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Nippon Tubes Limited

COMMITTED TO EXCELLENCE



COMPANY PROFILE

Nippon Tubes Ltd. an ISO 9001:2008 organization and is a leading name in the Steel Industry.

State of the Art manufacturing plant is located in the heart of Industrial Area Gautam Budh Nagar capable of producing ERW Black & Galvanized pipes.

Nippon Tubes Ltd. pioneered its operation in 2008 to produce ERW Black & Galvanized Steel Pipes and Tubes. Since then the company has held a commanding position in the Construction Industry and has tapped the premium segment of Indian market under own brand name **NTL / JAI INDIA / JAI SHREE / NIPPON**

We manufacturer premium quality tubular product in Steel Segment and have the capability to supply them in any configuration at competitive prices and in quick time. With cutting edge infrastructural facilities, we at **Nippon Tubes Ltd.** have the manufacturing capability & production flexibility to respond to the most dynamic & complex needs of our customers.

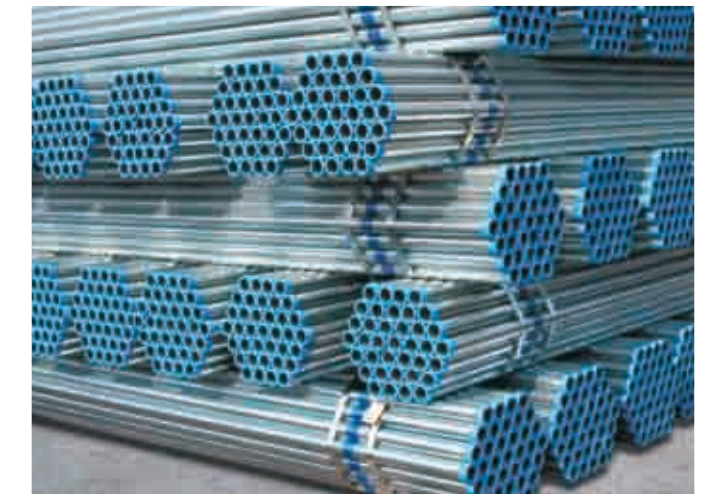
Our organizational structure empowers us with the competitive capability to maintain a leading edge in the marketplace & work to the benefit of our customers. We are market leaders with our fine range of competitively priced, custom-made products.

Our Product Confirm to :

- IS/BS Standards / Norms like 1161, 1239, 3589, 4270 etc.
- ISO 9001 : 2008 Standards
- EN 10255, EN 10219, & EN 39 etc.

OUR PRODUCT RANGE

- The brand name "NTL" is highly admired and respect in the market place by our customers. Available for diverse
- uses and applications, Our products are available in the Indian markets. Our all encompassing range of product
- include : ERW black steel pipes, galvanised steel pipes
- Product Available in different sizes and confirm to British Standards having Light, Medium, Heavy Class. Ranging from 15MM to 250 MM NB.





QUALITY PROFILE

Remaining true to our beliefs, we strive for continuous improvements in the way we work and deliver products to our customers with whom we wish to maintain a lasting business partnership.

As we believe in raising our benchmarks of quality, we maintain stringent quality standards in our processes of manufacturing our products. We ensure that the products go through rigorous quality checks at every stage of production right from the sourcing of raw materials to the final testing. We ensure that the product is of excellent quality.

"TQS through TQM" (Total Quality Service through Total Quality Management)

Practicing Total Quality Management (TQM) provides us the fundamental structure for meeting and exceeding our customers' needs and expectations. As our ongoing improvement efforts focus on refining our processes and controls, we are able to provide the highest quality products & service in the industry.

Our products conform to BIS besides fulfilling international specifications. The quality assurance procedure involves multi step production process, which allows our rigorous quality checks of each and every process that is part of the production. The quality checks start right from sourcing the raw materials to a series of chemical and mechanical tests.

QUALITY IS NOT AN ACT IT, IS A HABIT

The different kinds of test that are performed are :-

Tensile Testing : The tensile testing evaluates the overall strength of our products to ensure they are fit to be delivered to our customers and confirm to international quality standards.

