

Product Range - ERW

I) Pipe Size Range	21.30 - 508.00mm OD
II) Galvanized Pipes	21.30 - 355.60mm OD
III) Boiler Tubes	33.40 - 355.60mm OD
IV) Oil Country Tubular Goods (OCTG)	
A) Size Range:	
Line Pipes	Plain End from 88.9 - 508.0mm OD Threaded & Coupled with API Round Threads from 88.90 - 323.90mm OD
Casing	From 114.3 - 244.48mm Outside Diameter Plain End / Threaded and Coupled with STC, LTC & BTC Threads
B) Grades:	
Line Pipes (API 5L)	Upto Gr. X-70 (PSL-1 and PSL-2)
Casing & Tubing (API 5CT)	J-55 and K-55
V) Sectional Pipes	
Square Hollow Sections	25 x 25 to 250 x 250mm
Rectangular Sections	50 x 25 to 300 x 200mm

BLACK & GALVANIZED
**ERW STEEL TUBES CONFORMING TO IS:1239(Pt-I) EQUIVALENT TO
BS:1387 & STRUCTURAL TUBES CONFORMING TO IS:1161**

SERIES			LIGHT					MEDIUM					HEAVY				
NOMINAL BORE		O.D.	OUTSIDE DIA.		W.T.	WEIGHT		OUTSIDE DIA.		W.T.	WEIGHT		OUTSIDE DIA.		W.T.	WEIGHT	
INCH	mm	mm	MIN. (mm)	MAX. (mm)	mm	P/E Kg/m	S/S Kg/m	MIN. (mm)	MAX. (mm)	mm	P/E Kg/m	S/S Kg/m	MIN. (mm)	MAX. (mm)	mm	P/E Kg/m	S/S Kg/m
1/2	15	21.3	21.0	21.4	2.0	0.947	0.956	21.0	21.8	2.6	1.21	1.22	21.0	21.8	3.2	1.44	1.45
3/4	20	26.9	26.4	26.9	2.3	1.38	1.39	26.5	27.3	2.6	1.56	1.57	26.5	27.3	3.2	1.87	1.88
1	25	33.7	33.2	33.8	2.6	1.98	2.00	33.3	34.2	3.2	2.41	2.43	33.3	34.2	4.0	2.93	2.95
1 1/4	32	42.2	41.9	42.5	2.6	2.54	2.57	42.0	42.9	3.2	3.10	3.13	42.0	42.9	4.0	3.79	3.82
1 1/2	40	48.3	47.8	48.4	2.9	3.23	3.27	47.9	48.8	3.2	3.56	3.60	47.9	48.8	4.0	4.37	4.41
2	50	60.3	59.6	60.2	2.9	4.08	4.15	59.7	60.8	3.6	5.03	5.10	59.7	60.8	4.5	6.19	6.26
2 1/2	65	76.1	75.2	76.0	3.2	5.71	5.83	75.3	76.6	3.6	6.42	6.54	75.3	76.6	4.5	7.93	8.05
3	80	88.9	87.9	88.7	3.2	6.72	6.89	88.0	89.5	4.0	8.36	8.53	88.0	89.5	4.8	9.90	10.10
4	100	114.3	113.0	113.9	3.6	9.75	10.00	113.1	115.0	4.5	12.20	12.50	113.1	115.0	5.4	14.50	14.80
5	125	139.7	-	-	4.5	15.00	-	138.5	140.8	4.8	15.90	16.40	138.5	140.8	5.4	17.90	18.40
6	150	165.1	-	-	4.5	17.80	-	163.9	166.5	4.8	18.90	19.50	163.9	166.5	5.4	21.30	21.90
6	150	165.1	-	-	-	-	-	-	-	-	-	-	-	-	H2-5.9	23.20	-
6	150	165.1	-	-	-	-	-	-	-	-	-	-	-	-	H3-6.3	24.70	-
6	150	165.1	-	-	-	-	-	-	-	-	-	-	-	-	H4-8	31.00	-
6	150	168.3	-	-	4.5	18.20	-	-	-	4.8	19.40	-	-	-	H1-5.4	21.70	-
6	150	168.3	-	-	-	-	-	-	-	-	-	-	-	-	H2-6.3	25.20	-
6	150	168.3	-	-	-	-	-	-	-	-	-	-	-	-	H3-8	31.60	-
6	150	168.3	-	-	-	-	-	-	-	-	-	-	-	-	H4-10	39.00	-
7	175	193.7	-	-	4.8	22.40	-	-	-	5.4	25.10	-	-	-	5.9	27.30	-
7	175	193.7	-	-	-	-	-	-	-	-	-	-	-	-	H2-6.3	29.10	-
7	175	193.7	-	-	-	-	-	-	-	-	-	-	-	-	H3-8	36.60	-
7	175	193.7	-	-	-	-	-	-	-	-	-	-	-	-	H4-10	45.30	-
7	175	193.7	-	-	-	-	-	-	-	-	-	-	-	-	H5-12	53.80	-
8	200	219.1	-	-	4.8	25.40	-	-	-	5.6	29.50	-	-	-	5.9	31.00	-
8	200	219.1	-	-	-	-	-	-	-	-	-	-	-	-	H2-8	41.60	-
8	200	219.1	-	-	-	-	-	-	-	-	-	-	-	-	H3-10	51.60	-
8	200	219.1	-	-	-	-	-	-	-	-	-	-	-	-	H4-12	61.30	-
10	250	273.0	-	-	-	-	-	-	-	-	-	-	-	-	5.9	38.90	-
10	250	273.0	-	-	-	-	-	-	-	-	-	-	-	-	H2-8	52.30	-
10	250	273.0	-	-	-	-	-	-	-	-	-	-	-	-	H3-10	64.90	-
10	250	273.0	-	-	-	-	-	-	-	-	-	-	-	-	H4-12	77.20	-
12	300	323.9	-	-	-	-	-	-	-	-	-	-	-	-	6.3	49.30	-
12	300	323.9	-	-	-	-	-	-	-	-	-	-	-	-	H2-8	62.30	-
12	300	323.9	-	-	-	-	-	-	-	-	-	-	-	-	H3-10	77.40	-
12	300	323.9	-	-	-	-	-	-	-	-	-	-	-	-	H4-12	92.30	-
14	350	355.6	-	-	-	-	-	-	-	-	-	-	-	-	8.0	68.60	-
14	350	355.6	-	-	-	-	-	-	-	-	-	-	-	-	H2-10	85.20	-
14	350	355.6	-	-	-	-	-	-	-	-	-	-	-	-	H3-12	102.00	-

NOTE: (I) IS:1239 & BS:1387 cover sizes upto 100mm NB all series and 125 & 150mm NB medium & heavy series, plain end and screwed & socketed ends.
 (II) IS:1161 covers all sizes plain end only.
 (III) IS:1161 O.D. tolerance will be as per dimension tolerance clause. Above table min./max. O.D. applicable for IS:1239 only.
 (IV) Hydro Test Pressure - 5 MPa (IS:1161 hydro test not required.)


**ERW PIPES FOR WATER & SEWAGE CONFORMING TO IS:3589
& WATER WELL CASING CONFORMING TO IS:4270**

SIZE		CONVENTIONAL MASS PER UNIT LENGTH (Kg/m)																			
NB	OD	WALL THICKNESS (mm)																			
mm	mm	3.20	3.60	4.00	4.30	4.65	4.85	5.00	5.20	5.40	5.60	6.00	6.35	6.40	7.00	7.10	8.00	9.50	10.00	10.30	10.50
100	114.30	-	-	-	-	-	-	13.48	-	14.50	-	16.02	-	-	-	-	-	-	-	-	-
125	141.30	-	-	-	-	-	-	16.81	-	18.10	-	20.02	-	-	-	-	-	-	-	-	-
150	168.30	13.03	14.62	16.21	17.39	18.77	19.55	20.13	20.91	21.69	-	24.01	25.36	25.55	27.84	28.22	-	-	-	-	-
175	193.70	-	16.88	18.71	20.08	21.68	22.59	23.27	24.17	25.07	-	27.77	29.34	29.56	32.23	32.67	36.63	-	-	-	-
200	219.10	-	19.13	21.22	22.78	24.59	25.62	26.40	27.43	28.46	29.48	31.53	33.31	33.57	36.61	37.12	41.65	49.10	51.56	53.03	54.01
225.0	244.50	-	-	23.72	25.47	27.50	28.66	29.53	30.69	31.84	32.99	35.29	37.29	37.58	41.00	41.57	46.66	55.05	57.83	59.49	60.59
250	273.10	-	23.93	26.54	28.50	30.78	32.08	33.06	34.35	35.65	36.94	39.52	41.77	42.09	45.93	46.57	52.30	61.75	64.88	66.75	68.00
300	323.90	-	-	31.55	33.89	36.61	38.16	39.32	40.87	42.41	43.96	47.04	49.73	50.11	54.70	55.47	62.32	73.65	77.41	79.65	81.15
350	355.60	-	-	34.68	37.25	40.24	41.95	43.23	44.93	46.63	48.33	51.73	54.69	55.11	60.18	61.02	68.57	81.08	85.22	87.71	89.36
400	406.40	-	-	-	-	46.07	48.03	49.49	51.45	53.40	55.35	59.24	62.64	63.13	68.94	69.91	78.60	92.98	97.75	100.61	102.51
450	457.00	-	-	-	-	51.87	54.08	55.73	57.94	60.14	62.34	66.73	70.57	71.12	77.68	78.77	88.58	104.84	110.23	113.46	115.61
500	508.00	-	-	-	-	57.72	60.18	62.02	64.48	66.93	69.38	74.28	78.55	79.16	86.48	87.70	98.64	116.78	122.81	126.41	128.82

NOTE: (I) IS:4270 covers Pipe size 100mm to 500mm NB & IS:3589 covers Pipe size 168.30mm O.D. to 508.00mm O.D.
 (II) IS:4270 covers wall thickness upto 12 mm.
 (III) Other thickness may be supplied as per agreement.
 (IV) Max. Hydro Test Pressure IS:3589 - 5 MPa, IS:4270 - 7 MPa.

ERW BOILER, SUPER HEATER, HEAT EXCHANGER, CONDENSER & AIR HEATER TUBES & PIPES

Outside Diameter mm	Conforming to BS 3059 (Pt-I & II),ASTM A-178, A-214, A-333, IS:1914 (Pt-IV), IS:2416 (Pt-IV), IS:11714 (Pt-III)																											
	2.03	2.34	2.64	2.95	3.25	3.38	3.56	3.66	3.68	3.91	4.06	4.50	5.16	5.49	5.74	6.02	6.35	6.55	7.04	7.11	7.80	7.92	8.18	8.38	9.27	9.52		
33.4/33.7	1.59	1.81	2.02	2.24	2.44	2.53	-	2.71	-	-	2.97	3.24	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
38.0	1.80	2.06	2.30	2.55	2.79	-	-	3.10	-	-	3.40	3.72	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
42.2/42.4	-	2.31	2.59	2.87	3.14	-	3.41	3.50	-	-	3.84	4.21	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
44.5	-	2.43	2.73	3.02	3.31	-	-	3.69	-	-	4.05	4.44	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
48.3	-	2.65	2.97	3.30	3.61	-	-	4.03	4.05	-	4.43	4.86	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
50.8	-	2.80	3.14	3.48	3.81	-	-	4.25	-	-	4.68	5.14	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
57.2	-	-	3.55	3.95	4.32	-	-	4.83	-	-	5.32	5.85	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
60.3	-	-	3.75	4.17	4.57	-	-	5.11	-	5.44	5.63	6.19	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
63.5	-	-	3.96	4.40	4.83	-	-	5.40	-	-	5.95	6.55	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
73.0	-	-	-	-	-	-	-	-	-	-	-	-	8.63	-	-	-	-	-	-	-	-	-	-	-	-	-		
76.1	-	-	-	5.32	5.84	-	-	6.54	-	-	7.21	7.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
88.9	-	-	-	-	6.86	-	-	7.69	-	-	8.49	9.37	-	11.29	-	-	-	-	-	-	-	-	-	-	-	-		
101.6	-	-	-	-	-	-	-	8.84	-	-	9.77	10.78	-	-	13.57	-	-	-	-	-	-	-	-	-	-	-		
114.3	-	-	-	-	-	-	-	-	-	-	11.04	12.18	-	-	-	16.07	-	-	-	-	-	-	-	-	-	-		
127.0	-	-	-	-	-	-	-	-	-	-	-	13.59	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
141.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.77	-	-	-	-	-	-	-	-		
168.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28.26	-	-	-	-	-	-		
219.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	33.31	-	36.81	-	-	-	42.55	-	-	-		
273.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	41.75	-	-	-	51.01	-	-	-	60.29	-		
323.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	49.71	-	-	-	-	-	-	65.18	-	73.78		
355.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	54.69	-	-	-	-	67.90	-	-	-	81.25		

Note :Hydrostatic Test / NDT Test, as per specification requirements.

