi) Above 2000 mm. Upto 2250 mm. dia. Rmt 1205.00</p> <p>vii) Above 2250 mm. Upto 2500 mm. dia. Rmt 1297.00</p>			





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>c) Above 12 mm upto 16 mm thick</b>			
	i) From 2000 mm. Upto 2250 mm. dia.	Rmt	1149.00	
	ii) Above 2250 mm. Upto 2500 mm. dia.	Rmt	1240.00	
	iii) Above 2500 mm. Upto 2750 mm. dia.	Rmt	1324.00	
	iv) Above 2750 mm. Upto 3000 mm. dia.	Rmt	1409.00	
	v) Above 3000 mm. Upto 3250 mm. dia.	Rmt	1494.00	
	vi) Above 3250 mm. Upto 3500 mm. dia.	Rmt	1581.00	
	<b>d) Above 16 mm upto 20 mm thick</b>			
	i) From 2500 mm. Upto 2750 mm. dia.	Rmt	1736.00	
	ii) Above 2750 mm. Upto 3000 mm. dia.	Rmt	1833.00	
	iii) Above 3000 mm. Upto 3250 mm. dia.	Rmt	1930.00	
	iv) Above 3250 mm. Upto 3500 mm. dia.	Rmt	2024.00	
	v) Above 3500 mm. Upto 3750 mm. dia.	Rmt	2122.00	
	vi) Above 3750 mm. Upto 4000 mm. dia.	Rmt	2219.00	
	<b>e) Above 20 mm upto 25 mm thick</b>			
	i) From 3500 mm. Upto 3750 mm. dia.	Rmt	2366.00	
	ii) Above 3750 mm. Upto 4000 mm. dia.	Rmt	2501.00	

**SECTION-I: M.S. PIPE LAYING**

285 296



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
2.	<p><b>Lowering, laying in position</b> to correct line and level including M. S. specials with / without any outcoating such as distance pieces, straps, bends, tapers, etc. on pedestals or chairs upon formation. The rate to include loading, unloading, hoisting, marginal cutting wherever required, assembling and tack welding, and transportation upto 500M etc. complete.</p> <p><b>a) 5 mm to 8 mm thick</b></p> <p>i) Upto 250 mm. dia. Rmt 524.00</p> <p>ii) Above 250 mm. Upto 500 mm. dia. Rmt 615.00</p> <p>iii) Above 500 mm. Upto 750 mm. dia. Rmt 711.00</p> <p>iv) Above 750 mm. Upto 1000 mm. dia. Rmt 802.00</p> <p>v) Above 1000 mm. Upto 1250 mm. dia. Rmt 896.00</p> <p><b>b) Above 8 mm upto 12 mm thick</b></p> <p>i) From 750 mm.Upto 1000 mm. dia. Rmt 1069.00</p> <p>ii) Above 1000 mm. Upto1250 mm. dia. Rmt 1193.00</p> <p>iii) Above 1250 mm. Upto 1500 mm. dia. Rmt 1315.00</p> <p>iv) Above 1500 mm. Upto 1750 mm. dia. Rmt 1439.00</p> <p>v) Above 1750 mm. Upto 2000 mm. dia. Rmt 1566.00</p> <p>vi) Above 2000 mm. Upto 2250 mm. dia. Rmt 1687.00</p> <p>vii) Above 2250 mm. Upto 2500 mm. dia. Rmt 1812.00</p> <p><b>c) Above 12 mm upto 16 mm thick</b></p> <p>i) From 2000 mm. Upto 2250 mm. dia. Rmt 1666.00</p> <p>ii) Above 2250 mm. Upto 2500 mm. dia. Rmt 1734.00</p> <p>iii) Above 2500 mm. Upto 2750 mm. dia. Rmt 1855.00</p> <p>iv) Above 2750 mm. Upto 3000 mm. dia. Rmt 1973.00</p> <p>v) Above 3000 mm. Upto 3250 mm. dia. Rmt 2095.00</p> <p>vi) Above 3250 mm. Upto 3500 mm. dia. Rmt 2213.00</p>			

**SECTION-I : M.S. PIPE LAYING**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<p><b>d) Above 16 mm upto 20 mm thick</b></p> <p>i) From 2500 mm. Upto 2750 mm. dia. ii) Above 2750 mm. Upto 3000 mm. dia. iii) Above 3000 mm. Upto 3250 mm. dia.</p> <p>iv) Above 3250 mm. Upto 3500 mm. dia. v) Above 3500 mm. Upto 3750 mm. dia. vi) Above 3750 mm. Upto 4000 mm. dia.</p> <p><b>e) Above 20 mm upto 25 mm thick</b></p> <p>i) From 3500 mm. Upto 3750 mm. dia. ii) Above 3750 mm. Upto 4000 mm. dia.</p>	<p>Rmt Rmt Rmt  Rmt Rmt Rmt</p> <p>Rmt Rmt</p>	<p>2390.00 2497.00 2702.00  2836.00 2969.00 3105.00</p> <p>3309.00 3500.00</p>	
3.	<p><b>Lowering, laying in position to correct line and level including M. S. pipes with / without any outcoating, on pedestals or chairs upon piers, trestles etc. The rate to include loading, unloading, hoisting, marginal cutting wherever required, assembling and tack welding, transportation upto 500 m. etc. complete.</b></p> <p><b>a) 5 mm to 8 mm thick</b></p> <p>i) Upto 250 mm. dia. ii) Above 250 mm. Upto 500 mm. dia. iii) Above 500 mm. Upto 750 mm. dia. iv) Above 750 mm. Upto 1000 mm. dia. v) Above 1000 mm. Upto 1250 mm. dia.</p> <p><b>b) Above 8 mm upto 12 mm thick</b></p> <p>i) From 750 mm. Upto 1000 mm. dia. ii) Above 1000 mm. Upto 1250 mm. dia. iii) Above 1250 mm. Upto 1500 mm. dia.</p> <p>iv) Above 1500 mm. Upto 1750 mm. dia. v) Above 1750 mm. Upto 2000 mm. dia. vi) Above 2000 mm. Upto 2250 mm. dia. vii) Above 2250 mm. Upto 2500 mm. dia.</p>	<p>Rmt Rmt Rmt Rmt Rmt</p> <p>Rmt Rmt Rmt</p> <p>Rmt Rmt Rmt Rmt Rmt</p>	<p>449.00 527.00 608.00 688.00 769.00</p> <p>916.00 1021.00 1128.00</p> <p>1234.00 1342.00 1447.00 1552.00</p>	





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>c) Above 12 mm upto 16 mm thick</b>			
	i) From 2000 mm. Upto 2250 mm. dia.	Rmt	1322.00	
	ii) Above 2250 mm. Upto 2500 mm. dia.	Rmt	1386.00	
	iii) Above 2500 mm. Upto 2750 mm. dia.	Rmt	1589.00	
	iv) Above 2750 mm. Upto 3000 mm. dia.	Rmt	1693.00	
	v) Above 3000 mm. Upto 3250 mm. dia.	Rmt	1797.00	
	vi) Above 3250 mm. Upto 3500 mm. dia.	Rmt	1884.00	
	<b>d) Above 16 mm upto 20 mm thick</b>			
	i) From 2500 mm. Upto 2750 mm. dia.	Rmt	2083.00	
	ii) Above 2750 mm. Upto 3000 mm. dia.	Rmt	2200.00	
	iii) Above 3000 mm. Upto 3250 mm. dia.	Rmt	2314.00	
	iv) Above 3250 mm. Upto 3500 mm. dia.	Rmt	2429.00	
	v) Above 3500 mm. Upto 3750 mm. dia.	Rmt	2545.00	
	vi) Above 3750 mm. Upto 4000 mm. dia.	Rmt	2662.00	
	<b>e) Above 20 mm upto 25 mm thick</b>			
	i) From 3500 mm. Upto 3750 mm. dia.	Rmt	2837.00	
	ii) Above 3750 mm. Upto 4000 mm. dia.	Rmt	3001.00	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
4	<p><b>Lowering and laying in position</b> to correct line and level including <b>M. S. specials such as distance pieces, straps, bends, tapers, etc. on pedestals or chairs</b> upon piers or trestles. The rate to include loading, unloading, hoisting, marginal cutting wherever required, assembling and tack welding, and including transportation upto 500 m. etc. complete as specified.</p> <p><b>a) 5 mm to 8 mm thick</b></p> <p>i) Upto 250 mm. dia. Rmt 628.00</p> <p>ii) Above 250 mm. Upto 500 mm. dia. Rmt 740.00</p> <p>iii) Above 500 mm. Upto 750 mm. dia. Rmt 850.00</p> <p>iv) Above 750 mm. Upto 1000 mm. dia. Rmt 964.00</p> <p>v) Above 1000 mm. Upto 1250 mm. dia. Rmt 1072.00</p> <p><b>b) Above 8 mm upto 12 mm thick</b></p> <p>i) From 750 mm. Upto 1000 mm. dia. Rmt 1283.00</p> <p>ii) Above 1000 mm. Upto 1250 mm. dia. Rmt 1432.00</p> <p>iii) Above 1250 mm. Upto 1500 mm. dia. Rmt 1580.00</p> <p>iv) Above 1500 mm. Upto 1750 mm. dia. Rmt 1728.00</p> <p>v) Above 1750 mm. Upto 2000 mm. dia. Rmt 1878.00</p> <p>vi) Above 2000 mm. Upto 2250 mm. dia. Rmt 2028.00</p> <p>vii) Above 2250 mm. Upto 2500 mm. dia. Rmt 2176.00</p>			

**SECTION-I: M.S. PIPE LAYING**

300



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>c) Above 12 mm upto 16 mm thick</b>			
	i) From 2000 mm. Upto 2250 mm. dia.	Rmt	1999.00	
	ii) Above 2250 mm. Upto 2500 mm. dia.	Rmt	2079.00	
	iii) Above 2500 mm. Upto 2750 mm. dia.	Rmt	2225.00	
	iv) Above 2750 mm. Upto 3000 mm. dia.	Rmt	2369.00	
	v) Above 3000 mm. Upto 3250 mm. dia.	Rmt	2511.00	
	vi) Above 3250 mm. Upto 3500 mm. dia.	Rmt	2658.00	
	<b>d) Above 16 mm upto 20 mm thick</b>			
	i) From 2500 mm. Upto 2750 mm. dia.	Rmt	2920.00	
	ii) Above 2750 mm. Upto 3000 mm. dia.	Rmt	3079.00	
	iii) Above 3000 mm. Upto 3250 mm. dia.	Rmt	3242.00	
	iv) Above 3250 mm. Upto 3500 mm. dia.	Rmt	3399.00	
	v) Above 3500 mm. Upto 3750 mm. dia.	Rmt	3563.00	
	vi) Above 3750 mm. Upto 4000 mm. dia.	Rmt	3727.00	
	<b>e) Above 20 mm upto 25 mm thick</b>			
	i) From 3500 mm. Upto 3750 mm. dia.	Rmt	3974.00	
	ii) Above 3750 mm. Upto 4000 mm. dia.	Rmt	4199.00	

**SECTION-I: M.S. PIPE LAYING**





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
5.	<p>Transporting within 500 meters, laying in position to correct line and level <b>M. S. pipes with / without any outcoating, on prepared bedding in trenches</b> including marginal cutting wherever required, assembling tack welding the same. The rate to include loading, unloading, hoisting, etc. complete as specified.</p> <p><b>a) 5 mm to 8 mm thick</b></p> <p>i) Upto 250 mm. dia. Rmt 383.00</p> <p>ii) Above 250 mm. Upto 500 mm. dia. Rmt 453.00</p> <p>iii) Above 500 mm. Upto 750 mm. dia. Rmt 521.00</p> <p>iv) Above 750 mm. Upto 1000 mm. dia. Rmt 588.00</p> <p>v) Above 1000 mm. Upto 1250 mm. dia. Rmt 657.00</p> <p><b>b) Above 8 mm upto 12 mm thick</b></p> <p>i) From 750 mm. Upto 1000 mm. dia. Rmt 783.00</p> <p>ii) Above 1000 mm. Upto 1250 mm. dia. Rmt 873.00</p> <p>iii) Above 1250 mm. Upto 1500 mm. dia. Rmt 964.00</p> <p>iv) Above 1500 mm. Upto 1750 mm. dia. Rmt 1056.00</p> <p>v) Above 1750 mm. Upto 2000 mm. dia. Rmt 1144.00</p> <p>vi) Above 2000 mm. Upto 2250 mm. dia. Rmt 1234.00</p> <p>vii) Above 2250 mm. Upto 2500 mm. dia. Rmt 1324.00</p>			

**SECTION - I : M. S. PIPE LAYING**

302



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>c) Above 12 mm upto 16 mm thick</b>			
	i) From 2000 mm. Upto 2250 mm. dia.	Rmt	1218.00	
	ii) Above 2250 mm. Upto 2500 mm. dia.	Rmt	1271.00	
	iii) Above 2500 mm. Upto 2750 mm. dia.	Rmt	1358.00	
	iv) Above 2750 mm. Upto 3000 mm. dia.	Rmt	1445.00	
	v) Above 3000 mm. Upto 3250 mm. dia.	Rmt	2674.00	
	vi) Above 3250 mm. Upto 3500 mm. dia.	Rmt	1622.00	
	<b>d) Above 16 mm upto 20 mm thick</b>			
	i) From 2500 mm. Upto 2750 mm. dia.	Rmt	1775.00	
	ii) Above 2750 mm. Upto 3000 mm. dia.	Rmt	1872.00	
	iii) Above 3000 mm. Upto 3250 mm. dia.	Rmt	1973.00	
	iv) Above 3250 mm. Upto 3500 mm. dia.	Rmt	2073.00	
	v) Above 3500 mm. Upto 3750 mm. dia.	Rmt	1791.00	
	vi) Above 3750 mm. Upto 4000 mm. dia.	Rmt	2271.00	
	<b>e) Above 20 mm upto 25 mm thick</b>			
	i) From 3500 mm. Upto 3750 mm. dia.	Rmt	2417.00	
	ii) Above 3750 mm. Upto 4000 mm. dia.	Rmt	2557.00	

**SECTION - I: M. S. PIPE LAYING**



Sr. No.	Descriptiona	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
6.	Transporting within 500 meters, laying in position to correct line and level <b>M. S. specials pipes with / without any outcoating, such as distance pieces, straps, bends, tapers, etc. on prepared bedding in trenches</b> including marginal cutting wherever required, assembling tack welding, the same. The rate to include loading, unloading, hoisting, etc. complete as specified.			
	<b>a) 5 mm to 8 mm thick</b>			
	i) Upto 250 mm. dia.	Rmt	540.00	
	ii) Above 250 mm. Upto 500 mm. dia.	Rmt	632.00	
	iii) Above 500 mm. Upto 750 mm. dia.	Rmt	728.00	
	iv) Above 750 mm. Upto 1000 mm. dia.	Rmt	822.00	
	v) Above 1000 mm. Upto 1250 mm. dia.	Rmt	920.00	
	<b>b) Above 8 mm upto 12 mm thick</b>			
	i) From 750 mm. Upto 1000 mm. dia.	Rmt	1096.00	
	ii) Above 1000 mm. Upto 1250 mm. dia.	Rmt	1223.00	
	iii) Above 1250 mm. Upto 1500 mm. dia.	Rmt	1348.00	
	iv) Above 1500 mm. Upto 1750 mm. dia.	Rmt	1475.00	
	v) Above 1750 mm. Upto 2000 mm. dia.	Rmt	1714.00	
	vi) Above 2000 mm. Upto 2250 mm. dia.	Rmt	1789.00	
	vii) Above 2250 mm. Upto 2500 mm. dia.	Rmt	1855.00	

**SECTION - I : M.S. PIPE LAYING**





Sr. No.	Descriptiona	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>c) Above 12 mm upto 16 mm thick</b>			
	i) From 2000 mm. Upto 2250 mm. dia.	Rmt	1705.00	
	ii) Above 2250 mm. Upto 2500 mm. dia.	Rmt	1845.00	
	iii) Above 2500 mm. Upto 2750 mm. dia.	Rmt	1899.00	
	iv) Above 2750 mm. Upto 3000 mm. dia.	Rmt	2023.00	
	v) Above 3000 mm. Upto 3250 mm. dia.	Rmt	2150.00	
	vi) Above 3250 mm. Upto 3500 mm. dia.	Rmt	2271.00	
	<b>d) Above 16 mm upto 20 mm thick</b>			
	i) From 2500 mm. Upto 2750 mm. dia.	Rmt	2467.00	
	ii) Above 2750 mm. Upto 3000 mm. dia.	Rmt	2624.00	
	iii) Above 3000 mm. Upto 3250 mm. dia.	Rmt	2763.00	
	iv) Above 3250 mm. Upto 3500 mm. dia.	Rmt	2902.00	
	v) Above 3500 mm. Upto 3750 mm. dia.	Rmt	3040.00	
	vi) Above 3750 mm. Upto 4000 mm. dia.	Rmt	3181.00	
	<b>e) Above 20 mm upto 25 mm thick</b>			
	i) From 3500 mm. Upto 3750 mm. dia.	Rmt	3383.00	
	ii) Above 3750 mm. Upto 4000 mm. dia.	Rmt	3581.00	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
7.	<p><b>Welding</b> in all positions with required number of runs, for M. S. pipes internally and/or externally including gauging wherever necessary, fixing appurtenances and other accessories in connection with pipe laying work as per specification.</p> <p><b>A) Butt Joints : Plate thickness</b></p> <p>i) 4 mm.</p> <p>ii) 5 mm.</p> <p>iii) 6 mm.</p> <p>iv) 7 mm.</p> <p>v) 8 mm.</p> <p>vi) 10 mm.</p> <p>vii) 12 mm.</p> <p>viii) 14 mm.</p> <p>ix) 16 mm.</p> <p>x) 18 mm.</p> <p>xi) 20 mm.</p> <p>xii) 22 mm.</p> <p>xiii) 25 mm.</p>	<p>Rmt</p> <p>Rmt</p> <p>Rmt</p> <p>Rmt</p> <p>Rmt</p> <p>Rmt</p> <p>Rmt</p> <p>Rmt</p> <p>Rmt</p> <p>Rmt</p> <p>Rmt</p> <p>Rmt</p> <p>Rmt</p>	<p>174.00</p> <p>263.00</p> <p>619.00</p> <p>690.00</p> <p>867.00</p> <p>1062.00</p> <p>1137.00</p> <p>1354.00</p> <p>1640.00</p> <p>1775.00</p> <p>2127.00</p> <p>2670.00</p> <p>3624.00</p>	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
	<b>B) Lap joints with convex fillet welds Lap Lengths</b>			
	i) 5 mm.	Rmt	244.00	
	ii) 6 mm.	Rmt	312.00	
	iii) 8 mm.	Rmt	413.00	
	iv) 10 mm.	Rmt	461.00	
	v) 12 mm.	Rmt	690.00	
	vi) 14 mm.	Rmt	937.00	
	vii) 16 mm.	Rmt	1032.00	
	viii) 18 mm.	Rmt	1253.00	
	ix) 20 mm.	Rmt	1412.00	
	x) 22 mm.	Rmt	1888.00	
	xi) 25 mm.	Rmt	2292.00	

SECTION - I : M. S. PIPE LAYING

307





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
8.	<b>Shifting and aligning ring girders</b> including removing tack welds and re-tacking in the correct position etc. complete as per specification for the pipes of following diameter.			
	i) From 1000 mm. Upto 1250 mm. dia.	Rmt	473.00	
	ii) Above 1250 mm. Upto 1500 mm. dia.	Rmt	579.00	
	iii) Above 1500 mm. Upto 1750 mm. dia.	Rmt	683.00	
	iv) Above 1750 mm. Upto 2000 mm. dia.	Rmt	788.00	
	v) Above 2000 mm. Upto 2250 mm. dia.	Rmt	892.00	
	vi) Above 2250 mm. Upto 2500 mm. dia.	Rmt	996.00	
	vii) Above 2500 mm. Upto 2750 mm. dia.	Rmt	1100.00	
	viii) Above 2750 mm. Upto 3000 mm. dia.	Rmt	1207.00	
	ix) Above 3000 mm. Upto 3250 mm. dia.	Rmt	1312.00	
	x) Above 3250 mm. Upto 3500 mm. dia.	Rmt	1417.00	
	xi) Above 3500 mm. Upto 3750 mm. dia.	Rmt	1521.00	
	xii) Above 3750 mm. Upto 4000 mm. dia.	Rmt	1635.00	

**SECTION - I : M.S. PIPE LAYING**

308



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
9.	<p>Transporting within 500 meters and fixing in position <b>stools, base plates, roller sets, grease box covers, etc. including</b> welding wherever necessary. The rate also to include fixing stools, base plates, etc. in true line and level, connecting the base plate to anchor bolts by flush welding including cutting the bolts, if required, assembling and aligning C. I. or M. S. roller sets of any size including oiling, greasing, etc. The rate also to include grouting anchor bolts, welding of two halves of grease box covers as directed by Engineer-in-charge, for pipes of following dia.</p> <p>i) From 1000 mm. Upto 1250 mm. dia.</p> <p>ii) Above 1250 mm. Upto 1500 mm. dia.</p> <p>iii) Above 1500 mm. Upto 1750 mm. dia.</p> <p>iv) Above 1750 mm. Upto 2000 mm. dia.</p> <p>v) Above 2000 mm. Upto 2250 mm. dia.</p> <p>vi) Above 2250 mm. Upto 2500 mm. dia.</p> <p>vii) Above 2500 mm. Upto 2750 mm. dia.</p> <p>viii) Above 2750 mm. Upto 3000 mm. dia.</p> <p>ix) Above 3000 mm. Upto 3250 mm. dia.</p> <p>x) Above 3250 mm. Upto 3500 mm. dia.</p> <p>xi) Above 3500 mm. Upto 3750 mm. dia.</p> <p>xii) Above 3750 mm. Upto 4000 mm. dia.</p>	<p>Each</p> <p>Each</p> <p>Each</p> <p>Each</p> <p>Each</p> <p>Each</p> <p>Each</p> <p>Each</p> <p>Each</p> <p>Each</p> <p>Each</p>	<p>1728.00</p> <p>1869.00</p> <p>2011.00</p> <p>2151.00</p> <p>2292.00</p> <p>2433.00</p> <p>2575.00</p> <p>2714.00</p> <p>2856.00</p> <p>2997.00</p> <p>3163.00</p> <p>3277.00</p>	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
10.	Transporting within 500 meters and aligning, fixing in position and tack welding <b>expansion joints</b> suitable for pipeline of diameters.			
	i) From 1000 mm. Upto 1250 mm. dia.	Each	5847.00	
	ii) Above 1250 mm. Upto 1500 mm. dia.	Each	6064.00	
	iii) Above 1500 mm. Upto 1750 mm. dia.	Each	6283.00	
	iv) Above 1750 mm. Upto 2000 mm. dia.	Each	6501.00	
	v) Above 2000 mm. Upto 2250 mm. dia.	Each	12289.00	
	vi) Above 2250 mm. Upto 2500 mm. dia.	Each	12564.00	
	vii) Above 2500 mm. Upto 2750 mm. dia.	Each	12837.00	
	viii) Above 2750 mm. Upto 3000 mm. dia.	Each	13027.00	
	ix) Above 3000 mm. Upto 3250 mm. dia.	Each	13387.00	
	x) Above 3250 mm. Upto 3500 mm. dia.	Each	13663.00	
	xi) Above 3500 mm. Upto 3750 mm. dia.	Each	13934.00	
	xii) Above 3750 mm. Upto 4000 mm. dia.	Each	14209.00	





