



For Uses in Water, Gas, Steam and Air line

Conforming to IS : 1239 (Pt I) – 2004, Equivalent to EN – 10255 : 2004

Nominal Bore		Outside Diameter		Wall Thickness		Nominal weight of steel Tubes				No. of pipes approx	Socket	
						Plain End		Screwed & Socketed				
mm	inch	Minimum mm	Maximum mm	mm	SWG	kg/mtr	mtrs/tonne	kg/mtrs	mtrs/tonne	Tonne Bundle	Minimum OD mm	Minimum Length mm
15 L	1/2	21.0	21.4	2.00	14	0.947	1056	0.956	1046	165	27.0	37.0
20 L	3/4	26.4	26.9	2.30	13	1.380	725	1.390	719	112	32.5	39.0
25 L	1	33.2	33.8	2.60	12	1.980	505	2.000	500	80	39.5	46.0
32 L	1.1/4	41.9	42.5	2.60	12	2.540	394	2.570	389	60	49.0	51.0
40 L	1.1/2	47.8	48.4	2.90	11	3.230	310	3.270	306	48	56.0	51.0
50 L	2	59.6	60.2	2.90	11	4.080	245	4.150	241	39	68.0	60.0
65 L	2.1/2	75.2	76.0	3.20	10	5.710	175	5.830	172	27	84.0	69.0
80 L	3	87.9	88.7	3.20	10	6.720	149	6.890	145	23	98.0	75.0
100 L	4	113.0	113.9	3.60	9	9.750	103	10.00	100	16	124.0	87.0
15 M	1/2	21.0	21.8	2.60	12	1.210	826	1.220	820	132	27.0	37.0
20 M	3/4	26.5	27.3	2.60	12	1.560	641	1.570	637	98	32.5	39.0
25 M	1	33.3	34.2	3.20	10	2.410	415	2.430	412	65	39.5	46.0
32 M	1.1/4	42.0	42.9	3.20	10	3.100	323	3.130	319	51	49.0	51.0
40 M	1.1/2	47.9	48.8	3.20	10	3.560	281	3.600	278	45	56.0	51.0
50 M	2	59.7	60.8	3.60	9	5.030	199	5.100	196	30	68.0	60.0
65 M	2.1/2	75.3	76.6	3.60	9	6.420	156	6.540	153	24	84.0	69.0
80 M	3	88.0	89.5	4.00	8	8.360	120	8.530	117	19	98.0	75.0
100 M	4	113.1	115.0	4.5	7	12.200	82	12.500	80	13	124.0	87.0
125 M	5	138.5	140.8	4.80	6	15.900	63	16.400	61	10	151.0	96.0
150 M	6	163.9	166.5	4.80	6	18.900	53	19.500	51	8	178.0	96.0
15 H	1/2	21.0	21.8	3.20	10	1.440	694	1.450	690	110	27.0	37.0
20 H	3/4	26.5	27.3	3.20	10	1.870	535	1.880	532	84	32.5	39.0
25 H	1	33.3	34.2	4.00	8	2.930	341	2.950	339	55	39.5	46.0
32 H	1.1/4	42.0	42.9	4.00	8	3.790	264	3.820	262	42	49.0	51.0
40 H	1.1/2	47.9	48.8	4.00	8	4.370	229	4.410	227	36	56.0	51.0
50 H	2	59.7	60.8	4.50	7	6.190	162	6.260	160	27	68.0	60.0
65 H	2.1/2	75.3	76.6	4.50	7	7.930	126	8.050	124	20	84.0	69.0
80 H	3	88.0	89.5	4.80	6	9.900	101	10.100	99	16	98.0	75.0
100 H	4	113.1	115.0	5.40	5	14.500	69	14.800	68	11	124.0	87.0
125 H	5	138.5	140.8	5.40	5	17.900	56	18.400	54	9	151.0	96.0
150 H	6	163.9	166.5	5.40	5	21.300	47	21.900	46	7	178.0	96.0