Weld-On Connectors- **ERW**

MSL, now offers weldable Box and Pin Multi Start Thread Connectors, suitable to be girth welded with ERW Pipes as per Specification API 5L. Weld-On Connectors are designed for Offshore and Onshore applications, where environmental conditions call for fast connector make-up combined with superior performance.

MSL uses Leopard Connectors which combine the advantages of a preloaded thread-type connector with the rapid make up, desired for offshore operations.

The Leopard Connectors have high cone angle and is available in twin on four start thread. When stabbed, the box swallows approximately 90% of the pin length. The stabbing guide prevents cross-threading. Full make-up is achieved in less than half a turn with a four start thread and less than one turn for a two start thread.

Leopard Connectors have following features:

- Multi Start Threads for fast make-up
- Low torque make-up with rig tongs less than one turn make-up
- Integral 4 point anti-rotation provision
- Suitable for piling
- Reversible and reusable
- Visual indication of make-up
- Preloaded for fatigue

Weld-On Connectors are available as per following details:

Specification	: API 5L
Grade	: Gr. B through Gr. X-70
Pipe Size	: Upto 508.00mm (20")
Wall Thickness	: 15.87mm (max.)

Product Range - Seamless

I) Hot Finished Pipes and Tubes

Carbon & Alloy Steel:

Outside Diameter (OD) 26mm - 508.0mm

Wall Thickness (WT) 2.8mm - 40mm

II) Cold Pilgered / Cold Drawn Tubes

Carbon & Alloy Steel:

Outside Diameter (OD) 10mm - 101mm

Wall Thickness (WT) 1mm - 10mm

III) OIL Country Tubular Goods (OCTG)

A) Size Range

- Line Pipes
 - Plain End Upto 20" (508 mm) Outside Diameter
 - Threaded and Coupled with API Line
 - Pipe threads upto 12" (323.9 mm) Outside Diameter
- Casing
 - Upto 13³/₈" (339.72 mm) Outside Diameter Plain End / Threaded and Coupled with STC, LTC & BTC Threads
- Tubing
 - NUE / EUE upto 4¹/₂" Outside Diameter
 - Plain End or Threaded & Coupled with API Round Threads
- Drill Pipes
 - Internal Upset (IU)
 - 3¹/₂" to 4¹/₂"
 - External Upset (EU)
 - 2⁷/₈" to 4¹/₂"
 - Internal - External Upset (IEU)
 - 4¹/₂" to 5"

B) Grades

- Line Pipes (API - 5L) All Grades upto X-70 / X-70Q
- Casing & Tubing (API 5CT)

Yield Strength (ksi)	40	55	65	80	90	95	110	125
Group 1	H 40	J 55 K 55		N 80				
Group 2			M 65	L 80	C 90	R 95 T 95	C 110	
Group 3							P 110	
Group 4								Q 125

- Proprietary Grades
 - High Collapse Casing
 - MAHA HC L80
 - MAHA HC P110
- Drill Pipes (API 5DP)
 - Gr. E, X, G, S
- Sour Service
 - NACE (MR - 0175)

ASTM SCHEDULED SIZES

DIMENSION AND WEIGHT															
Nominal Pipe Size mm/ inch	OD mm	SCHEDULE WALL THICKNESS (mm) / WEIGHT (kg/m)													
		Sch 5	Sch 10	Sch 20	Sch 30	STD	Sch 40	XS	Sch 60	Sch 80	Sch 100	Sch 120	Sch 140	Sch 160	XXS
6	10.3	-	1.24	-	-	1.73	1.73	2.41	-	2.41	-	-	-	-	-
1/8		-	0.28	-	-	0.37	0.37	0.47	-	0.47	-	-	-	-	-
8	13.7	-	1.65	-	-	2.24	2.24	3.02	-	3.02	-	-	-	-	-
1/4		-	0.49	-	-	0.63	0.63	0.80	-	0.80	-	-	-	-	-
10	17.1	-	1.65	-	-	2.31	2.31	3.20	-	3.20	-	-	-	-	-
3/8		-	0.63	-	-	0.84	0.84	1.10	-	1.10	-	-	-	-	-
15	21.3	1.65	2.11	-	-	2.77	2.77	3.73	-	3.73	-	-	-	4.78	7.47
1/2		0.80	1.00	-	-	1.27	1.27	1.62	-	1.62	-	-	-	1.95	2.55
20	26.7	1.65	2.11	-	-	2.87	2.87	3.91	-	3.91	-	-	-	5.56	7.82
3/4		1.03	1.28	-	-	1.69	1.69	2.20	-	2.20	-	-	-	2.90	3.64
25	33.4	1.65	2.77	-	-	3.38	3.38	4.55	-	4.55	-	-	-	6.35	9.09
1		1.29	2.09	-	-	2.50	2.50	3.24	-	3.24	-	-	-	4.24	5.45
32	42.2	1.65	2.77	-	-	3.56	3.56	4.85	-	4.85	-	-	-	6.35	9.70
1 1/4		1.65	2.69	-	-	3.39	3.39	4.47	-	4.47	-	-	-	5.61	7.77
40	48.3	1.65	2.77	-	-	3.68	3.68	5.08	-	5.08	-	-	-	7.14	10.15
1 1/2		1.90	3.11	-	-	4.05	4.05	5.41	-	5.41	-	-	-	7.25	9.55
50	60.3	1.65	2.77	-	-	3.91	3.91	5.54	-	5.54	-	-	-	8.74	11.07
2		2.39	3.93	-	-	5.44	5.44	7.48	-	7.48	-	-	-	11.11	13.44
65	73.0	2.11	3.05	-	-	5.16	5.16	7.01	-	7.01	-	-	-	9.53	14.02
2 1/2		3.69	5.26	-	-	8.63	8.63	11.41	-	11.41	-	-	-	14.92	20.39
80	88.9	2.11	3.05	-	-	5.49	5.49	7.62	-	7.62	-	-	-	11.13	15.24
3		4.52	6.46	-	-	11.29	11.29	15.27	-	15.27	-	-	-	21.35	27.68
90	101.6	2.11	3.05	-	-	5.74	5.74	8.08	-	8.08	-	-	-	-	-
3 1/2		5.18	7.41	-	-	13.57	13.57	18.64	-	18.64	-	-	-	-	-
100	114.3	2.11	3.05	-	-	6.02	6.02	8.56	-	8.56	-	11.13	-	13.49	17.12
4		5.84	8.37	-	-	16.08	16.08	22.32	-	22.32	-	28.32	-	33.54	41.03
125	141.3	2.77	3.40	-	-	6.55	6.55	9.53	-	9.53	-	12.70	-	15.88	19.05
5		9.46	11.56	-	-	21.77	21.77	30.97	-	30.97	-	40.28	-	49.12	57.43
150	168.30	2.77	3.40	-	-	7.11	7.11	10.97	-	10.97	-	14.27	-	18.26	21.95
6		11.31	13.83	-	-	28.26	28.26	42.56	-	42.56	-	54.21	-	67.57	79.22
200	219.10	-	-	6.35	7.04	8.18	8.18	12.70	10.31	12.70	15.09	18.26	20.62	23.01	22.23
8		-	-	33.32	36.82	42.55	42.55	64.64	53.09	64.64	75.92	90.44	100.93	111.27	107.93
250	273.00	3.40	4.19	6.35	7.80	9.27	9.27	12.70	12.70	15.09	18.26	21.44	25.40	28.58	25.40
10		22.61	27.78	41.76	51.01	60.29	60.29	81.53	81.53	95.98	114.71	133.01	155.10	172.27	155.10
300	323.80	-	-	-	8.38	9.53	10.31	12.70	14.27	17.48	21.44	25.40	28.58	33.32	25.40
12		-	-	-	65.19	73.86	79.71	97.44	108.93	132.05	159.87	186.92	208.08	238.69	186.92
350	355.60	-	-	-	9.53	9.53	11.13	12.70	15.09	19.05	23.83	27.79	31.75	35.71	-
14		-	-	-	81.33	81.33	94.55	107.40	126.72	158.11	194.98	224.66	253.58	281.72	-
400	406.40	-	-	-	9.53	9.53	12.70	12.70	16.66	21.44	-	-	-	-	-
16		-	-	-	93.27	93.27	123.31	123.31	160.12	203.54	-	-	-	-	-
450	457.00	-	-	9.53	11.13	9.53	14.27	12.70	19.05	23.83	-	-	-	-	-
18		-	-	105.17	122.38	105.17	155.81	139.16	205.75	254.57	-	-	-	-	-
500	508.00	-	-	9.53	12.70	9.53	15.09	12.70	20.62	26.19	-	-	-	-	-
20		-	-	117.15	155.13	117.15	183.43	155.13	247.84	311.19	-	-	-	-	-

NOTE : Special sizes made to order.

BOILER AND HEAT-EXCHANGER TUBES

Outside Diameter		Wall Thickness																
		16 swg	15 swg	14 swg	13 swg	12 swg	11 swg	10 swg	9 swg	8 swg	7 swg	6 swg	5 swg	4 swg	1/4"	5/16"	3/8"	1/2"
		1.63 mm	1.83 mm	2.03 mm	2.34 mm	2.64 mm	2.95 mm	3.25 mm	3.66 mm	4.06 mm	4.47 mm	4.88 mm	5.39 mm	5.89 mm	6.35 mm	7.94 mm	9.53 mm	12.7 mm
In	mm	Weight with nominal thk (kg/mtr) Weight with minimum thk (kg/mtr)																
0.75	19.05	0.70	0.78	0.85	0.96	1.07	1.17	1.27										
		0.74	0.82	0.89	1.01	1.12	1.23	1.33										
1.00	25.40	0.96	1.06	1.17	1.33	1.48	1.63	1.78										
		1.00	1.12	1.23	1.40	1.56	1.71	1.86										
1.25	31.75				1.70	1.90	2.10	2.28	2.54	2.77								
					1.78	1.99	2.20	2.40	2.66	2.91								
1.50	38.10							2.79	3.11	3.41	3.71	4.00	4.35	4.68	4.97			
								3.07	3.42	3.75	4.08	4.40	4.57	4.91	5.22			
1.75	44.45							3.30	3.68	4.04	4.41	4.76	5.19	5.60	5.97			
								3.63	4.05	4.45	4.85	5.24	5.71	5.88	6.26			
2.00	50.80							3.81	4.25	4.68	5.11	5.53	6.04	6.52	6.96			
								4.19	4.68	5.15	5.62	6.08	6.64	7.18	7.66			
2.25	57.15							4.32	4.83	5.32	5.81	6.29	6.88	7.45	7.96	9.64		
								4.75	5.31	5.85	6.39	6.92	7.57	8.19	8.75	10.60		
2.50	63.50							4.83	5.40	5.95	6.51	7.05	7.72	8.37	8.95	10.88	12.68	
								5.31	5.94	6.55	7.16	7.76	8.50	9.21	9.84	11.97	13.95	
2.75	69.85							5.34	5.97	6.59	7.21	7.82	8.57	9.29	9.94	12.12	14.18	
								5.87	6.57	7.25	7.93	8.60	9.43	10.22	10.94	13.34	15.59	
3.00	76.20							5.85	6.55	7.22	7.91	8.58	9.41	10.21	10.94	13.37	15.67	
								6.43	7.20	7.95	8.70	9.44	10.35	11.23	12.03	14.70	17.24	
3.25	82.55							6.36	7.12	7.86	8.61	9.35	10.26	11.14	11.93	14.61	17.16	
								6.99	7.83	8.64	9.47	10.28	11.28	12.25	13.13	16.07	18.88	
3.50	88.90							6.86	7.69	8.49	9.31	10.11	11.10	12.06	12.93	15.85	18.65	
								7.55	8.46	9.34	10.24	11.12	12.21	13.26	14.22	17.44	20.52	
3.75	95.25									9.13	10.01	10.88	11.94	12.98	13.92	17.10	20.15	
										10.04	11.01	11.96	13.14	14.28	15.31	18.81	22.16	
4.00	101.60									9.77	10.71	11.64	12.79	13.90	14.92	18.34	21.64	
										10.74	11.78	12.80	14.07	15.29	16.41	20.17	23.80	
4.25	107.95									10.40	11.41	12.40	13.63	14.82	15.91	19.58	23.13	29.83
										11.44	12.55	13.64	15.00	16.31	17.50	21.54	25.44	32.82
4.50	114.30									11.04	12.11	13.17	14.48	15.75	16.91	20.83	24.62	31.82
										12.14	13.32	14.49	15.92	17.32	18.60	22.91	27.09	35.00
4.75	120.65									11.67	12.81	13.93	15.32	16.67	17.90	22.07	26.12	33.81
										12.84	14.09	15.33	16.85	18.34	19.69	24.28	28.73	37.19
5.00	127.00									12.31	13.51	14.70	16.17	17.59	18.89	23.31	27.61	35.80
										13.54	14.86	16.17	17.78	19.35	20.78	25.64	30.37	39.38
5.25	133.35									12.95	14.21	15.46	17.01	18.51	19.89	24.56	29.10	37.79
										14.24	15.63	17.01	18.71	20.37	21.88	27.01	32.01	41.57
5.50	139.70												17.85	19.44	20.88	25.80	30.59	39.78
													19.64	21.38	22.97	28.38	33.65	43.75
6.00	152.40												19.54	21.28	22.87	28.29	33.58	43.75
													21.50	23.41	25.16	31.12	36.94	48.13
6.50	165.10												21.23	23.13	24.86	30.77	36.56	47.73
													23.35	25.44	27.35	33.85	40.22	52.51

NOTE : Special sizes made to orders.

