



CREATING
BENCHMARKS



JINDAL (INDIA) LIMITED

Steel Pipe Manufacturing & Coating Division



JINDAL (INDIA) LIMITED

Creating Benchmarks

The modern tubes and pipes industries in India owe its origin to the grand vision of Shri. B.C. Jindal since 1952, for production of steel pipe fittings.

Jindal (India) Limited as a company with volume over 6,00,000 Tons per annum with units at Belur, Ghosury, Jangalpur and Ranihati Works, Howrah, West Bengal produce HFW/HFIW Pipes Black and Galvanised from ½" to 20" diameter with thickness from 1.2 to 14.3 mm conforming to various National and International Standard /Specifications.

WHAT SETS US APART

1. Brand Equity

We market our products under JINDAL brand who enjoys a good reputation across the globe.

2. Technological Advancement

We have always been a pioneer in adopting latest technology high speed mills from Japan, Korea which help in providing the best quality rolled tubes with solid state HF welder, Spiral Coil accumulator and online/offline NDT.

3. "O" Ovality

One of the few manufacturers in the world having online Rotatory Sizing Mill, we are capable of providing tubes with minimum ovality for high precision end use.

4. Raw Material

We acquire 100% Specially tested, best quality hot rolled coils for rolling our tubes which makes our tubes high pressure resistant with high strength.

5. Bur – Free Ends

We have cold saw installed on the mills which provides bur free ends in our tubes or hollow sections.

6. Bundling Facility

Installed with automatic bundling machines, we are capable of providing a proper bundled pack of tubes which provides an advantage of proper handling and also helps in reducing damages.

7. Certifications

Our products are certified by reputed international agencies like Underwriter Laboratories (USA), CE (Europe) and API (USA). Organisation is also ISO 9001; ISO 14001:2004+ AC: 2005 and OHSAS: 18001:2007 certified. Additionally all its products are BIS-Licensed & marked for domestic market as per applicable IS Specifications.

HFW High Test Line Pipes Facility

Production Capacity	600000 MT per annum
Manufacturing Process	Solid State HF Welding with Seam Annealing (As Applicable)
Outside Diameter Rounds	21.3 mm – 508 mm
Square Hollow Section Range	19X19mm – 150X150mm
Rectangular Hollow Section Range	40X20mm – 240X120mm
Thickness Range	1.2 mm – 14.3 mm
Coating Type	Black and Galvanized
Pipe Length	SRL / DRL / TRL (6 meters to 18 meters)
Specifications	API 5L / ASTM / UL / EN / ISO / IS / CSA-245-1
Pipe Ends	Beveled or Plain End
Protective Coating	Bare or Rust Preventive Coating
End Protection	Protected with Plastic/Metallic Caps

Special Sizes in Rounds: 15.9 mm /19.1mm / 22.2 mm / 28.6 mm

PE/PP/FBE/DFBE Coating System at JINDAL (INDIA) LIMITED

Coating systems are customized as per the requirement of the project for providing cost effective and durable solution. The coating quality tests are applied according to the requirements of related standard and pipe application. These steel pipes have longer life cycle and higher performance, before coating application on these pipes these are perfectly cleaned of impurities. Tubes are shot blasted according to the required standard degree of cleanliness, roughness and heated according to the type of coating; Spec:- **DIN 30670-2012, ISO21809-1-2011, CSA-Z 245-20-21, NF A-49-710, DIN 30678, ISC 15741, API RP 5L2, NACE RP 0394-2002 and Equivalent.**

3-Layer Poly Ethylene External Coating (3-LPE): PE Coating is a perfect solution for underground line pipe operating in temperature range of -40° to +80° C for hydrocarbon, gas, water, have a long lifetime with excellent corrosion protection due to its aging, impact and cathodic disbandment resistance. 3LPE coatings very effective type coating with superior adhesion to steel it guarantees protection to weld zone, good flexibility, prevents water penetration.

3-Layer Poly Propylene External Coating (3LPP): 3-LPP is applied in similar process as 3-LPE. These 3-LPP pipes have superior mechanical properties with excellent integrity of the coating system for corrosion and impact protection even in high temperature operating condition (-20° to +110° C). 3LPP coating can be applied with various thickness for unique application.

Dual Layer Abrasion Resistant Fusion-Bonded Epoxy (DFBE) External coating: Dual Layer FBE coating provides excellent physical properties with impact and abrasion resistance for gas, oil & water works pipelines during transportation, installation and utilisation. JINDAL applied DFBE coated pipes enhance higher operating temperature capacities (up to 110° C).

Liquid Internal Epoxy Coating: Flow efficiency internal epoxy coatings a worldwide preferred type of solvent based coating for high pressure gas transportation used to reduce roughness of the pipe wall to improve gas flow capacity with less compressor power consumption. Thin flow efficiency coating layer gives not only corrosion protection of the tube but also give economic advantages, decreasing outside diameter in design stage to reach the same flow capacity.

Production Rate	2.5 Lac Mtrs /Annum (External 3LPE/PP/FBE /DFBE & 2 Lac Mtrs /Annum (Internal Liquid Epoxy)
Coating Process	Electrostatic deposition of FBE / DFBE Adhesive & PE / PP with side extrusion Coating for External & Air Less Spray for Internal Liquid Epoxy Coating
Outside Diameter	Up to 20 (508.0 mm)
Pipe Length	prevents water
Coating Specifications	ISO 2180 1 / DIN 30670 / DIN30678 / API RP5L2 / ISO 15741 / CSA 245 20 21 & Equivalent
Protective Coating	Standard Corrosion Protective Coatings [External & Internal]
End Protection	Protected with Plastic / Metallic Caps

APPROVALS AND COMPLIANCE



ERW Steel Tubes for Structural Purposes conforming to IS 1161:2014, Sizes from 15mm NB to 350mm NB, thickness upto & including 12.7mm in grade YST 210, 240 & 310



ERW Mild Steel Tubes and Galvanised from 15mm NB upto and including 100mm NB in Light Class and 15mm NB upto and including 150mm NB in Medium and Heavy Class, Plain as well as Socketed Ends as per IS 1239 (Part-I):2004



Petroleum and Natural gas industries - Steel pipe for pipeline transportation systems as per IS/ISO 3183:2007 covering all sizes and grades and thickness upto and including 12.7mm.



