

HPB
HPB Tubes LLP
BOILER TUBE EXPERTS



High Pressure Boiler Tubes with IBR Approved MTC
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About Us

Our core competency is **High Pressure Boiler** Tubes, Pipes for - Thermal Power Plants in any Size, Specification and Shape. We are not Traders but IBR Approved Manufacturers hence we First Technically Evaluate whether our clients requirement is suitable to their end-use and then we consider giving the right Technical Product meeting their need.

We have in depth knowledge within our Group of the Manufacturing Process of Steel Pipes, Tubes and Fittings and their uses in the Industry. Our Clients are generally wary of us as we ask a lot of Questions before we make an offer but that does not bother us because at the end of the day our clients are Grateful that we were careful before our commitments rather than regret later. We are associated with all the Tube Mills in India and in many countries in Japan, Europe ,USA Abroad with Techno- Commercial Consultations during their inception stages for the Product Mix, Technical Delivery Conditions, QAP etc. We have information on the monthly Rolling programs of all the mills in the world, their Strengths and their weaknesses which we use to the advantage of our customers to efficiently source with shortest delivery times , price advantages balanced to quality. Our Promoters are pioneers in the Field of Tubes and Pipes in India and were responsible for the Rise of the Largest Stockist and Importers of Pipes and Tubes in India for the last 65 Years and these Promoters and Staff have now turned Entrepreneurs to serve you Better, giving our clients the advantage of dealing with a smaller tighter agile ship with knowledge and stocks compatible to Large Corporate.

USERS:

Power Generation,
Petrochemicals,
Refineries,
Fertilizers,
Steel Plants,
Aluminum/Copper/Zinc Smelters,
Sugar Factories,
OEM Boiler Manufacturers,
Paper Factories,
Cement Plants,
Chemical Process Industries,
Ship-Yards.

Steel Pipes and Tubes are classified by the following methods:

1. **By Manufacturing** - Method which are broadly Classified as Seamless or Welded.
 - a) Seamless method is further classified as Hot Finished and Cold Drawn.
 - b) Welded are classified as ERW, SAW, CDW, SW, MMAW.
2. **By Steel Chemistry** - which are broadly Carbon Steels, Alloy Steel, Stainless Steels.
 - a) Carbon Steels are further classified as Low, Medium, High Carbon & Manganese Steels.
 - b) Alloy Steels are further classified by composition of Chrome and Moly.
 - c) Stainless Steels are classified by their various composition of Nickel, Chrome, Moly etc.
3. **End Use determines all the above three parameters best suited for required working Pressure & Metal Temperatures**
 - a) Tubes are used to transfer Heat Load Through its Walls (Thickness).
 - b) Pipes are used to transfer Heat Loads through its Bore.



High Pressure Boiler



When You Need Answers, Call on the Boiler Tube Experts.



We supply Steel Pipes, Tubes and Fittings to Various Specifications with MTC and IBR Certificates In the size Ranging from 8 mm OD to 1016 mm OD and thickness ranges 1 mm Thk to 76.2 mm Thk used for Steam /Line Piping, Boiler SuperHeaters, Economisers, Water Walls, Headers, Air Pre Heaters, Heat Exchangers. We also supply Rifle Bore Tubes, integral Finned tubes (Omega or Phi Tubes) etc.

Specifications handled by us :

ASME/ASTM : A178, A179, A192, A210 Gr. A1/C, SA 209 – T1a, b A 213 – T2, T11, T12, T22, T23 T5, T9, T91, T92, TP 304H, TP 321H, TP 347H, TP 347HFG, TP 30432 (Super 304H) TP310HCbN, Super 304 H etc. SA 214 A 53 / A106 Gr. A, B, C, A 335 –all grades etc. **ASME/ASTM** A 423, A333 Gr. 1/6, SA 556, SA 234 WPB, WP6, WP11.etc

DIN : 17175 / EN10216-2 / St. 35.8 / 45.8 / P235 GH / 16Mo3 / 13CrMo4-5 / 10CrMo9-10 / X20Cr MoV11-1 / DIN-2391/2448 etc.

BS 3059 : Part I/II – Gr. 320, 360, 440, 243, 620, 622, BS 6323.

GB 5310 : 20G, 15CrMoG, 12Cr1MoVG.

GOST : 20, 12XIMF, 15XM, 15X1MF.