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
11.	Transporting within 500 meters aligning and fixing in position and tack welding only, including marginal cutting, supplying and providing <b>rubber packing</b> etc. where necessary.			
	A) Minor fixtures such as manhole cover, pressure and non-pressure type blank flanges, loose rings, small pipes to form saddle bypass arrangement, plug plates, ladders, platform, stiffener rings, etc.	MT	10466.00	
	B) Minor fixtures such as tees, domes, 'Y' branches, insulating flange ring assembly, etc.	MT	5318.00	
12.	<b>Gas cutting</b> (either square cut or V cut) <b>pipes, plates</b> , etc. of thickness.			
	i) Upto 5 mm.	Rmt	79.00	
	ii) Above 5 mm. Upto 10 mm.	Rmt	112.00	
	iii) Above 10 mm. Upto 14 mm.	Rmt	144.00	
	iv) Above 14 mm. Upto 18 mm.	Rmt	165.00	
	v) Above 18 mm. Upto 22 mm.	Rmt	229.00	
	vi) Above 22 mm.	Rmt	306.00	

**SECTION-I : M.S. PIPE LAYING**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
13.	<b>Gas cutting</b> holes upto 50 mm dia (for plugs)  <b>Thickness of shell</b>  a) 5 mm. to 12 mm b) Above 12 mm	No.  No.	86.00  121.00	
14.	Providing <b>M.S. bar mesh</b> prepared out of 16 mm dia M.S. bar at 15 cm. c/c both ways, welded to flanged ring including tack welding of bars and fixing the same with nuts and bolts on open faces of outlet/inlet pipes in the sump or reservoir, etc. complete as directed by Engineer-in-charge.	Sqm	1587.00	
15.	Providing <b>permanent test points</b> on the pipe line as per drawing and as directed by Engineer-in-charge including providing and fixing sluice valves, road boxes for sluice valves of size 80 mm to 250 mm in one brick masonry chamber 300 mm x 300 mm clear C. M. 1:5 with 12 mm thick in 1:3 cement plaster both inside and outside on M-100 C.C. 150 mm thick etc. complete as specified and directed.	No.	3559.00	
16.	Supplying transporting, the <b>S.P. fire hydrants</b> including duck foot bend, S.V. and S.V. road box, painting the hydrant, fixing the saddle piece, supplying, and laying required length of C.I. pipe-line and jointing the same spun yarn, molten lead including caulking, fixing the S.V. road box in one brick masonry chamber in 1:5 C.M. with 12 mm thick 1:3 cement plaster both inside and outside on 1:3:6: C.C. 150 mm thick etc, complete specified and directed. [As per I.S.900/1965 Revised]	No.	14097.00	

**SECTION-I: M.S. PIPE LAYING**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
17.	<b>Hydraulic testing</b> of M.S. pipeline to specified pressure including cost of all materials and labour and water for testing for the length upto 1 km., using reciprocating type pumps which should be able to provide specified test pressure gauges and other necessary equipments, labour, operation charges, etc. required for testing. The rate under this item shall also include cost of retesting, if necessary.			
a)	i) Upto 600 mm. dia. (I.D.)	Km.	49549.00	
	ii) Above 600 mm. upto 750 mm. dia. (I.D.)	Km.	49622.00	
	iii) Above 750 mm. upto 900 mm. dia. (I.D.)	Km.	49736.00	
	iv) Above 900 mm. upto 1050 mm. dia. (I.D.)	Km.	49908.00	
	v) Above 1050 mm. upto 1200 mm. dia. (I.D.)	Km.	50078.00	
	vi) Above 1200 mm. upto 1500 mm. dia. (I.D.)	Km.	50416.00	
	vii) Above 1500 mm. upto 1800 mm. dia. (I.D.)	Km.	50912.00	
	viii) Above 1800 mm. upto 2250 mm. dia. (I.D.)	Km.	51744.00	
	ix) Above 2250 mm. upto 2500 mm. dia. (I.D.)	Km.	52351.00	
	x) Above 2500 mm. dia. (I.D.)	Km.	52956.00	

**SECTION-I: M.S. PIPE LAYING**





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
b)	<b>Extra work initial km</b>			
	xi) Upto 600 mm dia. (I.D.)	Km.	251.00	
	xii) Above 600 mm dia. upto 750 mm dia. (I.D.)	Km.	361.00	
	xiii) Above 750 mm dia. upto 900 mm dia. (I.D.)	Km.	535.00	
	xiv) Above 900 mm dia. upto 1050 mm dia. (I.D.)	Km.	707.00	
	xv) Above 1050 mm dia. upto 1200 mm dia. (I.D.)	Km.	910.00	
	xvi) Above 1200 mm dia. upto 1500 mm dia. (I.D.)	Km.	1345.00	
	xvii) Above 1500 mm dia. upto 1800 mm dia. (I.D.)	Km.	2032.00	
	xviii) Above 1800 mm dia. upto 2250 mm dia. (I.D.)	Km.	3118.00	
	xix) Above 2250 mm dia. upto 2500 mm dia. (I.D.)	Km.	3883.00	
	xx) Above 2500 mm dia. upto 2750 mm dia. (I.D.)	Km.	4697.00	
	xxi) Above 2750 mm dia. upto 3000 mm dia. (I.D.)	Km.	5542.00	



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
18.	Providing and applying with mechanical arrangement 1:3 proportion <b>cement sand gunite, 40 to 50 mm thick to M. S. pipe</b> surface under 2.1 kg. per sqcm. to 2.80 kg. per sqcm. pressure including removing the loose materials as directed by Engineer-in-charge and including scrapping the surface with wire brushes, degreasing, cleaning by compressed air and providing fixing BRC fabric no.14 as reinforcement, curing for 21 days, disposing off the rebound materials within a lead of 50 M, etc. complete as directed by Engineer-in-charge.	Sqm.	554.00	
19.	Providing and applying <b>pipe coating of fibres, coal tar and solvent based rubber modified bituminous primer</b> of density 0.92 gms/cu cm and viscosity of 1000-2000 cps @ 150 gms/sqm followed by seven layers(4mm thick) of polythene polymerised bitumen and polyester of local 7 layers) pipe coat 4 mm should conform to requirement of IS-10221 and AWWA C-203 for pre-fabricated tapes including covering cost on pipe coating. Rates shall include cost of material coating and wrapping over the pipes, handling charges, preparation of pipe surface, all labour, material, etc. complete.	Sqm.	596.00	
<b>Note : Pipe coating is to be done at laying work site only.</b>				

**SECTION-I : M. S. PIPE LAYING**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
20.	Providing and applying with mechanical arrangement <b>cement sand gunite</b> of 50 mm thickness to floors, walls, floor slabs or any other structure under 2.1 kg. per sqcm. to 2.80 kg. per sqcm. pressure including removing the loose materials on surface, cleaning with compressed air, degreasing, etc. including scaffolding and curing for 21 days, providing and fixing BRC fabric no. 14 but excluding cost of reinforcement, if any and removing rebound materials within a lead of 50 M, etc. complete as directed by Engineer-in-charge <b>(for GSRs and buildings.)</b>	Sqm.	545.00	
21.	Providing and applying with mechanical arrangement <b>cement sand gunite</b> of 50 mm thickness to floors, walls, roof slabs or any other structure under 2.1 kg. per sqcm. to 2.80 kg. per sqcm. pressure including removing the loose materials on surface, cleaning with compressed air, degreasing, etc. including scaffolding and curing for 21 days, providing and fixing BRC fabric no. 14 but excluding cost of reinforcement, if any and removing rebound materials within a lead of 50 M, for staging and bottom of bottom slab, etc. complete as directed by Engineer-in-charge <b>(for RCC ESRs)</b>	Sqm.	482.00	
22.	Providing and making <b>inner cement mortar lining to M.S. pipes</b> with mechanical devices in cement mortar 1:1 proportion, including cost of all materials, labour, special sand required, machinery, power generation, all equipments and taking necessary access openings and manholes, cuts at suitable intervals as directed by Engineer-in-charge and rewelding the same after done with doubler plates pipes including necessary excavation, refilling concrete breaking and remaking if any, breaking guniting and remaking the same, repainting wherever required with epoxy paint in 3 coats, all dewatering including emptying the pipeline and refilling the same after done with (water to be supplied by department free of cost within 5 km. lead at fixed point and all other arrangements to be done by agency), including carrying out "C" value performance test of pipeline, complete job as per the directions of the Engineer-in-charge.			
	i) 9 mm thick for pipes upto 700 mm dia.	Sqm.	433.00	
	ii) 12 mm thick for pipes above 700 mm dia.	Sqm.	502.00	

**SECTION - I : M.S. PIPE LAYING**





Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
23.	Providing and applying of elastomeric (450% elongation), thermoplastic, fire retardant, coating skin tensile strength 18 to 21 kg/cm <sup>2</sup> , antifungal, antibacterial, anticorrosive, graft co-polymer Coating on smooth plastered surface. 100 Micron dyufilm thickness of self bonding with plastered surface and 100 Micron of top coat. For sewage treatment plant (R. C. C. Tank inside coating) and water treatment plant.	Sqm.	1406.00	
24.	Providing and applying external and internal coating for steel structures in sewage treatment plant/water treatment plant with elastomeric (450% elongation), thermoplastic, fire retardant, coating skin tensile strength 18 to 21 kg/cm <sup>2</sup> , antifungal, antibacterial, anticorrosive, graft co-polymer. 50 Micron DFT. of self bonding with steel, 50 Micron DFT. of inner coat and 50 Micron DFT of top coat.	Sqm.	822.00	
25.	Providing and applying of elastomeric (450% elongation), thermoplastic, fire retardant, coating skin tensile strength 18 to 21 kg/cm <sup>2</sup> , antifungal, antibacterial, anticorrosive, graft co-polymer coating on external pipe lines in unlaidd/laid condition after proper cleaning. 50 micron DFT of self bonding grade with metal surface, 50 Micron DFT of self bonding grade with metal surface, 50 Micron DFT inner coat and 50 Micron DFT of top coat.			
	1) Water and sewage pipe lines (external) in unlaidd condition.	Sqm.	860.00	
	2) Water and sewage pipe lines (external) in laidd condition.	Sqm.	882.00	
26.	Providing and applying of elastomeric (450% elongation), thermoplastic, fire retardant, coating skin tensile strength 18 to 21 Kg/cm <sup>2</sup> , antifungal, antibacterial, anticorrosive, graft co-polymer coating on internal surface of pipe lines. 100 Micron DFT of site bonding grade with steel surface and 100 Micron DFT of top coat.			
	1) Pipe line in unlaidd condition	Sqm.	1083.00	
	2) Pipe line in laidd condition	Sqm.	1155.00	

**SECTION - I : M. S. PIPE LAYING**



Sr. No.	Description	Unit	Rate (in Rs.) 2018-2019	Rate (in Rs.) 2019-2020
1	2	3	4	5
27.	Providing and applying of elastomeric (450% elongation), thermoplastic, fire retardant, coating skin tensile strength 18 to 21 kg/cm <sup>2</sup> , antifungal, antibacterial, anticorrosive, graft co-polymer coating on cleaned steel reinforcement bars. 80 to 100 micron DFT With self bonding trade of bar coating.			
	1. 6 mm dia.	MT	39372.00	
	2. 8 mm dia.	MT	30127.00	
	3. 10 mm dia.	MT	23873.00	
	4. 12 mm dia.	MT	19865.00	
	5. 16 mm dia.	MT	14875.00	
	6. 20 mm dia.	MT	12105.00	
	7. 25 mm dia.	MT	9559.00	
	8. 32 mm dia.	MT	7661.00	
	9. 40 mm dia.	MT	5818.00	
28.	Providing and applying of HDPE coating for MS pipe internally as well as externally including cost of HDPE powder moulding pipe grade, labour, scrapping the pipe surface with wire brushes, degreasing, cleaning by compressed air and surface grinding and finishing including cost of loading, unloading and handling of pipe at factory etc. complete as directed by Engineer -in -charge.			
HDPE coating thickeess in micron		Total coating thickness in micron	Unit	
	External	Internal		
1.	0	2000	Sq. m	2166.00
2.	2000 micron	1000	Sq. m	2721.00
3.	3000 micron	1000	Sq. m	3127.00
4.	3000 micron	2000	Sq. m	3594.00



**SECTION - J - (I)**  
**TREATMENT PLANT (WTP & STP)**





Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
	<u>Water Treatment Plant (WTP)</u>					
1	Designing (aesthetically), providing and constructing high rate <u>Unconventional Water Treatment Plant</u> i.e. Simplified Water Treatment Plant consisting of Civil, Mechanical and Electrical works including cost of providing and applying epoxy paint to inside surface of water retaining structures in contact with chlorine and providing anti-termite treatment to entire structure below ground level, mechanical and electrical components of various sub-works as given below, including necessary hydraulic testing, structural testing and trial run for 3 months, etc. complete as directed by Engineer-in-charge (turn-key job) works.					
1)	Aeration fountain					
2)	Inlet arrangements					
3)	Mixing channel with ventury flume and flow measuring arrangement					
4)	Inlet channel					
5)	Flocculator - Conforming to I.S. 7208-1974 (Type-C) with detention period of 30 minutes					
6)	Tube settlers - Designing, fabricating and constructing Tube Settlers with square or any other shaped tube like Circular, Cheveron, Hexagonal etc. having proven performance.					
7)	Rapid sand gravity filters					
8)	Filter house					
9)	Chemical house					
10)	Alum tanks - 2 Nos. with mixing, carrying and dosing arrangements with piping.					
11)	Gravity feed gas chlorinator with 100% standby.					
12)	TCL solution tank with mixing, carrying and dosing arrangement with piping.					
13)	Bypass arrangement					
14)	External and internal electrification					
15)	Laboratory equipments					
16)	Wash water tanks of capacity equal to 2% of designed quantity of filtered water in a day (+)10%.					

**SECTION – J : (I) TREATMENT PLANT – WTP & STP**



Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
17)	Wash water pumps with 100% standby.					
18)	Air blowers capable of delivering 600 LMP per square metre of free air of filter area at 0.4 Kg/ sqcm at the under drains (100% standby).					
19)	Pure water sump of capacity equal to 1 hour pumping capacity.					
20)	Pure water pump house over the sump / by the side pump.					
21)	Drainage arrangements					
22)	Alum store					
23)	Sanitary block with necessary water supply and drainage arrangements and internal WBM roads.					
24)	These rates are applicable for seismic zones 2, 3 and 4.					
25)	Rates given below are inclusive of uplift pressure if any and dewatering during the entire work.					
26)	All RCC structures shall be constructed in M-300.					
27)	Unconventional Treatment Plants less than 1 MLD capacity shall not be constructed.					
28)	Up to 3 MLD capacity no air blower will be required.					
29)	Up to 5 MLD WTP, 100 kg. and for above 5 MLD WTP 900 kg. Chlorine Tonner supply shall be provided.					
30)	i) Glandless valves shall be provided. ii)Stainless steel railing shall be provided. (32 mm dia.(SS316) as per relevant standard ) iii) All WTP & its components outside faces shall be painted by Acrylic Emulsion with silicon additives paint only. iv) Ceramic tiles shall be provided for flooring and Dado.					
	<b>Note :</b> Conditions from Sr. No. 1 to 30 shall form a part and parcel of the tender and must be included in draft tender papers for the work of unconventional treatment plants.					

SECTION – J : (I) TREATMENT PLANT – WTP & STP





Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
	<u>Unconventional Water Treatment Plant</u>		<u>Rs. In Lakhs</u>			
1)	Fixed cost for 1 MLD	Job	50.00	20.00		
2)	Add for capacity above 1 MLD upto 2 MLD	MLD	22.00	9.00		
3)	Cost of 2 MLD treatment plant	Job	71.00	29.00		
4)	Add for capacity above 2 MLD upto 5 MLD	MLD	17.00	7.00		
5)	Cost of 5 MLD treatment plant	Job	121.00	48.00		
6)	Add for capacity above 5 MLD	MLD	13.00	5.00		
7)	Cost of 10 MLD treatment plant	Job	186.00	74.00		
2	Designing (aesthetically), providing, constructing and commissioning <u>Conventional Water Treatment Plant</u> consisting of all Civil, Mechanical and Electrical works including cost of providing and applying epoxy paint to inside surface of water retaining structures in contact with chlorine and providing anti-termite treatment to entire structure below ground level, mechanical and electrical components of various sub-works as given below, including necessary hydraulic testing, structural testing, equipment testing and trial run for a period of 3 months, etc. complete as directed by Engineer-in-charge (turn-key job).					
1)	Aeration Fountain - Plan area not less than 0.625 square metre per MLD					
2)	Ventury Flume - With necessary devices, consisting of simple mechanical indicator. (Pedestal type gauge)					
3)	Flash Mixer - Rapid mixing device, detention time 60 seconds to give velocity gradient 300 to 400 sec-1, vane mixer type conforming to I.S. 7090 of 1985.					
4)	Flocculator - Conforming to I.S. 7208-1974 (Type-C) with detention period of 30 minutes.					
5)	Clarifier - Horizontal flow circular tank, detention period 2-5 hours, overflow rate 30 cubic metre per square metre per day (to be specified), Weir loading not more than 300 cubic metre per metre per day, with mechanical sludge scraper conforming to I.S. No. 10313-1982.					

#### SECTION – J : (I) TREATMENT PLANT – WTP & STP





Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
6)	Rapid Sand Filters and Filter House - Filter designed for filtration rate of 5,000 litres per square metre per hour, minimum 2 beds for plant upto 10 MLD, for larger plants as specified, filters to be located in filter house with roof slab, pipe gallery and platform minimum 5.5 metre in width.					
a)	Filter Sand - Effective size 0.45 to 0.70 mm, uniformity coefficient not more than 1.7, nor less than 1.3, depth of water over sand 0.75 M, free board 50 cm, gravel 0.45 M in depth, sand and gravel conforming to I.S. 8491(i)-77, backwash by air wash, standard appurtenances (to be specified), rate of flow controller, filter gauge, sand expansion gauge, etc.					
b)	Wash Water Tank - Capacity to be specified and suitable to supply water to wash 2 filter units at a time where the units are 4 or more.					
c)	Wash Water Pumps - Capacity to fill water tank in 1 hour with 100% standby.					
d)	Air Blowers - Capable of delivering 600 LMP per square metre of free air, of filter area at 0.4 kg/sqcm at the underdrains (100% standby).					
7)	Chemical House in Two Storeys					
a)	Ground floor to accommodate 7 days' alum requirement and sundry storage.					
b)	First floor to accommodate alum and lime tanks. etc.					
c)	Solution tanks - Minimum 3 tanks (one for preparation, second for dosing and third as standby), each tank capable of giving 8 hours maximum dose without interruption, minimum free board 0.30 M, trays for dissolving, level indicator, mechanical agitation devices, solution feed and drain lines, solution feed device (constant head device, strength of solution upto 10% only) conforming to I.S. 9222 Part-I 1979.					
8)	Pure Water Sump and Sump House.					
a)	Capacity of sump - One hour of designed flow.					
b)	Pump House - Pump house of required size over the sump or by the side.					

SECTION - J : (I) TREATMENT PLANT - WTP & STP 324



Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
9)	Store House - Suitable for alum storage of three months' requirement in monsoon with 10% extra capacity for other sundry articles.					
10)	Vacuum feed type Chlorinators - Make to be approved by MJP.					
a)	Conforming to I.S. 10533 - A Part-II 1983.					

b)	Rate for withdrawal					
	Temperature Degree 'C'	Kg. of Chlorine discharge per day (Cylinders)				
	45	67 Tonnes				
	10	6.35 9.50 110				
	15	10.75 16.10 130				
	20	14.50 21.24 254				
	27&Above	18.70 28.12 315				
c)	Chlorinator equipment and container room to conform to I.S. 10553 Part-I 1983.					
d)	100% standby shall be provided.					
11)	By pass arrangements - C.I. or M.S. pipes.					
12)	Drainage arrangements - RCC pipes upto plot boundary.					
13)	Electrical installation - Both internal and external including entire plant area.					
14)	Laboratory equipment - As per requirement (to be specified during tendering).					
15)	Sanitary blocks - Carpet area - 15 square metre minimum upto 25 Mld and 25 square metre above 25 Mld.					
16)	Administrative block and internal road - To accommodate office room, chlorine room, laboratory room, panel board room, blower room etc. and WBM road to connect all units from main gate of plot.					
17)	Rates given below are inclusive of uplift pressure if any and dewatering during entire work.					
18)	These rates are applicable for seismic zones 2, 3 and 4.					

