



CREATING  
BENCHMARKS



**JINDAL (INDIA) LIMITED**

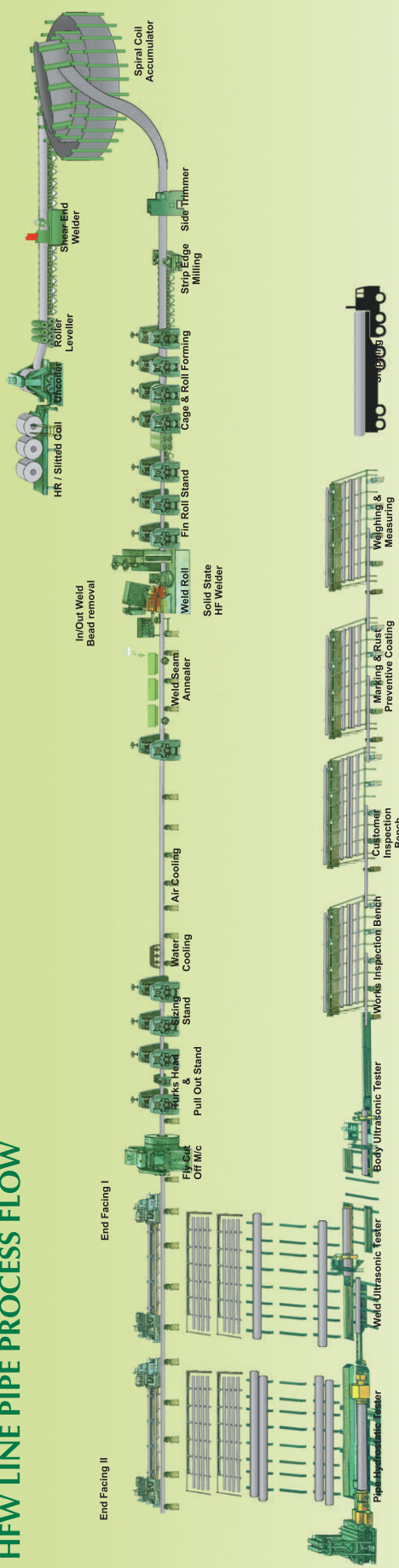
(ISO 9001, API Q1-2014,  LISTED, ISO 14001:2004, OHSAS 18001:2007)

Steel Pipe Manufacturing & Coating Division

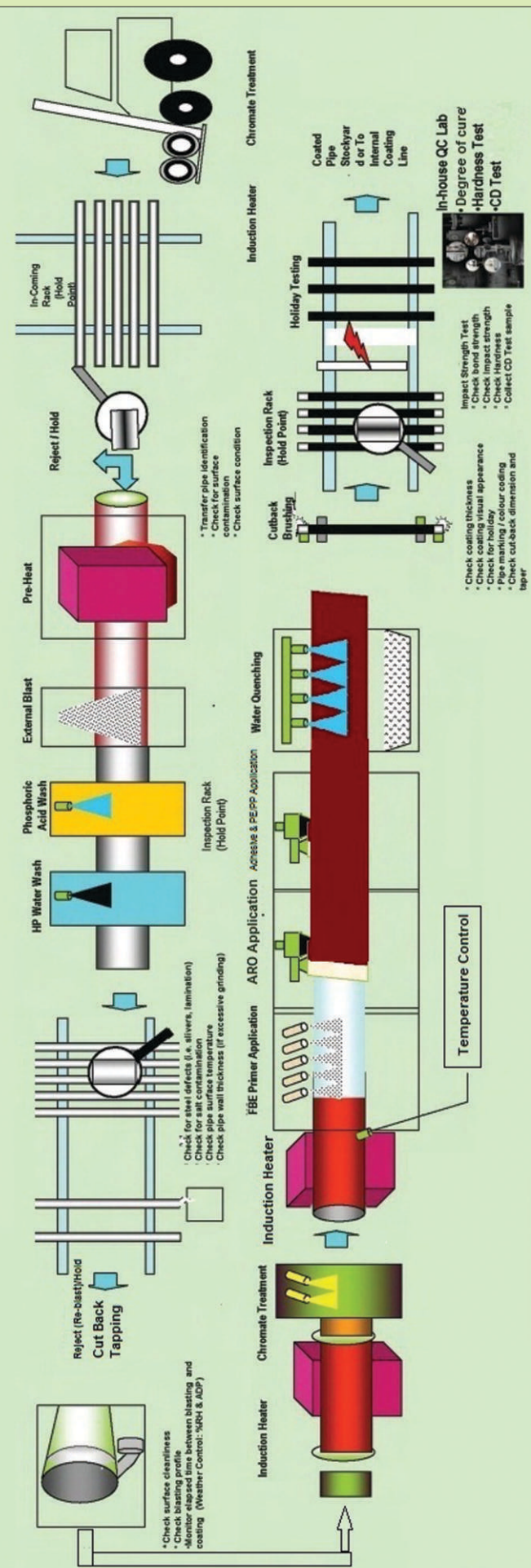


# JINDAL (INDIA) LIMITED

## HFW LINE PIPE PROCESS FLOW



## FLOW CHART OF 3 LAYER POLYETHYLENE / 3 LAYER POLYPROPYLENE / FBE / DFBE COATING








# JINDAL (INDIA) LIMITED

(ISO 9001, API Q1-2014, Listed, ISO 14001:2004, OHSAS 180001:2007)

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.

In 1966, the company set up the plant and machinery to produce ERW Pipes (MS Black/Galvanized) at Belur, Howrah, West Bengal conforming to National and International Standards. The Manufacturing facility at Belur and Ghosury Works, Howrah, West Bengal produce ERW/HFIW Pipes Black and Galvanised from ½" to 10" diameter with thickness from 2.0 to 9.5 mm conforming to various National and International Standard/Specifications.

The technology and the product ranges were continuously upgraded to cater to the growing needs of quality requirements of the market in the developing economy, commitment continued. The High Test Line Pipe Manufacturing facility at its new Works, Howrah, West Bengal, started in the year 2008 to produce HFW Pipes up to 20" diameter with thickness up to 14.3 mm for meeting the requirements mainly for High Pressure Oil, Gas and long distance slurry transmission, Oil drilling Industries and other high Pressure applications.

This High Test Line pipe unit is certified to ISO 9001 and API Q1-2014 for its Quality Management System for **Manufacturing and Coating of HFW Line Pipes** of  accreditation through ANSI-ASQ National Accreditation Board  and APIQR's accreditation body as per API Management System registration agreement. We are authorized to use  Logo with Certification for ISO 9001 accredited certificate. The Line Pipe unit is an authorized API Monogram Holder since 2009 for API 5L, API 5CT, API Q1 and all its related management system registration agreement

## **API authorizations include:**

**Manufacture of Line Pipe API 5L Plain End at PSL 1** – Type of Pipe: HFW / Delivery Condition: M / Max Grade: X70, / Delivery Condition: N / Max. Grade: X70 and Delivery Condition: R / Max. Grade: X70;



**Manufacture of Line Pipe Plain End at PSL 2** – Type of Pipe: HFW / Delivery Condition: M / Max. Grade: X80 and / Delivery Condition: N / Max. Grade: X60;

**Manufacturer of Line Pipe Plain End at PSL 2 – Service Annex H** – Type of Pipe: HFW / Delivery Condition: M / Max. Grade: X70 and / Delivery Condition: N / Max. Grade: X52;

**Manufacturer of Line Pipe Plain End at PSL 2 - Service Annex J** – Type of Pipe: HFW / Delivery Condition: M / Max. Grade: X80 and / Delivery Condition: N / Max. Grade: X52.