ERW Steel Pipes for Water and Sewage to IS: 3589:2001. Sizes from 168.3mm to 508.0mm O.D., thickness upto & including 12.7mm in Grade Fe 330 & 410



ERW Steel Tubes Black and Galvanised used for mechanical & general engineering purpose to IS 3601:2006 Sizes from 21.3mm OD and up to and including 406.4mm O.D thickness upto & including 12.7mm, Plain ends in grade WT160, WT210, WT240 & WT310



ERW Steel Tubes used for water wells to IS 4270:2001, Sizes from 100mm NB upto and including 450mm NB thickness upto & including 10.0mm in grade Fe 410



ERW Hollow Steel Sections for Structural use as per IS 4923:1997. Covering all sizes and grades and thickness upto 10.0mm. The grades are YST 210, 240 & 310



ERW Steel Tubes for Idlers, Belt Conveyors conforming to IS 9295:1983. Sizes upto & including 168.3mm O.D. thickness upto & including 5.4mm, in ERW Grades YST 210 & 240

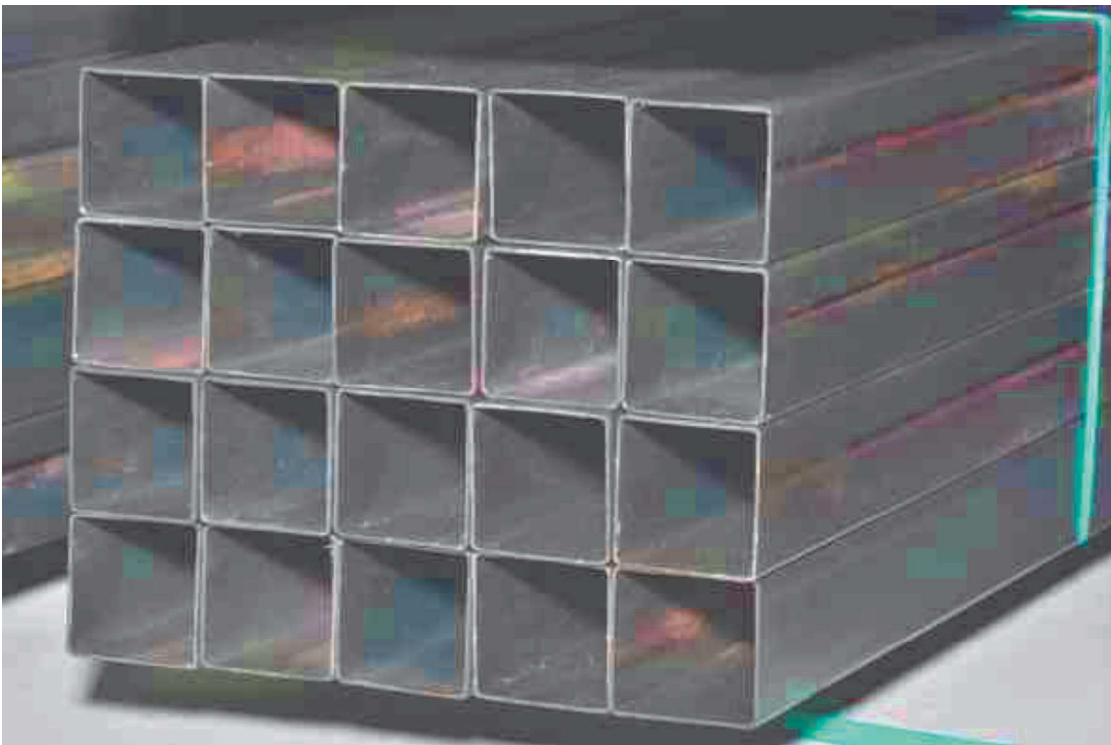
ACCREDITATIONS



UL:852

½ - 16 International Metallic
ASTM A135, A795, A53, Type E, Grade F
4B, Schedule 10, 20, 30, 40

OUR PRODUCTS



Round Tubes

Outside Diameter : 21.3 mm – 508 mm

Thickness Range : 1.2 mm – 14.3 mm

Length : 6.0 meter to 18.0 meter

APPLICATIONS

- Liquid Transmission
- Idlers
- Mechanical and General Engineering
- Structural
- Water and Sewage
- Water Wells
- Fire Protection
- Fencing

& Many more...

PRODUCTION STANDARDS

- IS:1239 (Part-1)/2004, BS:1387-1990
- EN10255/2004, EN10240/1998
- IS:9295-1983
- IS:3601-1984
- IS:1161-1998
- IS:3589/2001
- IS:4270/2001
- ASTM A-53 GRA&B SCH 20/40/80
- ASTM A-795
- ASTM A-135

TESTS PERFORMED

- Hydrostatic Test
- Eddy Current Test
- Flattening/Flaring Test/Bend Test
- Chemical Analysis
- Other Tests as required by the Standard

FINISHING OPERATIONS

- Plain End
- Threaded and Coupled
- Cut Lengths

SURFACE PROTECTION

- Black (Self Coloured Uncoated)
- Outside Protective Coating-Oil/Varnish/3LPE/3LPP/FBE
- Hot Dip Galvanised

Black (Self Colored Uncoated)



Oiled/Varnish



Hot Dip Galvanised



NOTE : For details please refer Specification Sheet

Hollow Section

Size – RHS 40*20 – 240*120

SHS 19*19 – 150*150

Thickness : 1.2 mm to 8.0 mm

Length : 6 meter to 18 meter

APPLICATIONS

- Construction
- Machinery
- Automotive
- Furniture
- Storage System
- Transmission Tower

PRODUCTION STANDARD

- IS4932:997
- ASTM A-500

TESTS PERFORMED

- Visual and Dimensional Inspection
- Tensile Test
- Flattening and Flaring Test
- Impact Test
- Chemical analysis
- Plain End-square cut
- Cut Lengths

SURFACE PROTECTION

- Black (Self Coloured Uncoated)
- Varnish/Oil Coating
- Hot Dip Galvanised

Black (Self Coloured Uncoated)



Oiled/Varnish



Hot Dip Galvanised



NOTE : For details please refer Specification Sheet

API Tubes

This category of steel tubes at JINDAL are made out of special Steels with control Rolled HR Coil material.

5L

The purpose of this specification is to provide standards for pipe suitable for use in conveying gas, water and oil in both the oil and natural gas industries. This specification covers welded steel line pipes. It includes plain-end, Although the plain-end pipe meeting the specification is primarily intended for field makeup by circumferential welding the manufacturer may not assume responsibility for field welding unless specially agreed for field weld ability as per revised API 5L.

This International Standards specifies requirement for the manufacturing of two product specification levels (PSL 1 and PSL2) welded steel pipes for use in pipeline transportation systems in the petroleum and natural gas industries.

This International Standard is not applicable to cast pipe.