#### SECTION - J : (I) TREATMENT PLANT - WTP & STP





Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
19)	All RCC structures shall be constructed in M-300.					
20)	Upto 5 MLD WTP , 100 kg. & for above 5MLD WTP , 900 kg. Chlorine Tonner supply shall be provided.					
21)	i) Glandless valves shall be provided. ii) Stainless steel railing shall be provided. (32 mm dia.(SS316) as per relevant standard ) iii) All WTP & its components outside faces shall be painted by Acrylic Emulsion with silicon additives paint only. iv) Ceramic tiles shall be provided for flooring and Dado.					
	<u>Note</u> : Conditions from Sr. No.1 to 21 shall form a part and parcel of the tender and must be included in draft tender papers of conventional treatment plants.					
	<u>Conventional Water Treatment Plant</u>		<u>Rs. in Lakhs</u>			
1)	Upto 5 MLD	MLD	31.00	12.00		
2)	Cost of 5 MLD treatment plant	Job	153.00	61.00		
3)	Add for capacity above 5 MLD upto 10 MLD	MLD	22.00	9.00		
4)	Cost of 10 MLD treatment plant	Job	262.00	105.00		
5)	Add for capacity above 10 MLD upto 20 MLD	MLD	14.00	6.00		
6)	Cost of 20 MLD treatment plant	Job	404.00	161.00		
7)	Add for capacity above 20 MLD upto 50 MLD	MLD	13.00	5.00		
8)	Cost of 50 MLD treatment plant	Job	796.00	318.00		
9)	Add for capacity above 50 MLD upto 100 MLD	MLD	11.00	4.00		
10)	Cost of 100 MLD treatment plant	Job	1342.00	537.00		
11)	Add for capacity above 100 MLD	MLD	6.00	2.00		
3	Designing (aesthetically), providing, fabricating <u>Package Water Treatment Plant</u> at the shop, transporting to site, installing, testing and commissioning at the site, giving necessary one month's free test and trail run with guarantee for one year, etc. complete.					
	Prefabricated Package Water Treatment Plant comprising following :					





Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
4A	Designing (aesthetically), providing, constructing and giving satisfactory trials of <u>modernised Sewage Treatment Plant</u> consisting of receiving chamber, screen chamber, grit chamber, measuring flume, distribution chamber with primary and secondary treatment, etc. as detailed below, administration block of suitable size including allied units for waste disposal with all civil and mechanical works involved, etc. complete (turn key job).					
	<u>Primary treatment - with extended sludge drying beds</u>					
	<u>Rates</u>		<u>Rs. in Lakhs</u>			
1)	Upto 10 MLD	MLD	43.00	17.00		
2)	Cost of 10 MLD plant	Job	428.00	171.00		
3)	Add for capacity above 10 MLD upto 20 MLD	MLD	37.00	15.00		
4)	Cost of 20 MLD plant	Job	802.00	321.00		
5)	Add for capacity above 20 MLD	MLD	32.00	13.00		
6)	Cost of 50 MLD plant	Job	1765.00	706.00		
7)	Add for capacity above 50 MLD	MLD	27.00	11.00		
8)	Cost of 100 MLD plant	Job	3102.00	1241.00		
B	Designing (aesthetically), providing, constructing and giving satisfactory hydraulic testing, commissioning and giving satisfactory trials of <u>modernised Sewage Treatment Plant</u> consisting of inlet chamber, screen chamber, detritus tanks, parshall flume, primary settling tanks, aeration tanks, secondary settling tanks, sludge sump and pump house, sludge thickener, primary digester, secondary digester, SST sump and pump house, chlorine contact tank, chlorinators, chlorinator room, sump cum blending tank, PST sludge sump cum blending tank, pump house, sludge centrifuge, gas holder, necessary piping work with required valves, gates, drains, pathways, administrative building cum laboratory, laboratory equipments, tools and plants, spare parts, etc. complete as turnkey job with all involved civil, electrical and mechanical works inclusive of following items, units as per detailed specification for civil, electrical and mechanical components with all duties and taxes, etc. complete.					

**SECTION – J : (I) TREATMENT PLANT – WTP & STP**



Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
	<u>Inlet Chamber</u> Designing, providing and constructing RCC (M-300) inlet chamber designed for the peak flow 2 DWF including necessary excavation in all types of strata including walkway around the periphery. Each compartment will have phosphor bronze, steel gate with extension rod, head stock, operating wheel, G.I. pipe railing, etc. The work includes providing and making necessary arrangements to connect the flow to screen chamber by approach channel as directed and as per specifications.					
	<u>Screen Chambers</u> Designing, providing, constructing, testing and commissioning screen chamber designed for average 1 DWF and maximum 2 DWF in RCC (M-300) including inlet pipe/ channel from inlet chamber, outlet pipe/ channel to detritus tank, free board of 0.50 M minimum, RCC walkway 1.2 M wide with G.I. pipe railing, RCC staircase of 1.2 M width from GL to screen chamber.					
	<u>Detritus Tank</u> Designing, providing and constructing continuously grit removal type of detritus tank, mechanically operated in RCC (M-300) capable of removing 100%, 0.20 mm size particle and above, having specific gravity 2.30 designed for one peak 2 DWF with suitable arrangement of separation of grit from putrescible solids including providing and making necessary arrangement of JB-1 inlet and outlet channel of required sizes as may be required to connect the flow to parshall flume, etc. complete including hydraulic testing for water tightness of the structure having minimum free board of 0.30 M washout arrangement to grit chamber and platform 1.20 M wide RCC walkway with G.I. pipe hand railing shall be provided. A pit for collecting grit conveyed by conveyor shall be provided.. It should be suitable to handle the grit for carting. All arrangements shall be as per detailed specifications and as directed.					





Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
9)	Alum dosing and mixing arrangements to be provided in twin tanks, each of 8 hours capacity, capable of importing does of 20 ppm with 5% solution. The alum tanks provided with a dose in steps of 5 ppm and entire unit mounted on the top of flocculator / settler box, in the form of prefabricated structure, with access platform and ladder. Alum boxes with FRP lining (5 mm thick) inside and epoxy paint two coats with one coat of primer on outside.					
10)	Both flocculator and settling basins provided with hopper bottom with slope not less than 45 degrees to the horizontal drain pipes and valves provided to both flocculator and settling basin.					
11)	Flow ratings to conform following parameters :					
a)	Velocities in channels not to exceed 0.6 M./Second.					
b)	Velocities in filter outlet pipes and valves not to exceed 1 M./Second.					
c)	Velocities in interconnecting pipe and controls not to exceed 1M./Second.					
d)	Backwash with air : Not required.					
e)	Backwash with water : Not less than 0.6 M./ Sqm. of filter bed area in filter box.					
12)	Free board for all units not less than 300 mm					
13)	Rates as above include all taxes, octroi and duties which would be specific to the site locations.					
	<u>Package Water Treatment Plant</u>		<u>Rs. in Lakhs</u>			
1)	21 Cum/Hr. (0.50 MLD)	Each	25.00	10.00		
2)	34 Cum/Hr. (0.80 MLD)	Each	31.00	12.00		
3)	42 Cum/Hr. (1.00 MLD)	Each	35.00	14.00		
4)	63 Cum/Hr. (1.50 MLD)	Each	44.00	17.00		
5)	83 Cum/Hr. (2.00 MLD)	Each	52.00	21.00		
6)	125 Cum/Hr. (3.00 MLD)	Each	66.00	27.00		
	<u>Note</u> : Depending upon the capacity required for the scheme, one of the above capacities should be chosen.					
	<u>Sewage Treatment Plant (STP)</u>					





Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
1)	Rapid mixing channel in M.S. sheets and M.S. baffle.					
2)	Flocculator not less than 10 minutes detention, in M.S. prefabricated box, flocculation being achieved either by glass pebbles of graded size or PVC tetrapod or equivalent arrangement to ensure good floc formation.					
3)	Plate or tube settlers of not less than 30 minutes detention in M.S. prefabricated box, the plates / tubes mounted in the settler basin with inclination of not less than 60 degree to horizontal.					
4)	Rapid sand gravity filter in M.S. prefabricated box with filter sand not less than 500 mm thick, supported on false floor below with polypropylene nozzles spaced at not more than 500 mm centres in either direction.					
5)	Backwashing, inlet facilities only shall be provided. Department shall provide either ESR giving 8 to 10 M head at filter nozzles or backwash pump, having flow rate of 0.6 Cum per minute per square metre of filter bed. (Limit upto 5.0 M. from W.T.P. face )					
6)	All civil works for foundation, consisting of raised RCC platform above G.L. or walls in B.B. masonry or UCR masonry shall be provided as per needs at site.					
7)	Bypass in the form of pipes or M.S. channels included in the design, effecting bypass of such new tank and filter individually or both. (Limit upto 5.0 M. from W.T.P. face)					
8)	The entire M.S. fabricated tank provided with FRP lining (5 mm thick) to inside face in contact with water epoxy painting- two coats with one coat of primer on outside. The thickness of plates employed shall not be less than 6 mm					



Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
	<u>Parshall Flume</u> Designing, providing and constructing parshall flume channel in RCC (M-300) for measuring quantity of sewage received at the treatment works, max. flow of 2 DWF and minimum flow of ½ DWF including providing and making necessary arrangement of approach channel as may be required to connect the flow having minimum velocity of 0.3 M per second to distribution box (DB-1). The unit shall be provided with walkway and RCC staircase having width of 1.20 M each etc. complete, including hydraulic testing for watertightness of the civil structure having free board of 0.6 M including electrically operated, flow indicating and flow integrating devices having a standby of float operated ROF meter. All arrangements as per specifications.					
	<u>Primary Settling Tanks with Equipments</u> Designing, providing, constructing and hydraulic testing in RCC (M-300) watertight primary settling tanks of 1 DWF capacity with feed chamber, sludge and effluent chamber, base adequately supported, providing 1.20 M wide clear peripheral and approach walkway inter connecting C.I. double flanged pipes from feed chamber of the clarifier distribution well, grouting wherever necessary, including foundation, etc. as per specifications, water depth at outer side shall be minimum 3.0 M, weir loading shall not be greater than 125 cum, DWF for average flow, bottom slope shall be 1:12.					
	The floor of clarifier shall have 40 mm thick (min.) screed course of cement grout of mix in CM 1:2 detention period shall be 2.25 hrs. dispersion box and stiffened weir plate made of mild steel plate not less than 8 mm thick, anti-corrosive epoxy paint on both faces shall be provided. Minimum free board of 0.50 M be provided. It includes inlet pipe from distribution chamber, central shaft, inlet baffle, outlet chamber, scum remover, skimming device, scum chamber, connecting channel from PST, outlet chamber to DB-2 as per detailed specifications.					

**SECTION – J : (I) TREATMENT PLANT – WTP & STP**





Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
	<u>Aeration Tank (AT)</u> Designing, providing and constructing in RCC mix (M-300) aeration tank in compartments to handle combined flow of 1 DWF incoming flow and recirculation flow including construction of inlet, outlet and distribution chamber DB-3 and providing 1.20 m wide clear peripheral approach walkways, expansion joints wherever necessary, including foundation, etc. as per specifications. Peak factor shall be 2, F/M ratio shall be 0.40, low speed aerator speed between 20 to 100 RPM, recirculation flow @50% and free board 0.60 m depth, (SWD) 3.50 M minimum, D.O. level at A.T. 2 mg/lit, MLVSS concentration shall be 2500 mg/lit and MLVSS concentration shall be 2000 mg/lit, HRT shall be 4 to 6 hours and STR 6-8 days.					
	It should have compartments for washing, oxygen transfer capacity of mechanical aerator shall not be less than 1.5 kg/KWH, BOD of effluent 20 mg/lit with input to aerator 0.15 to 0.30 KWH/1000 cum of aeration tank. All related works shall be as per detailed specifications.					





Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
	<p><u>Secondary Settling Tanks with Equipments</u></p> <p>Designing, providing and constructing in RCC (M-300) water tight secondary settling tank having detention period 2 hours and SWD shall be 4.20 M. The effluent BOD &amp; SS from the secondary clarifier shall not be more than 20 Mg/lit and 30 Mg/lit respectively. It should be hydraulically tested, bottom floor slope of 1:12 and free board of 0.60 M minimum. Dispersion box shall be made of mild steel plate not less than 8 mm thick with anticorrosive epoxy paint from both faces and well stiffened. The sewage admitted at the centre flowing upward and outward towards periphery be slowly and continuously collected towards a convenient discharge point near centre by a rotating wheel arm. The clarifier will be completed with end drive half rotating bridge, structural steel rake, overflow weir, walkway diffuser, over load alarms, having push buttons, starters for the clarifier, walkway and the suitable sludge withdrawing arrangement with flush valve capable of withdrawing moisture content not more than 97% to 98% slopping floor shall have 40 mm thickness (minimum), screed course of cement grout of mix 1 cement : 2 sand, rotating sludge scrapper mechanism fitted with squeezes including providing and making necessary arrangement to connect the flow to outlet chamber (DB-4) then the gravity mains for final disposal and as per detailed specifications and obligatory provision. All other arrangements shall be as per detailed specifications.</p>					



Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
	<u>Sludge Thickener with Equipments</u> Designing, providing and constructing watertight of sludge thickener (gravity type) including foundation in RCC (M-300) with inlet and outlet chamber influent well, inlet and outlet pipes, with sludge pit and sludge removal arrangement, grouting wherever necessary with walkway all around of 1.20 M width G.I. pipe railing interconnecting CI pipes all complete as per specifications, detention time 24 hours. SWD shall be 4.25 metre with necessary fixed bridge scraper arrangement as per detailed specifications and necessary inlet and outlet arrangement. All other arrangement as per detailed specifications.					
	<u>Primary Digester with Mixer Equipment (Fixed Cover)</u> Designing, providing and constructing unit of watertight and gastight primary digester suitable for 1 DWF plant and complete with pipe gallery, building, staircase for access from dome of digester into inside staircase, walkways at springing levels, etc. walls and base slab being in RCC (M-300), domes in structural concrete including providing burners and civil works for gas collection, grouting wherever necessary, etc. complete as per specifications. It should be designed for min 9°C and max. 45°C and minimum detention time of 30 days, water depth shall not be more than 8.5 M, free board shall be 0.6 M with inlet and outlet arrangement of C.I. flanged pipes including giving hydraulic testing and airtightness testing. The item includes providing works for collecting gas and gas burner as per specifications.					





Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
	<u>Secondary Digester with Equipment (Fixed Cover)</u> Designing, providing and constructing including foundation unit of watertight and gastight secondary digester to deal with 1 DWF complete with pipe gallery, building, staircase for access from dome of digester into inside, staircase to walkways at springing levels, etc. Walls and base slab and domes being in RCC M-300, providing arrangement for digested sludge from digesters to centrifuge, providing burners and civil works for gas collection grouting wherever necessary, etc. complete as per specifications and obligatory provision. All other arrangements as per detailed specifications.					
	<u>S.S.T. Sump and Pump House with Recirculation Pumps and Sludge Pumps to Digester</u> Designing, providing and constructing sump and pump house of requisite capacity with ceiling height not less than 6 M, sludge stream for recirculation to aeration tank and excess sludge to SCBT, including C.I. piping to carry this flow to sump as per detailed specification and as directed by Engineer-in-charge.					
	<u>Chlorine Contact Tank</u> Designing, providing and constructing chlorine contact chamber of adequate capacity to deal with 1 DWF average flow. The chlorine contact tank should be of 30 minutes capacity during average flow to achieve 99.99% coliform reduction. Chlorine dose shall be maintained as per standard provisions including designing, providing and constructing water supply arrangement for chlorination including providing dewatering and bypass arrangements, jointing to final effluent main and outlet weir, etc. complete. The effluent quality should match with the standards laid down by Maharashtra Water Pollution Control Board and as per the obligatory provisions and detailed specifications and as directed by Engineer-in-charge.					



Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
	<u>Chlorinator and Chlorinator Room / Tonner Room</u> Designing, providing and constructing chlorinators, vacuum type 2 nos. each having capacity of 10 Kg/hr as per obligatory provisions and detailed specifications with necessary provision of chlorinator room having floor area not less than 30 sqm including automatic residual chlorine controller with actuator and residual chlorine analyser including cost of chlorine cylinder, piping, valves, measuring and controlling equipments, safety devices, lifting equipments, etc. complete as per I.S.-10553 (Part II) 1982. The tonner room should have 3 MT capacity crane for loading and unloading facility. Tonner storage should distinctly isolated and should be for minimum 10 tonners space and arrangements as per gas laws 1981 and factory act shall be provided and all other matching amenities be provided, 5 MT gantry shall be provided for full length of tonner room at 6 M height from floor level, with outlet chamber and treated effluent outlet channel, etc. complete as per detailed specifications.					
	<u>Sump cum Blending Tank (SCBT)</u> Designing, providing and constructing sump cum blending tank of appropriate size and detention time with free board of 0.60 M. The slope of floor 1:4 with suction pit at the centre as per detailed specifications and obligatory requirements.					
	<u>P.S.T. Sump cum Blending Tank, Pump House with Recirculation Pumps</u> Designing, providing and constructing pump house of appropriate size with pumps, ceiling height minimum 6 M over the circular sump for discharging the sludge to thickener and recycling of flow for blending with C.I. piping, etc. complete as per detailed specifications.					



Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
	<u>Sludge Centrifuge Room with Centrifuges</u> Designing, providing, constructing and installing including foundation, etc. sludge centrifuge to handle the sludge flow of one day in one hour per unit with sludge dewatering unit, drain, etc. complete as per specifications, sludge centrifuge with all necessary arrangements as per detailed specifications mentioned in Volume-II and Volume-III of tender and obligatory provisions, be provided with satisfactory functioning.					
	<u>Gas Holder</u> Designing, providing and constructing gas holder having gas collection system, gas flow meter and gas burner with floating dome arrangement and storage time 6 hrs. to be constructed in M-300 having appropriate diameter as per detailed specifications and obligatory provisions. The floating dome shall be of 8 mm thick M.S. plate minimum and shall be provided with two coats of anti-corrosive epoxy coating from both faces.					
	<u>Outfall Sewer</u> Designing, providing and constructing appropriate outfall sewer of RCC NP-2 pipe to discharge treated effluent, untreated effluent from outlet chamber (after basin / chlorination tank) to the local nalla at a point shown on the drawing including necessary chambers for inspection / cleaning including necessary excavation, dewatering, refilling, concrete encasing/ bedding concrete steps to reach the nalla bed level, pitching and energy dissipation chamber in the nalla portion, etc. complete upto 50 M length RCC NP-2 pipeline and including all above items.					



Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
	<u>Piping Work in CI 'LA' class including Sluice Valve, Reflux Valve, M.S. Gate</u> Providing, laying and jointing pipes other than those already included in the above items for interconnection bypass drains, etc. of all units including adequate numbers of manhole chambers. The item includes excavations, refilling and hydraulic testing of pipes, valves, gates, accessories and cost of jointing materials. The item includes required channels with gates for interconnection of units, bypass drains, etc. for all units and as directed, etc. complete as per detailed specifications.					
	<u>Administrative Building cum Laboratory (G+1)</u> Designing, providing and constructing administrative building, office cum laboratory including stores. This shall be a building having appropriate carpet area at ground floor and at first floor complete as per specifications including necessary excavation, foundation in RCC M-200 framed structure, BB masonry (IInd class in CM 1:6) 20 mm cement plaster in CM 1:3 inside and outside painting, aluminium door and window with glass panels, mosaic tile flooring and skirting and all other allied items, fixtures, fastening electrification arrangements, water supply arrangement, etc. complete. The building will have laboratory on upper floor of administrative building and should be so centralised that it should not be attached with any unit but should have complete control of every unit as per laboratory equipment, beautification, telephone and intercom arrangement and wireless system.					
	<u>Primary and secondary treatment-with digesters, sludge drying beds, etc. complete.</u>					
	<u>Rates</u>		<u>Rs. in Lakhs</u>			
1)	Upto 10 MLD	MLD	51.00	21.00		
2)	Cost of 10 MLD plant	Job	513.00	205.00		
3)	Add for capacity above 10 MLD upto 20 MLD	MLD	45.00	18.00		
4)	Cost of 20 MLD plant	Job	963.00	385.00		





Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
5)	Add for capacity above 20 MLD	MLD	39.00	15.00		
6)	Cost of 50 MLD plant	Job	2118.00	847.00		
7)	Add for capacity above 50 MLD	MLD	32.00	13.00		
8)	Cost of 100 MLD plant	Job	3722.00	1489.00		
5	Designing, manufacturing, supplying and erecting of <u>Filter Plant</u> including cost of underdrain system, cost of filter media, transportation to work site connecting inlet, outlet pipelines of water supply scheme to the plant with fixing of required appurtenances, gauges, valves, water level and flow indicator, etc. including all duties and taxes. The cost includes supply of operation and maintenance manual free of cost, one month trial run after completion of erection work with labour cost, the required training to the staff of Department and Gram Panchayat, 5 years' performance guarantee after commissioning against manufacturing defect. The work includes cost of construction of RCC masonry as and where necessary including excavation if required, epoxy painting to all units inside and outside of the plant, etc. complete.					
	<u>Rates</u>		<u>Rs. in Lakhs</u>			
1)	0.5 MLD plant	---	Deleted			
2)	1.5 MLD plant	---	Deleted			

#### SECTION – J : (I) TREATMENT PLANT – WTP & STP



**SECTION - J - (II)**  
**MOVING MEDIA**  
**BIO REACTOR TECHNOLOGY**



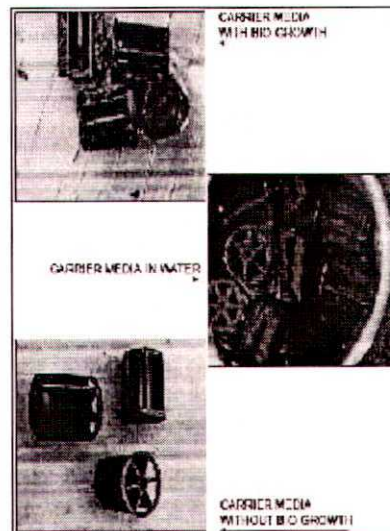
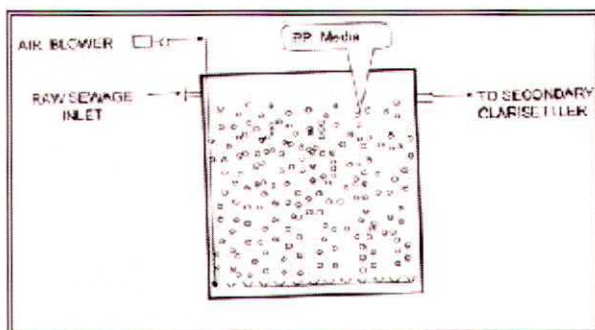
Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
I	<u>PROCESS DESCRIPTION - MOVING MEDIA BIO REACTOR TECHNOLOGY</u>					
	<p>The Moving Media Bio Reactor Technology is a advanced biological treatment process which has a combination of activated sludge process and attached growth process. The bio reactor has lot of packing material called carrier media in suspension and provides a large surface area for micro organisms to grow and degrade the organic matter in aerobic condition. Due to the use of carrier media, the higher concentration of bio mass is developed which helps to reduce the basin size, accept higher loading rates and take shock loads.</p> <p>The sewage after screening and grit removal flows by gravity into the BIO REACTOR wherein the attached growth, aerobic microbes will utilize pollutant in presence of oxygen thereby, further reducing BOD. The air required will be provided through coarse bubble air diffusers provided on the aeration grid at the bottom of reactor and using positive displacement, twin lobe, root type air blower for supply of oxygen.</p> <p>The PP media is provided in the aeration tank to allow the aerobic microbes to grow and get attached. This media remains in fluid state in the aeration tank thereby keeping large number of microbial colonies moving in the tank and provide high concentration of bio mass available at all the time. The microbes get exposed to bio degradable organics in presence of oxygen and convert it into cell biomass, water molecule and carbon-dioxide. The microbial colony grows on plastic media. The excess bio mass gets sloughed and moves with treated water into subsequent unit. This sloughing action is a continuous process and the microbes keep on growing and sloughing. This is a very fast process and hence system becomes self sustaining.</p>					
	<p>The dead bio mass generated will be separated in the CLARISSETTLER TANK wherein tube media is provided for providing additional surface area for settlement of bio mass and thereby reducing the space requirement.</p>					