**Manufacturer of API 5CT Electric Welded Casing or Tubing Plain End** – Group 1, H40/PSL 1, J55/PSL 1, K55/PSL 1 and **N80(1)/PSL 1**. (Higher grades 5CT green pipes are supplied **upgradable up to P110 PE** when agreed).



The Company holds Underwriter Laboratory Certificate of Compliance  on Metallic Sprinkler Pipes **from ½ inch upto 16 inches**. The current  includes Steel Sprinklers Pipes in ASTM A135, A795 A53, Type E, Grade A & Grade B, Sch 10, Sch 20, Sch 30, Sch 40 and Sch 80 in range of ½ inch to 16 inch.


**JINDAL (INDIA) LIMITED– Coating system** is customized for 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, ISO 21809-1-2011, CSA-Z 245-20-21.NF A-49-710, DIN 30678, ISO 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  $-40^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$  for hydrocarbon, gas, water, have a long lifetime with excellent corrosion protection due to its aging, impact and cathodic disbondment resistance. 3LPE coating is very effective type coating with superior adhesion to steel, it guarantees protection to weld zone, good flexibility and 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 ( $-20^{\circ}\text{C}$  to  $+110^{\circ}\text{C}$ ). 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  $110^{\circ}\text{C}$ ).

**Liquid Internal Epoxy Coating:** Flow efficiency internal epoxy coating is 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.

The Company's Environmental Management System is  accredited as per **ISO 14001-2004**. The Occupational Health and Safety is certified to **OHAS 18001-2007** for the entire organisation.

The Product diversifications were implemented with addition of more mills up to 8" in HFIW Hollow Sections in rounds and shapes. These new HSS mills are equipped to meet all the requirements of latest Indian and International Standards : IS: 1239 (Part 1), IS: 1161, IS: 3589, IS: 3601, IS: 4270, IS: 9295, IS/ISO 3183, ASTM A53, A795, A135, ASTM A500 Grade A/B/C, ASTM A252, IS 4923 YST 310, CSA G 40.21 350 W and its equivalent Grades and Specifications.

Jindal (India) Limited as a company with a volume over 6,00,000 Tons per annum can assure that PRICE are Competitive. It is QUALITY what it has been working on for the last 50 Years. Customer satisfaction is not the end of its outstanding services, it looks to further improve the service level. The friendly and knowledgeable staff ensure that the customer's enquiries and orders are dealt with promptly. The low production cycle assists in reliable product deliveries. The Quality Management System is incorporated at each level of manufacturing process right from selection of input raw material to final finished product. Control instruments and equipment are sourced from globally renowned suppliers ensures a Total Quality Management. Care is taken to see that at each step the exact process and techniques are followed to give the fully tested product.



**HFW High Test Line Pipes Facility**

Production Capacity	240000 MT per annum
Manufacturing Process	Solid State HF Welding with Seam Annealing
Outside Diameter	Lines Pipes up to 20"(508.0 mm)
	Casings- 6 5/8", 7", 7 5/8", 8 5/8", 9 5/8", 10 3/4 ", 13 3/8", 16" & 20".
Thickness Range	Up to 0.562" (14.3 mm)
Pipe Length	SRL / DRL / TRL (6 meters to 18 meters)
Specifications	API 5L / API 5CT / 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

**3 Layer PE / PP/DFBE / Internal Liquid Epoxy Coating Facility**

Production Rate	250,000 Mtrs <sup>2</sup> /Annum (External 3LPE/PP/FBE /DFBE) & 200,000 Mtrs <sup>2</sup> /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	Up to 18 Meters
Coating Specifications	ISO-21809-1 / 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

**ERW/HFIW Black & Galvanized Steel Tubes 1/2" to 10"**

Production Capacity	160000 MT per annum
Manufacturing Process	ERW / HFW Welding Process
Outside Diameter	1/2" [15 mm] to 10" [250 mm]
Wall Thickness	2 mm to 9.5 mm
Pipe Length	4 Meters to 7 Meters
Specifications	IS, BS, ISO / ASTM / UL
Pipe Ends	Plain, Beveled or Socketed
Protective Coating	Bare, Galvanized or Rust Preventive Coating or Galvanized when agreed
End Protection	Protected with Plastic & Sockets



## HFIW Steel Hollow Sections 3" to 8" Mills

Production Capacity	60,000 MT per annum Each
Manufacturing Process	HFIW Welding up to 60 Mtr/Min
Outside Diameter	
1) Round	3"(88.9 mm) to 8"(219.1 mm) OD
2) Square	75 x 75 mm to 175 x 175 mm
3) Rectangular	100 x 50 mm to 250 x 100 mm
Wall Thickness	0.083" (2.1 mm) to 0.393" (10.0 mm)
Pipe Length	SRL & DRL (4 to 12 meters)
Specifications	ASTM / UL / CSA / EN / ISO / IS
Pipe Ends	Plain End, Square Cut or Beveled
Protective Coating	Bare or Rust Preventive Coating
End Protection	Protected with Plastic/Metallic Caps

## HFIW Steel Hollow Section 2" to 6" Mills

Production Capacity	60,000 MT per annum Each
Manufacturing Process	HFIW Welding up to 60 Mtr/Min
Outside Diameter	
1) Round	2"(60.3 mm) to 6"(168.3 mm) OD
2) Square	50 x 50 mm to 100 x 100 mm
3) Rectangular	60 x 40 mm to 125 x 75 mm
Wall Thickness	0.055" (1.4 mm) to 0.276" (7.0 mm)
Pipe Length	SRL & DRL (4 to 12 meters)
Specifications	ASTM / UL / CSA / EN / ISO / IS
Pipe Ends	Plain End, Square Cut or Beveled
Protective Coating	Bare or Rust Preventive Coating
End Protection	Protected with Plastic/Metallic Caps

## HFIW Steel Hollow Sections 1" to 2 1/2" Mills

Production Capacity	48,000 MT per annum Each
Manufacturing Process	HFIW Welding up to 80 Mtr/Min
Outside Diameter	
1) Round	31.8 mm to 76.3 mm OD
2) Square	25 x 25 mm to 60 x 60 mm
3) Rectangular	40 x 20 mm to 75 x 45 mm
Wall Thickness	0.031" (0.8 mm) to 0.216" (5.5 mm)
Pipe Length	SRL & DRL (4 to 12 meters)
Specifications	ASTM / UL / CSA / EN / ISO / IS
Pipe Ends	Plain End, Square Cut or Beveled
Protective Coating	Bare or Rust Preventive Coating or Galvanized as per requirement.
End Protection	Protected with Plastic/Metallic Caps

## HFIW Steel Hollow Section 1/2" to 2 1/2" Mills

Production Capacity	48,000 MT per annum Each
Manufacturing Process	HFIW Welding up to 80 Mtr/Min
Outside Diameter	
1) Round	21.3 mm to 76.3 mm OD
2) Square	25 x 25 mm to 60 x 60 mm
3) Rectangular	40 x 20 mm to 60 x 40 mm
Wall Thickness	0.031" (0.8 mm) to 0.216" (5.5 mm)
Pipe Length	SRL & DRL (4 to 12 meters)
Specifications	ASTM / UL / CSA / EN / ISO / IS
Pipe Ends	Plain End, Square Cut or Beveled
Protective Coating	Bare or Rust Preventive Coating or Galvanized as per requirement.
End Protection	Protected with Plastic/Metallic Caps

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

For more details visit our website [www.jindalindia.com](http://www.jindalindia.com).