JIS : STBA22, STBA 23, STBA 24, STBA 26.



Standard Pipe Dimensions - ANSI B16.9															Wall Thickness in millimeter, Kg/Mtr = Weight in Kg. per Mtr.													
PIPE DIMENSION		SCH.10		SCH.20		SCH.30		SCH.STD.		SCH.40		SCH. X STRONG		SCH.60		SCH.80		SCH.100		SCH.120		SCH.140		SCH.160		SCH.XX STRONG		
INCH	(MM)	KG/MTR	(MM)	KG/MTR	(MM)	KG/MTR	(MM)	KG/MTR	(MM)	KG/MTR	(MM)	KG/MTR	(MM)	KG/MTR	(MM)	KG/MTR	(MM)	KG/MTR	(MM)	KG/MTR	(MM)	KG/MTR	(MM)	KG/MTR	(MM)	KG/MTR	(MM)	KG/MTR
1/4	13.7	1.65					2.24	0.63	2.24	0.63	3.02	0.80				3.02	0.80											
3/8	17.1	1.65					2.31	0.84	2.31	0.84	3.20	1.10				3.20	1.10											
1/2	21.3	2.11					2.77	1.27	2.77	1.27	3.73	1.62				3.73	1.62							4.78	1.95	7.47	2.55	
3/4	26.7	2.11					2.87	1.69	2.87	1.69	3.91	2.20				3.91	2.20							5.56	2.90	7.82	3.64	
1	33.4	2.77					3.38	2.50	3.38	2.50	4.55	3.24				4.55	3.24							6.35	4.24	9.00	5.42	
1 1/4	42.2	2.77					3.56	3.39	3.56	3.39	4.85	4.47				4.85	4.47							6.35	5.61	9.70	7.77	
1 1/2	48.3	2.77					3.68	4.05	3.68	4.05	5.08	5.41				5.08	5.41							7.14	7.25	10.15	9.55	
2	60.3	2.77					3.91	5.44	3.91	5.44	5.54	7.48				5.54	7.48							8.74	11.11	11.07	13.44	
2 1/2	73	3.05					5.16	8.63	5.16	8.63	7.01	11.41				7.01	11.41							9.59	15.00	14.02	20.39	
3	88.9	3.05					5.49	11.29	5.49	11.29	7.62	15.27				7.62	15.27							11.13	21.35	15.24	27.68	
3 1/2	101.6	3.05					5.74	13.57	5.74	13.57	8.08	18.63				8.08	18.63											
4	114.3	3.05					6.02	16.07	6.02	16.07	8.56	22.32				8.56	22.32			11.13	28.32			13.48	33.51	17.12	41.03	
5	141.3	3.4					6.55	21.77	6.55	21.77	9.53	30.97				9.53	30.97			12.70	40.28			15.88	49.11	19.05	57.43	
6	168.3	3.4					7.11	28.26	7.11	28.26	10.97	42.56				10.97	42.56			14.27	54.20			18.26	67.56	21.95	79.22	
8	219.1	3.76		6.35	33.31	7.04	36.81	8.18	42.55	8.18	42.55	12.70	64.64	10.31	53.08	12.70	64.64	15.09	75.92	18.26	90.44	20.62	100.92	23.01	111.27	22.23	107.92	
10	273	4.19		6.35	41.75	7.80	51.01	9.27	60.29	9.27	60.29	12.70	81.52	12.70	81.52	15.09	95.97	18.25	114.65	21.44	133.00	25.40	155.09	28.58	172.26	25.40	155.09	
12	323.8	4.57		6.35	49.71	8.38	65.18	9.53	73.86	10.31	79.70	12.70	97.43	14.27	108.92	17.48	132.04	21.44	159.86	25.40	186.91	28.58	208.07	33.32	238.68	25.40	186.91	
14	355.8	6.35	54.72	7.92	67.94	9.53	81.38	9.53	81.38	11.13	94.60	12.70	107.45	15.09	126.78	19.05	158.20	23.83	195.08	27.79	224.79	31.75	253.72	35.71	281.87			
16	406.4	6.35	62.64	7.92	77.83	9.53	93.27	9.53	93.27	12.70	123.30	12.70	123.30	16.66	160.12	21.44	203.53	26.19	245.56	30.96	286.64	36.53	333.19	40.49	365.36			
18	457.2	6.35	70.60	7.92	87.75	11.13	122.43	9.53	105.21	14.27	155.87	12.70	139.21	19.05	205.83	23.83	254.67	29.36	309.76	34.83	362.78	39.67	408.45	45.24	459.59			
20	508	6.35	78.55	9.53	117.15	12.70	155.12	9.53	117.15	15.08	183.30	12.70	155.12	20.62	247.83	26.19	311.17	32.54	381.53	38.10	441.49	44.45	508.11	50.01	564.81			
22	558.8	6.35	86.51	9.53	129.08	12.70	171.03	9.53	129.08			12.70	171.03	22.23	294.14	28.58	373.69	34.83	450.04	41.28	526.82	47.36	597.31	53.88	670.88			
24	609.6	6.35	94.46	9.53	141.02	14.27	209.50	9.53	141.02	17.48	255.24	12.70	186.94	24.61	355.02	30.94	441.51	38.89	547.33	46.02	639.58	52.37	719.63	59.54	807.63			