#### SECTION – J : (II) MOVING MEDIA BIO REACTOR TECHNOLOGY





Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
	<p>The solid-liquid separation is achieved in this tank and clear supernatant will flow by gravity.</p> <p>The treated wastewater will be disinfected with Chlorine and allowed to react in CHLORINE CONTACT TANK prior to suitable disposal.</p> <p>A typical sketch of bio reactor showing various components is given below.</p> <p>The MMBR / FAB Technology has following advantages over Conventional Systems like :</p> <ol style="list-style-type: none"> <li>1 Low on civil works</li> <li>2 Low space requirement</li> <li>3 Low on operating cost due to higher Oxygen Transfer Efficiency.</li> <li>4 Low on maintenance cost</li> <li>5 Easy to operate with semi-skilled manpower</li> <li>6 Higher efficiencies in pollutant removal</li> <li>7 Effective removal of nitrates and phosphates</li> <li>8 Quick retrieval of system after shutdown / power failure</li> </ol>					



Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
II	<p><u>SPECIFICATIONS OF SEWAGE TREATMENT SCHEME</u></p> <p><u>Raw Sewage Characteristics</u></p> <p>Temperature Ambient</p> <p>ph 7.0 - 8.0</p> <p>Total Suspended Solids 210 mg/l</p> <p>BOD 5 days at 20° C 170 mg/l</p> <p>COD 340 mg/l</p> <p>Oil &amp; Grease 30 mg/l</p> <p>MPN <math>10^6</math> to <math>10^7</math> per 100 ML</p> <p><u>Treated Sewage Quality</u></p> <p>pH 6.5 - 8.5</p> <p>Total Suspended Solids &lt; 30 mg/l</p> <p>BOD &lt; 20 mg/l</p> <p>COD &lt; 100 mg/l</p> <p>Oil &amp; Grease &lt; 10 mg/l</p> <p>MPN &lt; 1000 per 100 ML</p> <p><u>Moving Media Bio Reactor (MMBR) / FAB (Fluidised Aerated Bed) Process</u></p> <p>Designing, providing, constructing, hydraulic testing, commissioning and giving satisfactory trials of STP consisting of inlet chamber, screen chamber, grit separator, MMBR / FAB (based on technologies providing attached growth on plastic meddi kept suspended in the waste water due to low density of plastic and provided with compressed air for aeration with very high MLSS of greater than 15,000 mg/lit.) tank, secondary clari settler, sludge sump, sludge thickener, chlorine contact tank, chlorinator room/shed, sludge centrifuge, associated piping work with required valves, gates, drains, pathways, administration block cum laboratory, laboratory equipments, spare parts for 2 years of operation, etc. complete as turnkey job with all involved civil, electrical and mechanical works inclusive of following items, units as per detailed specifications for civil, electrical and mechanical components with all duties and taxes, etc. complete. Treated sewage can be used for irrigation, horticulture purposes.</p>					



Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
	<b><u>FOLLOWING UNITS ARE INCLUDED</u></b>					
	<b><u>1. Inlet Chamber</u></b> Designing, providing and constructing RCC (M-25) inlet chamber designed for the peak flow including necessary excavation in all types of strata including walkway all around the periphery. Each compartment will have CI gates with extension rod, head stock, operating wheels, GI pipe railing, etc. The work includes providing and making necessary arrangements to connect the flow to screen chamber by approach channel as directed and as per specifications.	1 No.				
	<b><u>2. Screen Chamber</u></b> Designing, providing, constructing, testing and commissioning of screen chamber, designed for peak flow in RCC (M-25), including walkway 1.2 m wide with GI pipe.	2 Nos				
	<b><u>3. Grit Separator</u></b> Designing, providing and constructing detritor type grit removal mechanism in RCC (M-25) capable of removing 100% 0.2 mm size particle and above, having specific gravity 2.30 designed for peak flow with suitable arrangement of separation of grit from putrescible solids including providing and making necessary arrangements of Jb-1. Inlet and outlet channels of required sizes as make be required to connect the flow to connecting unit, etc. complete including hydraulic testing for watertightness of structure having minimum FB of 0.3 m, washout arrangement to grit chamber and platform 1.2 m wide RCC walkway with GI pipe handling shall be provided. A pit for collecting grit conveyed by conveyor shall be provided. It should be suitable to handle the grit for carting. All arrangements shall be as detailed specifications and as directed.	2 Nos				





Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
	<p><u>4. MMBR / FAB Tank</u> Designing, providing and constructing in RCC (M-25) biological reactor tank for removal of BOD along with nutrient removal to handle the average flow and having hydraulics suitable to handle peak flow conditions with suitable 1.2 m wide walkway, expansion joints as required, including foundation, etc as per specifications. The tank shall be equipped with inlet and outlet arrangement, air blowers for supply of air, coarse bubble diffusers and aeration grid in SS 304, PP carrier bio media, etc. FB of 0.5 m and SWD as required should be complete as per detailed specifications.</p>	1 No.				
	<p><u>5. Secondary Clari Settler</u> Designing, providing and constructing in RCC (M-25) watertight secondary clari settler having SWD of 3.75 m + 0.5 m FB and has tube media in the clarification zone to provide additional surface area for settling. The settler shall be provided with a scraper mechanism in MS with epoxy painting for collecting the settled solids at the bottom (bottom slope 1:12). The central feed well shall be made of MS with epoxy painting from both faces and well stiffened. The sewage will be admitted in the feed well and then will move outwards towards periphery slowly and continuously over a weir and will be collected in a launder.</p>	1 No.				
	<p><u>6. Chlorine Contact Tank</u> Designing, providing and constructing chlorine contact tank of adequate capacity to deal with average flow. The contact time provided is 30 mm to achieve 99.99% reduction in coliform during average flow condition. Chlorine dosage will be as per standard provisions including designing, providing and constructing water supply provision for chlorination, including providing dewatering and bypass arrangement for joining to final effluent mains and outlet weir, etc. complete. The effluent quality should match with the standards laid down by Maharashtra Pollution Control Board and as per obligatory provision and as detailed specification and as directed by Engineer-in-charge.</p>	1 No.				

Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
	<p><u>7. Chlorinator and Chlorinator Room / Tonner Room</u></p> <p>Designing, providing and constructing vacuum type chlorinators having adequate capacity for dosage of adequate chlorine to ensure 99.99% coliform reduction as per obligatory provisions, detailed specifications with necessary provision of having chlorinator room of adequate size. The chlorinator equipment shall include chlorine cylinders / tonners, piping, valves, measuring, controlling equipments, safety devices, lifting equipment, etc. complete as per IS 10553 (Part II) 1982. The tonner room should have min. 3 MT capacity crane for loading and unloading facility. Tonner storage should be distinctly isolated and should have min. storage space as per the detailed specifications and as per gas law 1981 and factory act shall be provided. All other matching amenities shall be provided, 5 MT gantry rail shall be provided for full length of tonner room at 6 m ht. from level of tonner room with outlet.</p>	1 No.				
	<p><u>8. Sludge Sump</u></p> <p>Designing, providing and constructing of sludge sump and pump for discharging sludge to sludge thickener using MS pipe, etc. complete as per detailed specification.</p>	1 No.				
	<p><u>9. Sludge Thickener</u></p> <p>Designing, providing and constructing watertight of sludge thickener - gravity type in RCC (M-25) with inlet and outlet pipes, central feed well, sludge it and sludge removal arrangement, grouting wherever necessary with walkway all around of 1.20 m with GI pipe railing interconnecting CI pipes all complete as per specifications, having bottom slope 1:8 and 3 m SWD with necessary fixed bridge scraper arrangement as per detailed specifications and necessary inlet and outlet arrangement, all other arrangement as per detailed specifications.</p>	1 No.				





Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
	<p><u>10. Sludge Centrifuge Platform with Centrifuge</u></p> <p>Designing, providing, constructing and installing including foundation, etc., sludge centrifuge to handle the sludge flow of 1 day in 18 hrs per unit with sludge dewatering unit, drain, etc. complete is per specification. Sludge centrifuge with necessary arrangements as per detailed specification mentioned in tender and obligatory provisions to be provided with satisfactory functioning.</p>	1 No.				
	<p><u>11. Outfall Sewer</u></p> <p>Designing, providing, constructing appropriate outfall sewer of RCC NP2 pipe to discharge treated effluent, untreated effluent from outlet chamber (after basin / chlorination tank) to the local Nallah at the point shown on the drawing including necessary chambers for inspection and cleaning including excavation, dewatering, refilling, concrete, encasing / bedding concrete.</p>	1 No.				
	<p><u>12. Piping Work in CI LA class including Sluice Valves, Reflux Valves, MS Gates</u></p> <p>Providing, laying and jointing pipes other than those already included in the above items for interconnection, bypass drains, etc. of all units including adequate number of manhole chambers. The item includes excavations, refilling and hydraulic testing of pipes, valves, gates, accessories and cost of jointing materials. The item includes required channels with gates or interconnection of units, bypass drains, etc. for all units as directed, etc complete as per detailed specifications.</p>	Lot				





Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
	<p><u>13. Administrative Building cum Laboratory (G+1)</u></p> <p>Designing, providing and constructing administrative building, office cum laboratory including stores. This shall be building having appropriate carpet area, at ground floor and at first floor complete as per specifications including necessary excavation, foundation in RCC M-20 framed structure, BB masonry (IInd class in CM 1:6), 20 mm cement plaster in CM 1:3, inside and outside painting, aluminum door and window with glass panels, mosaic tile flooring and skirting and all other allied items, fixtures, fastening, electrification arrangement, water supply arrangement, etc complete. The building will have laboratory on upper floor of administrative building and should have complete control of every unit as per laboratory equipment, beautification, telephone and intercom arrangement and wireless system.</p>					
III	<u>PRICE SCHEDULE</u>					
	Capacity of the Plant in MLD      Area required in Sqm.	Unit	Rate (in Rs. Lakhs)			
	1      450	MLD	142.00			
	3      600	MLD	84.00			
	5      1000	MLD	72.00			
	8      1500	MLD	66.00			
	10      1800	MLD	64.00			
	13      2500	MLD	58.00			
	15      2650	MLD	53.00			
	18      3250	MLD	52.00			
	20      3500	MLD	50.00			
	25      4350	MLD	48.00			
	<u>NOTES</u>					
1	Screen chamber and grit separator upto 5 MLD capacity are manual type.					
2	Upto 5 MLD capacity STP, chlorination is done by using sodium hypochlorite solution. Above 5 MLD capacity, gas chlorinator is provided.					



Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
3	Sludge thickener is not provided upto 3 MLD capacity STP. Sludge will be collected into sludge sump and pumped directly to sludge dewatering system.					
4	For all STP, sludge dewatering is using solid bowl centrifuge.					
5	Chlorinator room not provided for STP upto 3 MLD. For STP upto 3 MLD, laboratory / administration building is not provided. Only a room for operator is provided.					
6	Boundary wall, fencing, gate, storm water drains, site clearance is not considered in the scope.					
7	All water retaining structures are in M-30 grade of concrete.					
8	Water table is considered 5 m below GL for design.					
9	Soil bearing capacity is considered as 20 T/m <sup>2</sup> at 1.5 m below GL.					
10	Lead for excavation is considered as 0.5 km.					
11	Grade of cement used is OPC 43 grade.					
12	Grade of steel used is Fe 415.					
13	Peak factor considered for design for plants upto 3 MLD is 3, 4; upto 15 MLD is 2.5, 16; upto 20 MLD is 2.0.					
14	Chemicals required during trial run and commissioning are not considered.					
15	Water and power during construction, trial run and commissioning shall be provided by client.					
16	Power available at STP location is assumed as LT power supply.					
IV	<u>MAKES OF EQUIPMENT</u>					
No.	Description	Make				
1	Centrifugal Pumps	Kirloskar / Jhonson / Kishor / Eqv.				
2	Screw Pumps	Roto / Tushaco / Eqv.				
3	Air Blower	Usha / Swam / Kay / Kulkarni / Eqv.				
4	Dosing Pumps	Milton Roy / VK Pumps / Positive / Minimax / Eqv.				
5	Agitators / Flocculators	Pavan / Fibre & Fibre / Ceecons				
6	Clarifier / Thickener Mechanism	To be fabricated as per MJP approved design / make				
7	Screens	To be fabricated as per MJP approved design / make				
8	Grit Separator	To be fabricated as per MJP approved design / make				

## SECTION – J : (II) MOVING MEDIA BIO REACTOR TECHNOLOGY



Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
9	Chlorinator	Toshcon Jesco / Banaco / Perfect Chloro / Chlorocontrol / Metito / Eqv.				
10	Chlorine Tonner	Meenakshi / Eqv.				
11	Solid Bowl Centrifuge	Alfa Laval / Humbolt / Wedag / Hiller / Eqv.				
12	Motors	Crompton / Siemens / Lakshmi				
13	Cables	Finolex / Polycab				
14	MS pipes	Mahalakshmi Seamless / Maharashtra Seamless / Suryaroshni / Jindal / Eqv.				
15	CI Pipes	Truform/ Electrosteel/ Kejriwal/ Eqv.				
16	Valves	Intervalve / BDK / Procon / Tyco / AV Valves / Eqv.				
17	Clarissettler Media	Cooldeck / Munters				
18	Bio Reactor Carrier Media	As per MJP approved design / make				





Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
A	<p>Cyclic Activated Sludge Process</p> <p>Designing, providing, constructing, hydraulic testing, commissioning and giving satisfactory trials of STP based on SBR technology consisting of Inlet Chamber, Screen Chamber, Detritus Tanks, Distribution Chamber and Biological CASP Basins, Sludge Sump, Chlorine Contact Tank, Chlorinator Room/Shed, Sludge Centrifuge necessary piping work with required valves, gates, drains, pathways Administration Block cum Laboratory, Laboratory Equipments, Tools and Plants, Spare Parts, etc. complete as turnkey job with all involved civil, electrical and mechanical works inclusive of following items, units as per detailed specification for civil, electrical and mechanical components with all duties and taxes, etc. complete to achieve BOD &lt; 5 ppm, COD &lt; 100 ppm, TSS &lt; 10 ppm, to get recyclable quality of water for industrial / agricultural purposes. (In Case Cyclic activated sludge plant is designed for N, P outlet parameters shall also include TN &lt; 10 ppm, Nh3N &lt; 2 ppm and TP &lt; 1 ppm)</p> <p><u>UNITS INCLUDED</u></p> <p><u>1. Inlet Chamber</u></p> <p>Designing, providing, and constructing RCC (M-250) inlet chamber for the peak low of 2 DWF including necessary excavation in all types of strata including walkway all around the periphery.</p> <p>Each compartment will have phosphor bronze steel gates with extension rod, head stock, operating wheels, GI pipe railing, etc. The work includes providing and making necessary arrangements to connect the flow to screen chamber by approach channel as directed and as per specifications.</p>					

#### SECTION – J : (II) MOVING MEDIA BIO REACTOR TECHNOLOGY



Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
	<p><u>2. Screen Chamber</u></p> <p>Designing, providing, constructing, testing and commissioning of screen chamber, designed for average 1 DWF and maximum peak flow of 2 DWF in RCC (M-250), including inlet pipe / channel from inlet chamber, outlet pipe channel to detritus tank, free board of 0.5 m minimum, RCC walkway 1.2 m wide with GI pipe railing, RCC staircase of 1.2 m width from GL to screen chamber.</p> <p><u>3. Detritus Tank</u></p> <p>Designing, providing and constructing continuous grit removal type Detritus Tank, mechanically operated in RCC (M-250) capable of removing 100% of 0.2 mm size particle and above, having specific gravity 2.30, designed for one peak 2 DWF with suitable arrangement of separation of grit from putrescible solids. Inlet and outlet channels of required sizes as may be required to connect the flow to connecting unit etc. complete including hydraulic testing for watertightness of structure having minimum FB of 0.3 m, washout arrangement to grit chamber and platform 1.2 m wide RCC walkway with GI pipe handling shall be provided. A pit for collecting grit conveyed by conveyor shall be provided. It should be suitable to handle the grit for carting. All arrangements shall be as detailed specifications and as directed.</p>					





Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
	<p><b>4. CASP Basins</b></p> <p>Designing, providing and constructing in RCC (M-250), CASP basins for biological removal of BOD along with nitrification, denitrification, Bio-P removal in compartments to handle combine flow of 1 DWF incoming flow and recirculation flow including construction of selector compartments and providing 1.2 m wide clear approach walkways, expansion joints wherever necessary, including foundations, etc as per specifications. Peak factor shall be 2, F/M ratio shall be 0.15, complete with air blowers, fine diffused aeration grid / equipment and FB 0.5 m and SWD as required. DO level in basin to be minimum 2 mg/l complete with 'Oxygen Uptake Rate' control system and all related instruments, stainless steel decanters and automation works. MLSS concentrations shall be 2000-5500 mg/l or more. MLVSS to MLSS ratio to be 0.8. HRT shall be between 12 to 13 hrs and SRT suitable for fully digested sludge. It should have all other related works as per detailed specification. In case CASP is designed to achieve N,P removal HRT shall be between 15-18 hrs and SRT shall be suitably provided to a.</p> <p><b>5. Chlorine Contact Tank</b></p> <p>Designing, providing and constructing chlorine contact chamber of adequate capacity to deal with 1 DWF average flow. The chlorine contact tank should be 30 min capacity, during average flow to achieve 99.99% coliform reduction. Chlorine dose shall be maintained as per standard provisions, including designing, providing and constructing water supply provision for chlorination including providing dewatering and bypass arrangement, jointing to final effluent mains and outlet weir, etc. complete. The effluent quality should match with the standards laid down by Maharashtra Water Pollution Control Board and as per obligatory provision and as detailed specification and as directed by Engineer-in-charge.</p>					



Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
	<p><u>6. Chlorinator and Chlorinator Room / Tonner Room</u></p> <p>Designing, providing and constructing chlorinators vacuum type 2 Nos. with auto switchover facility and having capacity for dosage of adequate chlorine to ensure 99.99% coliform reduction as per obligatory provisions and detailed specifications with necessary provision of having chlorinator room of adequate size. The chlorinator equipment shall include cost of chlorine cylinders / tonner piping, valves, measuring and controlling equipments, safety devices, lifting equipments, etc. complete as per IS-10553 (Part II) 1982. The tonner room should have minimum 3 MT capacity hoist for loading and unloading facility. Tonner storage should be distinctly isolated and should be for minimum storage space as directed in the design specification and as per Gas Laws 1981 and Factory Act shall be provided. All other matching amenities shall be provided. 5 MT gantry rail shall be provided for full length of tonner room at 6 m height from level of tonner room, with outlet chamber and treated effluent outlet channel, etc. complete as per detailed specification.</p> <p><u>7. Sludge Sump</u></p> <p>Designing, providing and constructing of sludge sump and pump house of appropriate size with pumps, ceiling height minimum 6 m over sump for discharging sludge to centrifuge using CI pipe, etc. complete as per detailed specification.</p> <p><u>8. Sludge Centrifuge Platform with Centrifuges</u></p> <p>Designing, providing, constructing and installing including foundation etc., sludge centrifuge to handle the sludge flow of 1 day in 20 hours per unit with sludge dewatering unit, drain etc. complete as per specification. Sludge centrifuges with the necessary arrangement, as per detailed specification mentioned in tender and obligatory provisions to be provided with satisfactory functioning.</p>					



Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
	<p><u>9. Outfall Sewer</u> Designing, providing and constructing appropriate outfall sewer of RCC NP2 pipe, to discharge treated effluent from outlet chamber after chlorination tank to the local nallah at the point shown on the drawing including necessary chamber for inspection and cleaning including necessary excavation, dewatering, refilling, concrete encasing / bedding concrete steps to reach the nallah bed level, pitching and energy dissipation chamber in nallah portion, etc. complete upto 50 m length RCC NP2 pipe line and including all above items.</p> <p><u>10. Piping Work in CI-LA class including Sluice Valves, Reflux Valves, MS Gates</u> Providing, laying and jointing pipes other than those already included in the above items for interconnection, bypass drains, etc. of all units including adequate number of manhole chambers. The item includes excavations, refilling and hydraulic testing of pipes, valves, gates, accessories and cost of jointing materials. The items includes required channels with gates for interconnection of units, bypass drains, etc. for all units as directed, etc complete as per detailed specifications.</p> <p><u>11. Administrative Building cum Laboratory (G+1)</u> Designing, providing and constructing administrative building, office cum laboratory including stores. This shall be a building having appropriate carpet area at ground floor and at first floor complete as per specifications including necessary excavation, foundation in RCC M-200 framed structure BB masonry (IInd class in C.M. 1:6), 20 mm cement plaster in CM 1:3 inside and outside painting. Aluminium door and window with glass panels, mosaic tile flooring and skirting and all other allied items, fixtures, fastening, electrification arrangement, water supply arrangement, etc. complete.</p>					



Sr. No.	Description			Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
					Complete	Labour	Complete	Labour
	The building will have laboratory on upper floor of administrative building and should be so centralized that it should not be attached with any unit but should have complete control of every unit as per laboratory equipment, beautification, telephone and intercom arrangement and wireless system.							
	Capacity of the Plant in MLD	Area required in Ha.	No. of Basins	Unit	Rate (in Rs. Lakhs)			
	1	0.16	2	MLD	326.00			
	2	0.20	2	MLD	218.00			
	5	0.40	2	MLD	137.00			
	10	0.70	2	MLD	112.00			
	15	0.75	2	MLD	100.00			
	20	0.80	4	MLD	95.00			
	25	1.00	4	MLD	91.00			
	30	1.20	4	MLD	86.00			
	40	1.60	4	MLD	81.00			
	50	1.75	4	MLD	79.00			
	60	1.90	4	MLD	77.00			
	75	2.25	4	MLD	75.00			
	100	2.40	6	MLD	72.00			
	125	3.00	6	MLD	70.00			
	150	3.50	6	MLD	68.00			
	<u>NOTES</u>							
a	These Rates are for Civil Works, in M-30 grade RCC.							
b	Water Table is considered at 5 m below ground level.							
c	Soil bearing capacity considered as 20 T/m <sup>2</sup> at 1.5 m below ground level.							
d	OPC has been considered for costing purposes.							
e	All civil items, electrical, piping, valves, pumps, motors, blowers, etc. are considered as per MJP Schedule of Rates.							





Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
f	I.Nos.1, 2 include sludge drying beds instead of sludge centrifuge and DWPE dosing system.					
g	I.Nos.1, 2, 3 include NaOCl dosing system instead of Gas Chlorination.					
h	I.Nos.1, 2, 3 do not include Lab and Lab Equipments.					