ROUND SECTION



Nominal Size		Outside Diameter		Schedule	Wall Thickness		Weight of Pipe in End			No of Pieces per Bundle
mm	Inch	mm	Inch		mm	Inch	Kg/Mtr	Lbs/Ft	Ft/Ton	
15	½	21.3	0.84	40	2.77	0.109	1.27	0.85	2592	120
				80	3.73	0.147	1.62	1.09	2023	
20	¾	26.7	1.05	40	2.87	0.113	1.69	1.13	1945	90
				80	3.91	0.154	2.2	1.48	1490	
25	1	33.4	1.315	40	3.38	0.133	2.5	1.68	1311	60
				80	4.55	0.179	3.24	2.17	1016	
32	1¼	42.2	1.66	40	3.56	0.14	3.39	2.27	967	42
				80	4.85	0.191	4.47	3	735	
40	1½	48.3	1.9	40	3.68	0.145	4.05	2.72	810	36
				80	5.08	0.2	5.41	3.63	607	
50	2	60.3	2.375	40	3.91	0.154	5.44	3.66	603	26
				80	5.54	0.218	7.48	5.03	438	
65	2½	73	2.875	40	5.16	0.203	8.63	5.8	380	18
				80	7.01	0.276	11.41	7.67	287	
80	3	88.9	3.5	40	5.49	0.216	11.29	7.58	291	14
				80	7.62	0.3	15.27	10.26	215	
90	3½	101.6	4	40	5.74	0.226	13.57	9.12	242	12
				80	8.08	0.318	18.63	12.52	176	
100	4	114.3	4.5	40	6.02	0.237	16.07	10.8	204	10
				80	8.56	0.337	22.32	15	147	
125	5	141.3	5.56	40	6.55	0.258	21.77	14.63	151	
150	6	168.3	6.625	40	7.11	0.28	28.26	18.99	116	
200	8	219.1	8.625	20	6.35	0.25	33.31	22.38	98	
				30	7.04	0.277	36.31	24.72	89	
				40	8.18	0.322	42.55	28.58	77	
250	10	273	10.748	20	6.35	0.25	41.75	28.06	79	
				30	7.8	0.307	51.01	34.27	64	
				40	9.27	0.365	60.29	40.52	54	
300	12	323.8	12.748	20	6.35	0.25	49.71	33.41	66	
				30	8.38	0.33	65.18	43.1	50	
				40	9.52	0.375	73.78	49.61	44	
350	14	355.6	14	10	6.35	0.25	54.69	36.75	60	
				20	7.92	0.312	67.9	45.65	48	
				30	9.52	0.375	81.25	54.62	40	
400	16	406.4	16	10	6.35	0.250	62.64	42.09		
				20	7.92	0.312	77.83	52.32		
				30	9.52	0.375	93.17	62.64		
450	18	457	18	10	6.35	0.250	70.6	47.44		
				20	7.92	0.312	87.75	58.99		
				30	11.13	0.438	122.43	82.23		
500	20	508	20	10	6.35	0.250	77.55	52.78		
				20	9.52	0.375	117.02	78.67		
				30	12.7	0.500	155.12	104.23		

Chemical Properties				Composition Maximum %					
	C	Mn	P	S	Cu	Ni	Cr	Mo	V
Grade	0.25	0.5	0.05	0.045	0.5	0.4	0.4	0.15	0.08
Grade B	0.30	1.20	0.05	0.045	0.5	0.4	0.4	0.15	0.08

TOLERANCE		
Outside Diameter	Pipe Size upto & including 40NB	±0.4mm
Thickness	Pipe Size 50NB or larger	±1%
Weight	For all sizes	-12.5%
	For all sizes	±10%

MECHANICAL PROPERTIES		
	Grade A	Grade B
Yield Strength	205Mpa(Min)	240Mpa(Min)
Tensile Strength	330Mpa(Min)	415Mpa(Min)
Elongation%	ASTM A53, Table X4.1 & 4.2	

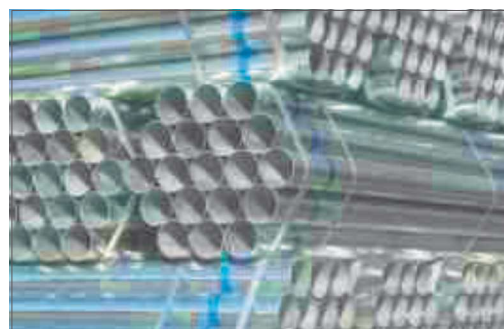
Schedule 10 and Schedule 30/40													
Nominal ore		Outside Diameter		SCH 10				No of iece er undle	SCH 30/40				No of iece er undle
				Wall Thickness		Weight lain End			Wall Thickness		Weight lain End		
mm	inch	mm	inch	mm	inch	kg/m	b/ft		mm	inch	kg/m	b/ft	
15	½	21 3	0 840	—	—	—	—	90	2 77	0 109	1 27	0 85	90
20	¾	26 7	1 050	2 11	0 083	1 28	0 86	90	2 87	0 113	1 69	1 13	90
25	1	33 4	1 315	2 77	0 109	2 09	1 41	90	3 38	0 133	2 50	1 68	60
32	1¼	42 2	1 660	2 77	0 109	2 69	1 81	61	3 56	0 140	3 39	2 27	42
40	1½	48 3	1 900	2 77	0 109	3 11	2 09	61	3 68	0 145	4 05	2 72	36
50	2	60 3	2 375	2 77	0 109	3 93	2 64	37	3 91	0 154	5 45	3 66	26
65	2½	73 0	2 875	3 05	0 120	5 26	3 53	29	5 16	0 205	8 64	5 80	18
80	3	88 9	3 500	3 05	0 120	6 46	4 34	24	5 49	0 216	11 29	7 58	14
90	3½	101 6	4 000	3 05	0 120	7 41	4 98	21	5 74	0 226	13 58	9 12	12
100	4	114 3	4 500	3 05	0 120	8 37	5 62	19	6 02	0 237	16 09	10 80	10
125	5	141 3	5 563	3 4	0 134	11 58	7 78	10	6 55	0 258	21 79	14 63	8
150	6	168 3	6 625	3 4	0 134	13 85	9 3	10	7 11	0 280	28 29	18 99	7
200	8	219 1	8 625	4 75	0 188	25 26	16 96	5	7 04	0 277	36 82	24 72	5

ASTM A-135 GRADE A&B (BLACK & GALVANISED STEEL PIPES)								
Nominal Bore		Outside Diameter		SCH 10				No. of piece per Bundle
				Wall Thickness		Weight Plain End		
mm	inch	mm	inch	mm	inch	kg/m	lb/ft	
20	¾	26.7	1.050	2.11	0.083	1.28	0.86	90
25	1	33.4	1.315	2.77	0.109	2.09	1.41	90
32	1¼	42.2	1.660	2.77	0.109	2.69	1.81	61
40	1½	48.3	1.900	2.77	0.109	3.11	2.09	61
50	2	60.3	2.375	2.77	0.109	3.93	2.64	37
65	2½	73.0	2.875	3.05	0.120	5.26	3.53	29
80	3	88.9	3.500	3.05	0.120	6.46	4.34	24
90	3½	101.6	4.000	3.05	0.120	7.41	4.98	21
100	4	114.3	4.500	3.05	0.120	8.37	5.62	19
125	5	141.3	5.563	3.4	0.134	11.58	7.78	14

MECHANICAL PROPERTIES				CHEMICAL PROPERTIES			
	Grade A	Grade B		C	Mn	P	S
Yield Strength	205Mpa(Min)	240Mpa(Min)	Grade A	0.25	0.95	0.035	0.035
Tensile Strength	330Mpa(Min)	415Mpa(Min)	Grade B	0.30	1.20	0.035	0.035
Elongation %	A	B					

TOLERANCE		
Outside Diameter	Pipe Size upto & including 40NB	+/- 0.41mm
Thickness	Pipe Size 50mm NB or larger	+/- 1%OD
Weight	For all sizes	-12.5% (max)
	For all sizes	+/- 5%

GALVANISING	
Minimum	0.490kg/Sq Mtr.
Average	0.550kg/Sq Mtr.