Pipe Weight = (OD - thk) x thk x 0.02466. Kg/Mt. (OD, thk / in mm.)

Recommended Metal Temperatures for Boiler Tube Grades. Typical Steel Grades of Tubes Fabricated by us.

Max. Service temp.	454°C 850°F				537°C 1000°F				538°C 1000°F	649°C 1200°F	649°C 1200°F		648°C 1200°F			648°C 1200°F	648°C 1200°F	
ASTM A 106 A 192 A 209-A 210 A213-A335	Gr. A A192	Gr. B	Gr. C															
		Gr. A-1	Gr. C			T1 P1			T2/P2	T12/P12		T11/P11		T22/P22		T9/P9	T91/P91	
BS 3059-3602-3604	360	410	440-460	490 Nb	243					620		621		622	660		629	762
DIN 17175	St35.8	St45.8	17Mn4	19Mn5	15Mo3					13CrMo44				10CrMo9 10	14MoV63		X12CrMo91	X20CrMoV121
	1.0305	1.0405	1.0461	1.0482	1.5415	16Mo5	15NiCuMoNb5	1.5423	1.6368	1.7335				1.7380	1.7715		1.7386	1.4922
GOST TY 143-460-75		20								15XM	12X1MF					15X1M1F		
JIS G 3456 G3458 G3461 G3462	STPT38 STB35	STPT42 STB42	STPT49			STPA12 STBA12				STPA20 STBA20	STPA22 STBA22		STPA23 STBA23	STPA24 STBA24			STPA26 STBA26	
NF A49-213	TU37-C	TU42-C	TU48-C	TU52-C	TU15D3					TU15CD2.05	TU13CD4.04		TU10CD5.05	TU10CD9.10			TU210CD9	TU210CDNbV9.2

Tube Dimension & Weight Table

WEIGHT FOR STEEL TUBES (KGS PER MTR)																STRESS			
THICKNESS/ OUSIDE DIAMETER	S.W.G	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Pa	Mpa(N/mm ²)	kgf/mm ²	lbf/in ²
IN.	MM THK ->	7.62	7.01	6.40	5.89	5.38	4.88	4.47	4.06	3.66	3.25	2.94	2.64	2.33	2.03				
½	12.7	-	-	-	-	-	-	-	-	0.82	0.76	0.71	0.65	0.60	0.53				
3/4	19.05	-	-	-	-	-	-	-	-	1.39	1.27	1.17	1.07	0.96	0.85				
1	25.4	-	-	-	-	-	-	-	-	1.96	1.78	1.63	1.48	1.33	1.17				
1 1/4	31.75	-	-	-	-	-	3.23	3.01	2.77	2.54	2.28	2.09	1.90	1.69	1.49				
1 1/2	38.1	-	5.37	5.00	4.68	4.34	4.00	3.71	3.41	3.11	2.79	2.55	2.31	2.06	1.81				
1 3/4	44.45	6.92	6.47	6.01	5.60	5.18	4.76	4.41	4.04	3.68	3.30	3.01	2.72	2.42	2.12				
2	50.8	8.11	7.57	7.01	6.52	6.03	5.53	5.11	4.68	4.25	3.81	3.47	3.14	2.78	2.44				
2 1/4	57.15	9.31	8.67	8.01	7.45	6.87	6.29	5.81	5.32	4.83	4.32	3.93	3.55	3.15	2.76				
2 3/8	60.33	9.90	9.22	8.51	7.91	7.29	6.67	6.16	5.63	5.11	4.57	4.16	3.76	3.33	2.92				
2 1/2	63.5	10.50	9.77	9.01	8.37	7.71	7.05	6.51	5.95	5.40	4.83	4.39	3.96	3.51	3.08				
2 3/4	69.85	11.69	10.86	10.01	9.29	8.55	7.82	7.21	6.59	5.97	5.34	4.85	4.38	3.88	3.40				
2 7/8	73.03	12.29	11.41	10.52	9.75	8.98	8.20	7.56	6.91	6.26	5.59	5.08	4.58	4.06	3.55				
3	76.2	12.89	11.96	11.02	10.21	9.40	8.58	7.91	7.22	6.55	5.85	5.31	4.79	4.24	3.71				
3 1/4	82.55	14.08	13.06	12.02	11.13	10.24	9.35	8.61	7.86	7.12	6.36	5.77	5.20	4.61	4.03				
3 1/2	88.9	15.27	14.16	13.02	12.06	11.08	10.11	9.31	8.49	7.69	6.86	6.23	5.62	4.97	4.35				