**SECTION – J : (II) MOVING MEDIA BIO REACTOR TECHNOLOGY**



**SECTION K - (I)**  
**RCC GSRS & SUMPS**



Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
1	Designing (aesthetically), and constructing RCC ground service reservoirs / RCC sumps in M-300 mix of required capacity including excavation in all types of strata, foundation concrete, container walls, bottom slab top RCC roof slab / or dome, 20 mm thick cement plaster with water proofing compound in CM 1:3 proportion to inside face of the container, including epoxy paint from inside including refilling and disposing of surplus stuff within lead of 50 M, all labour and material charges, for laying and jointing of pipe assembly for inlet, outlet washout, over flow and bypass arrangement consisting of C.I. M.S. D/F. pipes, specials and valves of given diameters, providing and fixing accessories such as M.S. ladder inside and outside, C.I. Manhole frame and cover, water top slab, B.B. masonry chamber for all valves, ventilating shafts, including giving satisfactory hydraulic test and water tightness test as per IS code and providing three coats of cement paints to all exposed surface of structure including roof surface etc. complete as per design data, criteria, obligatory requirements and detailed specifications. Anti-termite treatment shall be given for underground portion of the structure.					
	<u>Notes</u>					
1)	The design shall be in accordance with various relevant I.S. specification (I.S. 456/1978, I.S. 875 - 1987, I.S. 3370 - 1965 or revised.)					
2)	Only M.S. bars grade I conforming to I.S. 432 part-I or high yield strength deformed bars conforming to I.S. 1786 or I.S. 1139 shall be used. Grade-II M.S. bars shall not be used.					
3)	Entire structure shall be in M-300 only.					
4)	The scope of pipe assembly work shall be upto 5 metre beyond outside face of the wall, cost of pipes valves and specials is not included in the rate but labour cost for laying and jointing is included.					
5)	The G.S.R. / Sump above 15 lakh litres capacity shall be in two compartment.					

#### SECTION - K : (I) RCC GSRs AND SUMPS





Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
6)	The Job includes designing the structure for uplift pressure and dewatering if required during entire execution and disposal of surplus excavated stuff within lead of 50 metres as directed by Engineer-in-charge. If uplifts considered in design, then these rates shall be increased by 7.5%.					
7)	G.S.R. outlets shall be with bell mouth of approved pattern in bottom slab and cost of designing bell mouth is included in the rate. Sump well includes cost of suction pit required at bottom.					
8)	For pipe diameters upto 300 mm only CI pipes and CI specials shall be used. For pipe diameters above 300 mm, M.S. pipes and specials minimum 10 mm thick shall be used with proper anticorrosive epoxy treatment from inside and outside.					
9)	Cost of pump house is not included in these rates.					
10)	Above rates are applicable for Seismic Zones 2, 3 and 4.					
11)	75% part rate shall be payable for reinforcement, concrete and plastering items of all types of G.S.R.s and sumps till satisfactory hydraulic testing for water tightness test is given and till that work shall be treated as incomplete.					
	Note : Conditions from Sr. No. 1 to 11 shall form a part and parcel of tender and must be included in the draft tender papers for work of R.C.C. GSRs and sumps.					
	<u>Rates for RCC GSRs and Sumps</u>		<u>Rate in Rs.</u>	<u>Rate in Rs.</u>	<u>Rate in Rs.</u>	<u>Rate in Rs.</u>
1)	Upto 25,000 litres	Lit	11.39	4.56		
2)	Cost of 25,000 litres capacity	Job	284957.00	113983.00		
3)	Add for capacity above 25,000 upto 50,000 litres	Lit	6.62	2.65		
4)	Cost of 50,000 litres capacity	Job	450409.00	180164.00		
5)	Add for capacity above 50,000 upto 75,000 litres	Lit	5.51	2.20		
6)	Cost of 75,000 litres capacity	Job	588247.00	235299.00		
7)	Add for capacity above 75,000 upto 1,00,000 litres	Lit	4.97	1.99		
8)	Cost of 1,00,000 litres capacity	Job	712394.00	284958.00		



Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
9)	Add for capacity above 1,00,000 upto 1,50,000 litres	Lit	4.69	1.88		
10)	Cost of 1,50,000 litres capacity	Job	946764.00	378706.00		
11)	Add for capacity above 1,50,000 upto 2,00,000 litres	Lit	4.41	1.76		
12)	Cost of 2,00,000 litres capacity	Job	1167397.00	466959.00		
13)	Add for capacity above 2,00,000 upto 3,00,000 litres	Lit	3.86	1.54		
14)	Cost of 3,00,000 litres capacity	Job	1553343.0	621337.00		
15)	Add for capacity above 3,00,000 upto 5,00,000 litres	Lit	3.31	1.32		
16)	Cost of 5,00,000 litres capacity	Job	2214964.0	885986.00		
17)	Add for capacity above 5,00,000 upto 10,00,000 litres	Lit	2.71	1.08		
18)	Cost of 10,00,000 litres capacity	Job	3571250.0	1428500.0		
19)	Add for capacity above 10,00,000 upto 15,00,000 litres	Lit	2.25	0.90		
20)	Cost of 15,00,000 litres capacity	Job	4696042.0	1878417.0		
21)	Add for capacity above 15,00,000 litres	Lit	1.66	0.66		
	Note : 10% shall be added over the cost of GSR for sump where overhead pump house is proposed.					

## **SECTION K - (II)**

**RCC ESRS**





Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
1	Designing (aesthetically), and constructing RCC elevated service reservoirs of following capacity with RCC staging consisting of columns, internal and external bracings spaced vertically not more than 4.5 metres centre to centre for ESR having capacity upto 500 cum and not more than 6 m c/c for ESRs having capacity above 500 Cum including excavation in all types of strata, foundation concrete, cement plaster with water proofing compound to the inside face of the container including refilling disposing off the surplus stuff within a lead of 50 metres, all labour and material charges including lowering, laying, erecting, hoisting and jointing of pipe assembly of inlet, outlet, washout, overflow and bypass arrangements as per departmental design, providing and fixing accessories such as M.S. ladder, C.I. manhole frame and covers, water level indicators, lightening conductor, G.I. pipe railing around walk way and top slab, providing spiral stair case from ground level to roof level, M.S. grill gate of 2 M height with locking arrangement of approved design, B.B. masonry chambers for all valves, ventilating shafts, providing and applying three coats of cement paint to the structure including roof slab, epoxy painting to internal surface and anti-termite treatment for underground parts of the structure and giving satisfactory water tightness test as per I.S. code. The job to include painting the name of the scheme and other details on the reservoir as per the directions of Engineer-in-Charge.					
	<u>Notes</u>					
1)	The design of the structure be in accordance with relevant I.S. specification (I.S. 3370 - 1965 or revised.)					
2)	The design shall satisfy the stipulations as per I.S. 1893 - 1984 and I.S. 13920 / 1993 for seismic force and I.S. - 11682 / 1985 for R.C.C. staging of overhead tanks.					

#### SECTION - K : (II) RCC ESRs



Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
3)	For design having more than 6 columns, provision of internal bracing is obligatory. External bracings is also obligatory.					
4)	The entire structure shall be in M-300 mix only.					
5)	Plain round mild steel bars grade-I conforming to I.S. 432 part-I or high yield strength deformed bars conforming to I.S. 1786 or I.S. 1139 shall be used, grade-II mild steel bars will not be allowed.					
6)	Irrespective of the type of foundation proposed in the design, one set of bracing be provided at the ground level.					
7)	These rates include providing M.S. ladder for E.S.R.s upto 2 lakh litres capacity and providing spiral staircase for E.S.R. above 2 lakh litres capacity.					
8)	Staging shall have to be designed with stresses of M-200 concrete for ESR. However all RCC construction should be done in M-300.					
9)	These rates are including the cost of uplift pressure if any and entire dewatering during execution. In case of water logging area where water is stretch at shallow depth, extra provision of dewatering shall be made as per site condition.					
10)	All conditions given in the Member Secretary's Circular No. MJP / TS-I / 350 / 1668 dt. 2-8-97 and MJP / S-I / 350 / 2127 dt. 13-7-99 shall be strictly followed and additional cost, if any, due to these conditions is included in the rates mentioned below.					
11)	75% part rate shall be payable for reinforcement concrete and plastering items of containers of E.S.R. till satisfactory hydraulic testing for water tightness is given; and till that work shall be treated as incomplete.					





Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
12)	The rates indicated in the table are excluding the cost of pipes, specials and valves required for inlet, outlet, washout, overflow and bypass arrangement. The scope of work, however, includes cost of erecting, laying and jointing of pipes and valves including cost of jointing materials upto 5 M beyond outer face of outermost column.					
13)	For ESR upto 500 cum capacity C.I. double flanged pipes upto 300 mm dia shall be provided and C.I. specials shall be used. For ESR above 500 cum capacity C.I./M.S. pipe assembly with minimum 8 mm thickness upto 500 mm dia and minimum 10 mm thickness above 500 mm dia can be used with proper anti-corrosive epoxy treatment from inside and outside.					
14)	Below mentioned rates are for foundations with individual footing with bearing capacity of 20 tonnes per square metre. For raft foundations, these rates shall be increased by 7.5% where safe bearing capacity (SBC) is 5 MT per sqm and by 5% where SBC is more than 5 MT/sqm and upto 10 MT/sqm. This % of 5% or 7.5% is applicable for estimation of amount of lumpsum item of ESR. For extra item due to change from individual foundation to raft, actual increase in concrete and steel be paid as per relevant DSR item.					
15)	The rate shall be increased by 30% for bearing piles upto depth of 10 M and for further increased in depth by 5 M each, it shall be increased by another 10%. These rates are applicable where raft is not feasible. For pile foundations sulphate resistant cement shall only be used. Single pile for the column is not permitted, group of piles shall be designed with pile cap for each column of ESR.					
16)	The rates are applicable for staging height of 12 M. These rates shall be increased or decreased for per metre variation in this staging height as below :					
	12 to 16 M staging - 2% per metre					
	16 to 20 M staging - 3% per metre					

#### SECTION - K : (II) RCC ESRs





Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
	20 M and above - 4% per metre					
	For 17 M staging height, percentage calculation will be like below :					
	12 to 16 M --- $4 \times 2 = 8\%$					
	16 & 17 M --- $1 \times 3\% = 3\%$ Total = 11%					
	For 21 M staging height, percentage calculation will be like below :					
	12 to 16 M --- $4 \times 2 = 8\%$					
	16 to 20 M --- $4 \times 3\% = 12\%$					
	20 & 21 M --- $1 \times 4\% = 4\%$ Total = 24%					
17)	Following rates are for seismic zone III. For zone IV, these rates shall be increased by 5% and for zone II, these rates shall be decreased by 5%. Concerned Executive Engineer shall confirm the seismic zone for the scheme from seismic zones plan before estimation and adopt appropriate rates as per actual seismic zones. (Seismic maps attached in this CSR).					
	<u>Notes</u>					
1)	Conditions from Sr. No. 1 to 11 shall form a part and parcel of the tender and must be included in the draft tender papers for works of R.C.C. E.S.R.					
2)	Conditions from Sr. No. 12 to 17 are for estimation purpose only and shall not appear in the tender.					
	<b><u>Rates for RCC ESRs</u></b>		<u>Rate in Rs.</u>	<u>Rate in Rs.</u>	<u>Rate in Rs.</u>	<u>Rate in Rs.</u>
1)	Upto 25,000 litres	Lit	22.71	9.08		
2)	Cost of 25,000 litres capacity	Job	567873.0	227149.0		
3)	Add for capacity above 25,000 upto 50,000 litres	Lit	12.03	4.81		
4)	Cost of 50,000 litres capacity	Job	868610.0	347444.0		
5)	Add for capacity above 50,000 upto 75,000 litres	Lit	9.02	3.61		
6)	Cost of 75,000 litres capacity	Job	1094162.00	437665.0		
7)	Add for capacity above 75,000 upto 1,00,000 litres	Lit	8.02	3.21		
8)	Cost of 1,00,000 litres capacity	Job	1294653.0	517861.0		
9)	Add for capacity above 1,00,000 upto 1,50,000 litres	Lit	7.02	2.81		
10)	Cost of 1,50,000 litres capacity	Job	1645513.0	658205.0		



Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
11)	Add for capacity above 1,50,000 upto 2,00,000 litres	Lit	6.01	2.40		
12)	Cost of 2,00,000 litres capacity	Job	1946250.0	778500.0		
13)	Add for capacity above 2,00,000 upto 2,50,000 litres	Lit	5.01	2.00		
14)	Cost of 2,50,000 litres capacity	Job	2196864	878746.0		
15)	Add for capacity above 2,50,000 upto 3,00,000 litres	Lit	5.01	2.00		
16)	Cost of 3,00,000 litres capacity	Job	2447478.0	978991.00		
17)	Add for capacity above 3,00,000 upto 4,00,000 litres	Lit	5.01	2.0		
18)	Cost of 4,00,000 litres capacity	Job	2948706.0	1179482.0		
19)	Add for capacity above 4,00,000 upto 5,00,000 litres	Lit	4.01	1.60		
20)	Cost of 5,00,000 litres capacity	Job	3349688.0	1339875.0		
21)	Add for capacity above 5,00,000 upto 7,50,000 litres	Lit	4.01	1.60		
22)	Cost of 7,50,000 litres capacity	Job	4352144.0	1740858.0		
23)	Add for capacity above 7,50,000 upto 10,00,000 litres	Lit	4.01	1.60		
24)	Cost of 10,00,000 litres capacity	Job	5354600.0	2141840.0		
25)	Add for capacity above 10,00,000 upto 15,00,000 litres	Lit	4.01	1.60		
26)	Cost of 15,00,000 litres capacity	Job	7359512.0	2943805.0		
27)	Add for capacity above 15,00,000 upto 20,00,000 litres	Lit	3.00	1.20		
28)	Cost of 20,00,000 litres capacity	Job	8863196.0	3545278.0		
29)	Add for capacity above 20,00,000 upto 25,00,000 litres	Lit	---	---	---	---
30)	Cost of 25,00,000 litres capacity	Job	---	---	---	---

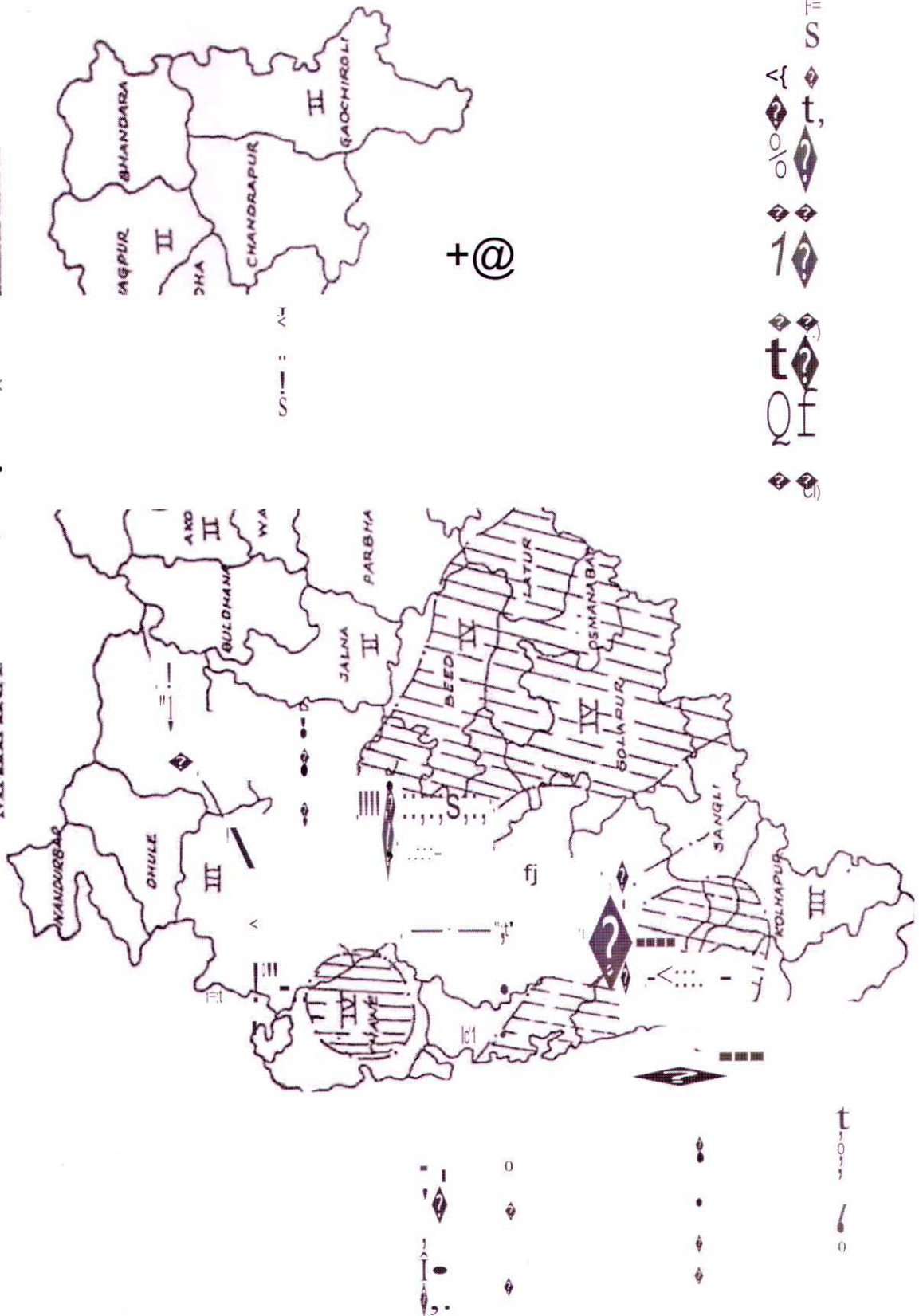




HIKARAN



MAHARA



Seismic Zone Map





**SECTION K - (III)**  
**ANCILLARY ITEMS FOR**  
**RESERVOIRS**



SECTION - K : (II) RCC ESRs



Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
4	Providing, hoisting and fixing in position <u>C.I. manhole, frame and cover</u> of best quality and of required size and shape with locking arrangements including applying 2 coats of anti-corrosive paint, etc. complete.					
i)	90 x 60 cm size and weight 35 kg.	No	2542.00			
ii)	Rate on weight basis for any size and type of frame and cover.	Kg	73.00			
5	Providing and fixing in position <u>M.S. ladder</u> 0.50 M wide consisting of 75 x 10 mm M.S. flats as stringers and 16 mm dia M.S. bars in double rows as steps placed at 25 cm c/c including cost of material and labour involved, welding, anchoring and applying 3 coats of anti-corrosive paint, etc. complete as directed by Engineer-in-charge.	RMT	1222.00	281.00		
6	Providing and applying <u>epoxy paint</u> of approved make (Shalimar, Ciba or Mahindra & Mahindra) to concrete surface <u>for RCC ESR or GSR or any other structure</u> including cleaning the surface by scrapping and air blowers to the satisfaction of Engineer-in-charge, necessary scaffolding, etc. complete with all leads and lifts and giving satisfactory hydraulic test for water tightness as per I.S. codes.					
i)	For new surfaces - Two coats	Sqm	597.00			
ii)	For old surfaces - Two coats	Sqm	656.00			
7	Providing and constructing RCC <u>spiral staircase</u> in M-150 mix concrete at site of work and consisting of central vertical column of 400 mm dia and steps in RCC M-150, tie members at each brace level, RCC parapet wall 80 cm high including cost of all labour and material involved, cost of scaffolding, centering, shuttering, curing, finishing in CM 1:3 proportion including RCC M-150 footing foundation, its excavation, refilling and cleaning the site, etc. complete as per type design, with 3 coats of cement paint.	RMT	5221.00	349.00		





Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
1	Providing and fixing in position <u>copper lightening conductor</u> including copper rod of 20 mm dia as per upper terminal 1.5 M long with a knob at end and with conical spike at top, <u>copper tape conductor</u> 20 x 3 mm size, copper earth plate of 3 mm thick and 0.81 sqm. in area, clamps at 1 M centre to centre including, necessary excavation, laying and fixing the conductor, providing and fixing 40 mm G.I. pipe upto 3 M height from ground and 0.5 M below ground including making all connections, filling earthing pit with charcoal, salt, etc. & refilling & watering, etc. complete as per specifications laid down in relevant I.S. codes.					
i)	For tape of 10 M length	No	11703.00			
ii)	Rebate/ extra rate per metre length or part thereof over and above initial length of 10 M.	Mtr.	284.00			
2	Providing and fixing in position <u>copper lightening conductor</u> including copper rod of 20 mm dia upper terminal 1.5 M long with a knob at the end with a conical spike at top, <u>aluminium tape conductor</u> 20 x 3 mm size, copper earth plate of 3 mm thick and 0.81 sqm. in area, clamps at 1 M centre to centre including, necessary excavation, laying and fixing the conductor, providing and fixing 40 mm G.I. pipe upto 3 M height from ground and 0.5 M below ground including making all connections, filling earthing pit with charcoal, salt, etc. & refilling & watering, etc. complete as per specifications laid down in relevant I.S. codes.					
i)	For tape of 10 M length	No	10264.0			
ii)	Rebate/ extra rate per metre length or part thereof over and above initial length of 10 M.	Mtr.	80.00	4.00		
3	Providing, hoisting and fixing in position inverted 'J' type 100 mm dia C.I. <u>cowl type ventilators</u> with mosquitoproof aluminium mesh at top in including applying 2 coats of anti-corrosive paint, etc. complete as directed by Engineer-in-charge, weighing not less than 35 kg.	No	1925.00			

#### SECTION - K : (III) ANCILLARY ITEMS FOR RESERVOIRS



Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
8	Providing and constructing RCC <u>ventilating shaft</u> of diameters and height mentioned below with required number of RCC 15 x 15 cm size columns and RCC circular slab or dome over the pillars in M-150 including cost of all material and labour, providing and fixing steel or wooden frame and providing and fixing G.I. flyproof mesh of 26 gauge and providing and applying in 3 coats of oil paint to wooden or steel frame and cement paint to concrete structure, etc. complete as directed by Engineer-in-charge.					
i)	0.9 M dia x 1.35 M height	No	4335.00	502.00		
ii)	1.2 M dia x 1.80 M height	No	5615.00	650.00		
iii)	1.5 M dia x 2.25 M height	No	8376.00	975.00		
9	Providing and installing <u>mercury water level indicator</u> for RCC ESR and wash water tank site as per instructions of Engineer-in-charge at ground level of the tank or nearing pump house or room for RCC ESR having 15 mtrs. stage height and 5 mtrs. water storage height with indication of water height in storage tank in metre and 1/10th of metre including providing and installing 15 mm dia class 'B' G.I. piping with necessary accessories from bottom of the tank upto the instrument as per instructions of Engineer-in-charge.	No	17496.00			
	For extra stage height over 15 mtrs. or part thereof and water depth over 5 mtrs. or part thereof for Item No. 9.	Mtr.	933.00	--		--