OCTG: API LINE PIPES

Dimensions, Weights and Test Pressures for Sizes 0.840" through 20" (SI Units)															
Size	Specified Outside Diameter	Specified Wall Thickness	Plain-end Weight per Unit Length	Calculated Inside Diameter	Minimum Test Pressure (kPa x 100)										Type
	D	t	Wpe	d	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	
	(mm)	(mm)	(Kg/m)	(mm)	A25	A	B	X-42	X-46	X-52	X-56	X-60	X-65	X-70	
0.840	21.3	2.8	1.28	15.7	48	48	48	-	-	-	-	-	-	-	S
0.840	21.3	3.7	1.61	13.9	59	59	59	-	-	-	-	-	-	-	S
1.050	26.7	2.9	1.70	20.9	48	48	48	-	-	-	-	-	-	-	S
1.050	26.7	3.9	2.19	18.9	59	59	59	-	-	-	-	-	-	-	S
1.315	33.4	3.4	2.52	26.6	48	48	48	-	-	-	-	-	-	-	S
1.315	33.4	4.5	3.21	24.4	59	59	59	-	-	-	-	-	-	-	S
1.660	42.2	3.6	3.43	35.0	69	83	90	-	-	-	-	-	-	-	S
1.660	42.2	4.9	4.51	32.4	90	124	131	-	-	-	-	-	-	-	S
1.900	48.3	3.7	4.07	40.9	69	83	90	-	-	-	-	-	-	-	S
1.900	48.3	5.1	5.43	38.1	90	124	131	-	-	-	-	-	-	-	S
2 3/8"	60.3	3.6	5.03	53.1	69	150	170	205	205	205	205	205	205	205	S
	60.3	3.9	5.42	52.5	69	163	170	205	205	205	205	205	205	205	S
	60.3	4.4	6.07	51.5	76	170	170	205	205	205	205	205	205	205	S
	60.3	4.8	6.57	50.7	83	170	170	205	205	205	205	205	205	205	S
	60.3	5.5	7.43	49.3	90	170	170	205	205	205	205	205	205	205	S
	60.3	6.4	8.51	47.5	96	170	170	205	205	205	205	205	205	205	S
	60.3	7.1	9.31	46.1	96	170	170	205	205	205	205	205	205	205	S
2 7/8"	73.0	4.0	6.81	65.0	69	138	161	191	205	205	205	205	205	205	S
	73.0	4.4	7.44	64.2	69	152	170	205	205	205	205	205	205	205	S
	73.0	4.8	8.07	63.4	69	166	170	205	205	205	205	205	205	205	S
	73.0	5.2	8.69	62.6	69	170	170	205	205	205	205	205	205	205	S
	73.0	5.5	9.16	62.0	76	170	170	205	205	205	205	205	205	205	S
	73.0	6.4	10.51	60.2	83	170	170	205	205	205	205	205	205	205	S
	73.0	7.0	11.39	59.0	90	170	170	205	205	205	205	205	205	205	S
3 1/2"	88.9	3.2	6.76	82.5	69	91	106	125	138	156	168	179	194	205	E
	88.9	3.6	7.57	81.7	69	102	119	141	156	175	190	201	205	205	E
	88.9	4.0	8.37	80.9	69	113	132	157	173	194	205	205	205	205	S/E
	88.9	4.4	9.17	80.1	69	125	146	172	190	205	205	205	205	205	S/E
	88.9	4.8	9.95	79.3	69	136	159	188	205	205	205	205	205	205	S/E
	88.9	5.5	11.31	77.9	69	156	170	205	205	205	205	205	205	205	S/E
	88.9	6.4	13.02	76.1	-	170	170	205	205	205	205	205	205	205	S
	88.9	7.1	14.32	74.7	-	170	170	205	205	205	205	205	205	205	S
	88.9	7.6	15.24	73.7	90	170	170	205	205	205	205	205	205	205	S
4"	101.6	3.2	7.76	95.2	-	79	93	110	121	136	147	157	170	183	E
	101.6	3.6	8.70	94.4	55	89	104	123	136	153	166	177	191	205	E
	101.6	4.0	9.63	93.6	-	99	116	137	151	170	184	196	205	205	S/E
	101.6	4.4	10.55	92.8	69	109	127	151	166	187	203	205	205	205	S/E
	101.6	4.8	11.46	92.0	83	119	139	164	181	204	205	205	205	205	S/E

S:Seamless ☐ S/E ☐E:ERW ☐

OCTG: API LINE PIPES

Dimensions, Weights and Test Pressures for Sizes 0.840" through 20" (SI Units)															
Size	Specified Outside Diameter	Specified Wall Thickness	Plain-end Weight per Unit Length	Calculated Inside Diameter	Minimum Test Pressure (kPa x 100)										Type
	D	t	Wpe	d	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	
	(mm)	(mm)	(Kg/m)	(mm)	A25	A	B	X-42	X-46	X-52	X-56	X-60	X-65	X-70	
	101.6	5.7	13.48	90.2	83	141	165	195	205	205	205	205	205	205	S/E
	101.6	6.4	15.02	88.8	-	159	185	205	205	205	205	205	205	205	S/E
	101.6	7.1	16.55	87.4	-	176	190	205	205	205	205	205	205	205	S
	101.6	8.1	18.68	85.4	117	190	190	205	205	205	205	205	205	205	S
4 1/2"	114.3	3.2	8.77	107.9	55	71	82	97	108	121	131	139	151	163	E
	114.3	3.6	9.83	107.1	-	79	93	110	121	136	147	157	170	183	E
	114.3	4.0	10.88	106.3	69	88	103	122	134	151	164	174	189	204	S/E
	114.3	4.4	11.92	105.5	-	97	113	134	148	166	180	192	205	205	S/E
	114.3	4.8	12.96	104.7	83	106	123	146	161	181	197	205	205	205	S/E
	114.3	5.2	13.99	103.9	-	115	134	158	175	197	205	205	205	205	S/E
	114.3	5.6	15.01	103.1	83	123	144	170	188	205	205	205	205	205	S/E
	114.3	6.0	16.02	102.3	83	132	154	183	202	205	205	205	205	205	S/E
	114.3	6.4	17.03	101.5	-	141	165	195	205	205	205	205	205	205	S/E
	114.3	7.1	18.77	100.1	-	157	183	205	205	205	205	205	205	205	S
	114.3	7.9	20.73	98.5	-	174	190	205	205	205	205	205	205	205	S
	114.3	8.6	22.42	97.1	117	190	190	205	205	205	205	205	205	205	S
	114.3	11.1	28.25	92.1	-	190	190	205	205	205	205	205	205	205	S
	114.3	13.5	33.56	87.3	-	190	190	205	205	205	205	205	205	205	S
	114.3	17.1	40.99	80.1	-	190	190	205	205	205	205	205	205	205	S
5 9/16"	141.3	3.2	10.90	134.9	46	57	67	79	87	98	106	113	122	132	E
	141.3	4.0	13.54	133.3	58	71	83	99	109	122	132	141	153	165	E
	141.3	4.8	16.16	131.7	70	86	100	118	130	147	159	169	183	198	E
	141.3	5.6	18.74	130.1	81	100	117	138	152	171	185	197	205	205	S/E
	141.3	6.6	21.92	128.1	83	118	137	163	179	202	205	205	205	205	S/E
	141.3	7.1	23.50	127.1	105	127	148	175	193	205	205	205	205	205	S
	141.3	7.9	25.99	125.5	116	141	164	195	205	205	205	205	205	205	S
	141.3	8.7	28.45	123.9	128	155	181	205	205	205	205	205	205	205	S
	141.3	9.5	30.88	122.3	139	169	190	205	205	205	205	205	205	205	S
	141.3	12.7	40.28	115.9	186	190	190	205	205	205	205	205	205	205	S
	141.3	15.9	49.17	109.5	193	190	190	205	205	205	205	205	205	205	S
6 5/8"	168.3	3.2	13.03	161.9	-	48	56	83	91	103	111	118	128	138	E
	168.3	3.6	14.62	161.1	-	54	63	93	103	116	125	133	144	156	E
	168.3	4.0	16.21	160.3	-	60	70	103	114	128	139	148	160	173	E
	168.3	4.4	17.78	159.5	-	66	77	114	125	141	153	163	176	190	E
	168.3	4.8	19.35	158.7	-	72	84	124	137	154	167	178	193	205	E
	168.3	5.2	20.91	157.9	-	78	91	134	148	167	181	192	205	205	S/E
	168.3	5.6	22.47	157.1	-	84	98	145	160	180	195	205	205	205	S/E

S:Seamless ☐ S/E ☐E:ERW ☐

OCTG: API LINE PIPES

Dimensions, Weights and Test Pressures for Sizes 0.840" through 20" (SI Units)															
Size	Specified Outside Diameter	Specified Wall Thickness	Plain-end Weight per Unit Length	Calculated Inside Diameter	Minimum Test Pressure (kPa x 100)										Type
	D	t	Wpe	d	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	
	(mm)	(mm)	(Kg/m)	(mm)	A25	A	B	X-42	X-46	X-52	X-56	X-60	X-65	X-70	
	168.3	6.4	25.55	155.5	-	96	112	165	183	205	205	205	205	205	S/E
	168.3	7.1	28.22	154.1	-	106	124	184	202	205	205	205	205	205	S/E
	168.3	7.9	31.25	152.5	-	118	138	204	205	205	205	205	205	205	S
	168.3	8.7	34.24	150.9	-	130	152	205	205	205	205	205	205	205	S
	168.3	9.5	37.20	149.3	-	142	166	205	205	205	205	205	205	205	S
	168.3	11.0	42.67	146.3	-	165	190	205	205	205	205	205	205	205	S
	168.3	12.7	48.73	142.9	-	190	190	205	205	205	205	205	205	205	S
	168.3	14.3	54.31	139.7	-	190	190	205	205	205	205	205	205	205	S
	168.3	15.9	59.76	136.5	-	190	190	205	205	205	205	205	205	205	S
	168.3	18.3	67.69	131.7	-	190	190	205	205	205	205	205	205	205	S
	168.3	19.1	70.27	130.1	-	190	190	205	205	205	205	205	205	205	S
8 5/8"	219.1	4.0	21.22	211.1	-	46	54	79	88	99	107	114	123	133	E
	219.1	4.8	25.37	209.5	-	55	64	95	105	118	128	136	148	159	E
	219.1	5.2	27.43	208.7	-	60	70	103	114	128	139	148	160	173	E
	219.1	5.6	29.48	207.9	-	64	75	111	123	138	150	159	173	186	E
	219.1	6.4	33.57	206.3	-	74	86	127	140	158	171	182	197	205	S/E
	219.1	7.0	36.61	205.1	-	81	94	139	153	173	187	199	205	205	S/E
	219.1	7.9	41.14	203.3	-	91	106	157	173	195	205	205	205	205	S/E
	219.1	8.2	42.65	202.7	-	94	110	163	180	202	205	205	205	205	S/E
	219.1	8.7	45.14	201.7	-	100	117	173	191	205	205	205	205	205	S/E
	219.1	9.5	49.10	200.1	-	109	127	189	205	205	205	205	205	205	S/E
	219.1	11.1	56.94	196.9	-	128	149	205	205	205	205	205	205	205	S/E
	219.1	12.7	64.64	193.7	-	146	170	205	205	205	205	205	205	205	S/E
	219.1	14.3	72.22	190.5	-	164	190	205	205	205	205	205	205	205	S
	219.1	15.9	79.67	187.3	-	183	190	205	205	205	205	205	205	205	S
	219.1	18.3	90.62	182.5	-	190	190	205	205	205	205	205	205	205	S
	219.1	19.1	94.20	180.9	-	190	190	205	205	205	205	205	205	205	S
	219.1	20.6	100.84	177.9	-	190	190	205	205	205	205	205	205	205	S
	219.1	22.2	107.79	174.7	-	190	190	205	205	205	205	205	205	205	S
	219.1	25.4	121.33	168.3	-	190	190	205	205	205	205	205	205	205	S
10 3/4"	273.1	4.0	26.54	265.1	-	37	43	72	80	90	97	103	112	121	E
	273.1	4.8	31.76	263.5	-	44	52	87	96	108	117	124	134	145	E
	273.1	5.2	34.35	262.7	-	48	56	94	104	117	126	134	146	157	E
	273.1	5.6	36.94	261.9	-	52	60	101	112	125	136	145	157	169	E
	273.1	6.4	42.09	260.3	-	59	69	116	127	143	155	165	179	193	E
	273.1	7.1	46.57	258.9	-	66	76	128	141	159	172	183	199	205	S/E