N Size	Out Side Diameter	Wall Thickness	Main End	
			Mass	Meters
mm	mm	mm	Kg/Mtr	Tonne
150	168.3	2.60	10.60	94
		3.20	13.00	77
		4.00	16.20	62
		4.50	18.20	55
		5.00	20.10	50
		6.30	25.20	40
175	193.7	2.60	12.30	81
		3.60	16.90	59
		4.50	21.00	48
		6.30	29.10	34
200	219.1	2.60	13.90	72
		3.60	19.10	52
		4.50	23.80	42
		6.30	33.10	30
250	273	3.60	23.90	42
		4.00	26.50	38
		5.00	33.90	30
		6.30	41.40	24
		7.10	46.57	21
		8.00	52.30	19
300	323.9	10.00	64.90	15
		4.00	31.60	32
		5.00	35.40	28
		5.60	44.00	23
350	355.6	7.10	55.50	18
		5.60	48.33	21
		6.40	55.11	18
		7.10	61.02	16
		7.90	67.74	15
		8.70	74.42	13
400	406.4	9.50	81.08	12
		5.60	55.35	18
		6.40	63.13	16
		10.00	97.76	10
450	457.0	12.70	123.31	8
		5.60	62.34	16
		8.00	88.58	11
		10.00	110.24	9
500	508.0	12.70	139.16	7
		5.60	69.38	14
		8.00	98.65	10
		10.00	122.81	8
		12.70	155.13	6

TOLERANCE

Outside Diameter of Pipes	±0.75%
Ovality	Max 1%
Thickness	±10%
Length	
Unless other specified, length are in single random length of 4 to 7 meter	
Mass per Truck Load of 10 Tonnes of above	±7.5%

PHYSICAL PROPERTIES

Grade	T.S.	Y.S.	% Age
	Mpa	Mpa	Elongation of
	min	min	min
Fe330	330	195	20
Fe410	410	235	18

N Size	Out Side Diameter	Wall Thickness	Nominal Weight	
mm	mm	mm	Kg/Mtr	Mtr/Tonne
100	114.3	5.0	13.48	74
		5.4	14.5	69
125	141.3	5.0	16.8	59
		5.4	18.1	55
		7.1	23.5	42.5
150	168.3	5.4	20.13	50
		5.4	21.6	46
		7.1	28.2	35.5
175	193.7	5.4	25.1	40
		6.4	29.6	34
		8.0	36.6	27
200	219.1	5.4	28.46	35
		6.4	33.6	30
		8.0	41.6	24
250	273.1	7.1	46.57	21
		8.0	52.3	19
		10.0	64.9	15
300	323.9	7.1	55.47	18
		8.0	62.3	16
		10.0	77.4	13
350	355.6	5.6	48.33	21
		6.4	55.11	18
		7.1	61.02	16
		7.9	67.74	15
		8.7	74.42	13
400	406.4	9.5	81.08	12
		5.6	55.35	18
		6.4	63.13	16
		8.7	85.33	12
450	457.2	10.0	97.76	10
		5.6	62.37	16
		6.4	71.15	14
		8.7	96.23	10
		10.0	110.29	9

TOLERANCE

Outside diameter of pipe	± 1%
Thickness upto 406.mm OD	+ 15%
	- 12.5%
Thickness over 406.mm OD	+ 15%
	- 10%
Weight Single Tube	+ 10%
	- 8%
Length	
Unless otherwise Specified	4 to 7 meters

PHYSICAL PROPERTIES

Grade	T.S. Mpa min	Y.S. Mpa min	% Age (min) Elongation on 5.65/So=G.I.
Fe410	410	235	15%

BS 1387 1 85 / Eqvt EN 10255 : 2007 / EN 10240 : 1 8 / DIN 2444 (IS:123 Part 1 2004) / DIN243 / DIN2440 / DIN2441									
N and Series		Outer Diameter		Wall Thickness		Nominal Weight			
		Min	Max			Iain End		Screwed & Socketed	
		mm	mm	mm	SWG	Kg/M	Meters/Tonne	Kg/M	Meters/Tonne
15	L	21 0	21 4	2 0	14	0 95	1052	0 96	1046
	M	21 0	21 8	2 6	12	1 21	826	1 22	820
	H	21 0	21 8	3 2	10	1 44	694	1 45	690
20	L	26 4	26 9	2 3	13	1 38	725	1 39	719
	M	26 5	27 3	2 6	12	1 56	641	1 57	637
	H	26 5	27 3	3 2	10	1 87	535	1 88	532
25	L	33 2	33 8	2 6	12	1 98	505	2 00	500
	M	33 3	34 2	3 2	10	2 41	415	2 43	411 5
	H	33 3	34 2	4 0	8	2 93	341	2 95	339
32	L	41 9	42 5	2 6	12	2 54	394	2 57	389
	M	42 0	42 9	3 2	10	3 10	322	3 13	319
	H	42 0	42 9	4 0	8	3 79	264	3 82	262
40	L	47 8	48 4	2 9	11	3 23	310	3 27	306
	M	47 8	48 8	3 2	10	3 56	281	3 60	278
	H	47 9	48 8	4 0	8	4 37	229	4 41	227
50	L	59 6	60 2	2 9	11	4 08	245	4 15	241
	M	59 7	60 8	3 6	9	5 03	199	5 10	196
	H	59 7	60 8	4 5	7	6 19	161	6 26	160
65	L	75 2	76	3 2	10	5 74	175	5 83	171 5
	M	75 3	76 6	3 6	9	6 42	156	6 54	153
	H	75 3	76 6	4 5	7	7 93	126	8 05	124
80	L	87 9	88 7	3 2	10	6 72	149	6 89	145
	M	88 0	89 5	4 0	8	8 36	120	8 53	117
	H	88 0	89 5	4 8	6	9 90	101	10 10	96
100	L	113 0	113 9	3 6	9	9 75	102	10 00	100
	M	113 1	115 0	4 5	7	12 20	82	12 50	80
	H	113 1	115 0	5 4	5	14 50	69	14 80	67 5
125	M	138 5	140 8	4 8	6	15 90	63	16 40	61
	H	138 5	140 8	5 4	5	17 90	56	18 40	54
150	M	163 9	165 5	4 8	6	18 90	53	19 50	51
	H	163 9	165 5	5 4	5	21 30	47	21 90	46

TOLERANCE				
A - Thickness	Tolerance	B - Weight	Tolerance	Length Tolerance
1. Light Tubes	+ not limited - 8%	1. Single Tube (Light Series)	+10% & -8%	Random Length 4 to 7 Mtrs. unless otherwise agreed, can also be supplied in Exact and Approximate length.
2. Medium & Heavy Tubes	+ not limited - 10%	2. Single Tube (Medium & Heavy Series)	±10%	
		3. For quantities per load of 10 tonnes minimm (Light Series)	+7.5% & -5%	
		4. For qantities per load of 10 tonnes minimum (Medium and Heavy Series)	±7.5%	