## ROUND TUBES & SHAPES

Outer Diameter : 21.3mm - 508mm  
Thickness Range : 1.2mm - 14.3mm  
Length : 6 meter to 18 meter

### APPLICATIONS

- Transmission of Oil & Gas with API monogram
- Metallic Sprinkler Pipe for Fire Protection Service Compliance to UL Listed
- Mechanical and General Engineering
- Structural
- Water and Sewage
- Water Wells
- Fencing
- Idlers
- & many more.....



### PRODUCTION STANDARDS

- API 5L-2013, IS/ISO 3183-2007
- API 5CT-2012
- ASTM A-53 Gr. A & B
- ASTM A-795 Gr. A & B SCH 10/30/40
- ASTM A-135 Gr. A & B SCH 10
- IS:1239 (Part-1) 2004
- DIN 2439, DIN 2440, DIN 2441, DIN 2444
- BS 1387 / EN 10255
- IS:3601 - 2006
- IS:1161 - 2014
- IS:3589 - 2001
- IS:4270 - 2001
- IS:9295 - 1983
- IS:4923 - 1997
- ASTM A-500 Gr. A, B & C
- ASTM A-252 Gr.1, 2 & 3
- UL - 852

### TEST PERFORMED

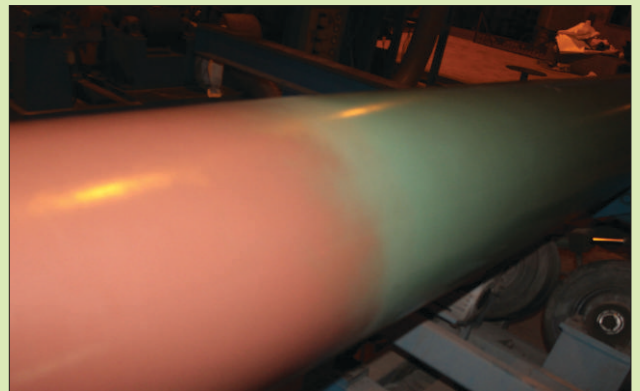
- Hydrostatic Test
- Eddy Current Test / Ultrasonic Test / Magnetic Particle Test / End Radiography (on request)
- Flattening / Flaring Test / Bend Test
- Chemical Analysis
- Other Tests as required by the Standard

### FINISHING OPERATIONS

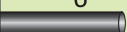
- Plain End
- Threaded and Coupled
- Bevel Ends
- Cut Lengths

### SURFACE PROTECTION

- Black (Self Colored Un-coated)
- Outside Protective Coating-Oil / Varnish / Rust Preventive / Other Coat on Agreement
- Hot Dip Galvanized
- 3LPE / 3LPP / FBE / DFBE / Internal Liquid Epoxy





**NOTE: For details please refer Specification Sheet & Purchase Agreement.**







## APPROVALS AND COMPLIANCE

 IS: 1161 1998	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
 IS: 1239 2004 (Part 1)	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
 IS: 3183 2007	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.
 IS: 3589 2001	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
 IS: 3601 2006	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
 IS: 4270 2001	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
 IS: 4923 1997	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
 IS: 9295 1983	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
 UL:852	Metallic Sprinkler Pipe for Fire Protection Service. Schedule 10,20,30,40 & 80

## ACCREDITATIONS

ISO : 9001



Manufacture and Coating of Line Pipes

API Specification Q1, Ninth Edition



Manufacture and Coating of Line Pipes

ISO:14001:2004 + AC : 2009



Manufacturing and Supply of ERW Steel Pipes, coated and galvanized pipes as per API Standards, Cold Rolled Sheets, Galvanized Plain and Corrugated Sheets, CRC Sheets, Aluminium Sheets, Foil and Aluminium Foil Based Laminates used for Packaging of Food products and Pharmaceuticals.

OHSAS :18001 : 2007



Manufacturing and Supply of ERW Steel Pipes, coated and galvanized pipes as per API Standards, Cold Rolled Sheets, Galvanized Plain and Corrugated Sheets, CRC Sheets, Aluminium Sheets, Foil and Aluminium Foil Based Laminates used for Packaging of Food products and Pharmaceuticals.



**LINE PIPE SIZE RANGE**

Diameter			WALL THICKNESS ( mm / Inch )																				Diameter												
O.D.	O.D.	N.B.	3.2	3.6	4.0	4.4	4.5	4.8	5.0	5.2	5.4	5.6	5.9	6.0	6.3	6.4	7.0	7.1	7.9	8.0	8.2	8.7	8.8	9.5	10.0	10.3	11.0	11.1	12.7	14.3	mm	inch	O.D.	O.D.	N.B.
mm	inch	mm.	0.125"	0.141"	0.157"	0.173"	0.177"	0.189"	0.196"	0.204"	0.212"	0.220"	0.232"	0.236"	0.248"	0.251"	0.275"	0.279"	0.311"	0.314"	0.322"	0.342"	0.346"	0.374"	0.393"	0.405"	0.433"	0.437"	0.500"	0.562"	168.3	6.625"	150	6"	150
219.1	8.625"	200																															219.1	8"	200
273.1	10.750"	250																															273.1	10"	250
323.9	12.750"	300																															323.9	12"	300
355.6	14.000"	350																															355.6	14"	350
406.4	16.000"	400																															406.4	16"	400
457.0	18.000"	450																															457.0	18"	450
508.0	20.000"	500																															508.0	20"	500

Note: Size other than those shown in the table are also supplied subject to negotiation.