S:Seamless ☐ S/E ☐E:ERW ☐

OCTG: API LINE PIPES

Dimensions, Weights and Test Pressures for Sizes 0.840" through 20" (SI Units)															
Size	Specified Outside Diameter	Specified Wall Thickness	Plain-end Weight per Unit Length	Calculated Inside Diameter	Minimum Test Pressure (kPa x 100)										Type
	D	t	Wpe	d	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	
	(mm)	(mm)	(Kg/m)	(mm)	A25	A	B	X-42	X-46	X-52	X-56	X-60	X-65	X-70	
	273.1	7.8	51.03	257.5	-	72	84	141	155	175	189	201	205	205	S/E
	273.1	8.7	56.72	255.7	-	80	94	157	173	195	205	205	205	205	S/E
	273.1	9.3	60.50	254.5	-	86	100	168	185	205	205	205	205	205	S/E
	273.1	11.1	71.72	250.9	-	102	119	200	205	205	205	205	205	205	S/E
	273.1	12.7	81.55	247.7	-	117	137	205	205	205	205	205	205	205	S/E
	273.1	14.3	91.26	244.5	-	132	154	205	205	205	205	205	205	205	S
	273.1	15.9	100.85	241.3	-	147	171	205	205	205	205	205	205	205	S
	273.1	18.3	114.99	236.5	-	169	190	205	205	205	205	205	205	205	S
	273.1	20.6	128.27	231.9	-	190	190	205	205	205	205	205	205	205	S
	273.1	22.2	137.36	228.7	-	190	190	205	205	205	205	205	205	205	S
	273.1	23.8	146.32	225.5	-	190	190	205	205	205	205	205	205	205	S
	273.1	25.4	155.15	222.3	-	190	190	205	205	205	205	205	205	205	S
	273.1	31.8	189.22	209.5	-	190	190	205	205	205	205	205	205	205	S
12 3/4"	323.9	4.4	34.67	315.1	-	34	40	67	74	83	90	96	104	112	E
	323.9	4.8	37.77	314.3	-	37	44	73	81	91	98	105	113	122	E
	323.9	5.2	40.87	313.5	-	40	47	79	87	98	106	113	123	132	E
	323.9	5.6	43.96	312.7	-	44	51	85	94	106	115	122	132	143	E
	323.9	6.4	50.11	311.1	-	50	58	97	107	121	131	139	151	163	E
	323.9	7.1	55.47	309.7	-	55	64	108	119	134	145	155	168	181	S/E
	323.9	7.9	61.56	308.1	-	61	72	120	133	149	162	172	187	201	S/E
	323.9	8.4	65.35	307.1	-	65	76	128	141	159	172	183	198	205	S/E
	323.9	8.7	67.62	306.5	-	68	79	132	146	164	178	189	205	205	S/E
	323.9	9.5	73.65	304.9	-	74	86	145	160	179	194	205	205	205	S/E
	323.9	10.3	79.65	303.3	-	80	93	157	173	195	205	205	205	205	S/E
	323.9	11.1	85.62	301.7	-	86	101	169	186	205	205	205	205	205	S/E
	323.9	12.7	97.46	298.5	-	99	115	193	205	205	205	205	205	205	S/E
	323.9	14.3	109.18	295.3	-	111	130	205	205	205	205	205	205	205	S
	323.9	15.9	120.76	292.1	-	124	144	205	205	205	205	205	205	205	S
	323.9	17.5	132.23	288.9	-	136	159	205	205	205	205	205	205	205	S
	323.9	19.1	143.56	285.7	-	149	173	205	205	205	205	205	205	205	S
	323.9	20.6	154.08	282.7	-	160	187	205	205	205	205	205	205	205	S
	323.9	22.2	165.17	279.5	-	173	190	205	205	205	205	205	205	205	S
	323.9	23.8	176.13	276.3	-	185	190	205	205	205	205	205	205	205	S
	323.9	25.4	186.97	273.1	-	190	190	205	205	205	205	205	205	205	S
	323.9	27.0	197.68	269.9	-	190	190	205	205	205	205	205	205	205	S
	323.9	28.6	208.27	266.7	-	190	190	205	205	205	205	205	205	205	S
	323.9	31.8	229.06	260.3	-	190	190	205	205	205	205	205	205	205	S

S:Seamless ☐ S/E ☐E:ERW ☐

OCTG: API LINE PIPES

Dimensions, Weights and Test Pressures for Sizes 0.840" through 20" (SI Units)															
Size	Specified Outside Diameter	Specified Wall Thickness	Plain-end Weight per Unit Length	Calculated Inside Diameter	Minimum Test Pressure (kPa x 100)										Type
	D	t	Wpe	d	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	
	(mm)	(mm)	(Kg/m)	(mm)	A25	A	B	X-42	X-46	X-52	X-56	X-60	X-65	X-70	
14"	355.6	4.8	41.52	346.0	-	34	40	67	73	83	89	95	103	111	E
	355.6	5.2	44.93	345.2	-	37	43	72	80	89	97	103	112	121	E
	355.6	5.3	45.78	345.0	-	38	44	74	81	91	99	105	114	123	E
	355.6	5.6	48.33	344.4	-	40	46	78	86	96	104	111	121	130	E
	355.6	6.4	55.11	342.8	-	45	53	89	98	110	119	127	138	148	E
	355.6	7.1	61.02	341.4	-	50	59	98	109	122	132	141	153	165	E
	355.6	7.9	67.74	339.8	-	56	65	110	121	136	147	156	170	183	E
	355.6	8.7	74.42	338.2	-	62	72	121	133	150	162	173	187	202	E
	355.6	9.5	81.08	336.6	-	67	79	132	145	163	177	188	204	205	S/E
	355.6	10.3	87.71	335.0	-	73	85	143	158	177	192	204	205	205	S/E
	355.6	11.1	94.30	333.4	-	79	92	154	170	191	205	205	205	205	S/E
	355.6	11.9	100.86	331.8	-	84	98	165	182	205	205	205	205	205	S/E
	355.6	12.7	107.39	330.2	-	90	105	176	194	205	205	205	205	205	S/E
	355.6	14.3	120.36	327.0	-	101	118	198	205	205	205	205	205	205	S
	355.6	15.9	133.19	323.8	-	113	131	205	205	205	205	205	205	205	S
	355.6	17.5	145.91	320.6	-	124	145	205	205	205	205	205	205	205	S
	355.6	19.1	158.49	317.4	-	135	158	205	205	205	205	205	205	205	S
	355.6	20.6	170.18	314.4	-	146	170	205	205	205	205	205	205	205	S
	355.6	22.2	182.52	311.2	-	157	184	205	205	205	205	205	205	205	S
	355.6	23.8	194.74	308.0	-	169	190	205	205	205	205	205	205	205	S
	355.6	25.4	206.83	304.8	-	180	190	205	205	205	205	205	205	205	S
	355.6	27.0	218.79	301.6	-	190	190	205	205	205	205	205	205	205	S
	355.6	28.6	230.63	298.4	-	190	190	205	205	205	205	205	205	205	S
	355.6	31.8	253.92	292.0	-	190	190	205	205	205	205	205	205	205	S
16"	406.4	4.8	47.54	396.8	-	30	35	58	64	72	78	83	90	97	E
	406.4	5.2	51.45	396.0	-	32	38	63	70	78	85	90	98	106	E
	406.4	5.6	55.35	395.2	-	35	41	68	75	84	91	97	105	114	E
	406.4	6.4	63.13	393.6	-	40	46	78	86	96	104	111	120	130	E
	406.4	7.1	69.91	392.2	-	44	51	86	95	107	116	123	134	144	E
	406.4	7.9	77.63	390.6	-	49	57	96	106	119	129	137	149	160	E
	406.4	8.7	85.32	389.0	-	54	63	106	117	131	142	151	164	177	E
	406.4	9.5	92.99	387.4	-	59	69	115	127	143	155	165	179	193	S/E
	406.4	10.3	100.61	385.8	-	64	75	125	138	155	168	179	194	205	E
	406.4	11.1	108.20	384.2	-	69	80	135	149	167	181	193	205	205	E
	406.4	11.9	115.77	382.6	-	74	86	144	159	179	194	205	205	205	E
	406.4	12.7	123.31	381.0	-	79	92	154	170	191	205	205	205	205	S/E

S:Seamless ☐ S/E ☐E:ERW ☐

OCTG: API LINE PIPES

Dimensions, Weights and Test Pressures for Sizes 0.840" through 20" (SI Units)															
Size	Specified Outside Diameter	Specified Wall Thickness	Plain-end Weight per Unit Length	Calculated Inside Diameter	Minimum Test Pressure (kPa x 100)										Type
	D	t	Wpe	d	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	
	(mm)	(mm)	(Kg/m)	(mm)	A25	A	B	X-42	X-46	X-52	X-56	X-60	X-65	X-70	
18"	406.4	21.4	203.19	363.6	-	133	155	205	205	322	205	205	205	205	S
	457.0	4.8	53.53	447.4	-	27	31	52	57	64	70	74	80	87	E
	457.0	5.6	62.34	445.8	-	31	36	60	67	75	81	87	94	101	E
	457.0	6.4	71.12	444.2	-	35	41	69	76	85	93	99	107	116	E
	457.0	7.1	78.77	442.8	-	39	46	77	85	95	103	110	119	128	E
	457.0	7.9	87.49	441.2	-	44	51	85	94	106	115	122	132	143	E
	457.0	8.7	96.18	439.6	-	48	56	94	104	117	126	134	146	157	E
	457.0	9.5	104.84	438.0	-	52	61	102	113	127	138	147	159	171	S/E
	457.0	10.3	113.46	436.4	-	57	66	111	123	138	149	159	172	186	E
	457.0	11.1	122.06	434.8	-	61	71	120	132	149	161	171	186	200	S/E
	457.0	11.9	130.62	433.2	-	66	77	128	142	159	173	184	199	205	E
	457.0	12.7	139.16	431.6	-	70	82	137	151	170	184	196	205	205	S/E
	457.0	14.3	156.12	428.4	-	79	92	154	170	192	205	205	205	205	S
	457.0	19.1	206.27	418.8	-	105	123	205	205	205	205	205	205	205	S
	457.0	23.8	254.26	409.4	-	131	153	205	205	205	205	205	205	205	S
20"	508.0	5.6	69.38	496.8	-	28	32	58	64	71	77	82	89	96	E
	508.0	6.4	79.16	495.2	-	32	37	66	73	81	88	94	102	110	E
	508.0	7.1	87.70	493.8	-	35	41	73	81	91	98	104	113	122	E
	508.0	7.9	97.43	492.2	-	39	46	81	90	101	109	116	126	136	E
	508.0	8.7	107.12	490.6	-	43	50	89	99	111	120	128	139	150	E
	508.0	9.5	116.79	489.0	-	47	55	92	102	114	124	132	143	154	S/E
	508.0	10.3	126.41	487.4	-	51	60	106	117	131	142	152	164	177	E
	508.0	11.1	136.01	485.8	-	55	64	114	126	142	153	163	177	191	E
	508.0	11.9	145.58	484.2	-	59	69	122	135	152	164	175	190	205	E
	508.0	12.7	155.13	482.6	-	63	74	123	136	153	166	176	191	205	S/E
	508.0	15.1	183.55	477.8	-	75	87	147	162	182	197	205	205	205	S
	508.0	20.6	247.61	466.8	-	102	119	200	205	205	205	205	205	205	S
	508.0	26.2	311.31	455.6	-	130	152	205	205	205	205	205	205	205	S