Light

Medium

Heavy

Tolerance : For IS : 1239

Thickness	
1. Light tubes	+ not limited - 8%
2. Medium and Heavy Tubes	+ not limited - 10%
Weight	
1. Single tube (Light series)	+10% - 8%
2. Single Tube (Medium & Heavy series)	± 10%
3. For Quantity per Load of 10 tones Minium (Light series)	+ 7.5% -5%
4. For Quantity per Load of 10 tonnes Minium (Medium & Heavy series)	± 7.5%
Length	
Unless otherwise specified	4 to 7 metres

Larger Dia Pipes

For Uses in Water, gas and Sewage conforming to IS : 3589 / 2001

Outside Diameter mm	Wall Thickness mm	Weight (Plain End) kg/mtr	M/tonne
168.3	4.00	16.09	62
	4.50	18.10	55
	4.85	19.60	51
	5.40	21.70	46
	6.30	25.30	40
193.7	7.00	28.16	36
	4.00	18.64	54
	4.85	22.60	44
	5.40	25.00	40
	5.90	27.30	37
219.1	7.00	32.62	31
	4.00	21.20	47
	4.85	25.70	39
	5.60	29.40	34
	5.90	31.00	32
7.00	37.09	27	



Steel Tubes for Structural Purposes

Conforming to IS : 1161/2014

NB	Outside diameter	Thickness	Nominal weight of Black tubes Plain End	
			Kg/Mtr.	Mtr./Ton
15	21.3	2.00	0.952	1050
		2.60	1.200	834
		3.20	1.430	699
20	26.9	2.30	1.400	714
		2.60	1.560	641
		3.20	1.870	535
25	33.7	2.60	1.990	503
		3.20	2.410	415
		4.00	2.930	341
32	42.4	2.60	2.550	392
		3.20	3.090	324
		4.00	3.790	264
40	48.3	2.90	3.250	308
		3.20	3.560	281
		4.00	4.370	229
50	60.3	2.90	4.110	243
		3.60	5.030	199
		4.50	6.190	162
65	76.1	2.90	5.240	191
		3.60	6.440	155
		4.50	7.950	126
80	88.9	3.20	6.760	148
		4.00	8.380	119
		4.80	9.960	100
90	101.6	3.60	8.700	115
		4.00	9.630	104
		4.80	11.460	87
100	114.3	3.60	9.830	102
		4.50	12.190	82
		5.40	14.500	69
110	127.0	4.50	13.590	74
		4.80	14.470	69
		5.40	16.190	62
125	139.7	4.50	15.000	67
		4.80	15.970	63
		5.40	17.890	56
135	152.4	4.50	16.410	61
		4.80	17.470	57
		5.40	19.580	51
150	165.1	4.50	17.820	56
		4.80	18.980	53
		5.40	21.270	47
150	168.3	4.50	18.180	55
		4.80	19.350	52
		5.40	21.690	46
175	193.7	6.30	25.170	40
		4.80	22.360	45
		5.40	25.080	40
200	219.1	5.90	27.330	37
		4.80	25.370	39
		5.60	29.490	34
		5.90	31.020	32

Physical Properties

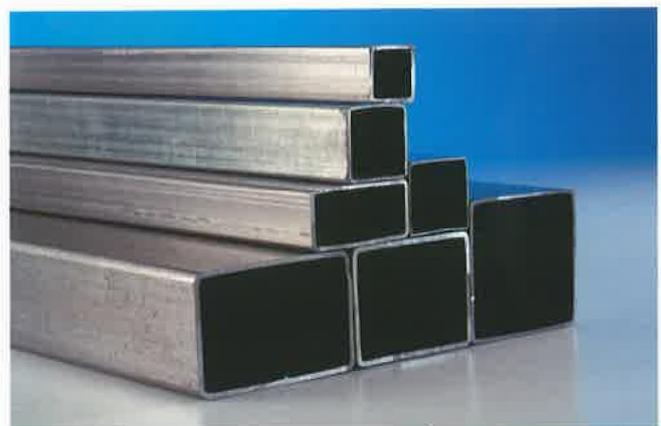
Grade	Y-S (min) MPa (kg/mm ²)	T.S. (Min) MPa (kg/mm ²)	Elongation
YST-210	210 (21.42)	330 (33.66)	20
YST-240	240 (24.48)	410 (41.82)	17
YST-310	310 (31.62)	450 (45.90)	14