Flattening Test : The flattening test are carried out to check the flattening properties of our products and ensure the robustness of our products

Bend Test : The availability of our products is tested with the bend test to ensure that they are of the best quality and standards.

Drift Expansion Test : Tests are performed to calculate the drift expansion of the products to make sure that the products are durable and can with stand heavy weights and pressure.

On Line NDT : Working in synchronization with automatic sorting systems in our plants 'Online NDT' not only segregates good & bad tubes, but also ensures efficient monitoring of equipment's performance and rejection levels.



QUALITY OBJECTIVES

- To adhere to probable date of completion as agreed with our customers
- To increase the capability of our employees through proper motivation and training
- To bring down quality costs.
- To increase efficiency & effectiveness of our processes through continuous improvements.

QUALITY RESOURCES

To ensure the quality assurance system's continued suitability and effectiveness, we maintain adequate resources by way of trained personnel, equipment, materials, finance and time to ensure that the products are provided in accordance with our quality policy and objectives.

This provision of resources includes those required for the management of quality, performance of activities relating to identification of requirements, inspection and tests, training, servicing, internal/external audits and review of adequacy of quality assurance system.



Dimensions and weight of ERW Black & Galvanized Steel Tubes

As per IS:1239 (Part-1) 2004 Equivalent to BS :1387-1987

Normal Bore & Series		Outside Diameter		Wall Thickness	Normal Mass of Steel Tube					
					Plain End		Screwed & Socked		Sockets	
mm	Inch	Max mm	Min. mm		Kg/m	mtrs/tonne	Kg/m	mtrs/tonne	Min O.D. mm	Min Length mm
15 L	0.50	21.4	21.0	2.0	0.947	1056	0.956	1046	27.0	37.0
15 M	0.50	21.8	21.0	2.6	1.21	826	1.22	820	27.0	37.0
15 H	0.50	21.8	21.0	3.2	1.44	694	1.45	690	27.0	37.0
20 L	0.75	26.9	26.4	2.3	1.38	724	1.39	719	32.5	39.0
20 M	0.75	27.3	26.5	2.6	1.56	641	1.57	637	32.5	39.0
20 H	0.75	27.3	26.5	3.2	1.87	534	1.88	532	32.5	39.0
25 L	1.00	33.8	33.2	2.6	1.98	505	2.00	500	39.5	46.0
25 M	1.00	34.2	33.3	3.2	2.41	415	2.43	412	39.5	46.0
25 H	1.00	34.2	33.3	4.0	2.93	341	2.95	339	39.5	46.0
32 L	1.25	42.5	41.9	2.6	2.54	393	2.57	389	49.0	51.0
32 M	1.25	42.9	42.0	3.2	3.10	322	3.13	319	49.0	51.0
32 H	1.25	42.9	42.0	4.0	3.79	264	3.82	262	49.0	51.0
40 L	1.50	48.4	47.8	2.9	3.23	309	3.27	306	56.0	51.0
40 M	1.50	48.8	47.9	3.2	3.56	281	3.60	278	56.0	51.0
40 H	1.50	48.8	47.9	4.0	4.37	229	4.41	227	56.0	51.0
50 L	2.00	60.2	59.6	2.9	4.08	245	4.15	241	68.0	60.0
50 M	2.00	60.8	59.7	3.6	5.03	199	5.10	196	68.0	60.0
50 H	2.00	60.8	59.7	4.5	6.19	161	6.26	160	68.0	60.0
65 L	2.50	76.0	75.2	3.2	5.71	175	5.83	172	84.0	69.0
65 M	2.50	76.6	75.3	3.6	6.42	155	6.54	153	84.0	69.0
65 H	2.50	76.6	75.3	4.5	7.93	126	8.05	124	84.0	69.0
80 L	3.00	88.7	87.9	3.2	6.72	149	6.89	145	98.0	75.0
80 M	3.00	89.5	88.0	4.0	8.36	119	8.53	117	98.0	75.0
80 H	3.00	89.5	88.0	4.8	9.90	101	10.10	99	98.0	75.0
100 L	4.00	113.9	113.0	3.6	9.75	102	10.00	100	124.0	87.0
100 M	4.00	115.0	113.1	4.5	12.20	82	12.50	80	124.0	87.0
100 H	4.00	115.0	113.1	5.4	14.50	69	14.80	68	124.0	87.0
125 M	5.00	140.8	138.5	4.8	15.90	63	16.40	61	151.0	96.0
125 H	5.00	140.8	138.5	5.4	17.90	56	18.40	54	151.0	96.0
150 M	6.00	166.5	163.9	4.8	18.90	53	19.50	51	178.0	96.0
150 H	6.00	166.5	163.9	5.4	21.30	47	21.90	46	178.0	96.0