S:Seamless ☐ S/E ☐E:ERW ☐

OCTG: API TUBING

DIMENSIONS, WEIGHTS AND END FINISH																
Outside Diameter		Nominal Weights				Wall Thickness		Coupling OD		Thread Type		Type of End Finish				Type
		Non Upset T&C		External Upset T&C				NUE	EUE	API Round						
										NUE	EUE	NUE	EUE	H-40 J-55	N-80 Type-1,Q	
In.	mm.	lb/ft.	kg/mtr	lb/ft.	kg/mtr	In.	mm.	mm.	mm.	TPI	TPI					S / E
1.900	48.26	2.40	3.57	-	-	0.125	3.18	-	-	-	-	P	-	-	-	S
1.900	48.26	2.75	4.09	2.90	4.32	0.145	3.68	55.88	63.50	10	10	PNU	PNU	PNU	-	S
1.900	48.26	3.65	5.43	3.73	5.55	0.200	5.08	-	63.50	-	10	PU	PU	PU	PU	S
1.900	48.26	4.42	6.58	-	-	0.250	6.35	-	-	-	-	-	-	P	-	S
1.900	48.26	5.15	7.66	-	-	0.300	7.62	-	-	-	-	-	-	P	-	S
2.063	52.40	3.24	4.82	-	-	0.156	3.96	-	-	-	-	P	P	P	-	S
2.063	52.40	4.50	6.70	-	-	0.225	5.72	-	-	-	-	P	P	P	P	S
2 3/8	60.32	4.00	5.95	-	-	0.167	4.24	73.02	-	10	-	PN	PN	PN	-	S
2 3/8	60.32	4.60	6.85	4.70	6.99	0.190	4.83	73.02	77.80	10	8	PNU	PNU	PNU	PNU	S
2 3/8	60.32	5.80	8.63	5.95	8.85	0.254	6.45	73.02	77.80	10	8	-	PNU	PNU	PNU	S
2 3/8	60.32	6.60	9.82	-	-	0.295	7.49	-	-	-	-	-	-	P	-	S
2 3/8	60.32	7.35	10.94	7.45	11.09	0.336	8.53	-	77.80	-	8	-	-	PU	-	S
2 7/8	73.02	6.40	9.52	6.50	9.67	0.217	5.51	88.90	93.17	10	8	PNU	PNU	PNU	PNU	S/E*
2 7/8	73.02	7.80	11.61	7.90	11.76	0.276	7.01	88.90	93.17	10	8	-	PNU	PNU	PNU	S
2 7/8	73.02	8.60	12.80	8.70	12.95	0.308	7.82	88.90	93.17	10	8	-	PNU	PNU	PNU	S
2 7/8	73.02	9.35	13.91	9.45	14.06	0.340	8.64	-	93.17	-	8	-	-	PU	-	S
2 7/8	73.02	10.50	15.63	-	-	0.392	9.96	-	-	-	-	-	-	P	-	S
2 7/8	73.02	11.50	17.11	-	-	0.440	11.18	-	-	-	-	-	-	P	-	S
3 1/2	88.90	7.70	11.46	-	-	0.216	5.49	107.95	-	10	-	PN	PN	PN	-	S/E*
3 1/2	88.90	9.20	13.69	9.30	13.84	0.254	6.45	107.95	114.30	10	8	PNU	PNU	PNU	PNU	S
3 1/2	88.90	10.20	15.18	-	-	0.289	7.34	107.95	-	10	-	PN	PN	PN	-	S
3 1/2	88.90	12.70	18.90	12.95	19.27	0.375	9.52	107.95	114.30	10	8	-	PNU	PNU	PNU	S
3 1/2	88.90	14.30	21.28	-	-	0.430	10.92	-	-	-	-	-	-	P	-	S
3 1/2	88.90	15.50	23.07	-	-	0.476	12.09	-	-	-	-	-	-	P	-	S
3 1/2	88.90	17.00	25.30	-	-	0.530	13.46	-	-	-	-	-	-	P	-	S
4	101.60	9.50	14.14	-	-	0.226	5.74	120.65	-	8	-	PN	PN	PN	-	S/E*
4	101.60	10.70	15.92	11.00	16.37	0.262	6.65	-	127.00	-	8	PU	PU	PU	-	S
4	101.60	13.20	19.64	-	-	0.330	8.38	-	-	-	-	-	-	P	-	S
4	101.60	16.10	23.96	-	-	0.415	10.54	-	-	-	-	-	-	P	-	S
4	101.60	18.90	28.13	-	-	0.500	12.70	-	-	-	-	-	-	P	-	S
4	101.60	22.20	33.04	-	-	0.610	15.49	-	-	-	-	-	-	P	-	S
4 1/2	114.30	12.60	18.75	12.75	18.97	0.271	6.88	132.08	141.30	8	8	PNU	PNU	PNU	-	S/E*
4 1/2	114.30	15.20	22.62	-	-	0.337	8.56	-	-	-	-	-	-	P	-	S
4 1/2	114.30	17.00	25.30	-	-	0.380	9.65	-	-	-	-	-	-	P	-	S
4 1/2	114.30	18.90	28.13	-	-	0.430	10.92	-	-	-	-	-	-	P	-	S
4 1/2	114.30	21.50	32.00	-	-	0.500	12.70	-	-	-	-	-	-	P	-	S
4 1/2	114.30	23.70	35.27	-	-	0.560	14.22	-	-	-	-	-	-	P	-	S
4 1/2	114.30	26.10	38.84	-	-	0.630	16.00	-	-	-	-	-	-	P	-	S

* Available only in J-55

S:Seamless ☐ S/E ☐
E:ERW

OCTG: API CASING

DIMENSIONS, WEIGHTS AND END FINISH																				
Outside Diameter		Normal Weight T&C		Normal Weight Plain-end		Wall Thickness		TYPE OF FINISH GRADE										COUPL- ING OD	THREAD TYPES TPI	TYPE
In.	mm	lb/ft.	Kg/mtr	lb/ft.	Kg/mtr	Inch	mm	H-40	J-55 K-55	M 65	L-80 R-95	N-80 Type-1,Q	C-90 T-95	C-110	P-110	Q-125	mm	STC LTC	BTC	S / E
4 1/2	114.30	9.50	14.14	9.42	14.02	0.205	5.21	PS	PS	PS	-	-	-	-	-	-	127.00	8	-	S
4 1/2	114.30	10.50	15.63	10.24	15.24	0.224	5.69	-	PSB	PSB	-	-	-	-	-	-	127.00	8	5	S
4 1/2	114.30	11.60	17.26	11.36	16.91	0.250	6.35	-	PSLB	PLB	PLB	PLB	PLB	P	PLB	-	127.00	8	5	S
4 1/2	114.30	13.50	20.09	13.06	19.44	0.290	7.37	-	-	PLB	PLB	PLB	PLB	P	PLB	-	127.00	8	5	S
4 1/2	114.30	15.10	22.47	15.00	22.32	0.337	8.56	-	-	-	-	-	-	-	PLB	PLB	127.00	8	5	S
5	127.00	11.50	17.11	11.25	16.74	0.220	5.59	-	PS	PS	-	-	-	-	-	-	141.30	8	-	S
5	127.00	13.00	19.35	12.85	19.12	0.253	6.43	-	PSLB	PSLB	-	-	-	-	-	-	141.30	8	5	S
5	127.00	15.00	22.32	14.89	22.16	0.296	7.52	-	PSLB	PLB	PLB	PLB	PLB	P	PLB	-	141.30	8	5	S
5	127.00	18.00	26.79	17.94	26.70	0.362	9.19	-	-	PLB	PLB	PLB	PLB	P	PLB	PLB	141.30	8	5	S
5	127.00	21.40	31.85	21.32	31.73	0.437	11.10	-	-	PLB	PLB	PLB	PLB	P	PLB	PLB	141.30	8	5	S
5	127.00	23.20	34.53	23.11	34.39	0.478	12.14	-	-	-	PLB	PLB	PLB	P	PLB	PLB	141.30	8	5	S
5	127.00	24.10	35.87	24.05	35.80	0.500	12.70	-	-	-	PLB	PLB	PLB	P	PLB	PLB	141.30	8	5	S
5 1/2	139.70	14.00	20.84	13.72	20.41	0.244	6.20	PS	PS	PS	-	-	-	-	-	-	153.67	8	-	S
5 1/2	139.70	15.50	23.07	15.35	22.85	0.275	6.98	-	PSLB	PSLB	-	-	-	-	-	-	153.67	8	5	S
5 1/2	139.70	17.00	25.30	16.88	25.13	0.304	7.72	-	PSLB	PLB	PLB	PLB	PLB	P	PLB	-	153.67	8	5	S
5 1/2	139.70	20.00	29.76	19.83	29.52	0.361	9.17	-	-	PLB	PLB	PLB	PLB	P	PLB	-	153.67	8	5	S
5 1/2	139.70	23.00	34.23	22.56	33.57	0.415	10.54	-	-	PLB	PLB	PLB	PLB	P	PLB	PLB	153.67	8	5	S
5 1/2	139.70	26.80	39.88	26.73	39.78	0.500	12.70	-	-	-	-	-	P	P	-	-	-	-	-	S
5 1/2	139.70	29.70	44.20	29.66	44.14	0.562	14.27	-	-	-	-	-	P	P	-	-	-	-	-	S
5 1/2	139.70	32.60	48.52	32.58	48.49	0.625	15.88	-	-	-	-	-	P	P	-	-	-	-	-	S
6 5/8	168.28	20.00	29.76	19.52	29.06	0.288	7.32	PS	PSLB	PSLB	-	-	-	-	-	-	187.71	8	5	S/E*
6 5/8	168.28	24.00	35.72	23.61	35.13	0.352	8.94	-	PSLB	PLB	PLB	PLB	PLB	P	PLB	-	187.71	8	5	S/E*
6 5/8	168.28	28.00	41.67	27.67	41.18	0.417	10.59	-	-	PLB	PLB	PLB	PLB	P	PLB	-	187.71	8	5	S/E*
6 5/8	168.28	32.00	47.62	31.22	46.46	0.475	12.06	-	-	-	PLB	PLB	PLB	P	PLB	PLB	187.71	8	5	S/E*
7	177.80	20.00	29.76	19.57	29.12	0.272	6.91	PS	PS	PS	-	-	-	-	-	-	200.03	8	-	S/E*
7	177.80	23.00	34.23	22.64	33.70	0.317	8.05	-	PSLB	PLB	PLB	PLB	PLB	-	-	-	200.03	8	5	S/E*
7	177.80	26.00	38.69	25.68	38.21	0.362	9.19	-	PSLB	PLB	PLB	PLB	PLB	P	PLB	-	200.03	8	5	S/E*
7	177.80	29.00	43.16	28.75	42.78	0.408	10.36	-	-	PLB	PLB	PLB	PLB	P	PLB	-	200.03	8	5	S/E*
7	177.80	32.00	47.62	31.72	47.20	0.453	11.51	-	-	PLB	PLB	PLB	PLB	P	PLB	-	200.03	8	5	S/E*
7	177.80	35.00	52.09	34.62	51.52	0.498	12.65	-	-	-	PLB	PLB	PLB	P	PLB	PLB	200.03	8	5	S/E*
7	177.80	38.00	56.55	37.30	55.52	0.540	13.72	-	-	-	PLB	PLB	PLB	P	PLB	PLB	200.03	8	5	S
7 5/8	193.68	24.00	35.72	23.49	34.96	0.300	7.62	PS	-	-	-	-	-	-	-	-	215.90	8	-	S
7 5/8	193.68	26.40	39.29	25.59	38.08	0.328	8.33	-	PSLB	PSLB	PLB	PLB	PLB	P	-	-	215.90	8	5	S
7 5/8	193.68	29.70	44.20	29.05	43.24	0.375	9.52	-	-	PLB	PLB	PLB	PLB	P	PLB	-	215.90	8	5	S
7 5/8	193.68	33.70	50.15	33.07	49.22	0.430	10.92	-	-	PLB	PLB	PLB	PLB	P	PLB	-	215.90	8	5	S
7 5/8	193.68	39.00	58.04	38.09	56.68	0.500	12.70	-	-	-	PLB	PLB	PLB	P	PLB	PLB	215.90	8	5	S
7 5/8	193.68	42.80	63.70	42.43	63.14	0.562	14.27	-	-	-	PLB	PLB	PLB	P	PLB	PLB	215.90	8	5	S
7 5/8	193.68	45.30	67.42	44.71	66.54	0.595	15.11	-	-	-	PLB	PLB	PLB	P	PLB	PLB	215.90	8	5	S
7 5/8	193.68	47.10	70.10	46.79	69.63	0.625	15.88	-	-	-	PLB	PLB	PLB	P	PLB	PLB	215.90	8	5	S
7 3/4	196.85	46.10	68.61	45.51	67.72	0.595	15.11	-	-	-	P	P	P	P	P	P	-	-	-	S
8 5/8	219.08	24.00	35.72	23.61	35.14	0.264	6.71	-	PS	PS	-	-	-	-	-	-	244.48	8	-	S/E*
8 5/8	219.08	28.00	41.67	27.04	40.24	0.304	7.72	PS	-	PS	-	-	-	-	-	-	244.48	8	-	S/E*
8 5/8	219.08	32.00	47.62	31.13	46.33	0.352	8.94	PS	PSLB	PSLB	-	-	-	-	-	-	244.48	8	5	S/E*