Tolerance

Outside Diameter upto & including 48.3 mm	+ 0.4 mm - 0.8 mm
Over 48.3 mm	± 1%
Thickness	± 10%
Weight -	
For Single Tube	± 10%
For 10 Tonne Lot	± 7.5%



M. S. BLACK PIPES



HOLLOW STEEL SECTIONS RHS/SHS



Technical Data of Hollow Steel Sections RHS/SHS

Conforming to IS : 4923 1997

A. Square (SHS)								
Designation	Depth or Width	Thickness	Weight	Area of Section	Moment of Inertia	Radius of Gyration	Elastic Modulus	Plastic Modulus
mm x mm	mm	mm	kg/m	cm ²	cm ⁴	cm	cm ³	cm ³
25 x 25	25.0	2.6	1.69	2.16	1.72	0.89	1.38	1.76
	25.0	3.2	1.98	2.53	1.89	0.86	1.51	1.98
32 x 32	32.0	2.6	2.26	2.88	4.02	1.18	2.51	3.11
	32.0	3.2	2.69	3.42	4.54	1.15	2.84	3.59
38 x 38	32.0	4.0	3.19	4.07	5.02	1.11	3.14	4.11
	38.0	3.2	3.29	4.19	8.18	1.40	4.30	5.34
	38.0	3.6	3.63	4.62	8.76	1.38	4.61	5.80
49.5 x 49.5	38.0	4.0	3.95	5.03	9.26	1.36	4.87	6.22
	49.5	2.9	4.07	5.19	18.37	1.88	7.42	8.93
	49.5	3.6	4.93	6.28	21.42	1.85	8.66	10.60
60 x 60	49.5	4.5	5.95	7.58	24.64	1.80	9.96	12.47
	60.0	3.2	5.50	7.00	36.94	2.30	12.31	14.73
	60.0	3.6	6.11	7.79	40.45	2.28	13.48	16.22
72 x 72	60.0	4.5	7.43	9.47	47.20	2.23	15.73	19.32
	72.0	3.2	6.71	8.54	66.32	2.79	18.42	21.80
	72.0	4.0	8.22	10.47	79.03	2.75	21.95	26.32
91.5 x 91.5	72.0	4.8	9.66	12.31	90.31	2.71	25.09	30.49
	91.5	3.6	9.67	12.32	156.49	3.56	34.21	40.24
	91.5	4.5	11.88	15.14	187.57	3.52	41.00	48.79
100 x 100	91.5	5.4	14.01	17.85	215.68	3.48	47.14	56.77
	100.0	4.0	11.74	14.95	226.35	3.89	45.27	53.30
	100.0	5.0	14.41	18.36	271.10	3.84	54.44	64.59
113.5x113.5	100.0	6.0	16.98	21.63	311.47	3.79	62.29	75.10
	113.5	4.5	14.99	19.10	372.88	4.42	65.71	77.33
	113.5	4.8	15.92	20.28	393.31	4.40	69.30	81.81
132 x 132	113.5	5.4	17.74	22.60	432.58	4.38	76.23	90.55
	132.0	4.8	18.71	23.83	634.39	5.16	96.12	112.69
	132.0	5.4	20.88	26.59	700.11	5.13	106.08	125.02
150x150	150.0	4.0	18.01	22.95	807.83	5.93	107.71	124.87
	150.0	5.0	22.26	28.36	982.13	5.89	130.95	152.98
	150.0	6.0	26.40	33.63	1145.92	5.84	152.79	179.89