**SECTION - K : (III) ANCILLARY ITEMS FOR RESERVOIRS**





Sr. No.	Description	Unit	Rate (Rs.) 2018-2019		Rate (Rs.) 2019-2020	
			Complete	Labour	Complete	Labour
10	Providing, erecting, installing and commissioning <u>Barometric leg chlorination system</u> for water treatment plant upto 5 MLD capacity as per manufacturer's specification with all required materials viz. 15 kg. pressure yellow PVC pipe, specially prepared chamber, mixing chamber, scrubber unit, gas pressure flexible pipe, brass nozzle nipple, electronic alarm unit, PPM dose, indicator of 25 mm dia, 4 mm thick glass tube borosil, gas unit opening spanner 3 hole type, instruction board, aluminium pipe upto sump (max. length 15 M) including civil works wherever required for above materials, fittings, including satisfactory test and trial at work site, etc. complete. (Item do not include construction of chlorine gas room of 3.0 x 3.0 M or adequate size) as per drawing attached.					
i)	For 5.0 Mld capacity	No	116640.00	--		
ii)	Add / deduct per Mld or part of per Mld capacity	Mld	4082.00	--		
11	Providing and fixing <u>water level indicator</u> upto 5 M height including <u>M.S. enamelled gauge plate 300 mm wide</u> and 3 mm thick, copper float, providing and fixing required accessories such as pointer, pulleys, nylon thread including cost of all material, labour, etc. complete.	No	8562.00			
12	Providing and fixing <u>water level indicator</u> upto 5 M height including <u>M.S. enamelled gauge plate 150 mm wide</u> and 3 mm thick, copper float, providing and fixing required accessories such as pointer, pulleys, nylon thread including cost of all material, labour, etc. complete.	No	5191.00			





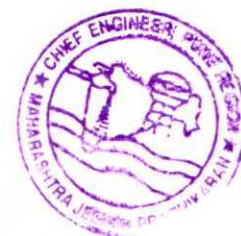
**SECTION - L**  
**CHAMBERS, MANHOLES &  
DRAINAGE DROPS**

383



Sr. No.	Description	Unit	Rate (Rs.) 2018-19		Rate (Rs.) 2019-20	
			Complete	Labour	Complete	Labour
1	<u>Valve Chamber with Precast RCC Covers</u> Providing and constructing B.B. masonry valve chamber with 15 cm thick 1:3:6 proportion PCC bedding, excluding excavation, B.B. masonry in CM 1:5 proportion precast RCC frame and cover, etc. complete as directed by Engineer-in-charge.					
	<u>Note : Wall thickness : 0.23 M for depth of 1.2 M and 0.35 M for balance depth exceeding 1.2 M.</u>					
A	As above of <u>60 x 45 cm</u> internal size and depth upto <u>0.9 M</u> with precast R.C.C. slab cover.	No	5302.00	1256.00		
a)	Add for every increase in depth of 30 cm or part thereof	30 cm depth	1153.00	306.00		
B	As above of <u>90 x 45 cm</u> internal size and depth upto <u>1.2 M</u> with precast R.C.C slab cover.	No	7845.00	1883.00		
a)	Add for every increase in depth of 30 cm or part thereof	30 cm depth	1373.00	366.00		
C	As above of <u>90 x 60 cm</u> internal size and depth upto <u>1.2 M</u> with precast R.C.C slab cover.	No	8529.00	2075.00		
a)	Add for every increase in depth of 30 cm or part thereof	30 cm depth	1488.00	402.00		
D	As above of <u>90 x 90 cm</u> internal size and depth upto <u>1.2 M</u> with precast R.C.C slab cover.	No	10210.00	2485.00		
a)	Add for every increase in depth of 30 cm or part thereof	30 cm depth	1720.00	470.00		
E	As above of <u>90 cm internal dia.</u> size and depth upto <u>1.2 M</u> with precast R.C.C slab cover.	No	7737.00	1905.00		
a)	Add for every increase in depth of 30 cm or part thereof	30 cm depth	1335.00	365.00		
F	As above of <u>1.2 x 1.2 M</u> internal size and depth upto <u>1.2 M</u> with precast R.C.C slab cover.	No	13676.00	3334.00		
a)	Add for every increase in depth of 30 cm or part thereof	30 cm depth	2185.00	608.00		
G	As above of <u>1.5 x 1.5 M</u> internal size and depth upto <u>1.5 M</u> with precast R.C.C slab cover.	No	20018.00	5005.00		
a)	Add for every increase in depth of 30 cm or part thereof	30 cm depth	2695.00	766.00		

#### SECTION - L : CHAMBERS, MANHOLES & DRAINAGE DROPS





Sr. No.	Description	Unit	Rate (Rs.) 2018-19		Rate (Rs.) 2019-20	
			Complete	Labour	Complete	Labour
2	<u>Valve chamber with cast iron manhole frame and covers</u> Providing and constructing B.B. masonry valve chamber with 15 cm thick 1:3:6 proportion PCC bedding, excluding excavation, B.B. masonry in CM 1:5 proportion, 12 mm thick cement plaster in CM 1:4 proportion on both sides with providing and fixing C.I. manhole frame and cover in RCC 1:2:4 coping or RCC 1:2:4 proportion x 15 cm thick slab, etc. complete as directed by Engineer-in-charge.					
	<u>Note</u> : Wall thickness : 0.23 M for depth of 1.2 M and 0.35 M for balance depth exceeding 1.2 M.					
A	As above of <u>60 x 45 cm</u> internal size and depth upto <u>0.9 M</u> with 60 x 45 cm size CI manhole frame and cover of 40 kg.	No	7971.00	1333.00		
a)	Add for every increase in depth of 30 cm or part thereof	30 cm depth	1153.00	306.00		
B	As above of <u>90 x 45 cm</u> internal size and depth upto <u>1.2 M</u> with 90 x 45 cm size CI manhole frame and cover of 40 kg.	No	10333.00	1945.00		
a)	Add for every increase in depth of 30 cm or part thereof	30 cm depth	1374.00	366.00		
C	As above of <u>90 x 60 cm</u> internal size and depth upto <u>1.2 M</u> with 90 x 60 cm size CI manhole frame and cover of 50 kg.	No	11756.00	2133.00		
a)	Add for every increase in depth of 30 cm or part thereof	30 cm depth	1488.00	402.00		
D	As above of <u>90 x 90 cm</u> internal size and depth upto <u>1.2 M</u> with 53 cm dia CI manhole frame and cover of 90 kg. fixed in RCC slab.	No	16112.00	2653.00		
a)	Add for every increase in depth of 30 cm or part thereof	30 cm depth	1720.00	470.00		
E	As above of <u>1.2 x 1.2 M</u> internal size and depth upto <u>1.2 M</u> with 53 cm dia CI manhole frame and cover of 90 kg. fixed in RCC slab.	No	18965.00	3366.00		
a)	Add for every increase in depth of 30 cm or part thereof	30 cm depth	2189.00	609.00		





Sr. No.	Description	Unit	Rate (Rs.) 2018-19		Rate (Rs.) 2019-20	
			Complete	Labour	Complete	Labour
F	As above of <u>1.5 x 1.5 M</u> internal size and depth upto <u>1.5 M</u> with 53 cm dia CI manhole frame and cover of 90 kg. fixed in RCC slab.	No	24697.00	4893.00		
a)	Add for every increase in depth of 30 cm or part thereof	30 cm depth	2695.00	766.00		
3	<u>Valve chamber with precast steel fibre reinforced concrete frame and covers (S.F.R.C. frame and covers)</u> Providing and constructing B.B. masonry valve chamber with 15 cm thick 1:3:6 proportion PCC bedding, excluding excavation, B.B. masonry in CM 1:5 proportion precast S.F.R.C. frame and cover, etc. complete as directed by Engineer-in-charge.					
	<u>Note</u> : Wall thickness : 0.23 M for depth of 1.2 M and 0.35 M for balance depth exceeding 1.2 M.					
A	As above of <u>60 x 45 cm</u> internal size and depth upto <u>0.9 M</u> with S.F.R.C. frame and cover.	No	7777.00	1854.00		
a)	Add for every increase in depth of 30 cm or part thereof	30 cm depth	1153.00	274.00		
B	As above of <u>90 x 45 cm</u> internal size and depth upto <u>1.2 M</u> with S.F.R.C. frame and cover.	No	11051.00	2635.00		
a)	Add for every increase in depth of 30 cm or part thereof	30 cm depth	1374.00	327.00		
C	As above of <u>90 x 60 cm</u> internal size and depth upto <u>1.2 M</u> with S.F.R.C. frame and cover.	No	12162.00	2899.00		
a)	Add for every increase in depth of 30 cm or part thereof	30 cm depth	1488.00	354.00		
D	As above of <u>90 x 90 cm</u> internal size and depth upto <u>1.2 M</u> with S.F.R.C. frame and cover.	No	13981.00	3334.00		
a)	Add for every increase in depth of 30 cm or part thereof	30 cm depth	1719.00	410.00		
E	As above of <u>1.2 x 1.2 M</u> internal size and depth upto <u>1.2 M</u> with S.F.R.C. frame and cover of size 540 mm dia. fixed in RCC slab.	No	17114.00	4080.00		
a)	Add for every increase in depth of 30 cm or part thereof	30 cm depth	2184.00	520.00		

Sr. No.	Description	Unit	Rate (Rs.) 2018-19		Rate (Rs.) 2019-20	
			Complete	Labour	Complete	Labour
F	As above of <u>1.5 x 1.5 M</u> internal size and depth upto <u>1.5 M</u> with S.F.R.C. frame and cover of size 540 mm dia. fixed in RCC slab.	No	23173.00	5523.00		
a)	Add for every increase in depth of 30 cm or part thereof	30 cm depth	2451.00	642.00		
4	Providing and fixing in position <u>M.S. air valve boxes</u> fabricated with 2 mm thick M.S. plate, 30 x 30 x 3 mm size M.S. angle frame, concreting in M-150 for fixing the box in position, applying two coats of oil paint, painting chainage, locking arrangement, etc. complete as directed by Engineer-in-charge.					
a)	For single ball air valve	No	3951.00	100.00		
b)	For double ball air valve	No	2158.00	279.00		
5	Providing and fixing <u>C.I. road box</u> including loading, unloading and carting to site of work including all necessary excavation in all types of strata and fixing in murum packing, etc. complete.					
a)	100 mm x 225 mm (20 kg)	No	1327.00	316.00		
b)	225 mm x 300 mm (40 kg)	No	2477.00	590.00		
6	Providing and constructing on sewer, B.B. masonry <u>circular manhole</u> with concentric cone <u>1.2 M dia.</u> at bottom and 0.5 M dia. at top and upto a <u>depth of 2.00 M</u> with 23 cm brick work in CM 1:4 proportion excluding excavation including foundation concrete 250 mm thick and haunches and channels in C.C. 1:2:4 proportion, finishing channels in smooth rendering, providing C.I. dapuri type steps each weighing 5.5 kg., 1:2:4 coping and providing and fixing approved make and quality S.F.R.C. frame and cover of 56 cm dia. etc. complete as directed by Engineer-in-charge.	No	21155.00	5042.00		
a)	Rebate for every decrease in depth of 50 cm or part thereof	50 cm depth	3134.00	679.00		





Sr. No.	Description	Unit	Rate (Rs.) 2018-19		Rate (Rs.) 2019-20	
			Complete	Labour	Complete	Labour
7	Providing and constructing on sewer, B.B. masonry <u>circular manhole</u> concentric cone <u>1.5 M dia.</u> at bottom and 0.5 M dia. at top and upto a <u>depth of 5.00 M</u> with 23 cm brick work, upto depth of 2 M from top and 35 cm thick brick work for balance depth in CM 1:4 proportion with 20 mm thick smooth plaster on both sides in CM 1:2 proportion excluding excavation including foundation concrete 250 mm thick and haunches and channels in C.C. 1:2:4 proportion, finishing channels in smooth rendering, providing C.I. dapuri type steps each weighing 5.5 kg., 1:2:4 coping and providing and fixing approved make and quality S.F.R.C. frame and cover of 56 cm dia. etc. complete as directed by Engineer-in-charge.	No	63207.00	1608.00		
a)	Rebate for every decrease in depth of 50 cm or part thereof	50 cm depth	6479.00	1546.00		
8	Providing and constructing on sewer, B.B. masonry <u>circular manhole</u> with concentric cone <u>1.5 M dia.</u> at bottom and 0.5 M dia. at top and upto a <u>depth of 9.00 M</u> with 23 cm brick work, upto depth of 2 M from top and 35 cm thick brick work for depth of 2 M and 45 cm thick brick work for remaining depth upto 9 M in CM 1:4 proportion with 20 mm thick smooth plaster on both sides in CM 1:2 proportion excluding excavation including foundation concrete 250 mm thick and haunches and channels in C.C. 1:2:4 proportion, finishing channels in smooth rendering, providing C.I. dapuri type steps each weighing 5.5 kg., 1:2:4 coping and providing and fixing approved make and quality S.F.R.C. frame and cover of 56 cm dia. etc. complete as directed by Engineer-in-charge.	No	136062.00	32438.00		
a)	Rebate for every decrease in depth of 50 cm or part thereof	50 cm depth	8151.00	1943.00		

# SECTION - L : CHAMBERS, MANHOLES & DRAINAGE DROPS





Sr. No.	Description	Unit	Rate (Rs.) 2018-19		Rate (Rs.) 2019-20	
			Complete	Labour	Complete	Labour
9	Providing and constructing B.B. masonry <u>circular manhole without conical shape</u> excluding excavation, RCC 1:2:4 proportion, 20 cm bedding brick masonry in CM 1:4 proportion, 23 cm thick for 2 M depth from top 35 cm thick for 2 M below it and 45 cm thick for balance depth, RCC slab at top and at 2 M depth from top for supporting brick masonry above it, plastering with smooth finish in CM 1:2 proportion, C.C. 1:2:4 finishing channels in smooth rendering, providing C.I. dapuri type steps each weighing 5.5 kg., providing and fixing S.F.R.C. frame and cover of 56 cm dia. at top including cost of all materials and labour, etc. complete.					
A	1.00 M dia. x 2 M depth	No	18781.00	4478.00		
a)	Rebate for every decrease in depth of 50 cm or part thereof	50 cm depth	2741.00	652.00		
B	1.00 M dia. x 3 M depth	No	34558.00	8239.00		
a)	Rebate for every decrease in depth of 50 cm or part thereof	50 cm depth	5579.00	1331.00		
C	1.00 M dia. x 4.5 M depth	No	54344.00	12956.00		
a)	Rebate for every decrease in depth of 50 cm or part thereof	50 cm depth	7152.00	1705.00		
D	1.50 M dia. x 2 M depth	No	34431.00	8208.00		
a)	Rebate for every decrease in depth of 50 cm or part thereof	50 cm depth	4865.00	1159.00		
E	1.50 M dia. x 3 M depth	No	46882.00	11176.00		
a)	Rebate for every decrease in depth of 50 cm or part thereof	50 cm depth	7361.00	1755.00		
F	1.50 M dia. x 4.5 M depth	No	72866.00	1738.00		
a)	Rebate for every decrease in depth of 50 cm or part thereof	50 cm depth	9373.00	2235.00		



Sr. No.	Description	Unit	Rate (Rs.) 2018-19		Rate (Rs.) 2019-20	
			Complete	Labour	Complete	Labour
10	<u>Drainage Drops</u> Providing 150 mm dia. S.W. or R.C.C. pipes in <u>vertical drop arrangement</u> including providing 150 mm dia S.W. and R.C.C. pipe fixed in B.B. masonry of manhole at the required level including providing 150 mm dia double tee, 150 mm dia right angled bend, encasing in B.B. masonry 1:4 proportion all around the pipe, double tee, bend upto the foundation of manhole, jointing, cutting, filleting including neat cement rendering, plugging the opening with jungle wood knob complete as directed by Engineer-in-charge (0.60 M depth) <u>excluding cost of chamber.</u>	No	1747.00	280.00		
a)	Extra for every 0.5 M depth beyond initial depth of 0.60 M.	50 cm depth	667.00	107.00		
11	As above but for <u>200 mm dia</u> pipes and depth 0.60 M	No	2252.00	378.00		
a)	Extra for every 0.5 M depth beyond initial depth of 0.60 M.	50 cm depth	730.00	123.00		
12	As above but for <u>250 mm dia</u> pipes and depth 0.60 M	No	2799.00	460.00		
a)	Extra for every 0.5 M depth beyond initial depth of 0.60 M.	50 cm depth	843.00	203.00		
13	As above but for <u>300 mm dia</u> pipes and depth 0.60 M	No	3402.00	561.00		
a)	Extra for every 0.5 M depth beyond initial depth of 0.60 M.	50 cm depth	946.00	226.00		
14	As above but for <u>400 mm dia</u> pipes and depth 0.60 M	No	4932.00	790.00		
a)	Extra for every 0.5 M depth beyond initial depth of 0.60 M.	50 cm depth	1249.00	298.00		
15	As above but for <u>500 mm dia</u> pipes and depth 0.60 M	No	6216.00	1482.00		
a)	Extra for every 0.5 M depth beyond initial depth of 0.60 M.	50 cm depth	1379.00	328.00		
16	As above but for <u>600 mm dia</u> pipes and depth 0.60 M	No	7152.00	1706.00		
a)	Extra for every 0.5 M depth beyond initial depth of 0.60 M.	50 cm depth	1587.00	378.00		

#### SECTION - L : CHAMBERS, MANHOLES & DRAINAGE DROPS





Sr. No.	Description	Unit	Rate (Rs.) 2018-19		Rate (Rs.) 2019-20	
			Complete	Labour	Complete	Labour
17	Providing and fixing in position <u>steel fibre reinforced concrete (S.F.R.C.) frame and covers</u> of approved make including loading, unloading, transportation, all taxes, etc. complete as directed by Engineer-in-charge (20 tonnes capacity).					
a)	540 mm dia	No	2682.00	638.00		
b)	560 mm dia	No	3333.00	793.00		
c)	90 x 45 cm size	No	2682.00	638.00		
d)	90 x 60 cm size	No	2906.00	692.00		
e)	60 x 60 cm size	No	2654.00	632.00		
f)	60 x 45 cm size	No	2300.00	547.00		
18	Providing and fixing <u>intercepting sewer trap</u> including concrete bedding, etc. complete.					
a)	150 x 100 mm	No	402.00	96.00		
b)	100 x 100 mm	No	287.00	68.00		
19	Providing and fixing in position <u>S.W. bends</u> of various size, etc. complete.					
a)	100 mm	No	128.00	31.00		
b)	150 mm	No	149.00	36.00		
20	Providing and fixing <u>'Y' junction</u> and labour, etc. complete.					
a)	Saddle junction 100 x 100 M	No	155.00	37.00		
b)	'Y' junction 150 x 150 x 100 mm	No	179.00	43.00		
c)	'Y' junction 300 x 300 x 300 mm	No	210.00	50.00		
d)	'Y' junction 300 x 300 x 100 mm	No	179.00	43.00		
21	Providing and fixing in position <u>A.C. soil ventilators / slotted</u> as necessary and as directed by Engineer-in-charge, etc. complete.					
a)	80 mm	No	152.00	36.00		
b)	100 mm	No	184.00	44.00		
c)	150 mm	No	261.00	63.00		
22	Providing and fixing <u>A.C. soil pipe or downtake pipe</u> with all required fittings, taking hole, etc. complete (as per manufacturer's code of practice).					
a)	80 mm	No	265.00	64.00		
b)	100 mm	No	316.00	76.00		
c)	150 mm	No	495.00	119.00		





Sr. No.	Description	Unit	Rate (Rs.) 2018-19		Rate (Rs.) 2019-20	
			Complete	Labour	Complete	Labour
23	Providing and fixing <u>Cast Iron soil pipe</u> of 1.8 M length including taking out holes and all required fittings, etc. complete.					
	<u>S/S</u>					
a)	80 mm	No	917.00	220.00		
b)	100 mm	No	1042.00	250.00		
	<u>D/S</u>					
a)	80 mm	No	990.00	238.00		
b)	100 mm	No	1148.00	276.00		



**SECTION - M**  
**WELL SINKING &**  
**RIVER INFILTRATION WORKS**



Sr. No.	Description	Unit	Rate (Rs.) 2018-19		Rate (Rs.) 2019-20	
			Complete	Labour	Complete	Labour
1	Providing, constructing <u>coffer dam</u> in river basin / dam storages as per type design including excavation, filling the middle portion with B.C. soil (in gunny bags if required). Providing impervious / semipervious materials on both sides of B.C. soil (in gunny bags if required) including ramming, compacting to the satisfaction of Engineer-in-charge till the completion of work including dismantling coffer dam after completion of works and disposing off the material as directed by the Engineer-in-charge.	Cum	521.00			
	<p><u>Note</u> : Pay line maximum. Top width payable shall be 2 Mtr. and maximum payable side slopes shall be 1.5 horizontal to 1 vertical, if the constructed top width of the side slopes are less, then the measurements at actual are payable. Extra top width or flat slopes are not payable. Contractor is free to use ballies, plastic sheets, piles, pipes, CGI sheets for supporting hearding materials instead of impervious/ semi-pervious hearding materials for which no extra payments shall be payable. 30% payment shall be withheld for dismantling of coffer dam.</p> <p>This foot note shall appear in tender condition.</p> <p>(Type section is shown on last page of type design section of CSR).</p>					
2	Providing and fabricating at work shop, carting to site of work, including transport, loading, unloading, hoisting, lowering and setting out at actual site of well, sinking <u>M.S. plate cutting edge for R.C.C. well curb</u> consisting of 350 mm M.S. plate, 10 mm thick, champhering at bottom. Cutting edge should be provided in pieces not less than 2 M in length. Each joint should be plain from outside and jointed by gusset plate 400 x 200 x 12 mm thick M.S. plate with 12 nos. of 20 mm dia. crushank headed bolts (gusset plates from inside) with unequal angle of 90 x 60 x 10 mm should be welded from top of chamfered portion at 14 mm from bottom so that 15 mm side should be in contact with cutting edge with overlap of 300 mm joints. 16 mm dia bar should be welded	Kg	70.00	16.00		



Sr. No.	Description	Unit	Rate (Rs.) 2018-19		Rate (Rs.) 2019-20	
			Complete	Labour	Complete	Labour
	to M.S. plate 200 mm below the top surface and length should be 1.8 M above plate with a bend 300 mm from plate surface including 3 coats of anti-corrosive paint as directed by Engineer-in-charge.					
3	Providing and filling puddle (selected good impervious clay) in Kolhapur type weirs in proper layers of 15 cm including watering, ramming and compaction, etc. complete with all leads and lifts.	Cum	219.00			
4	Providing and filling around the well boulders filling of selected variety and size of boulders including cost of all materials, labour, transportation, etc. complete with all leads and lifts.	Cum	760.00			
5	Providing and fixing 80 mm dia A.C./P.V.C. pipe weep holes at 1.5 M c/c staggered including cost of all materials and labour involved with all leads and lifts, etc. complete.	RMT	162.00			
6	Providing and fixing M.S. chequered plate flooring of following thickness supported on M.S. angles (25 x 25 x 5 mm size) including welding, cutting and fabricating the plates to the required square or rounding shape, making holes in the plate, including providing and applying 3 coats of anticorrosive paint, etc. complete as directed by Engineer-in-charge.					
a)	6 mm thick	Sqm	2906.00	415.00		
b)	8 mm thick	Sqm	3663.00	417.00		
7	Providing at site of works ISI standard RCC slotted pipes of NP-3 class including cost of all central and local taxes, octroi, inspection, transportation, etc. complete including cost of RCC collar, etc. complete.					
a)	450 mm dia	RMT	4065.00			
b)	600 mm dia	RMT	6304.00			
8	Lowering, laying and jointing RCC slotted pipes of following diameters including all leads and lifts, cost of jointing material, labour, etc. complete as directed by Engineer-in-charge.					
a)	450 mm dia	RMT	187.00			
b)	600 mm dia	RMT	249.00			