**WELDED STEEL LINE PIPE CONFORMING TO API-5L**

NB (Inch)	OD (mm)	Wall Thk. (mm)	Schedule	Plain End Weight		STD Test Pressure ( Bar)									
				Kg/Mtr	Lb/Ft	Grade A	Grade B	Grade X42	Grade X46	Grade X52	Grade X56	Grade X60	Grade X65	Grade X70	Grade X80
6 $\frac{5}{8}$	168.3	4.0		16.21	10.80	74	86	103	113	128	138	148	160	172	197
6 $\frac{5}{8}$	168.3	4.4		17.78	11.87	81	95	114	124	141	151	162	176	189	216
6 $\frac{5}{8}$	168.3	4.8		19.35	12.94	89	103	124	136	154	165	177	192	207	236
6 $\frac{5}{8}$	168.3	5.2		20.91	13.90	96	112	134	147	166	179	192	208	224	256
6 $\frac{5}{8}$	168.3	5.6		22.47	15.00	103	120	145	158	179	193	208	224	241	276
6 $\frac{5}{8}$	168.3	6.4		25.55	17.04	118	137	165	181	205	220	236	256	276	315
6 $\frac{5}{8}$	168.3	7.1	40	28.22	18.99	131	153	184	201	227	244	262	283	306	349
8 $\frac{5}{8}$	219.1	4.8		25.37	16.96	68	79	95	104	118	127	136	147	159	181
8 $\frac{5}{8}$	219.1	5.2		27.43	18.28	74	86	103	113	128	137	147	159	172	197
8 $\frac{5}{8}$	219.1	5.6		29.48	19.68	79	92	111	122	138	148	159	172	185	212
8 $\frac{5}{8}$	219.1	6.4	20	33.57	22.38	91	106	127	139	157	169	181	196	212	242
8 $\frac{5}{8}$	219.1	7.0		36.61	24.72	99	115	139	152	172	185	198	215	231	265
8 $\frac{5}{8}$	219.1	7.9		41.14	27.73	112	130	157	171	194	209	224	242	261	299
8 $\frac{5}{8}$	219.1	8.2	40	42.65	28.58	116	135	163	178	202	217	232	252	271	310
8 $\frac{5}{8}$	219.1	8.7		45.14	30.45	123	144	173	189	214	230	247	267	288	329
10 $\frac{3}{4}$	273.1	5.2		34.35	22.89	59	69	94	103	116	125	134	145	156	179
10 $\frac{3}{4}$	273.1	5.6		36.94	24.65	64	74	101	111	125	135	144	156	168	192
10 $\frac{3}{4}$	273.1	6.4		42.09	28.06	73	85	116	126	143	154	165	178	192	220
10 $\frac{3}{4}$	273.1	7.1		46.57	31.23	81	94	128	140	159	171	183	198	213	244
10 $\frac{3}{4}$	273.1	7.8		51.03	34.27	89	103	141	154	174	187	201	218	235	268
10 $\frac{3}{4}$	273.1	8.7		56.72	38.27	99	115	157	172	194	209	224	243	262	299
10 $\frac{3}{4}$	273.1	9.3	40	60.50	40.52	106	123	168	184	208	223	240	259	280	320
12 $\frac{3}{4}$	323.9	5.6		43.96	29.34	54	63	85	93	106	113	122	132	142	162
12 $\frac{3}{4}$	323.9	6.4	20	50.11	33.41	61	71	97	106	121	130	139	150	162	185
12 $\frac{3}{4}$	323.9	7.1		55.47	37.46	68	79	108	118	134	144	154	167	180	206
12 $\frac{3}{4}$	323.9	7.9		61.56	41.48	76	88	120	131	149	160	172	186	200	229
12 $\frac{3}{4}$	323.9	8.4	30	60.35	43.81	81	94	128	140	158	170	183	198	213	243
12 $\frac{3}{4}$	323.9	8.7		67.62	45.62	83	97	132	145	164	176	189	205	221	252
12 $\frac{3}{4}$	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

**HFW API-5L PSL 1/2 Specification - Physical and Chemical Compositions**

Grade	Tensile Properties			Chemical Compositions (%)						End Finish	Surface Finish
	Yield Strength Mpa(Min)	Tensile Strength Mpa(Min)	Min Eln% GL.50mm	C (Max)	Mn (Max)	P (max)	S (Max)	Si (Max)	Others		
A	210	335	Min elongation in 50.8mm G.L. as per API 5L Spec.	0.220	0.90	0.030	0.030	0	Nb, V, Ti & other to be used as specially agreed upon.	1) Plain Bevel 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.
B	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			



**ERW CASING PIPES CONFORMING TO API 5CT-2012**

DIMENSIONS & WEIGHTS									
DESIGNATION		OUTSIDE DIAMETER (D)		WALL THICKNESS		INSIDE DIAMETER		PLAIN-END WEIGHT	
Inch	lb/ft	Inch	mm	Inch	mm	Inch	mm	lb/ft	kg/m
6-5/8.	20.00	6.625	168.30	0.288	7.30	6.049	153.64	19.510	29.00
6-5/8.	24.00	6.625	168.30	0.352	8.90	8.921	150.40	23.600	35.10
6-5/8.	28.00	6.625	168.30	0.417	10.60	5.791	147.10	27.670	41.20
6-5/8.	32.00	6.625	168.30	0.475	12.10	5.675	144.15	31.230	46.48
7.00	17.00	7.000	177.80	0.231	5.90	6.538	166.06	16.720	24.90
7.00	20.00	7.000	177.80	0.272	6.90	6.456	163.98	19.560	29.10
7.00	23.00	7.000	177.80	0.317	8.05	6.366	161.70	22.650	33.70
7.00	26.00	7.000	177.80	0.362	9.20	6.276	159.41	25.690	38.20
7.00	29.00	7.000	177.80	0.408	10.40	6.184	157.07	28.750	42.80
7.00	32.00	7.000	177.80	0.453	11.50	6.094	154.79	31.700	47.20
7.00	35.00	7.000	177.80	0.498	12.70	6.004	152.50	34.610	51.50
8-5/8.	24.00	8.625	219.10	0.264	6.70	8.097	205.66	23.600	35.10
8-5/8.	28.00	8.625	219.10	0.304	7.70	8.017	203.63	27.040	40.24
8-5/8.	32.00	8.625	219.10	0.352	8.90	7.921	201.19	31.130	46.33
8-5/8.	36.00	8.625	219.10	0.400	10.20	7.825	198.75	35.170	52.34
8-5/8.	40.00	8.625	219.10	0.452	11.50	7.725	196.21	39.330	58.53
8-5/8.	44.00	8.625	219.10	0.500	12.70	7.625	193.67	43.430	64.63
9-5/8.	32.30	9.625	244.50	0.312	7.90	9.001	228.62	31.060	46.20
9-5/8.	36.00	9.625	244.50	0.352	8.90	8.921	226.59	34.890	51.90
9-5/8.	4.00	9.625	244.50	0.395	10.00	8.835	224.41	38.970	58.00
9-5/8.	43.50	9.625	244.50	0.435	11.00	8.755	222.38	42.730	63.60
9-5/8.	47.00	9.625	244.50	0.472	12.00	8.681	220.50	46.180	68.70
10-3/4.	32.75	10.750	273.10	0.279	7.10	10.192	258.87	31.230	46.48
10-3/4.	40.50	10.750	273.10	0.350	8.90	10.050	255.27	38.910	57.90
10-3/4.	45.50	10.750	273.10	0.400	10.20	9.950	252.73	44.260	65.87
10-3/4.	51.00	10.750	273.10	0.450	11.50	9.850	250.19	49.550	73.74
10-3/4.	55.50	10.750	273.10	0.495	12.60	9.760	247.90	54.260	80.75
13-3/8.	48.00	13.375	339.70	0.330	8.40	12.715	322.96	46.020	68.50
13-3/8.	54.50	13.375	339.70	0.380	9.70	12.615	320.42	52.790	78.60
13-3/8.	61.00	13.375	339.70	0.430	10.90	12.515	317.88	59.500	88.55
13-3/8.	68.00	13.375	339.70	0.480	12.20	12.415	315.34	66.170	98.50
16	65.00	16.000	406.40	0.375	9.50	15.25	387.34	62.640	93.22
16	75.00	16.000	406.40	0.438	11.10	15.124	384.15	72.860	108.40
16	84.00	16.000	406.40	0.495	12.60	15.01	381.25	82.050	122.10
18-5/8	87.50	18.625	473.07	0.435	11.10	17.755	450.98	84.590	125.90
20	94.00	20.000	508.00	0.438	11.10	19.124	485.75	91.590	136.30
20	106.50	20.000	508.00	0.500	12.70	19.000	482.60	104.230	155.10