Tolerance on Thickness & Mass

Thickness for all Sizes	±7.5%
On Individual Length	Weight
	+7%
On Lots of 10 Tonnes	-8%
	±7%
Outside Dimensions	±1% of length of the side to be measured of Sides with a minimum of ± 0.5mm
Squareness of Corner	90° ± 2°
Radius of Corners – Outside	3t, max where t is the thickness of section

Steel Grade Available
YST210/YST240/YST310

Can Roll in specific Thickness
and Length also

B. Rectangular (RHS)

Designation	Depth of Section	Width of Section	Thickness	Weight	Area of Section	Moment of Inertia		Radius of Gyration		Elastic Modulus		Plastic Modulus	
						X-X	Y-Y	X-X	Y-Y	X-X	Y-Y	X-X	Y-Y
mm	mm	mm	mm	kg/m	cm ²	cm ⁴	cm ⁴	cm	cm	cm ³	cm ³	cm ³	cm ³
50 x 25	50.0	25.0	2.9	2.98	3.80	10.93	3.60	1.70	0.97	4.37	2.88	5.72	3.48
	50.0	25.0	3.2	3.24	4.13	11.63	3.80	1.68	0.96	4.65	3.04	6.14	3.73
60 x 40	60.0	40.0	2.9	4.12	5.25	24.74	13.11	2.17	1.58	8.25	6.56	10.25	7.73
	66.0	33.0	2.9	4.07	5.19	27.33	9.12	2.29	1.33	8.28	5.53	10.59	6.49
66 x 33	66.0	33.0	3.6	4.93	6.28	31.87	10.52	2.25	1.29	9.66	6.37	12.56	7.66
	66.0	33.0	4.5	5.95	7.58	36.64	11.93	2.20	1.25	11.10	7.23	14.77	8.94
	80.0	40.0	2.9	5.03	6.41	50.87	17.11	2.82	1.63	12.72	8.56	16.07	9.88
80 x 40	80.0	40.0	3.2	5.50	7.01	54.94	18.41	2.80	1.62	13.74	9.21	17.46	10.72
	80.0	40.0	4.0	6.71	8.55	64.79	21.49	2.75	1.59	16.20	10.74	20.91	12.77
	96.0	48.0	3.2	6.71	8.54	98.61	33.28	3.40	1.97	20.54	13.87	25.85	15.91
96 x 48	96.0	48.0	4.0	8.22	10.47	117.54	39.32	3.55	1.94	24.49	16.30	31.21	19.14
	96.0	48.0	4.8	9.66	12.31	134.35	44.55	3.30	1.90	27.99	18.56	36.13	22.08
122 x 61	122.0	61.0	3.6	9.67	12.32	232.61	78.83	4.34	2.35	38.13	25.84	47.71	29.42
	122.0	61.0	4.5	11.88	15.14	278.94	93.78	4.29	2.49	45.73	30.75	57.85	35.56
	122.0	61.0	5.4	14.01	17.85	320.83	107.03	4.24	2.45	52.60	35.09	67.29	41.22
145 x 82	145.0	82.0	4.8	15.92	20.28	555.16	228.50	5.23	3.36	76.57	55.73	94.93	63.93
	145.0	82.0	5.4	17.74	22.60	610.85	250.59	5.20	3.33	84.26	61.12	105.07	70.66
172 x 92	172.0	92.0	4.8	18.71	23.83	917.13	346.91	6.20	3.82	106.64	75.41	132.08	85.61
	172.0	92.0	5.4	20.88	26.59	1012.47	381.74	6.17	3.79	117.73	82.99	146.55	94.86
200x100	200.0	100.0	4.0	18.01	22.95	1199.72	410.78	7.23	4.23	119.97	82.97	148.04	91.70
	200.0	100.0	5.0	22.26	28.36	1459.28	496.94	7.17	4.19	145.93	99.39	181.38	112.09
	200.0	100.0	6.0	26.40	33.63	1703.34	576.92	7.12	4.14	170.33	115.38	213.27	131.50