Sr. No.	Description	Unit	Rate (Rs.) 2018-19		Rate (Rs.) 2019-20	
			Complete	Labour	Complete	Labour
9	Lowering, laying and jointing CI 'B' class connecting mains with rubber gaskets including transportation of pipes from stores to site of works, cost of jointing materials, cost of rubber gasket with all leads and lifts, etc. complete.					
i)	300 mm dia	RMT	208.00			
ii)	350 mm dia	RMT	242.00			
iii)	400 mm dia	RMT	320.00			
iv)	450 mm dia	RMT	334.00			
v)	500 mm dia	RMT	419.00			
vi)	600 mm dia	RMT	578.00			
vii)	700 mm dia	RMT	778.00			
viii)	750 mm dia	RMT	876.00			
10	Providing, lowering, laying and placing in position, shrouding material for porous pipe gallery / slotted pipe gallery / trench gallery with all leads and lifts involved including transportation of materials to site of works, screening and washing of materials and placing in position with given section, etc. complete as directed by Engineer-in-charge.					
a)	40 mm gauge pebbles	Cum	1152.00	242.00		
b)	12 mm to 20 mm gauge pebbles	Cum	1393.00	291.00		
c)	6 to 12 mm gauge pebbles	Cum	1588.00	300.00		
d)	Coarse sand (from river sand at site)	Cum	787.00	165.00		
e)	Fine sand (from river sand at site)	Cum	787.00	165.00		
11	Providing and fixing in position C.I. dapuri steps or 22 mm dia. M.S. bar step with proper anchorage, etc. and providing and applying 3 coats of anti-corrosive paint, etc. complete as directed by Engineer-in-charge.	No	263.00	68.00		
12	Providing and fixing M.S. sluice gates in position as per detailed drawings and specification including cost of all materials, labour, operating pedestal, connecting rod, painting with three coats of anti-corrosive paint, etc. complete as directed by Engineer-in-charge.	Kg	85.00	33.00		

#### SECTION - M : WELL SINKING & RIVER INFILTRATION WORKS





Sr. No.	Description	Unit	Rate (Rs.) 2018-19		Rate (Rs.) 2019-20	
			Complete	Labour	Complete	Labour
13	Providing and fixing in position <u>C.I. / M.S. rose pieces</u> in intake wells including cost of all materials and labour, painting with three coats of anti-corrosive oil paint, etc. complete as directed by Engineer-in-charge.	Kg	64.00	16.00		--
14	Providing and fixing in position 80 mm dia. x 1.5 M deep <u>G.I. pipe anchorage</u> below invert of pipeline for nalla or river crossings where soft materials or sand is anticipated for considerable depth including hammering the pipe upto 1.5 M depth below invert of pipe, removing sand/ loose materials in the pipe with small and long spoons, providing and fixing 16 mm dia x 1.75 M clear length M.S. hook for holding the pipeline in position, through G.I. pipe already hammered and cleared, pouring cement grout through this pipe upto top of pipe to form a cement bulb at bottom of pipe and to hold M.S. hook tight in the pipe including cost of all material and labour involved but excluding cost of excavation on pipeline for its exposure upto invert, as per type design.	Anchor Pipe	Deleted			
	<u>Note</u> : This type of pipe anchorage shall be provided at 30 M centre to centre on alternate side of pipeline for full width of nalla or river.					
15	<u>Providing and spreading</u> around the well 1 mm thick <u>polyethylene sheet</u> complete as directed by Engineer-in-charge.	Sqm	21.00	--		
16	<u>Dewatering charges for estimation purpose for head works in river basin or dam :</u>					
i)	Approach Channel	RMT	5203.00	934.00		
ii)	Intake Well of 3 M dia.	No	69390.00	12455.00		
iii)	Inspection Well of 2 M dia.	No	44681.00	8020.00		
iv)	Connecting Main	RMT	4170.00	746.00		
v)	Jack Well of 6 M dia.	No	208161.0	37363.00		
vi)	Approach Bridge	RMT	701.00	126.00		
	<u>Notes</u>					





Sr. No.	Description	Unit	Rate (Rs.) 2018-19		Rate (Rs.) 2019-20	
			Complete	Labour	Complete	Labour
1)	The Contractor at his request may be allowed to start construction of masonry steining so as not to allow silting of well in oncoming monsoon and while paying masonry, 25% amount shall be withheld and released only when excavation to the full depth is completed.					
2)	<u>Dewatering</u> : Total dewatering charges are to be proposed in the tender as lumpsum amount and 75% is payable for excavation and 25% is payable for construction of well/ gallery. Out of 75% excavation, break-up shall be as under:					
	25% for last 1 M depth.					
	20% for 2 M depth which just above last 1 M depth.					
	15% for 2 M depth which just above last 3 M depth.					
	15% for the rest of depth from water table level.					
3)	The provisions made for dewatering in the tender being on lumpsum basis, the same shall have to be reduced / increased proportionately as the length of approach channel, connecting main or approach bridge reduces / increases during actual execution.					
	Condition Nos. (1) & (2) shall appear in tender conditions.					
17	<u>Carrying out recuperation/ yield test</u> for asserting the discharge of constructed well/ excavated profile as directed by Engineer-in-charge. The test is carried out by drawing down water from the well/profile below normal/ subsoil water level upto full depth rise in water level is recorded. The normal water level/ subsoil water level in the well/ profile as well as stainer/ suction level at pump as per design of W.S. scheme shall be recorded prior to the test including cost of all materials, overhead, labourers, etc. completed as directed.					
	The test shall be carried out as per Tech. Circular No. 2597 & 2011 -97 and shall be carried out for 7 days.					
i)	Lps more than 25,000	Day	3296.00	1793.00		
ii)	Lps less than 25,000	Day	3278.00	2191.00		
18	Sleep form shuttering	Sqm.	3140.00	--		

#### SECTION - M : WELL SINKING & RIVER INFILTRATION WORKS



**SECTION - N**

**TRIAL RUN**

403





Sr. No.	Description	Unit	Rate (Rs.) 2018-19		Rate (Rs.) 2019-20	
			Complete	Labour	Complete	Labour
1	<u>Commissioning, running and maintaining the scheme</u> to quantities, rated capacity, including manning necessary personnel such as operator, valveman, etc. as per requirements of the scheme and who should also administer chemical dose for a period of <u>1 month for individual scheme and 3 months for regional scheme</u> , together with training of personnel spared by MJP / Local Body and handing over the scheme to Local Body after completion of the above period as directed by Engineer-in-charge.					
	<u>Note</u> : Required chemicals to be supplied by Department free of cost and electricity bill will also be paid by the Department.					
a)	For <u>single village (Three Months)</u>	Job	55997.00	--		--
b)	For <u>regional scheme upto 3 villages</u> with raw water pumping, one treatment plant with pumps, raw water pumping main, leading main, ESR, BPT and distribution system, etc. <u>(For six months)</u>	Job	231861.00	--		--
c)	For <u>regional scheme upto 3 villages</u> with raw water pumping with pumps, raw water pumping main, leading main, ESR, BPT and distribution system, etc. <u>(For six months) without WTP</u>	Job	149967.00	--		--
d)	For <u>regional scheme upto 3 villages</u> trial period shall be one year with raw water pumping, one treatment plant with pumps, raw water pumping main, leading main, ESR, BPT and distribution system, etc. <u>(For one year)</u>	Job	470375.00	--		--
e)	For <u>regional scheme upto 3 villages</u> trial period shall be one year with raw water pumping with pumps, raw water pumping main, leading main, ESR, BPT and distribution system, etc. <u>(For one year) without WTP</u>	Job	304480.00	--		--
f)	<u>Add for every additional villages or part thereof</u>	Mth.	6912.00	--		--
g)	<u>Add for every additional pumping station</u>	Mth.	11374.00	--		--





# ORIENTED PVC PIPE (O-PVC)

## RECEPTION, STORAGE, INSTALLATION AND TEST INSTRUCTIONS

### RECEPTION

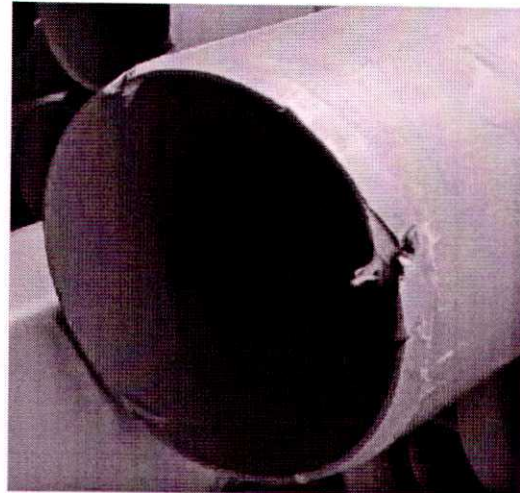
After the reception of the pipes, it is necessary to check their state. Before its installation, you should remove the caps and make a sampling to verify that all the pipes are correct.

Checking the next points is particularly important:

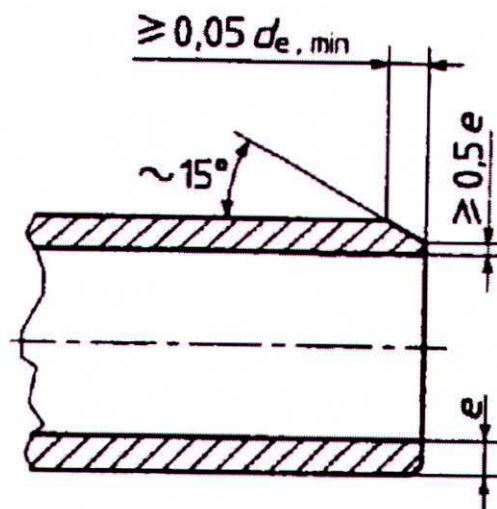
- The pipes should be free of dirt.
- The chamfer in the spigot end should not be damaged.



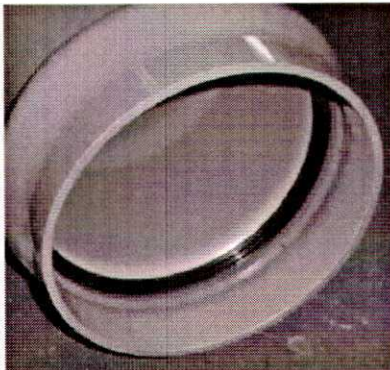
CORRECT



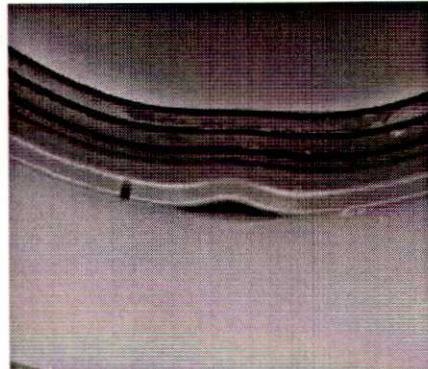
INCORRECT



- The seals should be placed correctly in their housings.



CORRECT



INCORRECT

- The surface and the inner part of the pipes and sockets should not be damaged.

## STORAGE

We suggest the following guidelines:

- Store the pipes horizontally on a flat surface and place supports every 1.5 meters to avoid the bending of the product.
- Avoid scratches especially in the crest of the socket, due to dragging the pipe on the ground, mainly if the surface is made of stone, concrete or asphalt.
- Do not stack more than 1.5 meters high, as this can damage lower pipes or even the upper pipes could fall.
- The sockets should be free, alternating sockets and ends.
- In case of prolonged sun exposure, protect pallets with an opaque material. White colour is preferable because it avoids the over-heating of the pipes.





## REALIZATION OF THE TRENCH

The trench must be free of stones at the bottom and at the sides.

Stones smaller than 10-20 mm are allowed, but they cannot be the main size of the ground particles.

Minimum trench width:

DN (mm)	Minimum width of trench B (m)	Depth of trench H (m)	Minimum width of trench B (m)
90-250	0.60	$h < 1.00$	0.60
315	0.85	$1.00 < h < 1.75$	0.80
355	1.00	$1.75 < h < 4.00$	0.90
400	1.10	$h > 4.00$	1.00
450	1.15		
500	1.20		
630	1.35		
800	1.65		

As a rule of thumb, when there is no road traffic involved, the pipes' crown will be at a minimum depth of 0.6 meters; with road traffic, the minimum depth is 1 meter.

## BEDDING AND FILLING THE TRENCH

Pipe must be installed in the following circumstances:

1. Before placing the pipe, a sand bed should be prepared (a fine granular material could be used instead of sand) with a thickness from 10 cm to 15 cm. The pipe should be well aligned and levelled.
2. The pipe must lie on the sand bed. It must be ensured that all the lower part of the pipe is settled on the sand bed trying to soak as much as possible in order to make the angle of sand that supports the kidneys of the pipe as big as possible.
3. Once the pipe is placed, chamberlain sides must be filled with the selected material and compacted to achieve >95% Proctor Normal.
4. The trench must be filled with the selected material and compacted laterally until the upper part of the pipe is buried at least 30 cm.
5. Steps 3 and 4 can be done with the same natural material obtained from the excavation, trying to avoid rocks and large stones, and checking that this natural material can support the forces produced by the pressure inside of the pipe.





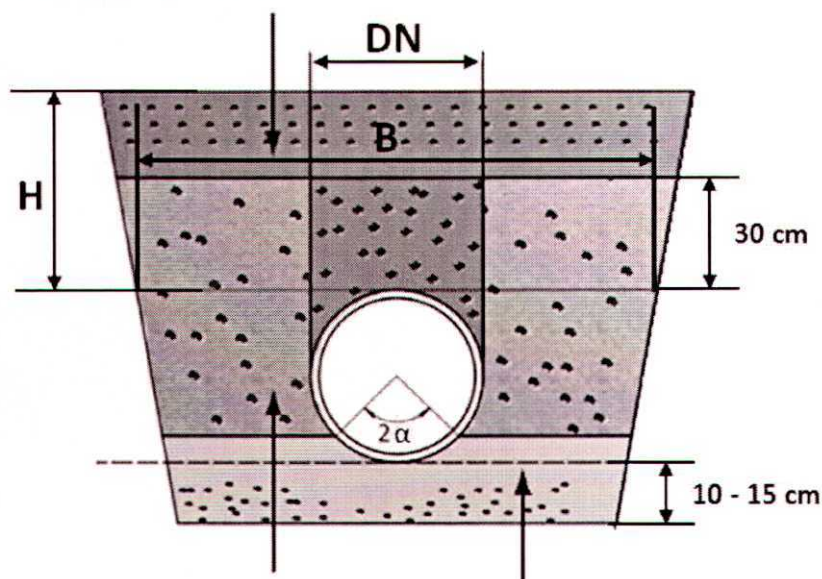
Natural soil can be used as the selected filler material whenever it fulfills the following criteria:

- The material cannot consist of angular stones or similar material.
- Filler material should not contain bigger particles than the ones shown in the following table.
- Filler material should not contain blocks of soil twice the size of the maximum dimensions of the particles given in the table.

Maximum particle size	
Nominal diameter DN	Maximum size mm
DN < 100	15
100 ≤ DN < 300	20
300 ≤ DN < 600	30
600 ≤ DN	40

- From the 30 cm above the pipe until the surface of the ground, the trench can be filled with natural material not specifically selected and compacting directly over the whole surface of the trench.

Natural, tightly-packed  
filling 100% P.N.



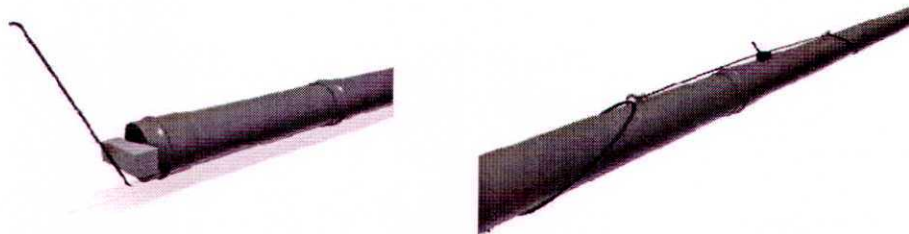
Selected,  
tightly-packed  
filling  
>95% P.N.

Granular  
tightly-packed  
material  
>95% P.N.



## ASSEMBLY

- Remove the protection caps.
- Verify that the pipe is clean and in good condition. Paying attention to the sockets and spigot ends.
- Check that the chamfer is correct and free of cracks.
- Verify that the seal is in its place, clean and free of foreign materials (stones, sand, etc.).
- Lubricate the chamfer of the spigot and the seal with joint lubricant.
- Line up the pipe as much as possible horizontal and vertically.
- Insert only the chamfer edge of the socket, just to support the pipe but leaving the socket lip free.
- In the case of pipes with nominal diameter  $\leq 250$  mm, a firm and dry push should be given to seize the momentum produced by the free movement in the lip of the socket and introduce it until the mark is hidden into the socket.
- When installing diameters  $> 250$  mm, one should use mechanical means to introduce the pipe using materials such as wood, hoists, tackles or slings.



In the next table, you can find an approximated number of assemblies per diameter with 1kg of lubricant.

DN (mm)	90	110	140	160	200	225	250	315	355	400	450	500	630	800
Assemblies	87	76	54	46	34	32	30	25	21	17	16	14	12	9

## PIPE CUTTING

Pipes can be cut transversally using a circular saw or a hacksaw. The resulting male cut ends should be chamfered in order to be entered manually in another socket pipe or fitting. The chamfer can be made with a circular saw and be reviewed later with a file. The chamfer should be approximately of 15°.

A mask must be worn to prevent dust inhalation and protections and safety measures must to be taken for cutting machines.

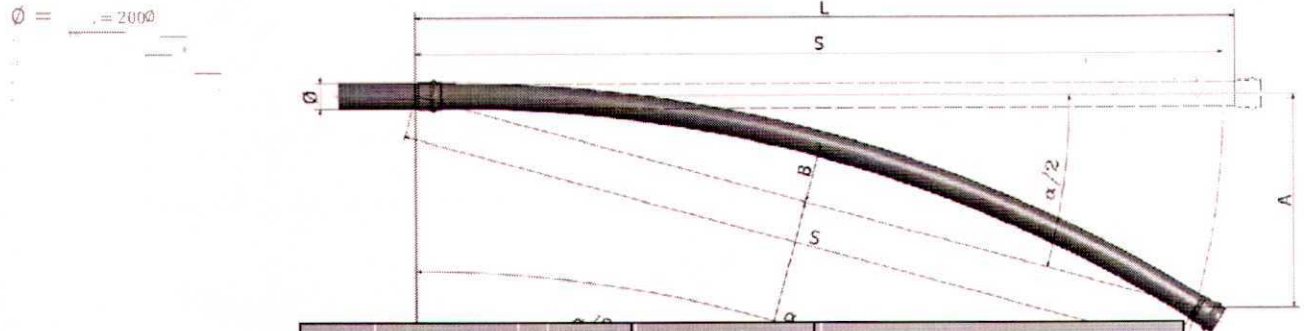
Pipes chamfered on-site are less accurate than those made at the factory. Because of that, they could require higher introduction efforts or even require simple mechanical means to place the spigot inside the socket.





## COLD BENDING OF PIPE (23°C)

The pipe can bend at room temperatures ( $\pm 23^\circ\text{C}$ ) in the trench up to the limits defined in the next table. These curves must to be done always in cold (don't heat any part of the pipe or socket) by manual efforts (you can use simple items to help in case of pipes DN > 250mm) and without damaging the geometry of the plugs.



DN	L	Pipe curvature			Angular deviation of the socket	Curvature + angular deviation (full angle) angular		
		R	$\alpha/2$	A		R'	$\alpha'/2$	A'
mm	m	m	degrees	m	degrees	m	degrees	m
90	5,78	18	9,2	0,92	2	15	11,2	1,12
110	5,78	22	7,5	0,75	2	17	9,5	0,95
140	5,76	28	5,9	0,59	2	21	7,9	0,79
160	5,75	32	5,1	0,52	2	23	7,1	0,71
200	5,73	40	4,1	0,41	2	27	6,1	0,61
225	5,70	45	3,6	0,36	2	29	5,6	0,56
250	5,68	50	3,3	0,32	2	31	5,3	0,52
315	5,63	63	2,6	0,25	2	35	4,6	0,45
355	5,61	71	2,3	0,22	2	38	4,3	0,42
400	5,58	80	2,0	0,19	2	40	4,0	0,39
450	5,56	90	1,8	0,17	2	42	3,8	0,37
500	5,58	100	1,6	0,16	2	44	3,6	0,35
630	5,53	126	1,3	0,12	2	49	3,3	0,31
800	5,42	160	1,0	0,09	2	52	3,0	0,28

The pipes may be subjected to greater curvatures with high efforts, but it is not recommended to overcome these limits to avoid compromising the safety coefficient of the pipe.





## ANGULAR DEVIATION ALLOWED IN THE SOCKET

In addition to the curvature of the pipe, an angular deviation is allowed at the junction between pipes. Therefore in the final layout of the pipes, one can add both effects.

It is important not to exceed the established values of angular deviation in the socket-end when bending the pipe.



(1) Total length of the pipe: 5.95 meters.

DN	Maximum angular deviation	Displacement in the socket (D)
mm	angle (°)	D(mm) <sup>(1)</sup>
90-800	2°	200

The pipe connections can be subject to greater angular deviations if subjected to high stresses. It's recommended not to exceed those limits in order to avoid endangering the safety coefficients of the assembly under pressure.

## FORCES PRODUCED BY THE BENDING OF THE PIPE

The bent pipeline behaves like a narrow-angle curve; this means that there is some backpressure on the ground as the table below shows. These cross-pressures, under normal conditions, can be supported by a sufficiently compacted soil, otherwise, if necessary, they should be supported with anchors in excessive curvatures.