N	Outside Diameter	Thickness	Nominal Weight		Calculated Nominal Weight	
			Black Tubes		Galvanized Tubes	
			Main End		Main End	
			Kg/Mtr	Mtr/Tonn	Kg/Mtr	Mtr/Tonn
15	21.3	2	0.947	1056	1.00	1003
		2.6	1.21	826	1.26	794
		3.2	1.44	694	1.49	671
20	26.9	2.3	1.38	725	1.43	699
		2.6	1.56	641	1.61	621
		3.2	1.87	535	1.92	521
25	33.7	2.6	1.98	505	2.03	493
		3.2	2.41	415	2.46	407
		4	2.93	341	2.98	336
32	42.4	2.6	1.54	649	2.62	382
		3.2	3.1	323	3.18	314
		4	3.79	264	3.87	258
40	48.3	2.9	3.23	310	3.34	299
		3.2	3.56	281	3.67	272
		4	4.37	229	4.48	223
50	60.3	2.9	4.08	245	4.2	238
		3.2	5.03	199	5.15	194
		4	6.19	162	6.31	158
65	76.1	3.2	5.71	175	5.86	171
		3.6	6.42	156	6.57	152
		4.5	7.93	126	8.1	123
80	88.9	3.2	6.72	149	6.9	145
		4	8.36	120	8.54	117
		4.8	9.9	101	10.08	99
90	101.6	4	8.7	115	8.97	111
		4.8	9.63	104	9.72	103
		5.4	11.5	87	11.77	85
100	114.3	3.6	9.75	103	9.97	100
		4.5	12.2	82	12.42	81
		5.4	14.5	69	14.72	68
110	127	4.5	13.6	74	13.9	72
		4.8	14.5	69	14.8	68
		5.4	16.2	62	16.4	61
125	139.7	4.5	15.0	67	15.25	66
		4.8	15.9	63	16.15	62
		5.4	17.9	56	18.15	55
135	152.4	4.5	16.4	61	16.78	60
		4.8	17.5	57	17.88	56
		5.4	19.6	51	19.98	50
150	165.1	4.5	17.8	56	18.2	55
		4.8	18.9	53	19.8	51
		5.4	21.3	47	21.7	46
150	168.3	4.5	18.2	55	18.66	54
		4.8	19.4	52	19.88	50
		5.4	21.7	46	22.24	45
175	193.7	6.3	25.2	40	41	24
		4.8	22.4	45	22.94	44
		5.4	25.1	40	25.64	39
200	219.1	5.9	27.3	37	27.84	36
		4.8	25.4	39	25.95	39
		5.6	29.5	34	30.05	33
225	244.5	5.9	31.0	32	31.55	32
		6.3	34.7	29	—	—
		8.0	37.0	27	—	—
250	273	8.0	46.7	21	—	—
		10.0	57.8	17	—	—
		5.9	38.9	26	—	—
		6.3	41.4	24	—	—
		8.0	52.3	19	—	—
300	323.9	10.0	64.9	15	—	—
		12.0	77.2	13	—	—
		6.3	49.3	20	—	—
		8.0	62.3	16	—	—
350	355.6	10.0	77.4	13	—	—
		12.0	92.3	11	—	—
		8.0	68.6	15	—	—
		10.0	85.2	12	—	—
			101.7	10		

Grad	YS (Min) Mpa	TS (Min) Mpa	% g Elongation
	(kg/mm ²)	(kg/mm ²)	
YST 210	210(21.42)	330(33.66)	20
YST 240	240(41.82)	410(41.82)	17
YST 310	310(31.62)	450(45.60)	14

Singl. Tub	±10%
10 Tonn lots	±7.5%

Tolerance
1. On outside diameter up to & including 48.3mm = +0.4mm / - 0.8mm
2. Over 48.3mm = ±1.0%

Thickness	Tolerance
Welded Tubes - For all Sizes	±10%



Outside Diameter	Thickness	Mass	Meters
mm	mm	Kg/Mtr	Tonne
63 50	3 65	5 39	186
	4 05	5 95	168
	4 50	6 55	153
	4 85	7 01	143
	5 40	7 74	129
	6 30	8 89	112
76 10	3 65	6 52	153
	4 05	7 20	139
	4 50	7 95	126
	4 85	8 52	117
	5 40	9 42	106
	6 30	10 84	92
88 90	4 05	8 74	118
	4 50	9 37	107
	4 85	10 05	99
	5 40	11 12	90
	6 30	12 83	78
101 60	4 05	9 74	103
	4 50	10 78	93
	4 85	11 57	86
	5 40	12 81	78
	6 30	14 81	68
114 30	4 50	12 19	82
	4 85	13 09	76
	5 40	14 50	69
127 00	4 50	13 59	74
	4 85	14 61	68
	5 40	16 19	62
	6 30	18 75	53
139 70	4 50	15 00	67
	4 85	16 13	62
	5 40	17 89	56
	6 30	20 73	48
152 40	4 50	16 41	61
	4 85	17 65	57
	5 40	19 58	51
	6 30	22 70	44
159 00	4 50	17 15	58
	4 85	18 44	54
	5 40	20 46	49
	6 30	23 72	42
165 10	4 50	17 82	56
	4 85	19 17	52
	5 40	21 27	47
	6 30	24 67	41
168 30	4 50	18 18	55
	4 85	19 55	51
	5 40	21 69	46
	6 30	25 17	40
193 70	5 40	25 08	40
	6 30	29 12	34
219 10	5 40	28 46	35
	6 30	33 06	40