Steel Tubes for Mechanical and General Engineering Purposes

Conforming to IS : 3601 – 2006

IS - 3601



Outside Diameter mm	Thickness mm	Mass Kg/m
1	2	3
21.3	1.8	0.866
	2.0	0.952
	2.6	1.20
	3.2	1.43
	4.0	1.71
26.9	1.8	1.11
	2.0	1.23
	2.3	1.4
	2.6	1.56
	3.2	1.87
33.7	2.0	1.56
	2.3	1.78
	2.6	1.99
	3.2	2.41
	4.0	2.93
42.4	4.5	3.24
	2.3	2.27
	2.6	2.55
	3.2	3.09
	3.6	3.44
48.3	4.0	3.79
	5.0	4.61
	5.4	4.93
	2.3	2.61
	2.6	2.93
	2.9	3.25
	3.2	3.56
	3.6	3.97
	4.0	4.37
	4.9	5.24
	5.0	5.34
	5.6	5.9
	5.9	6.16

Outside Diameter mm	Thickness mm	Mass Kg/m
1	2	3
60.3	2.3	3.29
	2.6	3.70
	2.9	4.11
	3.2	4.51
	3.6	5.03
	4.0	5.55
	4.5	6.19
	5.0	6.82
	5.6	7.65
	6.3	8.39
76.1	2.6	5.24
	2.9	5.75
	3.2	6.44
	3.6	7.11
	4.5	7.95
	5.0	8.77
	5.4	9.42
	6.3	10.8
	7.1	12.10
	2.9	6.15
88.9	3.2	6.76
	4.0	8.38
	5.0	10.3
	5.4	11.10
	5.6	11.5
	6.3	12.8
	8.0	16.0
101.6	3.6	8.70
	4.0	9.63
	5.0	11.9
114.3	3.2	8.77
	3.6	9.83
	4.5	12.2
	5.4	14.5

Outside Diameter mm	Thickness mm	Mass Kg/m
1	2	3
127	6.3	16.8
	8.0	21.0
	8.8	22.9
139.7	4.5	13.6
	5.0	15.0
	5.4	16.2
	3.6	12.1
	4.0	13.4
	4.5	15.0
	5.0	16.6
152.4	5.0	17.9
	5.4	19.6
	6.3	20.7
	8.0	26.0
165.1	10.0	32.0
	4.5	16.4
	5.0	18.2
168.3	5.4	19.6
	4.5	17.8
	5.0	19.7
	5.4	21.2
	6.3	24.8
193.7	4.0	16.2
	4.5	18.2
	5.0	20.1
	5.4	21.7
	6.3	25.2
	7.1	28.2
193.7	8.0	31.6
	6.0	23.3
	5.4	25.1
	5.9	27.3
	6.3	29.1
8.0	36.6	

Mechanical Properties IS : 3601-2006

S. No.	Tube Designation	Tensile Strength Min.	Yield Stress Min.	Elongation	
				As welded (Less than or equal to 33.7 mm OD)	As welded (more than 33.7mm OD)
1	WT 160	310	160	15	22
2	WT 210	330	210	12	20
3	WT 240	410	240	10	15
4	WT 310	450	310	6	10

Notes:

- If tube in the as welded condition are subjected to annealing, brazing, welding or similar heating will deviate in the heat affected zone.
- Welding of WT 310 grade may require special welding technique.
- 1Mpa=0.1020kgf/mm²

Manufacturing Tolerance

S. No.	Over mm	Tolerance on outside diameter mm	
		Up to and including mm	Tolerance on outside diameter mm
1	—	25.4	± 0.15
2	25.4	51	± 0.18
3	51	53.5	± 0.25
4	63.5	76.1	± 0.25
5	76.1	88.9	± 0.31
6	88.9	101.6	± 0.36
7	101.6	114.3	± 0.43
8	114.3	152.4	± 0.58
9	152.4	168.3	± 0.65
10	168.3	—	± 0.75

Note: The Tolerance on thickness excluding the weld shall be ± 10%