LENGTH				
m	inch	feet	yard	mile
1	3.937x10	3.281	1.094	6.214x10 ⁻⁴
2.540x10 ²	1	8.333x10 ²	2.778x10 ²	1.578x10 ⁻⁵
3.048x10 ⁻¹	12	1	3.333x10 ⁻¹	1.894x10 ⁻⁴
9.144x10 ⁻¹	36	3	1	5.682x10 ⁻⁴
1.609x10 ³	6.336x10 ¹	5.280x10 ³	1.760x10 ³	1

MATERIAL SPECIFICATIONS

STEEL GRADE	CHEMICAL COMPOSITIONS (%)										COMPARISON STANDARDS					
	C	SI	MN	P	S	NI	CR	MO	OTHERS	ASTM	BS	NOS	DIN CODE	AISI	JIS	GB
LOW CARBON STEEL	0.08-0.18	0.10-0.35	0.30-0.60	≤0.035	≤0.035	--	--	--	Cu≤0.20	A179/A192	3601/320 3602/360 3059	1.0308 1.0309 1.0305	st35 st35.4 st35.8	1015	STPG38, STS35, ST336, STPT36, STB30 STB33, STB35	St10G
MEDIUM CARBON STEEL	0.17-0.25	0.10-0.35	0.30-0.80	≤0.035	≤0.035	--	--	--	Cu≤0.20	A53-Gr.B,106Gr.B A210 GRA1	3601/ 3602/410	1.0408 1.0418 1.0405 1.0611	st45 st45.4 st45.8 C22	1020	STPG42, STS42, STPT42, STB42	St20 G
MEDIUM CARBON STEEL	0.25-0.30	0.10-0.35	0.30-1.00	≤0.035	≤0.035	--	--	--	Cu≤0.20	106Gr.C, 210GRA1				1025		
MEDIUM CARBON STEEL	0.30-0.35	0.10-0.35	0.30-1.00	≤0.035	≤0.035	--	--	--	Cu≤0.20		3602 /Steel35	1.0507 1.0509	st55 st55.4	1030		
0.3 Mo STEEL	0.10-0.20	0.10-0.35	0.50-0.80	≤0.030	≤0.030	--	--	0.25-0.35	Cu≤0.20		3059/243	1.5415	15Mo3			15CrMoG
0.5 Mo STEEL	0.10-0.20	0.10-0.35	0.30-0.60	≤0.030	≤0.030	--	--	0.45-0.65	Cu≤0.20	P1,T1					STPA12, STBA12	
0.5Cr-0.5Mo Steel	0.10-0.20	0.10-0.30	0.30-0.60	≤0.030	≤0.030	--	0.50-0.81	0.44-0.65	Cu≤0.20	P2,T2					STPA20, STBA20	
1Cr-0.5Mo Steel	≤0.15	0.10-0.50	0.30-0.60	≤0.030	≤0.030	--	0.80-1.25	0.45-0.65	Cu≤0.20	P12,T12	3604/620-460				STPA22, STBA22	
1Cr-0.5Mo Steel	≤0.15	0.10-0.35	0.40-0.60	≤0.030	≤0.030	--	0.70-1.10	0.45-0.60	Cu≤0.20		3059/620 3604/620-440	1.7335	13CrMo44			
1.25Cr-0.5Mo-0.75Si Steel	≤0.15	0.50-1.00	0.30-0.60	≤0.025	≤0.025	--	1.00-1.50	0.45-0.65	Cu≤0.20	P11,T11	621				STPA23, STBA23	
2.25Cr-1Mo Steel	≤0.15	0.10-0.50	0.30-0.60	≤0.030	≤0.030	--	1.90-2.60	0.90-1.10	Cu≤0.20	P22,T22	622		10CrMo910		STPA24, STBA24	