Tolerance

Outside Diameter : $\pm 0.8\%$

Ovality below 168.3mm : 0.5mm

Ovality including 168.3mm & above: 1.0mm

Weight Kg/Mtr : Single Tube : $\pm 10\%$

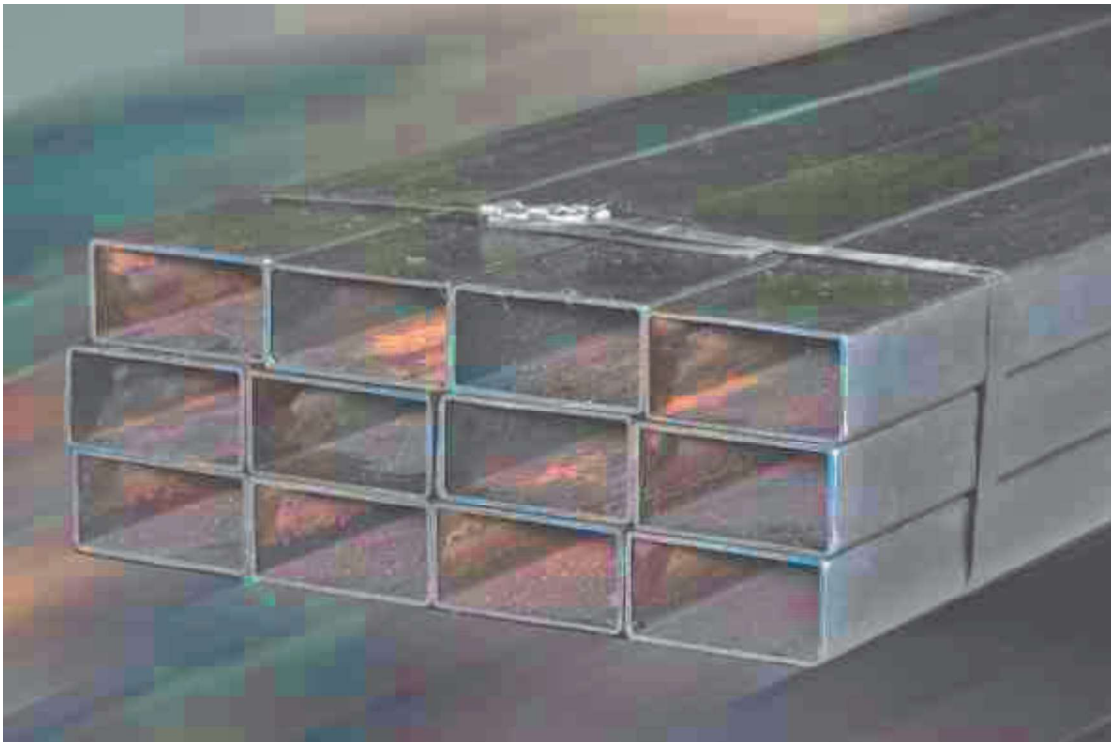
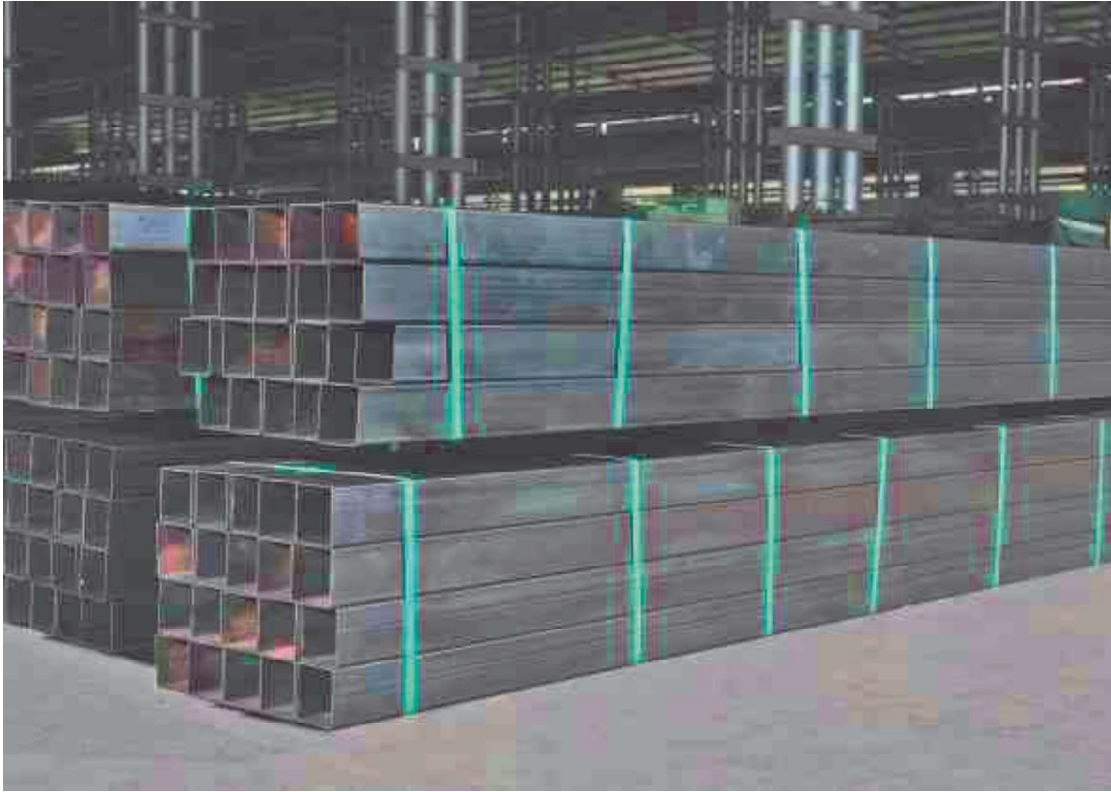
For Truck Load of 10 Tonnes : $\pm 7.5\%$

Thickness : $\pm 10\%$

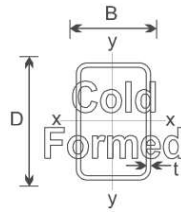
Grade : ERW Grade YST 210 & YST 240



HOLLOW SECTION



DIMENSIONS & PROPERTIES



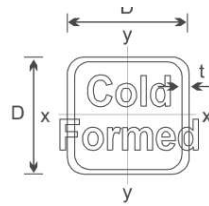
Outside Dimensions inch (mm)	Weight per Unit Length		Nominal Wall Thickness		Outside Dimensions inch (mm)	Weight per Unit Length		Nominal Wall Thickness	
	/ft	kg/m	in	mm		/ft	kg/m	in	mm
(40 x 20)	0.71	1.06	0.047	1.20	(150 x 50)	4.67	6.5	0.01	2.30
	1.13	1.68	0.07	2.00		6.40	52	0.126	3.20
	1.50	2.23	0.110	2.80		7.88	11.73	0.157	4.00
(50 x 25)	1.04	1.55	0.055	1.40		11.41	16.8	0.236	6.00
	2.18	3.24	0.126	3.20	6 x 4 (152.4 x 101.6)	8.22	12.23	0.125	3.20
	2.61	3.88	0.157	4.00		11.86	17.65	0.188	4.78
(60 x 40)	3.50	5.21	0.236	6.00		15.42	22.4	0.250	6.35
	1.41	2.10	0.055	1.40	(152 x 102)	18.77	27.3	0.120	7.2
	3.02	4.50	0.126	3.20		5.8	8.0	0.01	2.30
(80 x 40)	3.66	5.45	0.157	4.00		8.22	12.23	0.126	3.20
	5.08	7.56	0.236	6.00		10.16	15.12	0.157	4.00
(80 x 40)	1.70	2.54	0.055	1.40		14.83	22.07	0.236	6.00
	3.70	5.50	0.126	3.20	(160 x 80)	5.64	8.3	0.01	2.30
	4.51	6.71	0.157	4.00		7.75	11.53	0.126	3.20
	6.35	44	0.236	6.00		57	14.25	0.157	4.00
(6 x 48)	2.06	3.06	0.055	1.40		13.4	20.75	0.236	6.00
	4.51	6.71	0.126	3.20	(172 x 2)	6.22	26	0.01	2.30
	5.52	8.22	0.157	4.00		8.56	12.73	0.126	3.20
	7.87	11.71	0.236	6.00		10.5	15.75	0.157	4.00
4 x 2 (101.6 x 50.8)	4.51	6.71	0.118	3.00		15.46	23.01	0.236	6.00
	5.78	8.60	0.156	3.6	8 x 4 (203.2 x 101.6)	11.13	16.56	0.141	3.60
	6.86	10.21	0.188	4.78		14.71	21.44	0.188	4.78
	8.80	13.0	0.250	6.35		18.82	28.00	0.250	6.35
(122 x 61)	2.63	3.2	0.055	1.40		23.02	34.25	0.312	7.2
	5.82	8.66	0.126	3.20	8 x 6 (203.2 x 152.4)	13.06	1.43	0.141	3.60
	7.17	10.67	0.157	4.00		16.85	25.07	0.188	4.78
	10.33	15.38	0.236	6.00		22.04	32.80	0.250	6.35
5 x 3 (127.0 x 76.2)	6.50	68	0.125	3.20		26	3.16	0.312	7.2
	31	13.85	0.188	4.78	(240 x 120)	8.55	12.73	0.01	2.30
	12.02	17.8	0.250	6.35		14.64	21.78	0.157	4.00
	14.52	21.61	0.312	7.2		21.54	32.05	0.236	6.00
(145 x 82)	5.32	7.2	0.01	2.30		28.16	41.1	0.315	8.00
	7.31	10.88	0.126	3.20	10 x 4 (254.0 x 101.6)	13.75	20.47	0.150	3.80
	02	13.43	0.157	4.00		16.86	25.0	0.188	4.78
	13.12	1.52	0.236	6.00		22.05	32.81	0.250	6.35
						27.07	40.28	0.312	7.2

NB: Sizes other than those shown in table above are also supplied subject to negotiation.