L = Light M = Medium H = Heavy

NTL provides quick delivery of made to order customise ERW Pipes & Tubes/ Black Steel Pipes & Tubes / Galvanized Pipes & Tubes especially made for Use in Water, Gas, Air & Steam. All Pipes & Tubes are manufactured in accordance with ASTM / IS/ BS specifications.

TOLERANCES

A. Thickness	B. Weight	3. For Quality per Load of 10 tonnes minimum (Light series)	C. Length
1. Light Tubes + Not limited -8%	1. Single tube (Light series) + 10% -8%	±5%	4 to 7 meters unless otherwise specified
2. Medium and Heavy Tubes +Not limited -10%	2. Single tube (Medium & Heavy series) ±10%	4. For Quantity per Load of 10 tonnes minimum (Medium & heavy series) ±7.5%	

ERW Steel Tubes for Water & Sewage Purpose

Conforming to IS: 3589/2001 Equivalent to BS-534

N.B Size	Out side Diameter	Wall Thickness	Weight (Plain End)	
mm	mm	mm	kg/m	M/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
175	193.7	2.60	12.30	81
		3.60	16.90	59
		4.50	21.00	48
		6.30	29.10	34
200	219.1	2.60	13.90	72
		3.60	19.10	52
		4.50	23.80	42
		6.30	33.10	34
250	273.0	3.60	23.90	42
		4.00	26.50	38
		5.00	33.00	30
		6.30	41.40	24
300	323.9	4.00	31.60	32
		4.50	35.40	28
		5.60	44.00	23
		7.10	55.50	18
350	355.6	4.00	34.70	29
		5.00	43.20	23
		5.60	48.30	21
		8.00	68.60	15

TOLERANCES

- Outside diameter of pipe $\pm 0.75\%$
- Thickness $\pm 10\%$
- Length Unless other specified. Length are in single random length of 4 to 7 meter.
- Mass per Truck Load of 10 Tonnes or above $\pm 7.5\%$

A. PHYSICAL PROPERTIES

Grade	Y.S. (min) (Mpa)	T.S. (min) (Mpa)	Percentage Elongation (min.)
Fe 330	195	330	20
Fe 410	235	410	18
Fe 450	275	450	15

Note : Thickness as stated above are commonly used. However, pipes of other thickness can also be manufactured and supplied to meet customer's requirement.

Plain End Steel Tubes for Water Wells (Casing Pipes)

Conforming to IS : 4270 / 2001

N.B Size	Out side Diameter	Wall Thickness	Weight (Plain End)	
mm	mm	mm	kg/m	M/Tonne
100	114.3	5.0	13.48	74
		5.4	14.5	69
125	141.3	5.0	16.80	60
		5.4	18.1	55
150	168.3	5.0	20.13	50
		7.1	28.2	35
175	193.7	5.4	25.13	40
		7.1	32.67	31
200	219.1	5.4	28.46	35
		6.4	33.6	30
		7.10	37.11	27
		8.00	41.64	24
225	244.5	6.0	35.29	28
250	273.1	7.1	46.57	21
		8.0	52.3	19
300	323.9	7.1	55.47	18