5Cr-0.5Mo Steel	≤0.15	0.10-0.50	0.30-0.60	≤0.030	≤0.030	--	4.00-6.00	0.45-0.65	Cu≤0.20	P5,T5	625	1.738	12CrMo195		STPA25, STBA25	
9Cr-1Mo Steel	≤0.15	0.25-1.00	0.30-0.60	≤0.030	≤0.030	--	8.00-10.0	0.90-1.10	Cu≤0.20	P9,T9	629	1.7386	X12CrMo91		STPA26, STBA26	
9Cr-1Mo-Nb-V Steel	0.08-0.12	0.20-0.50	0.30-0.60	≤0.020	≤0.010	≤0.40	8.00-9.50	0.85-1.05	V:0.18-0.25 Nb:0.06-0.10 Sol-Al:0.04 N:0.03-0.07	A213-T-91 A335-P91						
0.5Cr-0.5Mo-0.25 V Steel	0.10-0.15	0.10-0.35	0.40-0.70	≤0.030	≤0.030	--	0.25-0.50	0.50-0.70	v:0.22-0.28		660	1.7715	14MoV63			12Cr1MoVG
AI- KILLED STEEL	≤0.12	≤0.35	≤1.35	≤0.035	≤0.035	--	--	--	Sol:Al 0.010-0.60	A333-1,A334-1						
Cr-Mo Steel	0.33-0.39	0.15-0.30	0.40-0.70	≤0.030	≤0.030	≤0.30	0.80-1.10	0.15-0.25	Cu≤0.20			1.722				
AI- KILLED STEEL	≤0.14	≤0.35	≤1.00	≤0.035	≤0.035	--	--	--	Sol:Al 0.010-0.60	A333-1,A334-1					STPL39,STBL39, STS38	
3.5Ni Steel	≤0.18	0.10-0.35	0.30-0.60	≤0.030	≤0.030	3.20-3.80	--	--	--	A333Gr.3, A334-Gr.3	3603/503	1.5637	10Ni14		STPL46,STBL46	
22Cr-Cu Steel	≤0.20	≤0.75	≤1.00	≤0.040	≤0.030	≤0.50	18.00-23.00	--	Cu:0.90-1.25	TP443						
12Cr-1Mo-0.3V Steel	0.17-0.23	0.10-0.50	0.30-0.80	≤0.035	≤0.030	0.30-0.0.80	11.10-12.50	0.80-1.20	v:0.25-0.35			1.4922	X20CrMoV121			
12Cr-1Mo-0.3V-0.5W Steel	0.17-0.23	0.10-0.50	0.30-0.80	≤0.035	≤0.030	0.30-0.0.80	11.10-12.50	0.80-1.20	v:0.20-0.35 W:0.40-0.60		3604/762	1.4935	x20CrMoWV121			
18Cr-8 Ni-Steel	0.04-0.10	≤0.75	≤2.00	≤0.030	≤0.030	8.00-11.00	16.00-20.00	--	--	TP304H	3059/304S18 3605/321S59	1.4301 1.4300	x5CrNi189 x12CrNi189	321	sus304H	
18Cr-8Ni-TiSteel	0.04-0.10	≤0.75	≤2.00	≤0.030	≤0.030	9.00-13.00	17.00-20.00		Ti:4Xc%-60	TP321H	3059/321S18 3605/321S59	1.4541	X10CrNiTi189	321	sus321H	
18Cr-8Ni-NbSteel	0.04-0.10	≤0.75	≤2.00	≤0.030	≤0.030	9.00-13.00	17.00-20.00		Nb:2xvc%	TP347H	3059/347S18 3605/347S59	1.455	X10CrNiNb189	347, 348	sus347H	

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