DN	Forces in a curved pipe ( $\alpha / 2$ ) <sup>(2)</sup>					
	bar	bar	bar	bar	bar	bar
	1	5	10	15	20	25
mm	kN	kN	kN	kN	kN	kN
90	0,10	0,51	1,02	1,53	2,04	2,55
110	0,12	0,62	1,25	1,87	2,49	3,12
140	0,16	0,79	1,58	2,37	3,17	3,96
160	0,18	0,90	1,81	2,71	3,61	4,51
200	0,22	1,12	2,25	3,37	4,50	5,62
225	0,25	1,26	2,52	3,78	5,04	6,29
250	0,28	1,39	2,79	4,18	5,58	6,97
315	0,35	1,74	3,48	5,22	6,96	8,70
355	0,39	1,96	3,91	5,87	7,82	9,78
400	0,44	2,19	4,38	6,57	8,76	10,96
450	0,49	2,46	4,91	7,37	9,82	12,28
500	0,55	2,74	5,48	8,22	10,96	13,69
630	0,68	3,42	6,84	10,26	13,68	17,10
800	0,85	4,26	8,51	12,77	17,03	21,28

(2) Resultant forces in a pipe 5.95 meters long.



## PRESSURE TEST AT WORKS

On-site testing should be performed according to local regulations and instructions laid down in the project.

During the assembly, the pipe installed should be tested in sections fully executed (the length may vary between 500 and 1.000 meters). The ends of the sections should be closed with appropriate fittings when being tested.

- Two main aspects must be taken into account: When the assembly are exposed, the water-tightness of the network should be checked, to see if there is any leak in such unions and locate them in case they exist. Except the cases of seal expulsion due to over-pressures or excessive angular deflections, leaks are manifested especially at very low pressures.
- On the other hand, for testing high-pressure pipes and fittings, they must be properly anchored (reductions, changes in direction, junctions, valves, cutting, etc.) and the pipes should be conveniently set in the trench (burial and compaction landfill). Otherwise, pipes and fittings could be unplugged by landslides in the field.

Therefore, it is recommended to test one of the following methods:

■

### **Method A:**

Burying the pipe conveniently with enough compaction to be able to withstand the stresses caused by the pressure of the test, but leaving assemblies uncovered (in some circumstances it is difficult to anchor pipes and fittings, leaving the unions visible). Any reductions, changes in direction, junctions and shutoff valves must be properly anchored.

Under these conditions, all pressure and leakage tests can be performed observing the uncovered unions and spot the appearance of leaks.

■

### **Method B:**

Perform a shallower anchorage of pipes and fittings, leaving assemblies out of any possible problems. Doing a first leak test by filling the line with water and observe that there are no water losses at the unions (most of the leaks occur at low pressures). In case of leaks, the reparation would be easier than with the fully anchored and buried pipes.

If required by local regulations, you could anchor the pipes and accessories conveniently for testing high pressure, keeping the assemblies exposed. If not, you can complete the burial of pipes and fittings with the correct compaction, thus facilitating the necessary anchorage for the high pressure test.

The pressures and time limits to test the pipes on-site are:

	Pressure	Maximum Time	Pressure	Maximum Time
<b>PN16</b>	Up to 21 bars	120 minutes	21 – 22.4 bars	60 minutes
<b>PN20</b>	Up to 25 bars	120 minutes	25 - 28 bars	60 minutes
<b>PN25</b>	Up to 30 bars	120 minutes	30 - 35 bars	60 minutes





## EFFECT OF TEMPERATURE

When the temperature is high, plastic pipes undergo a loss of mechanical properties and we must take this into account. Because of that, we must avoid the following conditions during pressure tests:

- Pipe partially or fully exposed to weathering (line uncovered).
- High outside temperature.
- Standing water inside the pipe.
- Prolonged sun exposure prior to the test.

All these circumstances may increase the temperature of the pipe above its operating temperature, so the overpressure test can damage the pipeline. In order to avoid that, it is recommended to:

- Cover the pipe once the tightness of the network is verified.
- Wait for pressure testing when the pipe has been exposed to sunlight.

High temperatures (over 25°C) or demanding or aggressive applications can reduce Allowable Operating Pressure (**PFA**) of pipes in comparison to the Nominal Pressure (NP).

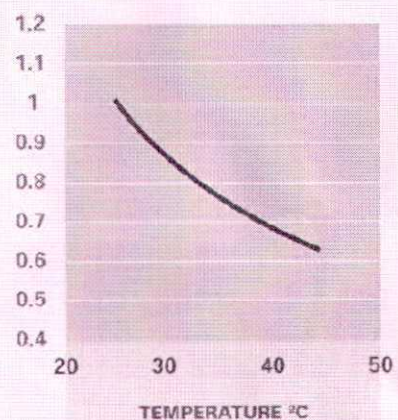
$$PFA = PN \cdot f_r \cdot f_d$$

The derating factor ( $f_r$ ) as function of operating temperature can be obtained from the graph on the right.

The derating factor related to application of the system ( $f_d$ ) must be determined by the Project Manager.

Note: Project design and execution is responsibility of the Project Manager and the Contractor, respectively.

Temperature Ratio Graph





# ORIENTED PVC PIPE (O-PVC)

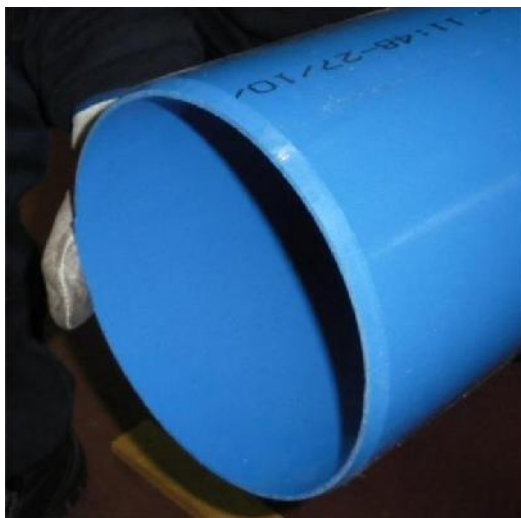
## RECEPTION, STORAGE, INSTALLATION AND TEST INSTRUCTIONS

### RECEPTION

After the reception of the pipes, it is necessary to check their state. Before its installation, you should remove the caps and make a sampling to verify that all the pipes are correct.

Checking the next points is particularly important:

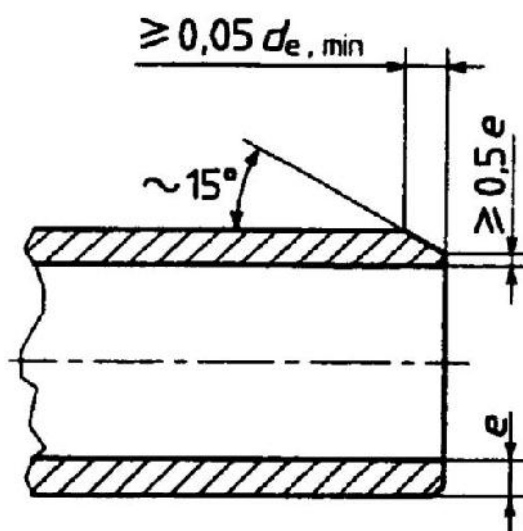
- The pipes should be free of dirt.
- The chamfer in the spigot end should not be damaged.



CORRECT



INCORRECT



- The seals should be placed correctly in their housings.



**CORRECT**



**INCORRECT**

- The surface and the inner part of the pipes and sockets should not be damaged.

## STORAGE

We suggest the following guidelines:

- Store the pipes horizontally on a flat surface and place supports every 1.5 meters to avoid the bending of the product.
- Avoid scratches especially in the crest of the socket, due to dragging the pipe on the ground, mainly if the surface is made of stone, concrete or asphalt.
- Do not stack more than 1.5 meters high, as this can damage lower pipes or even the upper pipes could fall.
- The sockets should be free, alternating sockets and ends.
- In case of prolonged sun exposure, protect pallets with an opaque material. White colour is preferable because it avoids the over-heating of the pipes.



## REALIZATION OF THE TRENCH

The trench must be free of stones at the bottom and at the sides.

Stones smaller than 10-20 mm are allowed, but they cannot be the main size of the ground particles.

Minimum trench width:

DN (mm)	Minimum width of trench B (m)	Depth of trench H (m)	Minimum width of trench B (m)
90-250	0.60	$h < 1.00$	0.60
315	0.85	$1.00 < h < 1.75$	0.80
355	1.00	$1.75 < h < 4.00$	0.90
400	1.10	$h > 4.00$	1.00
450	1.15		
500	1.20		
630	1.35		
800	1.65		

As a rule of thumb, when there is no road traffic involved, the pipes' crown will be at a minimum depth of 0.6 meters; with road traffic, the minimum depth is 1 meter.

## BEDDING AND FILLING THE TRENCH

Pipe must be installed in the following circumstances:

1. Before placing the pipe, a sand bed should be prepared (a fine granular material could be used instead of sand) with a thickness from 10 cm to 15 cm. The pipe should be well aligned and levelled.
2. The pipe must lie on the sand bed. It must be ensured that all the lower part of the pipe is settled on the sand bed trying to soak as much as possible in order to make the angle of sand that supports the kidneys of the pipe as big as possible.
3. Once the pipe is placed, chamberlain sides must be filled with the selected material and compacted to achieve >95% Proctor Normal.
4. The trench must be filled with the selected material and compacted laterally until the upper part of the pipe is buried at least 30 cm.
5. Steps 3 and 4 can be done with the same natural material obtained from the excavation, trying to avoid rocks and large stones, and checking that this natural material can support the forces produced by the pressure inside of the pipe.



Natural soil can be used as the selected filler material whenever it fulfills the following criteria:

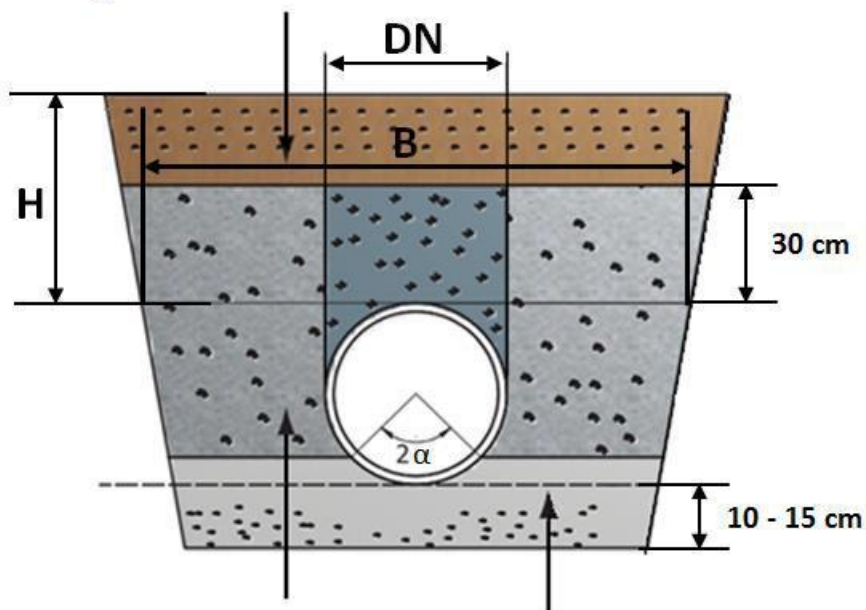
- The material cannot consist of angular stones or similar material.
- Filler material should not contain bigger particles than the ones shown in the following table.
- Filler material should not contain blocks of soil twice the size of the maximum dimensions of the particles given in the table.

**Maximum particle size**

Nominal diameter DN	Maximum size mm
DN <100	15
100 ≤ DN <300	20
300 ≤ DN <600	30
600 ≤ DN	40

- From the 30 cm above the pipe until the surface of the ground, the trench can be filled with natural material not specifically selected and compacting directly over the whole surface of the trench.

Natural, tightly-packed  
filling 100% P.N.

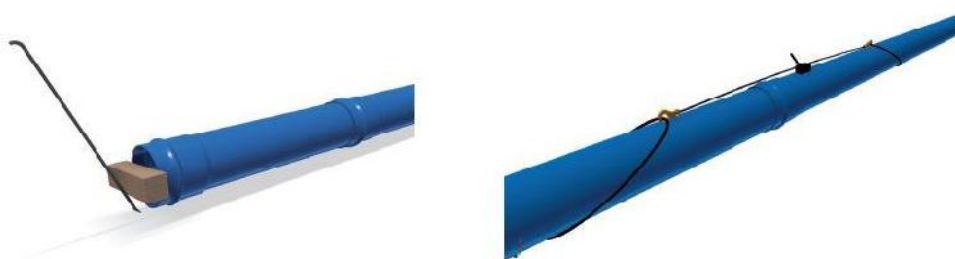


Selected,  
tightly-packed  
filling  
>95% P.N.

Granular  
tightly-packed  
material  
>95% P.N.

## ASSEMBLY

- Remove the protection caps.
- Verify that the pipe is clean and in good condition. Paying attention to the sockets and spigot ends.
- Check that the chamfer is correct and free of cracks.
- Verify that the seal is in its place, clean and free of foreign materials (stones, sand, etc.).
- Lubricate the chamfer of the spigot and the seal with joint lubricant.
- Line up the pipe as much as possible horizontal and vertically.
- Insert only the chamfer edge of the socket, just to support the pipe but leaving the socket lip free.
- In the case of pipes with nominal diameter  $\leq 250$  mm, a firm and dry push should be given to seize the momentum produced by the free movement in the lip of the socket and introduce it until the mark is hidden into the socket.
- When installing diameters  $> 250$  mm, one should use mechanical means to introduce the pipe using materials such as wood, hoists, tackles or slings.



In the next table, you can find an approximated number of assemblies per diameter with 1kg of lubricant.

DN (mm)	90	110	140	160	200	225	250	315	355	400	450	500	630	800
Assemblies	87	76	54	46	34	32	30	25	21	17	16	14	12	9

## PIPE CUTTING

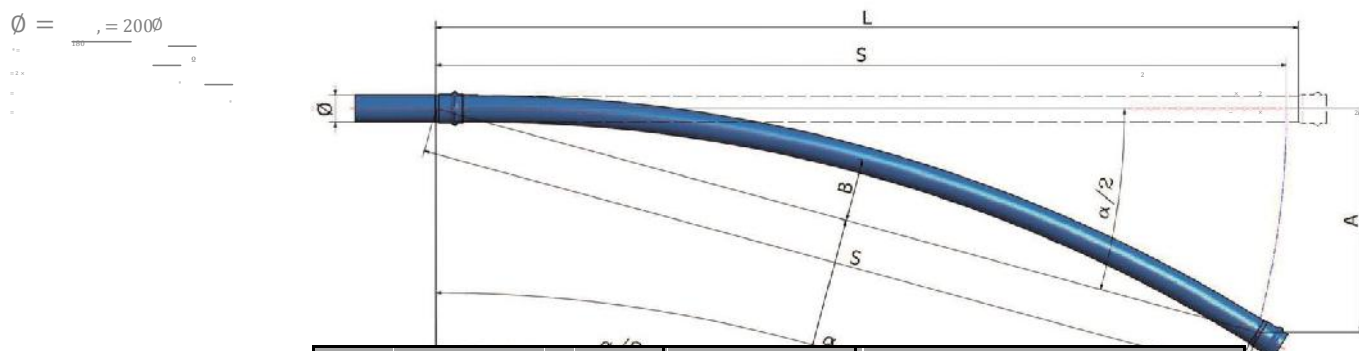
Pipes can be cut transversally using a circular saw or a hacksaw. The resulting male cut ends should be chamfered in order to be entered manually in another socket pipe or fitting. The chamfer can be made with a circular saw and be reviewed later with a file. The chamfer should be approximately of 15°.

A mask must be worn to prevent dust inhalation and protections and safety measures must to be taken for cutting machines.

Pipes chamfered on-site are less accurate than those made at the factory. Because of that, they could require higher introduction efforts or even require simple mechanical means to place the spigot inside the socket.

## COLD BENDING OF PIPE (23° C)

The pipe can bend at room temperatures ( $\pm 23^{\circ}\text{C}$ ) in the trench up to the limits defined in the next table. These curves must to be done always in cold (don't heat any part of the pipe or socket) by manual efforts (you can use simple items to help in case of pipes DN> 250mm) and without damaging the geometry of the plugs.



		Pipe curvature			Angular deviation of the socket	Curvature + angular deviation (full angle) angular		
DN	L	R	$\alpha/2$	A	angle	R'	$\alpha'/2$	A'
mm	m	m	degrees	m	degrees	m	degrees	m
90	5,78	18	9,2	0,92	2	15	11,2	1,12
110	5,78	22	7,5	0,75	2	17	9,5	0,95
140	5,76	28	5,9	0,59	2	21	7,9	0,79
160	5,75	32	5,1	0,52	2	23	7,1	0,71
200	5,73	40	4,1	0,41	2	27	6,1	0,61
225	5,70	45	3,6	0,36	2	29	5,6	0,56
250	5,68	50	3,3	0,32	2	31	5,3	0,52
315	5,63	63	2,6	0,25	2	35	4,6	0,45
355	5,61	71	2,3	0,22	2	38	4,3	0,42
400	5,58	80	2,0	0,19	2	40	4,0	0,39
450	5,56	90	1,8	0,17	2	42	3,8	0,37
500	5,58	100	1,6	0,16	2	44	3,6	0,35
630	5,53	126	1,3	0,12	2	49	3,3	0,31
800	5,42	160	1,0	0,09	2	52	3,0	0,28

The pipes may be subjected to greater curvatures with high efforts, but it is not recommended to overcome these limits to avoid compromising the safety coefficient of the pipe.



## ANGULAR DEVIATION ALLOWED IN THE SOCKET

In addition to the curvature of the pipe, an angular deviation is allowed at the junction between pipes. Therefore in the final layout of the pipes, one can add both effects.

It is important not to exceed the established values of angular deviation in the socket-end when bending the pipe.



(1) Total length of the pipe: 5.95 meters.

DN	Maximum angular deviation	Displacement in the socket (D)
mm	angle (°)	D(mm) <sup>(1)</sup>
<b>90-800</b>	2°	200

The pipe connections can be subject to greater angular deviations if subjected to high stresses. It's recommended not to exceed those limits in order to avoid endangering the safety coefficients of the assembly under pressure.

## FORCES PRODUCED BY THE BENDING OF THE PIPE

The bent pipeline behaves like a narrow-angle curve; this means that there is some backpressure on the ground as the table below shows. These cross-pressures, under normal conditions, can be supported by a sufficiently compacted soil, otherwise, if necessary, they should be supported with anchors in excessive curvatures.

	Forces in a curved pipe ( $\alpha / 2$ ) <sup>(2)</sup>					
	bar	bar	bar	bar	bar	bar
DN	1	5	10	15	20	25
mm	kN	kN	kN	kN	kN	kN
<b>90</b>	0,10	0,51	1,02	1,53	2,04	2,55
<b>110</b>	0,12	0,62	1,25	1,87	2,49	3,12
<b>140</b>	0,16	0,79	1,58	2,37	3,17	3,96
<b>160</b>	0,18	0,90	1,81	2,71	3,61	4,51
<b>200</b>	0,22	1,12	2,25	3,37	4,50	5,62
<b>225</b>	0,25	1,26	2,52	3,78	5,04	6,29
<b>250</b>	0,28	1,39	2,79	4,18	5,58	6,97
<b>315</b>	0,35	1,74	3,48	5,22	6,96	8,70
<b>355</b>	0,39	1,96	3,91	5,87	7,82	9,78
<b>400</b>	0,44	2,19	4,38	6,57	8,76	10,96
<b>450</b>	0,49	2,46	4,91	7,37	9,82	12,28
<b>500</b>	0,55	2,74	5,48	8,22	10,96	13,69
<b>630</b>	0,68	3,42	6,84	10,26	13,68	17,10
<b>800</b>	0,85	4,26	8,51	12,77	17,03	21,28

(2) Resultant forces in a pipe 5.95 meters long.

## PRESSURE TEST AT WORKS

On-site testing should be performed according to local regulations and instructions laid down in the project.

During the assembly, the pipe installed should be tested in sections fully executed (the length may vary between 500 and 1.000 meters). The ends of the sections should be closed with appropriate fittings when being tested.

- Two main aspects must be taken into account: When the assembly are exposed, the water-tightness of the network should be checked, to see if there is any leak in such unions and locate them in case they exist. Except the cases of seal expulsion due to over-pressures or excessive angular deflections, leaks are manifested especially at very low pressures.
- On the other hand, for testing high-pressure pipes and fittings, they must be properly anchored (reductions, changes in direction, junctions, valves, cutting, etc.) and the pipes should be conveniently set in the trench (burial and compaction landfill). Otherwise, pipes and fittings could be unplugged by landslides in the field.

Therefore, it is recommended to test one of the following methods:

■

### **Method A:**

Burying the pipe conveniently with enough compaction to be able to withstand the stresses caused by the pressure of the test, but leaving assemblies uncovered (in some circumstances it is difficult to anchor pipes and fittings, leaving the unions visible). Any reductions, changes in direction, junctions and shutoff valves must be properly anchored.

Under these conditions, all pressure and leakage tests can be performed observing the uncovered unions and spot the appearance of leaks.

■

### **Method B:**

Perform a shallower anchorage of pipes and fittings, leaving assemblies out of any possible problems. Doing a first leak test by filling the line with water and observe that there are no water losses at the unions (most of the leaks occur at low pressures). In case of leaks, the reparation would be easier than with the fully anchored and buried pipes.

If required by local regulations, you could anchor the pipes and accessories conveniently for testing high pressure, keeping the assemblies exposed. If not, you can complete the burial of pipes and fittings with the correct compaction, thus facilitating the necessary anchorage for the high pressure test.

The pressures and time limits to test the pipes on-site are:

	Pressure	Maximum Time	Pressure	Maximum Time
<b>PN16</b>	Up to 21 bars	120 minutes	21 – 22.4 bars	60 minutes
<b>PN20</b>	Up to 25 bars	120 minutes	25 - 28 bars	60 minutes
<b>PN25</b>	Up to 30 bars	120 minutes	30 - 35 bars	60 minutes

## EFFECT OF TEMPERATURE

When the temperature is high, plastic pipes undergo a loss of mechanical properties and we must take this into account. Because of that, we must avoid the following conditions during pressure tests:

- Pipe partially or fully exposed to weathering (line uncovered).
- High outside temperature.
- Standing water inside the pipe.
- Prolonged sun exposure prior to the test.

All these circumstances may increase the temperature of the pipe above its operating temperature, so the overpressure test can damage the pipeline. In order to avoid that, it is recommended to:

- Cover the pipe once the tightness of the network is verified.
- Wait for pressure testing when the pipe has been exposed to sunlight.

High temperatures (over 25°C) or demanding or aggressive applications can reduce Allowable Operating Pressure (**PFA**) of pipes in comparison to the Nominal Pressure (NP).

$$PFA = PN \cdot f_T \cdot f_A$$

The derating factor ( $f_T$ ) as function of operating temperature can be obtained from the graph on the right.

The derating factor related to application of the system ( $f_A$ ) must be determined by the Project Manager.

Note: Project design and execution is responsibility of the Project Manager and the Contractor, respectively.

Temperature Ratio Graph