**API-5CT: GROUP 1 PSL 1 -PHYSICAL AND CHEMICAL REQUIREMENT**

Grade	Type	Tensile Properties			Chemical Requirements(%)				
		Yield Strength Mpa(Min)	Tensile Strength Mpa(Min)	Total elongation under load %	C (Max)	Mn (Max or range)	P (max)	S (Max)	Si (Max)
H-40	—	40	60	0.5	—	—	0.030	0.030	—
J-55	—	55	75	0.5	—	—	0.030	0.030	—
K-55	—	55	95	0.5	—	—	0.030	0.030	—
N-80	1	80	100	0.5	—	—	0.030	0.030	—

# DIMENSIONS AND WEIGHTS OF WELDED STEEL PIPES

**SCHEDULE / WALL THICKNESS / WEIGHT: ASME-36.10**

NPS DESIG NATION	OUTSIDE DIAMETER		SCHEDULE / WALL THICKNESS / WEIGHT: ASME-36.10																
			10		20		30		STD		40		XS		60		80		
			Inch lb/ft	mm kg/m	Inch lb/ft	mm kg/m	Inch lb/ft	mm kg/m	Inch lb/ft	mm kg/m	Inch lb/ft	mm kg/m	Inch lb/ft	mm kg/m	Inch lb/ft	mm kg/m	Inch lb/ft	mm kg/m	Inch lb/ft
½	0.840	21.3	0.083 0.67	2.11 1.00	—	—	0.095 0.76	2.41 1.12	—	—	0.109 0.85	2.77 1.27	—	—	—	—	0.147 1.09	3.73 1.62	
¾	1.050	26.7	0.083 0.86	2.11 1.28	—	—	0.095 0.97	2.41 1.44	—	—	0.113 1.13	2.87 1.69	—	—	—	—	0.154 1.48	3.91 2.20	
1	1.315	33.4	0.109 1.41	2.77 2.09	—	—	0.114 1.46	2.90 2.18	—	—	0.133 1.68	3.38 2.50	—	—	—	—	0.179 2.17	4.55 3.24	
1 ¼	1.660	42.2	0.109 1.81	2.77 2.69	—	—	0.117 1.93	2.97 2.87	—	—	0.140 2.27	3.56 3.39	—	—	—	—	0.191 3.00	4.85 4.47	
1 ½	1.900	48.3	0.109 2.09	2.77 3.11	—	—	0.125 2.37	3.18 3.53	—	—	0.145 2.72	3.68 4.05	—	—	—	—	0.200 3.63	5.08 5.41	
2	2.375	60.3	0.109 2.64	2.77 3.93	—	—	0.125 3.01	3.18 4.48	—	—	0.154 3.66	3.91 5.44	—	—	—	—	0.218 5.03	5.54 7.48	
2 ½	2.875	73.0	0.120 3.53	3.05 5.26	—	—	0.188 5.4	4.78 8.04	—	—	0.203 5.80	5.16 8.63	—	—	—	—	0.276 7.67	7.01 11.41	
3	3.500	88.9	0.120 4.35	3.05 6.46	—	—	0.188 6.66	4.78 9.92	—	—	0.216 7.58	5.49 11.29	—	—	—	—	0.300 10.26	7.62 15.27	
4	4.500	114.3	0.120 5.62	3.05 8.37	—	—	0.188 8.67	4.78 12.91	—	—	0.237 10.80	6.02 16.07	—	—	—	—	0.337 15.00	8.56 22.32	
5	5.563	141.3	0.134 7.78	3.40 11.56	—	—	—	—	—	—	0.258 14.63	6.55 21.77	—	—	—	—	0.375 20.80	9.52 30.94	
6	6.625	168.3	0.134 9.3	3.4 13.83	—	—	—	—	—	—	0.280 18.97	7.11 28.28	0.432 28.57	10.97 42.56	—	—	0.432 28.57	10.97 42.56	
8	8.625	219.1	0.148 13.41	3.76 19.37	0.250 22.360	6.35 33.31	0.277 24.70	7.04 36.82	8.18 42.55	0.322 28.55	8.18 42.55	8.18 42.55	8.18 42.55	8.18 42.55	8.18 42.55	8.18 42.55	10.97 43.39	12.70 64.64	12.70 64.64
10	10.75	273.0	0.165 18.65	4.19 27.78	0.250 28.04	6.35 41.75	0.307 34.24	7.80 51.01	9.27 60.29	0.365 40.45	9.27 60.29	9.27 60.29	9.27 60.29	9.27 60.29	9.27 60.29	9.27 60.29	10.97 43.39	12.70 64.64	12.70 64.64
12	12.75	323.8	0.180 24.19	4.57 35.98	0.250 33.38	6.35 49.71	0.330 43.81	8.38 65.18	9.52 73.78	0.406 53.52	10.31 79.70	10.31 79.70	10.31 79.70	10.31 79.70	10.31 79.70	10.31 79.70	12.70 107.39	12.70 64.64	12.70 64.64
14	14.000	355.6	0.250 36.71	6.35 54.68	0.312 45.61	7.92 67.90	0.375 54.57	9.52 81.25	9.52 81.25	0.438 63.44	11.13 94.55	11.13 94.55	11.13 94.55	11.13 94.55	11.13 94.55	11.13 94.55	12.70 107.39	12.70 64.64	12.70 64.64
16	16.000	406.4	0.250 42.05	6.35 62.64	0.312 52.27	7.92 77.83	0.375 62.58	9.52 93.17	9.52 93.17	0.500 82.77	12.70 123.30	12.70 123.30	12.70 123.30	12.70 123.30	12.70 123.30	12.70 123.30	12.70 64.64	12.70 64.64	12.70 64.64
18	18.000	457.0	0.250 47.39	6.35 70.60	0.312 58.94	7.92 87.75	0.438 62.15	11.13 122.43	11.13 105.10	—	—	—	—	—	—	—	12.70 139.20	12.70 64.64	12.70 64.64
20	20.000	508.0	0.250 52.73	6.35 78.55	0.375 78.60	9.52 117.02	0.500 104.13	12.70 155.12	12.70 117.02	—	—	—	—	—	—	—	12.70 155.12	12.70 64.64	12.70 64.64



**TECHNICAL DATA OF PIPES CONFORMING TO ASTM A-53 GR. A & B (BLACK AND GALVANIZED)**

Nominal Bore		Outside Diameter		Schedule	Wall Thickness		Weight of Black Pipes Plain End			No. of pcs. 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		

**TECHNICAL DATA OF PIPES CONFORMING TO ASTM A-53 GR. A & B**

Chemical Properties				Composition, Maximum %					
	C	Mn	P	S	Cu	Ni	Cr	Mo	V
Grade A	0.25	0.95	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
	Pipe Size 50NB or larger	±1%
Thickness	For all sizes	-12.5%
Weight	For all sizes	±10%