General Technical Specifications and Tolerances:

Specification	: IS 4923 : 1997 / ASTM A-500
Length	: 6.0mm ± 0.05mm Customized Length ranging from 4mtr. to 8mtr. may be supplied
Thickness	: For all sizes: ± 10.0%
Outer Dimensions	: 1% with a minimum of 0.5mm
Corner Squareness	: 90° ± 2°
Corner Radii	: Maximum, 3x (thickness of the section)
Weight	: On individual length: +10% / -8% On lots of MT: ± 7.5%
Straightness	: Minimum 1:200th of any length measured along the center line (mill straightened condition) unless otherwise specifically arranged
Twist Tolerance	: Maximum 2mm
End Finish	: Plain Ended-Mechanically sheared, mill-cut finish without further machining.
Surface Finish	: Black without any surface treatment of oiling or varnishing.

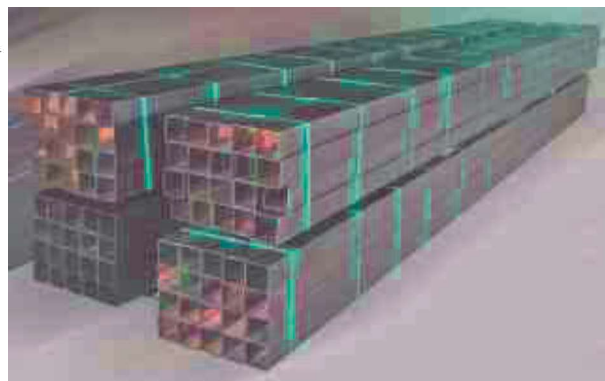
DIMENSIONS & PROPERTIES



Outside Dimensions inch (mm)	Weight per Unit Length		Nominal Wall Thickness	
	/ft	kg/m	in	mm
(1 x 1)	0 52 0 66 0	0 78 0 1 48	0 05 0 07 0 142	1 50 2 00 3 60
(20 x 20)	0 3 0 71 1 07	0 58 1 05 1 5	0 03 0 07 0 142	1 00 2 00 3 60
1 x 1 (25 4 x 25 4)	0 3 1 0 1 41	1 3 1 62 2 10	0 078 0 0 5 0 133	2 00 2 41 3 38
1¼ x 1¼ (30 x 30)	1 13 1 32 1 74	1 68 1 7 2 5	0 078 0 0 5 0 133	2 00 2 41 3 38
(32 x 32)	0 76 1 8 2 15	1 13 2 5 3 1	0 047 0 142 0 157	1 20 3 60 4 00
(38 x 38)	0 1 2 65 3 56	1 36 3 5 5 30	0 047 0 157 0 236	1 20 4 00 6 00
1½ x 1½ (40 x 40)	1 55 1 83 2 46	2 31 2 73 3 66	0 078 0 0 5 0 133	2 00 2 41 3 38
2 x 2 (50 8 x 50 8)	2 6 3 04 3 65 4 31	4 00 4 52 5 44 6 41	0 110 0 125 0 154 0 188	2 7 3 18 3 1 4 78
(60 x 60)	1 47 4 51 6 35	2 1 6 71 44	0 047 0 157 0 236	1 20 4 00 6 00
2½ x 2½ (63 5 x 63 5)	4 32 5 5 7 10	6 43 8 32 10 56	0 141 0 188 0 250	3 58 4 78 6 35

Outside Dimensions inch (mm)	Weight per Unit Length		Nominal Wall Thickness	
	/ft	kg/m	in	mm
(72 x 72)	2 06 5 52 7 87	3 06 8 22 11 71	0 055 0 157 0 236	1 40 4 00 6 00
(75 x 75)	2 15 5 77 8 25	3 2 8 5 12 77	0 055 0 157 0 236	1 40 4 00 6 00
3 x 3 (76 2 x 76 2)	5 78 6 86 8 80	8 60 10 21 13 0	0 156 0 188 0 250	3 6 4 78 6 35
(80 x 80)	2 30 6 20 8 88	3 42 22 13 21	0 055 0 157 0 236	1 40 4 00 6 00
(1 x 1)	2 62 7 12 10 27	3 10 6 15 28	0 055 0 157 0 236	1 40 4 00 6 00
4 x 4 (101 6 x 101 6)	6 50 31 12 02 14 52	68 13 85 17 8 21 61	0 125 0 188 0 250 0 312	3 20 4 78 6 35 7 2
5 x 5 (127 0 x 127 0)	8 22 11 86 11 86 15 42 18 77	12 23 17 65 17 65 22 4 27 3	0 125 0 188 0 188 0 250 0 312	3 20 4 78 4 78 6 35 7 2
6 x 6 (152 4 x 152 4)	11 13 14 41 18 82 23 02	16 56 21 44 2 00 34 25	0 141 0 188 0 250 0 312	3 60 4 78 6 35 7 2
7 x 7 (177 8 x 177 8)	13 06 16 85 22 04 26	1 43 25 07 32 80 3 16	0 141 0 188 0 250 0 312	3 60 4 78 6 35 7 2

NB: Sizes other than those shown in table above are also supplied subject to negotiation.



H S S SIZES AS PER IS 4923, ASTM A 500 , CSA -G.40.20/G-40.21-Class -C

I SIZE		NGE :		C H S																
SIZES		W LL THICKNESS																		
N S IN	DN MM	0 80	1 20	1 60	2 00	2 30	2 60	2 90	3 20	3 60	4 00	4 50	5 00	5 40	5 60	6 00	6 35	7 00	8 00	9 50
½	15																			
¾	20																			
1	25																			
1¼	32																			
1½	40																			
2	50																			
2½	65																			
3	80																			
4	100																			
5	125																			
6	150																			
8	200																			

II SIZE		NGE :		S H S																	
SIZES		W LL THICKNESS																			
INCH	MM	0 80	1 20	1 60	2 00	2 30	2 60	2 90	3 20	3 60	4 00	4 50	5 00	5 40	5 60	6 00	6 35	7 00	8 00	9 50	
1 x 1	25 4 x 25 4																				
1¼ x 1¼	30 x 30																				
1½ x 1½	40 x 40																				
2 x 2	50 x 50																				
2½ x 2½	60 x 60																				
3 x 3	75 x 75																				
4 x 4	100 x 100																				
5 x 5	125 x 125																				
6 x 6	150 x 150																				

III SIZE		NGE :		H S																
SIZES		W LL THICKNESS																		
INCH	MM	0 80	1 20	1 60	2 00	2 30	2 60	2 90	3 20	3 60	4 00	4 50	5 00	5 40	5 60	6 00	6 35	7 00	8 00	9 50
4 x 2	100x50																			
4 x 3	100x75																			
5 x 2	125x50																			
6 x 2	150x50																			
6 x 3	150x75																			
6 x 4	150x100																			
8 x 4	200x100																			
8 x 6	200x150																			
10 x 4	250x100																			

NB: Sizes other than those shown in table above are also supplied subject to negotiation.