B. TOLERANCES

- Outside diameter of pipe $\pm 1.0\%$
- Thickness upto 406.4 OD $\begin{cases} +15\% \\ -12.5\% \end{cases}$
- Weight Single Tube $\begin{cases} -8\% \\ +10\% \end{cases}$
- Length Unless otherwise specified 4 to 7 mtr. -

A. PHYSICAL PROPERTIES

Grade	Y.S. (min) Mpa (kg/mm ²)	T.S. (min) Mpa (kg/mm ²)	Percentage Elongation (min.)
Fe 410	235	410	15%
Fe 450	275	450	13%

ERW Steel Tube for Line Pipes in Oil & Natural Gas

Conforming to IS/ISO : 3183 - 2007

NB (mm)	OD (mm)	Wall Thickness (mm)	Plain End Weight (Kg/m)	Test Pressure (Min)		NB (mm)	OD (mm)	Wall Thickness (mm)	Plain End Weight (Kg/m)	Test Pressure (Min)	
				Grade Yst 210 STD 100Kpa	Grade Yst 240 STD 100Kpa					Grade Yst 210 STD 100Kpa	Grade Yst 240 STD 100Kpa
80	88.90	3.20	6.76	89	104	200	219.10	4.80	25.37	54	63
		3.60	7.57	101	117			5.60	29.48	63	74
		4.00	8.37	112	130			6.40	33.57	73	84
		4.40	9.17	123	143			7.00	36.61	79	92
		4.80	9.95	134	156						
90	101.60	3.60	8.70	88	102	250	273.10	4.80	31.76	44	51
		4.00	9.63	98	114			5.60	36.94	51	59
		4.40	10.55	108	125			6.40	42.09	58	68
		4.80	11.46	117	137			7.10	46.57	65	75
		5.70	13.48	139	162			8.70	51.03	71	83
100	114.30	3.60	9.83	78	91	300	323.90	4.80	37.77	37	43
		4.00	10.88	87	101			5.60	43.96	43	50
		4.80	12.96	104	121			6.40	50.11	49	57
		5.20	13.99	113	132			7.10	55.47	54	63
		5.60	15.01	122	142			7.90	61.56	61	71
125	141.30	3.20	10.90	56	65	350	355.60	4.80	41.52	34	39
		4.00	13.94	70	82			5.20	44.93	36	42
		4.80	16.16	84	98			6.40	55.11	45	52
		5.60	18.74	98	115			7.10	61.02	50	58
		6.60	21.92	116	135			7.90	67.74	55	64
150	168.30	3.60	14.62	53	62	400	406.40	4.80	47.54	29	34
		4.00	16.21	59	76			5.20	51.45	32	37
		4.80	19.35	71	81			5.60	55.35	34	40
		5.20	20.91	77	89			6.40	63.13	39	46
		5.60	22.47	83	96			7.10	69.91	43	51
		6.40	25.55	94	110			7.90	77.63	48	56
		7.10	28.22	105	122			8.70	85.32	53	62
								9.50	92.98	58	68