**MECHANICAL PROPERTIES**

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



**ASTM A-795 (BLACK & GALVANISED STEEL PIPES FOR FIRE PROTECTION)**

Nominal Bore		Outside Diameter		SCH 10				No. of piece per Bundle	SCH 30/40				No. of piece per Bundle
				Wall Thickness		Weight Plain End			Wall Thickness		Weight Plain End		
mm	inch	mm	inch	mm	inch	kg/m	lb/ft		mm	inch	kg/m	lb/ft	
15	½	21.3	0.840	—	—	—	—	2.77	0.109	1.27	0.85	90	
20	¾	26.7	1.050	2.11	0.083	1.28	0.86	2.87	0.113	1.69	1.13	90	
25	1	33.4	1.315	2.77	0.109	2.09	1.41	3.38	0.133	2.50	1.68	60	
32	1¼	42.2	1.660	2.77	0.109	2.69	1.81	3.56	0.140	3.39	2.27	42	
40	1½	48.3	1.900	2.77	0.109	3.11	2.09	3.68	0.145	4.05	2.72	36	
50	2	60.3	2.375	2.77	0.109	3.93	2.64	3.91	0.154	5.45	3.66	26	
65	2½	73.0	2.875	3.05	0.120	5.26	3.53	5.16	0.205	8.64	5.80	18	
80	3	88.9	3.500	3.05	0.120	6.46	4.34	5.49	0.216	11.29	7.58	14	
90	3½	101.6	4.000	3.05	0.120	7.41	4.98	5.74	0.226	13.58	9.12	12	
100	4	114.3	4.500	3.05	0.120	8.37	5.62	6.02	0.237	16.09	10.80	10	
125	5	141.3	5.563	3.4	0.134	11.58	7.78	6.55	0.258	21.79	14.63	8	
150	6	168.3	6.625	3.4	0.134	13.85	9.3	7.11	0.280	28.29	18.99	7	
200	8	219.1	8.625	4.75	0.188	25.26	16.96	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
Yeild 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 Pipe Size 50mm NB or larger	+/- 0.41mm +/- 1%OD
Thickness	For all sizes	-12.5% (max)
Weight	For all sizes	+/- 5%

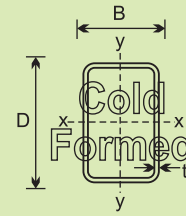
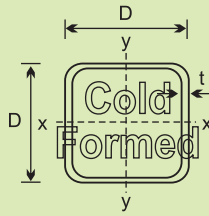
**GALVANISING**

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





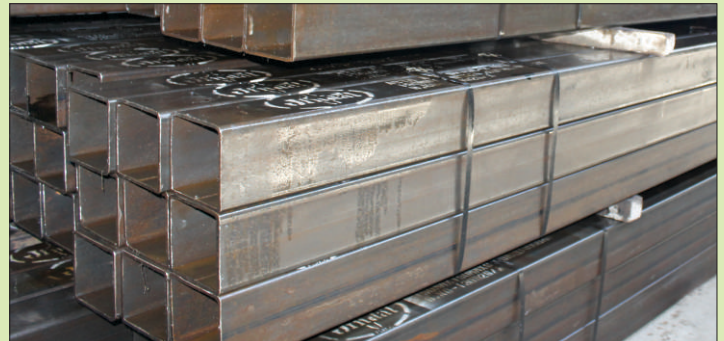
# DIMENSIONS & PROPERTIES



<b>Square Hollow Section IS 4923:1997 / EN 10219-1 / ASTM A-500 COLD FORMED SHS</b>					
Outside Dimensions inch (mm)	Nominal Wall Thickness		Weight per Unit Length		Ratio for local Buckling
	in.	mm	lb/ft	kg/m	d/t'
1 x 1 (25 x 25)	0.078	2.00	0.93	1.39	7.7
	0.095	2.41	1.09	1.62	5.5
	0.133	3.38	1.41	2.10	2.5
1¼ x 1¼ (30 x 30)	0.078	2.00	1.13	1.68	10.0
	0.095	2.41	1.32	1.97	7.4
	0.133	3.38	1.74	2.59	3.9
1½ x ½ (40 x 40)	0.078	2.00	1.55	2.31	15.0
	0.095	2.41	1.83	2.73	11.6
	0.133	3.38	2.46	3.66	6.8
2 x 2 (50 x 50)	0.110	2.79	2.69	4.00	13.2
	0.125	3.18	3.04	4.52	11.0
	0.154	3.91	3.65	5.44	8.0
2½ x 2½ (60 x 60)	0.141	3.58	4.32	6.43	12.7
	0.188	4.78	5.59	8.32	8.3
	0.250	6.35	7.10	10.56	5.0
3 x 3 (76 x 76)	0.156	3.96	5.78	8.60	14.2
	0.188	4.78	6.86	10.21	10.9
	0.250	6.35	8.80	13.09	7.0
4 x 4 (100 x 100)	0.125	3.20	6.50	9.68	26.8
	0.188	4.78	9.31	13.85	16.3
	0.250	6.35	12.02	17.89	11.0
	0.312	7.92	14.52	21.61	7.8
5 x 5 (125 x 125)	0.125	3.20	8.22	12.23	34.7
	0.188	4.78	11.86	17.65	21.6
	0.250	6.35	15.42	22.94	15.0
	0.312	7.92	18.77	27.93	11.0
6 x 6 (150 x 150)	0.141	3.60	11.13	16.56	37.3
	0.188	4.78	14.41	21.44	26.9
	0.250	6.35	18.82	28.00	19.0
	0.312	7.92	23.02	34.25	14.2
7 x 7 (175 x 175)	0.141	3.60	13.06	19.43	44.4
	0.188	4.78	16.85	25.07	32.2
	0.250	6.35	22.04	32.80	23.0
	0.312	7.92	26.99	39.16	17.4

<b>COLD FORMED RHS</b>						
Outside Dimensions inch (mm)	Nominal Wall Thickness		Weight per Unit Length		Ratios for local Buckling	
	in.	mm	lb/ft	kg/m	d/t'	b/t'
4 x 2 (100 x 50)	0.118	3.00	4.51	6.71	28.9	11.9
	0.156	3.96	5.78	8.6	20.7	7.8
	0.188	4.78	6.86	10.21	16.3	5.6
	0.250	6.35	8.80	13.09	11.0	3.0
5 x 3 (125 x 76)	0.125	3.20	6.50	9.68	34.7	18.8
	0.188	4.78	9.31	13.85	21.6	10.9
	0.250	6.35	12.02	17.89	15.0	7.0
	0.312	7.92	14.52	21.61	11.0	4.6
6 x 4 (150 x 100)	0.125	3.20	8.22	12.23	42.6	26.8
	0.188	4.78	11.86	17.65	26.9	16.3
	0.250	6.35	15.42	22.94	19.0	11.0
	0.312	7.92	18.77	27.93	14.2	7.8
8 x 4 (200 x 100)	0.141	3.60	11.13	16.56	51.4	23.2
	0.188	4.78	14.71	21.44	37.5	16.3
	0.250	6.35	18.82	28.00	27.0	11.0
	0.312	7.92	23.02	34.25	20.7	7.8
8 x 6 (200 x 150)	0.141	3.60	13.06	19.43	51.4	37.3
	0.188	4.78	16.85	25.07	37.5	26.9
	0.250	6.35	22.04	32.80	27.0	19.0
	0.312	7.92	26.99	39.16	20.7	14.2
10 x 4 (250 x 100)	0.150	3.80	13.75	20.47	61.8	21.7
	0.188	4.78	16.86	25.09	48.1	16.3
	0.250	6.35	22.05	32.81	35.0	11.0
	0.312	7.92	27.07	40.28	27.1	7.8

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.