* Available only in J-55 & K-55

OCTG: API CASING

DIMENSIONS, WEIGHTS AND END FINISH																				
Outside Diameter		Normal Weight T&C		Normal Weight Plain-end		Wall Thickness		TYPE OF FINISH GRADE									COUPLING OD	THREAD TYPES TPI		TYPE
In.	mm	lb/ft.	Kg/mtr	lb/ft.	Kg/mtr	Inch	mm	H-40	J-55 K-55	M 65	L-80 R-95	N-80 Type-1,Q	C-90 T-95	C-110	P-110	Q-125	mm	STC LTC	BTC	S / E
85/8	219.08	36.00	53.58	35.17	52.35	0.400	10.16	-	PSLB	PSLB	PLB	PLB	PLB	P	-	-	244.48	8	5	S/E*
85/8	219.08	40.00	59.53	39.33	58.53	0.450	11.43	-	-	PLB	PLB	PLB	PLB	P	PLB	-	244.48	8	5	S/E*
85/8	219.08	44.00	65.48	43.43	64.64	0.500	12.70	-	-	-	PLB	PLB	PLB	P	PLB	-	244.48	8	5	S/E*
85/8	219.08	49.00	72.92	48.05	71.51	0.557	14.15a	-	-	-	PLB	PLB	PLB	P	PLB	PLB	244.48	8	5	S
95/8	244.48	32.30	48.07	31.05	46.20	0.312	7.92	PS	-	-	-	-	-	-	-	-	269.88	8	-	S/E*
95/8	244.48	36.00	53.58	34.89	51.93	0.352	8.94	PS	PSLB	PSLB	-	-	-	-	-	-	269.88	8	5	S/E*
95/8	244.48	40.00	59.53	38.97	57.99	0.395	10.03	-	PSLB	PSLB	PLB	PLB	PLB	P	-	-	269.88	8	5	S/E*
95/8	244.48	43.50	64.74	42.74	63.61	0.435	11.05	-	-	PLB	PLB	PLB	PLB	P	PLB	-	269.88	8	5	S/E*
95/8	244.48	47.00	69.95	46.19	68.75	0.472	11.99	-	-	PLB	PLB	PLB	PLB	P	PLB	PLB	269.88	8	5	S/E*
95/8	244.48	53.50	79.62	52.90	78.72	0.545	13.84	-	-	-	PLB	PLB	PLB	P	PLB	PLB	269.88	8	5	S
95/8	244.48	58.40	86.91	57.43	85.47	0.595	15.11	-	-	-	PLB	PLB	PLB	P	PLB	PLB	269.88	8	5	S
103/4	273.05	32.75	48.74	31.25	46.50	0.279	7.09	PS	-	-	-	-	-	-	-	-	298.45	8	-	S/E*
103/4	273.05	40.50	60.27	38.92	57.91	0.350	8.89	PS	PSB	PSB	-	-	-	-	-	-	298.45	8	5	S/E*
103/4	273.05	45.50	67.71	44.26	65.87	0.400	10.16	-	PSB	PSB	-	-	-	-	-	-	298.45	8	5	S/E*
103/4	273.05	51.00	75.90	49.55	73.75	0.450	11.43	-	PSB	PSB	PSB	PSB	PSB	P	PSB	-	298.45	8	5	S/E*
103/4	273.05	55.50	82.60	54.26	80.75	0.495	12.57	-	-	PSB	PSB	PSB	PSB	P	PSB	-	298.45	8	5	S/E*
103/4	273.05	60.70	90.33	59.45	88.47	0.545	13.84	-	-	-	-	-	PSB	P	PSB	PSB	298.45	8	5	S
103/4	273.05	65.70	97.78	64.59	96.12	0.595	15.11	-	-	-	-	-	PSB	P	PSB	PSB	298.45	8	5	S
113/4	298.45	42.00	62.51	40.65	60.50	0.333	8.46	PS	-	-	-	-	-	-	-	-	323.85	8	-	S
113/4	298.45	47.00	69.95	45.63	67.90	0.375	9.53	-	PSB	PSB	-	-	-	-	-	-	323.85	8	5	S
113/4	298.45	54.00	80.36	52.63	78.32	0.435	11.05	-	PSB	PSB	-	-	-	-	-	-	323.85	8	5	S
113/4	298.45	60.00	89.29	58.87	87.61	0.489	12.42	-	PSB	PSB	PSB	PSB	PSB	P	PSB	PSB	323.85	8	5	S
113/4	298.45	65.00	96.73	64.02	95.27	0.534	13.56	-	-	-	P	P	P	P	P	P	-	-	-	S
113/4	298.45	71.00	105.66	69.48	103.40	0.582	14.78	-	-	-	P	P	P	P	P	P	-	-	-	S
133/8	339.72	48.00	71.43	46.01	68.48	0.330	8.38	PS	-	-	-	-	-	-	-	-	365.12	8	-	S/E*
133/8	339.72	54.50	81.11	52.78	78.55	0.380	9.65	-	PSB	PSB	-	-	-	-	-	-	365.12	8	5	S/E*
133/8	339.72	61.00	90.78	59.50	88.55	0.430	10.92	-	PSB	PSB	-	-	-	-	-	-	365.12	8	5	S/E*
133/8	339.72	68.00	101.20	66.16	98.46	0.480	12.19	-	PSB	PSB	PSB	PSB	PSB	P	PSB	-	365.12	8	5	S/E*
133/8	339.72	72.00	107.15	70.70	105.21	0.514	13.06	-	-	-	PSB	PSB	PSB	P	PSB	PSB	365.12	8	5	S

* Available only in J-55 & K-55

S:Seamless ☐ S/E ☐

E:ERW

Square & Rectangular Hollow Sections



Applications :

Architectural

Shopping Malls
Canopies / Atriums
Glass Curtains
Wall Frames
Partition Frames
Space Frames
Guard Rails & Staircases

Industrial

Industrial Sheds, Trusses
Columns and Purlins
Material Storage Racks
Mine Roof Support Systems
(Cogs, Props)
Pallets, Pipe Racks, Conveyors
Gantries, Trestles, Drilling Rigs

Infrastructural

Airport Terminal Buildings
Bridges, Bus Stands
Signage Supporting Structures
Pedestrian Walkovers (Footbridge)
Sports Galleries
Railways Platform/
Foot Overbridges

General Engineering

Automobile Chassis
Green House Structures
Truck and Bus Body Members
Hoarding Structures
Amusement Park & Playground
Equipments
Exhibition Stalls, Scaffoldings, Furnitures

Technical Specifications and Dimensional Tolerances

STEEL SECTIONS CONFORMING TO IS:4923

We can also supply sections as per ASTM A 500 specification.

Square pipe : Hf SHS (Hot formed square hollow section)
(manufacture processes : Seamless & ERW)

Specification: (Indian Standards: Hollow steel section for structural use)

IS 4923 : 1997 YSt 210

IS 4923 : 1997 YSt 240

IS 4923 : 1997 YSt 310

Chemical Composition

Sulphur = 0.050 % max.

Phosphorus = 0.050 % max.

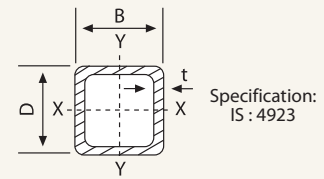
Tensile Properties of Hot formed section:

Grade	Tensile strength (MPa) min	Yield strength (MPa) min	Elongation (%) Min
Yst 210	330	210	20
Yst 240	410	240	15
Yst 310	450	310	10

Dimensional Tolerances

		Seamless	ERW
A	Thickness	±17.5%, -12.5%	+/-10%
B	Outside Dimension	+/-1% length of side to be measured with a minimum of +/-0.50 mm.	+/-1% length of side to be measured with a minimum of +/-0.50 mm.
C	Weight 1. On individual lengths 2. On lots of 10 tonnes	+10%, -8% ±7.5%	+10%, -8% +/-7.5%
D	Squareness of corner	90° ± 2°	90° ± 2°
E	Radii of corner	3t max Where t is the thickness of section	3t max Where t is the thickness of section
F	Length 1. Exact Length 2. Random Length	±6mm As per agreement Between Manufacturer & Purchaser	±6mm As per agreement Between Manufacturer & Purchaser
G	End Finish	Plain End - Mill cut finish	Plain End - Mill cut finish

Square Hollow Sections



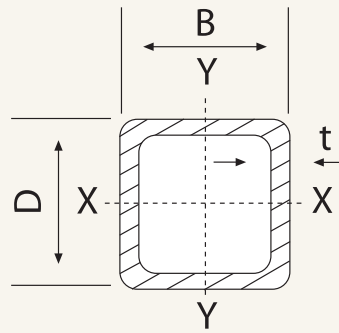
ERW

SHS B X D mm	Thick- ness mm	Sec Area A cm ²	Unit W kg/m	Moment of Inertia		Radius of Gyration		Elastic Modulus		Torsional Constants		Outer Surface
				I _{xx} cm ⁴	I _{yy} cm ⁴	r _{xx} cm	r _{yy} cm	Z _{xx} cm ³	Z _{yy} cm ³	J cm ⁴	B cm ³	Area Per mm ²
25 x 25	2.00	1.74	1.36	1.48	1.48	0.92	0.92	1.19	1.19	2.29	1.68	0.090
	2.60	2.16	1.69	1.72	1.72	0.89	0.89	1.38	1.38	2.68	1.92	0.087
	3.20	2.53	1.98	1.89	1.89	0.86	0.86	1.51	1.51	2.96	2.07	0.084
32 x 32	2.00	2.30	1.80	3.36	3.36	1.21	1.21	2.10	2.10	5.30	3.05	0.118
	2.60	2.88	2.26	4.02	4.02	1.18	1.18	2.51	2.51	6.45	3.63	0.115
	3.20	3.42	2.69	4.54	4.54	1.15	1.15	2.84	2.84	7.41	4.07	0.112
38 x 38	2.60	3.51	2.75	7.14	7.14	1.43	1.43	3.76	3.76	11.51	5.49	0.139
	3.20	4.19	3.29	8.18	8.18	1.40	1.40	4.30	4.30	13.45	6.28	0.136
	4.00	5.03	3.95	9.26	9.26	1.36	1.36	4.87	4.87	15.67	7.12	0.131
40 x 40	2.60	3.72	2.92	8.45	8.45	1.51	1.51	4.22	4.22	13.63	6.20	0.147
	3.20	4.45	3.49	9.72	9.72	1.48	1.48	4.86	4.86	16.00	7.12	0.144
	4.00	5.35	4.20	11.07	11.07	1.44	1.44	5.54	5.54	18.75	8.12	0.139
50 x 50	2.60	4.76	3.74	17.47	17.47	1.92	1.92	6.99	6.99	28.53	10.37	0.187
	2.90	5.25	4.12	18.99	18.99	1.90	1.90	7.60	7.60	31.15	11.23	0.185
	3.60	6.35	4.98	22.15	22.15	1.87	1.87	8.86	8.86	36.58	12.98	0.181
	4.50	7.67	6.02	25.50	25.50	1.82	1.82	10.20	10.20	41.99	14.68	0.177
60 x 60	2.60	5.80	4.55	31.33	31.33	2.33	2.33	10.44	10.44	50.08	15.52	0.227
	3.20	7.01	5.50	36.94	36.94	2.30	2.30	12.31	12.31	60.02	18.31	0.224
	4.00	8.55	6.71	43.55	43.55	2.26	2.26	14.52	14.52	72.41	21.62	0.219
	4.80	10.01	7.85	49.22	49.22	2.22	2.22	16.41	16.41	83.86	24.51	0.215
72 x 72	3.20	8.54	6.71	66.32	66.32	2.79	2.79	18.42	18.42	106.81	27.47	0.272
	4.00	10.47	8.22	79.03	79.03	2.75	2.75	21.95	21.95	129.85	32.78	0.267
	4.80	12.31	9.66	90.31	90.31	2.71	2.71	25.09	25.09	151.55	37.55	0.263
80 x 80	3.20	9.57	7.51	92.71	92.71	3.11	3.11	23.18	23.18	148.55	34.60	0.304
	4.00	11.75	9.22	111.04	111.04	3.07	3.07	27.76	27.76	181.22	41.49	0.299
	4.80	13.85	10.87	127.58	127.58	3.04	3.04	31.89	31.89	212.26	47.77	0.295
91.5 x 91.5	3.60	12.32	9.67	156.49	156.49	3.56	3.56	34.21	34.21	251.17	51.14	0.347
	4.50	15.14	11.88	187.57	187.57	3.52	3.52	41.00	41.00	306.78	61.40	0.343
	5.40	17.85	14.01	215.68	215.68	3.48	3.48	47.14	47.14	359.76	70.77	0.338
100 x 100	4.00	14.95	11.73	226.35	226.35	3.89	3.89	45.27	45.27	364.75	67.50	0.379
	5.00	18.36	14.41	271.10	271.10	3.84	3.84	54.22	54.22	441.84	80.54	0.374
	6.00	21.63	16.98	311.47	311.47	3.79	3.79	62.29	62.29	511.80	92.06	0.369
113.5 x 113.5	4.80	20.28	15.92	393.30	393.30	4.40	4.40	69.30	69.30	637.45	103.89	0.429
	5.40	22.60	17.74	432.58	432.58	4.38	4.38	76.23	76.23	708.69	114.41	0.426
132 x 132	4.80	23.83	18.71	634.39	634.39	5.16	5.16	96.12	96.12	1018.30	144.11	0.503
	5.40	26.60	20.88	700.11	700.11	5.13	5.13	106.08	106.08	1134.24	159.18	0.500
150 x 150	4.00	22.95	18.01	807.82	807.82	5.93	5.93	107.71	107.71	1273.46	161.38	0.579
	5.00	28.36	22.26	982.12	982.12	5.89	5.89	130.95	130.95	1569.09	196.38	0.574
	6.00	33.63	26.40	1145.91	1145.91	5.84	5.84	152.79	152.79	1856.18	229.44	0.569
	8.00	43.79	34.38	1443.00	1443.00	5.74	5.74	192.40	192.40	2405.78	290.12	0.559
180 x 180	4.00	27.75	21.78	1421.74	1421.74	7.16	7.16	157.97	157.97	2224.31	236.76	0.699
	5.00	34.36	26.97	1736.87	1736.87	7.11	7.11	192.99	192.99	2747.93	289.40	0.694
	6.00	40.83	32.05	2036.52	2036.52	7.06	7.06	226.28	226.28	3259.23	339.65	0.689
	8.00	53.39	41.91	2590.73	2590.73	6.97	6.97	287.86	287.86	4246.16	433.32	0.679
220 x 220	6.00	50.43	39.59	3813.36	3813.36	8.70	8.70	346.67	346.67	6034.53	520.18	0.849
	8.00	66.19	51.96	4894.99	4894.99	8.60	8.60	445.00	445.00	7897.48	668.99	0.839
	10.00	81.43	63.92	5887.19	5887.19	8.50	8.50	535.20	535.20	9549.15	796.48	0.829
	12.00	96.14	75.47	6793.08	6793.08	8.41	8.41	617.55	617.55	11116.96	915.37	0.818
250 x 250	6.00	57.63	45.24	5672.00	5672.00	9.92	9.92	453.76	453.96	8920.44	680.77	0.969
	8.00	75.79	59.50	7315.65	7315.65	9.82	9.82	585.25	585.25	11702.07	879.31	0.959
	10.00	93.43	73.34	8842.29	8842.29	9.73	9.73	707.38	707.38	14248.15	1054.68	0.949
	12.00	110.54	86.77	10254.78	10254.78	9.63	9.63	820.38	820.38	16678.37	1219.59	0.938