API TUBES



N	OD	Wall Thk	Schedule	Unit End Weight		STD Test Pressure (Bar)									
(Inch)	(mm)	(mm)		Kg/Mtr	Lb/Ft	Grade	Grade	Grade X42	Grade X46	Grade X52	Grade X56	Grade X60	Grade X65	Grade X70	Grade X80
6%	168.3	4.0		16.21	10.80	74	86	103	113	128	138	148	160	172	197
6%	168.3	4.4		17.78	11.87	81	95	114	124	141	151	162	176	189	216
6%	168.3	4.8		19.35	12.94	89	103	124	136	154	165	177	192	207	236
6%	168.3	5.2		20.91	13.90	96	112	134	147	166	179	192	208	224	256
6%	168.3	5.6		22.47	15.00	103	120	145	158	179	193	208	224	241	276
6%	168.3	6.4		25.55	17.04	118	137	165	181	205	220	236	256	276	315
6%	168.3	7.1	40	28.22	18.99	131	153	184	201	227	244	262	283	306	349
8%	219.1	4.8		25.37	16.96	68	79	95	104	118	127	136	147	159	181
8%	219.1	5.2		27.43	18.28	74	86	103	113	128	137	147	159	172	197
8%	219.1	5.6		29.48	19.68	79	92	111	122	138	148	159	172	185	212
8%	219.1	6.4	20	33.57	22.38	91	106	127	139	157	169	181	196	212	242
8%	219.1	7.0		36.61	24.72	99	115	139	152	172	185	198	215	231	265
8%	219.1	7.9		41.14	27.73	112	130	157	171	194	209	224	242	261	299
8%	219.1	8.2	40	42.65	28.68	116	135	163	178	202	217	232	252	271	310
8%	219.1	8.7		45.14	30.45	123	144	173	189	214	230	247	267	288	329
10%	273.1	5.2		34.35	22.89	59	69	94	103	116	125	134	145	156	179
10%	273.1	5.6		36.94	24.65	64	74	101	111	125	135	144	156	168	192
10%	273.1	6.4		42.09	28.06	73	85	116	126	143	154	165	178	192	220
10%	273.1	7.1		46.57	31.23	81	94	128	140	159	171	183	198	213	244
10%	273.1	7.8		51.03	34.27	89	103	141	154	174	187	201	218	235	268
10%	273.1	8.7		56.72	38.27	99	115	157	172	194	209	224	243	262	299
10%	273.1	9.3	40	60.50	40.52	106	123	168	184	208	223	240	259	280	320
12%	323.9	5.6	20	43.96	29.34	54	63	85	93	106	113	122	132	142	162
12%	323.9	6.4		50.11	33.41	61	71	97	106	121	130	139	150	162	185
12%	323.9	7.1		55.47	37.46	68	79	108	118	134	144	154	167	180	206
12%	323.9	7.9		61.56	41.48	76	88	120	131	149	160	172	186	200	229
12%	323.9	8.4	30	60.35	43.81	81	94	128	140	158	170	183	198	213	243
12%	323.9	8.7		67.62	45.62	83	97	132	145	164	176	189	205	221	252
12%	323.9	9.5		73.65	49.61	91	106	145	158	179	192	206	223	241	275
14	355.6	6.35	10	54.69	36.75	56	65	89	97	110	118	127	137	148	169
14	355.6	7.92	20	67.9	45.65	69	80	110	120	136	145	156	169	182	208
14	355.6	9.52	30	81.25	54.62	83	97	132	144	163	175	188	203	219	251
16	406.4	6.35	10	62.64	42.09	49	57	78	85	96	103	111	120	129	148
16	406.4	7.92	20	77.83	52.32	60	70	96	105	119	128	137	148	160	182
16	406.4	9.52	30	93.17	62.64	73	85	115	126	143	153	165	178	192	219
18	457	6.35	10	70.6	47.44	43	51	69	75	85	92	99	107	115	131
18	457	7.92	20	87.75	58.99	54	62	85	93	106	113	122	132	142	162
18	457	11.13	30	122.43	82.23	75	88	120	131	148	159	171	185	199	228
20	508	6.35	10	77.55	52.78	39	46	66	72	81	88	94	102	110	125
20	508	9.52	20	117.02	78.67	58	68	98	107	121	130	139	151	163	186
20	508	12.7	30	155.12	104.2	78	90	131	143	162	174	186	202	217	248

NOTE: 1) Test pressure at 75 % of SMYS for Grade A & B (Alt Pressure)
2) Pipe Sizes agreed as per Purchase Contract

Tensile Properties				Chemical Compositions (%)						End Finish	Surface Finish
Grade	Yield Strength Min (Min)	Yield Strength Max (Min)	Min Elong GL 50mm	C (Max)	Mn (Max)	(max)	S (Max)	Si (Max)	Others		
	210	335	Min elongation in 50.8mm GL as per 15L Spec	0.220	0.90	0.030	0.030	0	Nb V Ti & other to be used as specially agreed upon	1) Plain level End bevelled to 30 degrees with a root face of 1.6mm 2) Plain square cut end when agreed	Unless specified as bare pipe has a protective rust preventive finish on the outside
	245	415		0.220	1.20	0.025	0.015	0.400			
X 42	290	415		0.220	1.30	0.025	0.015	0.400			
X 46	320	435		0.220	1.30	0.025	0.015	0.450			
X 52	360	460		0.220	1.40	0.025	0.015	0.450			
X 56	390	490		0.220	1.40	0.025	0.015	0.450			
X 60	415	520		0.120	1.50	0.025	0.015	0.450			
X 65	450	535		0.120	1.60	0.025	0.015	0.450			
X 70	485	570		0.120	1.70	0.025	0.015	0.450			
X 80	555	625		0.120	1.85	0.025	0.015	0.450			

Clientel

The Company has approvals / assessment of EIL, MECON, GAIL, GSPL, IOCL, BPCL and HPCL besides various Classification Society like Bureau Veritas, DNV, IRS, Intertek, Moody, TUV etc. and have executed orders for premier organizations/ Projects in the domestic market and have also serviced the requirements for such pipes in USA, Canada, Myanmar, Sri Lanka, Bangladesh, GCC etc. Our Prime customers includes;

- Engineers India Limited
- MECON Limited
- GAIL (India) Limited
- GAIL Gas Limited
- Indian Oil Corporation Limited
- Oil India Limited
- Oil and Natural Gas Corporation Limited
- Larsen & Toubro Ltd
- Bharat Heavy Electricals Limited
- Hindustan Petroleum Corporation Limited
- National Thermal Power Corporation
- Electric Manufacturing Company Limited
- Bharat Petroleum Corporation Limited
- Steel Authority of India Limited
- Jindal Steel & Power Limited
- Gujarat State Petronet Limited
- Essar Projects India Limited
- Siemens Limited
- Blue Star Limited
- Brahmani River Pellets Limited [Stemcor Group]
- Reliance Industry





JINDAL (INDIA) LIMITED

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Dist: Howrah-711302, West Bengal, India
Tel: +91-33-2666 1800-04/6320, Fax: +91-33-2666 0356

Belur Works

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Belurmath, Howrah-711202, West Bengal, India
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Ghusury Works

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Ghusury, Howrah-711107, West Bengal, India
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3. QF/041, Rev. 01
Date: 06.01.2021