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

I. SIZE RANGE :		C H S																		
SIZES		WALL THICKNESS																		
NPS-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 RANGE :		S H S																		
SIZES		WALL 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 RANGE :		R H S																		
SIZES		WALL 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.



**ERW Steel Tubes for Water & Sewage Purpose Conforming to IS 3589:2001**

NB Size	Out Side Diameter	Wall Thickness	Plain 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
		2.60	12.30	81
175	193.7	3.60	16.90	59
		4.50	21.00	48
		6.30	29.10	34
		2.60	13.90	72
200	219.1	3.60	19.10	52
		4.50	23.80	42
		6.30	33.10	30
		3.60	23.90	42
		4.00	26.50	38
250	273	5.00	33.90	30
		6.30	41.40	24
		7.10	46.57	21
		8.00	52.30	19
		10.00	64.90	15
		4.00	31.60	32
300	323.9	5.00	35.40	28
		5.60	44.00	23
		7.10	55.50	18
		5.60	48.33	21
		6.40	55.11	18
350	355.6	7.10	61.02	16
		7.90	67.74	15
		8.70	74.42	13
		9.50	81.08	12
		5.60	55.35	18
400	406.4	6.40	63.13	16
		10.00	97.76	10
		12.70	123.31	8
		5.60	62.34	16
		8.00	88.58	11
450	457.0	10.00	110.24	9
		12.70	139.16	7
		5.60	69.38	14
500	508.0	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

**ERW Steel Tubes For Water Wells Conforming to IS 4270:2001 Plain End Casing Pipes**

NB Size	Out Side Diameter	Wall Thickness	Nominal Weight	
			Kg/Mtr	Mtr/Tonne
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
		5.6	55.35	18
		6.4	63.13	16
450	457.2	6.4	63.13	16
		8.7	85.33	12
		10.0	97.76	10
		5.6	62.37	16
450	457.2	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=Gl.
Fe410	410	235	15%



**TECHNICAL DATA OF MS BLACK & GALVANIZED ROUND TUBES**

**BS 1387-1985 / Eqvt EN 10255 : 2007 / EN 10240 : 1998 / DIN 2444  
(IS:1239-Part-1-2004) / DIN2439 / DIN2440 / DIN2441**

NB and Series		Outer Diameter		Wall Thickness		Nominal Weight			
		Min.	Max			Plain 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 2. Medium & Heavy Tubes	+ not limited - 8% + not limited - 10%	1. Single Tube (Light Series) 2. Single Tube (Medium & Heavy Series) 3. For quantities per load of 10 tonnes minimum (Light Series) 4. For quantities per load of 10 tonnes minimum (Medium and Heavy Series)	+10% & -8% ±10% +7.5% & -5% ±7.5%	Random Length 4 to 7 Mtrs. unless otherwise agreed, can also be supplied in Exact and Approximate length.



## Steel Tubes for Structural Purposes Conforming to IS 1161:2014

N.B.	Outside Diameter	Thickness	Nominal Weight		Calculated Nominal Weight	
			Black Tubes		Galvanized Tubes	
			Plain End		Plain End	
mm	mm	Kg/Meter	Mtr/Tonne	Kg/Meter	Mtr/Tonne	
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	3.6	8.7	115	8.97	111
		4	9.63	104	7.2	139
		4.8	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
		5.9	34.7	29	—	—
		6.3	37.0	27	—	—
250	273	8.0	46.7	21	—	—
		10.0	57.8	17	—	—
		5.9	38.9	26	—	—
300	323.9	6.3	41.4	24	—	—
		8.0	52.3	19	—	—
		10.0	64.9	15	—	—
350	355.6	12.0	77.2	13	—	—
		6.3	49.3	20	—	—
		8.0	62.3	16	—	—
		10.0	77.4	13	—	—
		12.0	92.3	11	—	—
		8.0	68.6	15	—	—
		10.0	85.2	12	—	—
		12.0	101.7	10	—	—

Tensile Properties			
Grade	Y.S. (Min) Mpa	T.S. (Min) Mpa	%Age Elongation on
	(kg/mm <sup>2</sup> )	(kg/mm <sup>2</sup> )	
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

Weight	Tolerance
Single Tube	±10%
10 Tonne 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%



## ERW Steel Tubes for idlers for Belt Conveyors as per IS 9295:1983 Dimension and Nominal Masses

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
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



**Technical Data of IS: 3601:2006 Tubes for Mechanical & General Engg. Purpose**

N.B. Size		OD (mm)	Thickness (mm)	Weight Kg/Mtr.	Meters per Tonne
mm	In				
15	½"	21.3	1.8	0.866	1155
			2.0	0.952	1050
			2.6	1.2	833
			3.2	1.43	699
			4.0	1.71	585
			1.8	1.11	901
			2.0	1.23	813
20	¾"	26.9	2.3	1.4	714
			2.6	1.56	641
			3.2	1.87	535
			4.0	2.26	442
			2.0	1.56	641
25	1"	33.7	2.3	1.78	562
			2.6	1.99	503
			3.2	2.41	415
			4.0	2.93	341
			4.5	3.24	309
			2.3	2.27	441
			2.6	2.55	392
32	1.25"	42.4	3.2	3.09	324
			3.6	3.44	291
			4.0	3.79	264
			5.0	4.61	217
			5.4	4.93	203
			2.3	2.61	383
			2.6	2.93	341
40	1.5"	48.3	2.9	3.25	308
			3.2	3.56	281
			4.0	4.37	229
			4.9	5.23	191
			5.0	5.34	187
			5.6	5.9	170
			5.9	6.16	162
			2.3	3.29	304
			2.6	3.7	270
			2.9	4.11	243
50	2"	60.3	3.2	4.51	222
			3.6	5.03	199
			4.0	5.55	180
			4.5	6.19	162
			5.0	6.82	147
			5.6	7.55	133
			6.3	8.39	119
			2.6	5.24	191
			3.2	5.75	174
65	2.5"	76.1	3.6	6.44	155
			4.0	7.11	141
			4.5	7.95	126
			5.0	8.77	114
			5.4	9.42	106
			6.3	10.8	93
			7.1	12.1	83
			2.9	6.15	163
			3.2	6.76	148
			80	3"	88.9
5.0	10.3	97			
5.4	11.1	90			
5.6	11.5	87			
6.3	12.8	78			
			8.0	16	63

NB:- Other Sizes upto 406.4 mm OD &amp; 12.7 mm Thickness as agreed



# JINDAL (INDIA) LIMITED

(ISO 9001:2008, 14001:2004, OHSAS 18001:2007)

# CREATING BENCHMARKS

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*John M. White*  
Vice President, Global Industry Services

## Certificate of Authority to use the Official API Monogram

License Number: 5L-0713

The American Petroleum Institute hereby grants to

**JINDAL (INDIA) LIMITED**  
NH-6, Jangalpur, P.O: Argori  
Howrah, West Bengal  
India

the right to use the Official API Monogram® on manufactured products under the conditions in the official publications of the American Petroleum Institute entitled API Spec Q1™ and API-SL and in accordance with the provisions of the License Agreement.