SEAMLESS

SHS B X D mm	Thick- ness mm	Sec Area A cm ²	Unit W kg/m	Moment of Inertia		Radius of Gyration		Elastic Modulus		Plastic Modulus	
				I _{xx} cm ⁴	I _{yy} cm ⁴	r _{xx} cm	r _{yy} cm	Z _{xx} cm ³	Z _{yy} cm ³	s _{xx} cm ³	s _{yy} cm ³
250 x 250	9.00	66.677	52.342	3986.760	3986.760	7.733	7.722	398.676	398.676	472.379	472.379
	10.00	73.429	57.642	4335.132	4335.132	7.684	7.684	433.513	433.513	516.765	516.765
	11.00	80.049	62.839	4665.953	4665.953	7.635	7.635	466.595	466.595	559.586	559.586
	12.00	86.538	67.932	4981.208	4981.208	7.587	7.587	498.121	498.121	600.855	600.855

Product Range

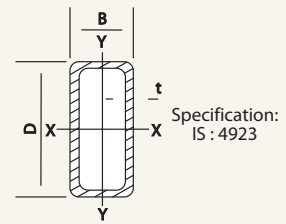


Specification:
IS : 4923

Product Range: Square Hollow Sections (SHS)

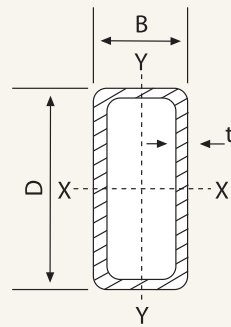
Thickness (mm) = t																		
Section Size	B	D	2.0	2.6	2.9	3.2	3.6	4.0	4.5	4.8	5.0	5.4	6.0	8.0	9.0	10.0	11.0	12.0
	25	25																
	32	32																
	38	38																
	40	40																
	50	50																
	60	60																
	72	72																
	80	80																
	91.5	91.5																
	100	100																
	113.5	113.5																
	132	132																
	150	150																
	180	180																
	200	200																
	220	220																
	250	250																

Rectangular Hollow Sections



RHS D X B mm	Thick- ness mm	Sec Area A cm ²	Unit W kg/m	Moment of Inertia		Radius of Gyration		Elastic Modulus		Torsional Constants		Outer Surface
				I _{xx} cm ⁴	I _{yy} cm ⁴	r _{xx} cm	r _{yy} cm	Z _{xx} cm ³	Z _{yy} cm ³	J cm ⁴	B cm ³	Area Per mm ²
50 x 25	2.00	2.74	2.15	8.38	2.81	1.75	1.01	3.35	2.25	6.79	3.79	0.142
	2.60	3.46	2.71	10.16	3.36	1.71	0.99	4.06	2.69	8.27	4.53	0.137
	3.20	4.13	3.24	11.63	3.80	1.68	0.96	4.65	3.04	9.52	5.12	0.134
	4.00	4.95	3.88	13.13	4.23	1.63	0.92	5.25	3.38	10.86	5.69	0.129
60 x 40	2.60	4.76	3.73	22.76	12.09	2.19	1.59	7.59	6.05	25.59	9.83	0.187
	2.90	5.25	4.12	24.74	13.11	2.17	1.58	8.25	6.56	28.02	10.66	0.185
	3.60	6.35	4.98	28.90	15.23	2.13	1.55	9.63	7.62	33.30	12.41	0.181
	4.50	7.67	6.02	33.31	17.44	2.08	1.51	11.10	8.72	39.34	14.29	0.177
66 x 33	2.60	4.70	3.69	25.15	8.43	2.31	1.34	7.62	5.11	20.75	8.71	0.185
	2.90	5.19	4.07	27.33	9.12	2.29	1.33	8.28	5.53	22.65	9.43	0.183
	3.60	6.28	4.93	31.87	10.52	2.25	1.29	9.66	6.37	26.71	10.90	0.179
	4.50	7.58	5.95	36.64	11.93	2.20	1.25	11.10	7.23	31.21	12.43	0.175
80 x 40	2.60	5.80	4.55	46.58	15.74	2.84	1.65	11.65	7.87	38.50	13.46	0.227
	3.20	7.01	5.50	54.94	18.41	2.80	1.62	13.74	9.21	45.83	15.78	0.224
	4.00	8.55	6.71	64.79	21.49	2.75	1.59	16.20	10.74	54.77	18.49	0.219
	4.80	10.01	7.85	73.22	24.03	2.71	1.55	18.30	12.02	62.81	20.79	0.215
96 x 48	3.20	8.54	6.71	98.61	33.28	3.40	1.97	20.54	13.87	82.13	23.82	0.272
	4.00	10.47	8.22	117.54	39.32	3.35	1.94	24.49	16.38	99.11	28.24	0.267
	4.80	12.31	9.66	134.35	44.55	3.30	1.90	27.99	18.56	114.80	32.14	0.263
122 x 61	3.60	12.32	9.67	232.61	78.83	4.34	2.53	38.13	25.84	193.91	44.50	0.347
	4.50	15.14	11.88	278.94	93.78	4.29	2.49	45.73	30.75	235.39	53.13	0.343
	5.40	17.85	14.01	320.83	107.03	4.24	2.45	52.60	35.09	274.29	60.89	0.338
145 x 82	4.80	20.28	15.92	555.16	228.50	5.23	3.36	76.57	55.73	534.27	94.45	0.429
	5.40	22.60	17.74	610.85	250.59	5.20	3.33	84.26	61.12	592.70	103.81	0.426
172 x 92	4.80	23.83	18.71	917.13	346.91	6.20	3.82	106.64	75.41	826.04	128.85	0.503
	5.40	26.59	20.88	1012.47	381.74	6.17	3.79	117.73	82.99	918.10	142.04	0.500
200 x 100	4.00	22.95	18.01	1199.71	410.78	7.23	4.23	119.97	82.16	991.47	141.46	0.579
	5.00	28.36	22.26	1459.25	496.94	7.17	4.19	145.93	99.39	1216.96	171.53	0.574
	6.00	33.63	26.40	1703.31	576.91	7.12	4.14	170.33	115.38	1434.03	199.68	0.569
	8.00	43.79	34.38	2146.21	719.19	7.00	4.05	214.62	143.84	1843.86	250.68	0.559
220 x 140	4.00	27.75	21.78	1892.62	947.66	8.26	5.84	172.06	135.38	2004.80	223.74	0.699
	5.00	34.36	26.97	2313.45	1155.23	8.21	5.80	210.31	165.04	2468.51	272.71	0.694
	6.00	40.83	32.05	2714.10	1351.70	8.15	5.75	246.74	193.10	2914.71	318.93	0.689
	8.00	53.39	41.91	3456.31	1712.25	8.05	5.66	314.21	244.61	3270.10	378.40	0.679
240 x 120	4.00	27.75	21.78	2110.72	725.35	8.72	5.11	175.89	120.89	1736.39	208.03	0.699
	5.00	34.36	26.97	2579.67	882.47	8.67	5.07	214.97	147.08	2138.48	253.55	0.694
	6.00	40.83	32.05	3025.91	1030.45	8.61	5.02	252.16	171.74	2528.39	296.7	0.689
	8.00	53.39	41.91	3851.84	1299.95	8.49	4.93	320.99	216.66	3272.9	376.29	0.679
260 x 180	6.00	50.43	39.59	4855.87	2763.43	9.81	7.40	373.53	307.05	5619.50	501.06	0.849
	8.00	66.19	51.96	6238.69	3538.10	9.71	7.31	479.90	393.12	6821.23	620.13	0.839
	10.00	81.43	63.92	7509.51	4244.26	9.60	7.22	577.65	471.58	8972.14	760.42	0.834
300 x 150	12.00	96.14	75.47	8672.42	4884.94	9.50	7.13	667.11	542.77	10150.39	875.12	0.829
	6.00	51.63	40.53	6073.51	2079.57	10.85	6.35	404.90	277.28	5034.64	478.20	0.869
	8.00	67.79	53.22	7808.95	2654.12	10.73	6.26	520.53	353.88	6559.05	612.64	0.859
	10.00	83.43	65.49	9403.90	3173.71	10.62	6.17	626.93	423.16	8011.67	736.01	0.848
300 x 200	12.00	98.54	77.35	10866.10	3641.00	10.50	6.08	724.41	485.48	9110.72	829.98	0.838
	6.00	57.65	45.24	7370.23	3962.19	11.31	8.29	491.34	396.22	8186.02	650.85	0.969
	8.00	75.79	59.50	9513.66	5097.04	11.20	8.20	634.24	509.70	10722.83	839.54	0.959
	10.00	93.43	73.34	11507.24	6144.30	11.10	8.11	767.15	614.43	13169.70	1015.43	0.948
300 x 200	12.00	110.54	86.77	13355.84	7107.43	10.99	8.02	890.39	710.43	15215.03	1160.24	0.938

Product Range



Specification:
IS : 4923

Product Range: Rectangular Hollow Sections (RHS)

Thickness (mm) = t																
Section Size	D	B	2.0	2.6	2.9	3.2	3.6	4.0	4.5	4.8	5.0	5.4	6.0	8.0	10.0	12.0
	50	25														
	60	40														
	66	33														
	80	40														
	96	48														
	122	61														
	145	82														
	172	92														
	200	100														
	220	140														
	240	120														
	260	180														
	300	150														
	300	200														

Pipe Fittings

MSL offers pipe fittings to cater to the Engineering and Petrochemical Industry requirements of high quality IBR Pipe Fittings.



Product Range

The product range includes Seamless Carbon Steel and Alloy Steel, as per following details:

Products	Size
Elbows	1/2" NB to 14" NB
Reducers	1" NB to 14" NB
Tees	1" NB to 14" NB
Cups	1/2" NB to 14" NB
Stub Ends	1/2" NB to 14" NB
Flanges	1/2" NB to 14" NB
Socket Weld	Upto 2" NB
Nipples	Upto 4" NB
Couplings	Upto 4" NB

Material Specifications

ASTM A 234 WPB WPC WP-1 WP12 WP11 WP22 WP5 WP9 WP91 and WPR
 ASTM A 403 WP321 321H 304 304L 316 316L 347 and 347H
 ASTM A 420 WPL-6 WPL-9 WPL-3 and WPL-8

CHEMICAL COMPOSITION & MECHANICAL PROPERTIES

API LINE PIPES

Specifi- cation	Type	Grade	Chemical Composition (%) Max.							Mechanical Properties						Impact Energy J/(ft.lb) (min.)	Hydrostatic Test Pressure				
			C	Mn	P	S	Si	V	Nb	Ti	C.E.		Yield Strength		Tensile Strength			% Elongation e			
											PCM	IIW	PSI	MPa	Min				Max	PSI	MPa
API 5L/ ISO 3183 & IS/ ISO3183	E & S PSL - 1	L210 or A	0.22	0.90	0.030	0.030	-	-	-	-	-	-	30,500	210	-	48,600	335	-	-	U.S Customary Unit e = 625,000 A ^{0.2} / U ^{0.9} SI Unit e = 1940 A ^{0.2} / U ^{0.9} Legend : e = Specified min. elongation A = Tensile test piece cross sectional area. U = Specified min. tensile strength.	
		L245 or B	0.26	1.20	0.030	0.030	-	-	-	-	-	-	35,500	245	-	60,200	415	-	-		
		L290 or X-42	0.26	1.30	0.030	0.030	-	-	-	-	-	-	42,100	290	-	60,200	415	-	-		
		L320 or X-46	0.26	1.40	0.030	0.030	-	-	-	-	-	-	46,400	320	-	63,100	435	-	-		
		L360 or X-52	0.26	1.40	0.030	0.030	-	-	-	-	-	-	52,200	360	-	66,700	460	-	-		
		L390 or X-56	0.26	1.40	0.030	0.030	-	-	-	-	-	-	56,600	390	-	71,100	490	-	-		
		L415 or X-60	0.26	1.40	0.030	0.030	-	-	-	-	-	-	60,200	415	-	75,400	520	-	-		
		L450 or X-65	0.26	1.45	0.030	0.030	-	-	-	-	-	-	65,300	450	-	77,600	535	-	-		
		L485 or X-70	0.26	1.65	0.030	0.030	-	-	-	-	-	-	70,300	485	-	82,700	570	-	-		
		Note : For Seamless, 'C' will be 0.28% for Gr. B to X-70 and 'Mn' for Gr. X-65 to X-70 will be 1.40%																			
API 5L/ ISO 3183 & IS/ ISO3183	E & S PSL - 2	L245R or BR	0.24	1.20	0.025	0.015	0.40	-	-	0.040	0.25	0.43								27 (20)	
		L245N or BN	0.24	1.20	0.025	0.015	0.40	-	-	0.040	0.25	0.43									
		L245Q or BQ	0.18	1.40	0.025	0.015	0.45	0.050	0.050	0.040	0.25	0.43	35,500	245	65,300	450	60,200	415	110,200		760
		L245M or BM	0.22	1.20	0.025	0.015	0.45	0.050	0.050	0.040	0.25	0.43									
		L290R or X42R	0.24	1.20	0.025	0.015	0.40	0.060	0.050	0.040	0.25	0.43									
		L290N or X42N	0.24	1.20	0.025	0.015	0.40	0.060	0.050	0.040	0.25	0.43									
		L290Q or X42Q	0.18	1.40	0.025	0.015	0.45	0.050	0.050	0.040	0.25	0.43	42,100	290	71,800	495	60,200	415	110,200		760
		L290M or X42M	0.22	1.30	0.025	0.015	0.45	0.050	0.050	0.040	0.25	0.43									
		L320N or X46N	0.24	1.40	0.025	0.015	0.40	0.070	0.050	0.040	0.25	0.43									
		L320Q or X46Q	0.18	1.40	0.025	0.015	0.45	0.050	0.050	0.040	0.25	0.43	46,400	320	76100	525	63,100	435	110,200		760
		L320M or X46M	0.22	1.30	0.025	0.015	0.45	0.050	0.050	0.040	0.25	0.43									
		L360N or X52N	0.24	1.40	0.025	0.015	0.45	0.100	0.050	0.040	0.25	0.43									
		L360Q or X52Q	0.18	1.50	0.025	0.015	0.45	0.050	0.050	0.040	0.25	0.43	52,200	360	76,900	530	66,700	460	110,200		760
		L360M or X52M	0.22	1.40	0.025	0.015	0.45	-	-	-	0.25	0.43									
		L390N or X56N	0.24	1.40	0.025	0.015	0.45	0.100	0.050	0.040	0.25	0.43									
		L390Q or X56Q	0.18	1.50	0.025	0.015	0.45	0.070	0.050	0.040	0.25	0.43	56,600	390	79,000	545	71,100	490	110,200		760
		L390M or X56M	0.22	1.40	0.025	0.015	0.45	-	-	-	0.25	0.43									
		L415N or X60N	0.24	1.40	0.025	0.015	0.45	0.100	0.050	0.040	As Agreed										
		L415Q or X60Q	0.18	1.70	0.025	0.015	0.45	-	-	-	0.25	0.43	60,200	415	81,900	565	75,400	520	110,200		760
		L415M or X60M	0.12	1.60	0.025	0.015	0.45	-	-	-	0.25	0.43									
		L450Q or X65Q	0.18	1.70	0.025	0.015	0.45	-	-	-	0.25	0.43									
		L450M or X65M	0.12	1.60	0.025	0.015	0.45	-	-	-	0.25	0.43	65,300	450	87,000	600	77,600	535	110,200		760
		L485Q or X70Q	0.18	1.80	0.025	0.015	0.45	-	-	-	0.25	0.43									
		L485M or X70M	0.12	1.70	0.025	0.015	0.45	-	-	-	0.25	0.43	70,300	485	92,100	635	82,700	570	110,200		760
		L555Q or X80Q	0.18	1.90	0.025	0.015	0.45	-	-	-	As Agreed										
		L555M or X80M	0.12	1.85	0.025	0.015	0.45	-	-	-	0.25	0.43	80,500	555	102,300	705	90,600	625	119,700		825

E = ERW (Electric Resistance Welded) S = Seamless ; YS - Yield Strength

U.S Customary Unit,
P = 2 S t / D

SI Unit
P = 2000 S t / D
where,
P = Hydrostatic test Pr. in PSI (kPa)
t = Specified W.T. inch (mm)
D = Specified Outside diameter, inch (mm)
S = Hoop Stress in PSI (MPa)
= 60% of Min. YS for all sizes for
Grade A & B
= 60% of Min. YS for all sizes ≤141.3 (mm)
(5 9/16") for Grade X-42 and above
= 75% of Min. YS. for size > 141.3 (mm)
(5 9/16") to ≤ 219.1 mm (8 5/8")
for Grade X-42 and above
= 85% of Min. YS for size > 219.1
(8 5/8") to < 508.0 mm (20") for
Gr X-42 and above
= 90% of Min. YS for size ≥ 508.0 mm
(20") for Grade X-42 and above

For Grade upto L-245 or B
OD ≤ 88.9 mm (3.5"),
it is not necessary that the test pressure
exceeds 17.0 Mpa,

For OD > 88.9 mm (3.5"),
it is not necessary that the test pressure
exceed 19.0 Mpa

For all other Grades & sizes,
it is not necessary that the test pressure
exceed 20.5 Mpa.

CHEMICAL COMPOSITION & MECHANICAL PROPERTIES

API CASING & TUBING

Specifi- cation	Group	Grade	Type	Chemical Composition (%)										Mechanical Properties						Hydrostatic Test Pressure																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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a - for ERW Gr. P-110, the Phosphorus content shall be 0.020% max. and Sulphur content 0.010% max.

b - No hardness limits are specified but the maximum variation is restricted as a manufacturing control.

N.L - No Limit

E - ERW (Electric Resistance Welded);

S - Seamless

Note: Charpy - V - Notch - Absorbed energy requirements for various grades are as per formulas given in **API Specification 5CT**.

Conversion Tables & Formulas

Conversion Tables

Pressure		Energy	
1 Atmosphere	= 14.7 PSI	1 Foot - Pound (Ft-Lb)	= 1.3558 Joules for Impact Energy
1 Atmosphere	= 1.033 kg/cm ²	1 Joules	= 0.736 foot - pound
1 Bar	= 100000 N/mtr ² or 100 KPa	1 Foot - Pound	= 4.448222 Newton
1 Bar	= 0.1 N/mm ²	1 Foot - Pound	= 0.1383 kg - mtr
1 Bar	= 1.02 kg/cm ²	1 Foot - Pound	= 1.3558 Newton Meter (for Torque)
1 Bar	= 14.504 PSI	1 Horse Power	= 746 Watt
1 kg/cm ²	= 0.9804 Bar	1 Watt	= 0.00134 Horse Power
1 kg/cm ²	= 14.22 PSI	Length	
1 Kg/mm ²	= 9.81 MPa	1 Kilometer	= 1000 meter
1 PSI	= 0.0703 kg/cm ²	1 Meter	= 100 centimeter
1 PSI	= 0.0689 Bar	1 Meter	= 1000 mm
1 PSI	= 6.895 KPa	1 Meter	= 3.28 foot
1 PSI	= 0.006895 MPa	1 Foot	= 0.3048 meter
1 MPa	= 145.032 PSI	1 Foot	= 304.8 mm
1 MPa	= 10.1992 kg/cm ²	1 Foot	= 12 inch
1 MPa	= 9.9992 Bar	1 Inch	= 25.4 mm
1 MPa	= 1000 KPa	1 mm	= 0.0394 inch
1 MPa	= 1 N/mm ²	1 Thou	= 0.001 inch
1 MPa	= 0.102 kg/mm ²	1 Micron	= 0.001 mm
1 KPa	= 0.145032 PSI	1 Yard	= 0.9144 meter
1 KPa	= 0.001 MPA	1 Meter	= 1.0936 yard
1 KPa	= 0.01 Bar	1 Yard	= 3 feet
1 N/mm ²	= 10 Bar	1 Mile	= 5280 feet
1 N/mm ²	= 10.2 kg/cm ²	1 Mile	= 1760 yard
1 N/mm ²	= 145.032 PSI	Area	
1 N/mm ²	= 1 MPa	1 Square Yard	= 0.8361274 Square meter
1 N/mm ²	= 0.102 kg/mm ²	1 Square Yard	= 9 Square feet
1 Ton/inch ²	= 1.575 kg/mm ²	1 Square Inch	= 645.16 Square millimeter
Weight		1 Square Feet	= 0.0929 Square meter
1 kg.	= 2.205 pounds (Lb)	1 Acre	= 4840 Square yard
1 Pound	= 0.45359 kg.	1 Square Mile	= 640 Acres
1 Pound	= 16 ounces	Temperature	
1 Pound/foot	= 1.48822 kg/mtr	i) C	= 5 (F-32) / 9
1 kg/mtr	= 0.6714 pound/foot	ii) F	= 32 + 9 C / 5
1 kg	= 9.81 Newton	iii) C / 5	= (F - 32) / 9
1 Newton	= 0.102 kg	C = Temperature in deg. Celsius	
		F = Temperature in deg. Fahrenheit	

Conversion Tables & Formulas

Formulas

1 Carbon Equivalent (Ref. API 5L)

a) When the Carbon Content is $\leq 0.12\%$

$$CE_{pcm} = C + \frac{Si}{30} + \frac{Mn}{20} + \frac{Cu}{20} + \frac{Ni}{60} + \frac{Cr}{20} + \frac{Mo}{15} + \frac{V}{10} + 5B$$

b) When the Carbon content is $> 0.12\%$

$$CE_{Iw} = C + \frac{Mn}{6} + \frac{(Cr + Mo + V)}{5} + \frac{(Ni + Cu)}{15}$$

2 Test Pressure (Ref. API 5C3)

a) Hydrostatic Test Pressure

Hydrostatic test pressure for plain - end pipe, extreme - line casing and integral - joint tubing are calculated by using the following formula

$$P = \frac{2St}{D}$$

b) Internal Yield (Burst) Pressure

$$P_i = 0.875 (2 \times Y_p \times t / D)$$

Where;

P = Hydrostatic test pressure in PSI

P_i = Min. internal yield pressure in PSI

S = Fiber stress corresponding to the percent of specified yield strength

t = Specified wall thickness in inches

D = Specified outside diameter in inches

Y_p = Specified min. yield strength in PSI

3 Weight for Plain End Pipes (Ref. API 5L/ASTM)

The plain end linear mass in SI Units is calculated by using the following formula

$$W_{pe} = 0.02466 (D - t) t$$

Where;

W_{pe} is the plain end linear mass, expressed in kg/Mtr and rounded to nearest 0.01 kg/Mtr

D is the specified outside diameter, expressed in millimetres

t is the specified wall thickness, expressed in millimetres

4 Weight for Full Length Pipes

$$WL = (W_{pe} \times L) + ew$$

Where;

WL = Calculated weight of full length pipe (kg.)

W_{pe} is the plain end linear mass, expressed in Kg/Mtr and rounded to nearest 0.01 kg/Mtr

L = Length of Pipe (mtr)

ew = Weight gain or loss due to end finish (kg)

Note : For Plain End Pipe ew = 0

5 Weight of Billet

$$\text{Weight of Billet (Kg/Mtr)} : 0.0061654 \times (\text{Dia. mm})^2$$

6 Standard Drift Size (Ref. API 5CT)

Product	Drift Mandrel Size(Min.)	
	Length (mm)	Diameter (mm)
Casing		
< 9 5/8	152	d - 3.18
≥ 9 5/8 to ≤ 13 3/8	305	d - 3.97
> 13 3/8	305	d - 4.76
Tubing		
≤ 2 7/8	1067	d - 2.38
> 2 7/8	1067	d - 3.18

Where; d - is inside diameter expressed in millimetres.