In all cases where the Official API Monogram is applied, the API Monogram shall be used in conjunction with this certificate number: **5L-0713**

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The scope of this license includes the following: Manufacturer of Line Pipe Plain End at PSL 1 - Type of Pipe: HRW / Line Pipe / Max. Grade: X70 / Delivery Condition: M / Max. Grade: X70 and / Delivery Condition: R / Max. Grade: X80 and / Delivery Condition: N / Max. Grade: X80; Manufacturer of Line Pipe Plain End at PSL 2 - Type of Pipe: HRW / Delivery Condition: M / Max. Grade: X70 and / Delivery Condition: R / Max. Grade: X80; Manufacturer of Line Pipe Plain End at PSL 2 - Service Annex H - Type of Pipe: HRW / Delivery Condition: M / Max. Grade: X70 and / Delivery Condition: N / Max. Grade: X80; Manufacturer of Line Pipe Plain End at PSL 2 - Service Annex J - Type of Pipe: HRW / Delivery Condition: M / Max. Grade: X80 and / Delivery Condition: N / Max. Grade: X82

OHS Exclusions: Design and Development

Effective Date: **JUNE 2, 2015**  
Expiration Date: **JULY 6, 2018**

To verify the authenticity of this license, go to [www.api.org/composlist](http://www.api.org/composlist).



**American Petroleum Institute**



American Petroleum Institute

*John M. White*  
Vice President, Global Industry Services

REGISTRATION NO. Q1-088

### Certificate of Registration

The American Petroleum Institute certifies that the quality management system of **JINDAL (INDIA) LIMITED** (NH-6, Jangalpur, P.O: Argori, Howrah, West Bengal, India) has been assessed by the American Petroleum Institute and found to be in conformance with the scope of this registration and the approved quality management system applicable to the **API Specification Q1** Manufacture and Coating of HFW Line Pipes.

API approves the organization's justification for including: Design and Development

Effective Date: **JULY 6, 2015**  
Expiration Date: **JULY 6, 2018**  
Registration Status: **JULY 6, 2015**

*John M. White*  
Vice President, Global Industry Services

QMS REGISTERED

### Certificate of Registration

APIQMS REGISTRATION NUMBER: **ISO 9001:2008**

This certificate certifies that the quality management system of **JINDAL (INDIA) LIMITED** (NH-6, Jangalpur, P.O: Argori, Howrah, West Bengal, India) has been assessed by the American Petroleum Institute and found to be in conformance with the scope of this registration and the approved quality management system applicable to the **ISO 9001:2008** Manufacture and Coating of HFW Line Pipes.

APIQMS approves the organization's justification for including: Design and Development

Effective Date: **JULY 6, 2015**  
Expiration Date: **JULY 6, 2018**  
Registration Status: **JULY 6, 2015**

*John M. White*  
Vice President, Global Industry Services

QS QUALITY SERVICES

### CERTIFICATE

Certificate no. 7277

**JINDAL (INDIA) LTD.**  
REGD. OFFICE: 6/10, 2<sup>nd</sup> FLOOR, CHANDRANAGAR ROAD, BELUR MATH, HOBBANYS, 711 001 (P.O. ARGORI, HOWRAH, WEST BENGAL, INDIA)  
WORKS IN: 6, VALLEGE JANGALPUR, P.O. ARGORI, P.O. INDIA.

The management system includes: **MANUFACTURE AND COATING OF HFW LINE PIPES**

ISO 14001:2004 + AC: 2009

On 23rd June 2015, QS Quality Services has assessed the management system of the above mentioned company and has found it to be in conformance with the requirements established by the following standard:

ISO 14001:2004 + AC: 2009

The management system includes: **MANUFACTURE AND COATING OF HFW LINE PIPES**

COATED AND GALVANIZED PIPE, API SPECIFICATION Q1, API SPECIFICATION Q2, API SPECIFICATION Q3, API SPECIFICATION Q4, API SPECIFICATION Q5, API SPECIFICATION Q6, API SPECIFICATION Q7, API SPECIFICATION Q8, API SPECIFICATION Q9, API SPECIFICATION Q10, API SPECIFICATION Q11, API SPECIFICATION Q12, API SPECIFICATION Q13, API SPECIFICATION Q14, API SPECIFICATION Q15, API SPECIFICATION Q16, API SPECIFICATION Q17, API SPECIFICATION Q18, API SPECIFICATION Q19, API SPECIFICATION Q20, API SPECIFICATION Q21, API SPECIFICATION Q22, API SPECIFICATION Q23, API SPECIFICATION Q24, API SPECIFICATION Q25, API SPECIFICATION Q26, API SPECIFICATION Q27, API SPECIFICATION Q28, API SPECIFICATION Q29, API SPECIFICATION Q30, API SPECIFICATION Q31, API SPECIFICATION Q32, API SPECIFICATION Q33, API SPECIFICATION Q34, API SPECIFICATION Q35, API SPECIFICATION Q36, API SPECIFICATION Q37, API SPECIFICATION Q38, API SPECIFICATION Q39, API SPECIFICATION Q40, API SPECIFICATION Q41, API SPECIFICATION Q42, API SPECIFICATION Q43, API SPECIFICATION Q44, API SPECIFICATION Q45, API SPECIFICATION Q46, API SPECIFICATION Q47, API SPECIFICATION Q48, API SPECIFICATION Q49, API SPECIFICATION Q50, API SPECIFICATION Q51, API SPECIFICATION Q52, API SPECIFICATION Q53, API SPECIFICATION Q54, API SPECIFICATION Q55, API SPECIFICATION Q56, API SPECIFICATION Q57, API SPECIFICATION Q58, API SPECIFICATION Q59, API SPECIFICATION Q60, API SPECIFICATION Q61, API SPECIFICATION Q62, API SPECIFICATION Q63, API SPECIFICATION Q64, API SPECIFICATION Q65, API SPECIFICATION Q66, API SPECIFICATION Q67, API SPECIFICATION Q68, API SPECIFICATION Q69, API SPECIFICATION Q70, API SPECIFICATION Q71, API SPECIFICATION Q72, API SPECIFICATION Q73, API SPECIFICATION Q74, API SPECIFICATION Q75, API SPECIFICATION Q76, API SPECIFICATION Q77, API SPECIFICATION Q78, API SPECIFICATION Q79, API SPECIFICATION Q80, API SPECIFICATION Q81, API SPECIFICATION Q82, API SPECIFICATION Q83, API SPECIFICATION Q84, API SPECIFICATION Q85, API SPECIFICATION Q86, API SPECIFICATION Q87, API SPECIFICATION Q88, API SPECIFICATION Q89, API SPECIFICATION Q90, API SPECIFICATION Q91, API SPECIFICATION Q92, API SPECIFICATION Q93, API SPECIFICATION Q94, API SPECIFICATION Q95, API SPECIFICATION Q96, API SPECIFICATION Q97, API SPECIFICATION Q98, API SPECIFICATION Q99, API SPECIFICATION Q100

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CERTIFICATE OF COMPLIANCE

Certificate Number: 20150901-1-200800

Issue Date: 2015-SEP15 16:00:00

Issued To: **JINDAL (INDIA) LTD.**  
20, Jangalpur, Howrah, West Bengal, India

This is to certify that the management system of the above mentioned company is in conformance with the requirements established by the following standard:

ISO 9001:2008

The management system includes: **MANUFACTURE AND COATING OF HFW LINE PIPES**

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## JINDAL (INDIA) LIMITED

### Registered & Head Office

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