A. Outside Diameter

The outside diameter tolerances shall be as follows, Pipe Body

For Size	Tolerance
48.3 mm and less	+0.40 mm
	- 0.80 mm
60.3 mm and above	+/-1%

B. Wall Thickness

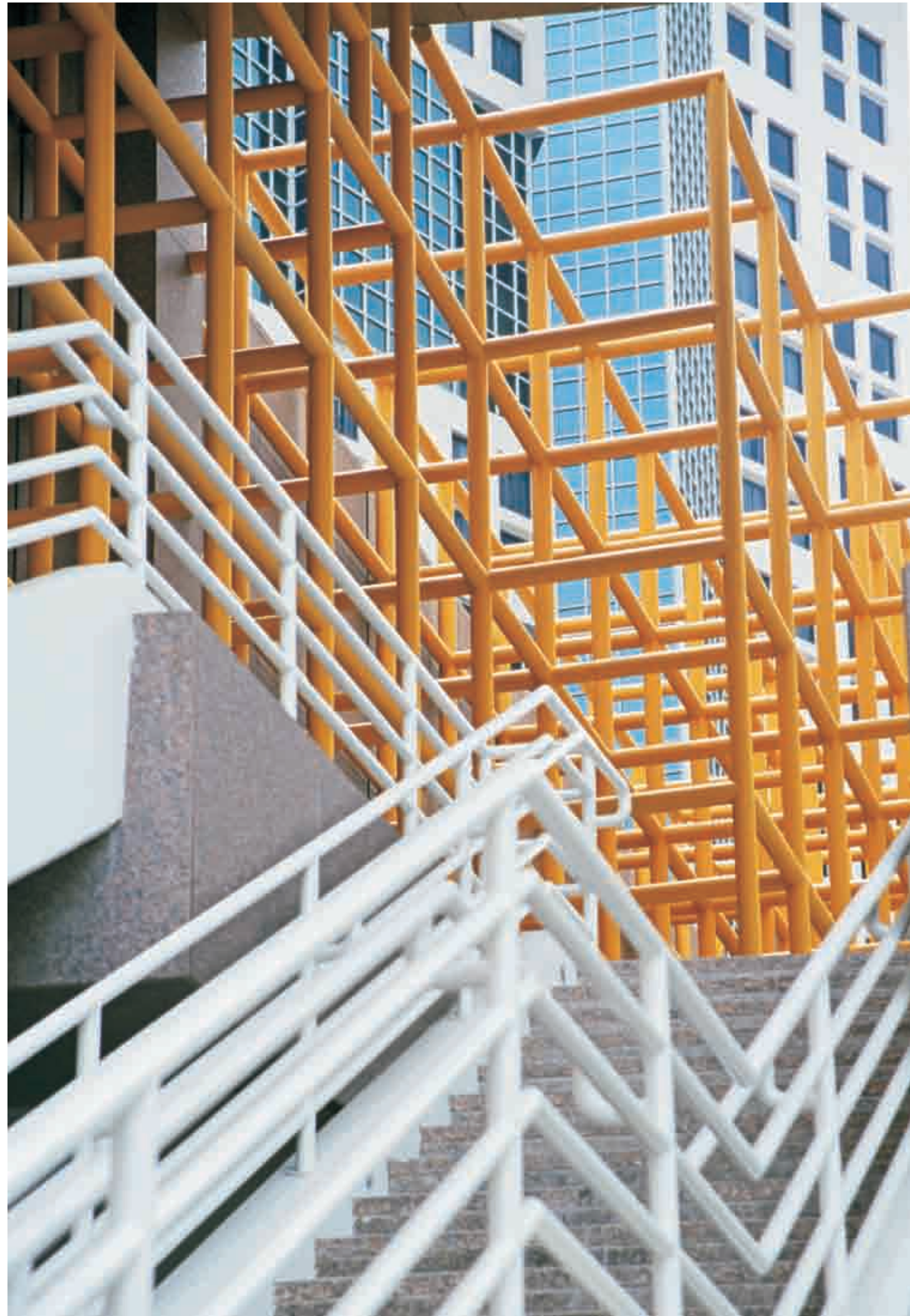
The Tolerances on the wall thickness of line pipes shall be as follows :

Type	For	Tolerance
Welded Pipes	73.0 mm and smaller	+20.0%
		-12.5%
	88.9 mm O.D. & Larger	+18.0%
		-12.5%

C. Weight

Single Lengths Standard Weight, regular weight, extra strong and double extra strong pipe

Grade Yst - 210 and Yst - 240	}	+10.0%
		-3.5%
Grade Yst -170	}	+10.0%
		-5.0%
Special plain end pipes - All Grades	}	+10.0%
		-5.0%
Car loads lots For min 18000 Kg :	}	-1.75%
Grade Yst 210 & Yst 240		-2.5%
GRADE Yst 170		



Steel Tubes for Structural / Scaffold Tube Purposes

Conforming to IS : 1161:2014 & BS : 1139 Equivalent to BS : 1775/64

Size N.B. mm	Outside Diameter mm	Wall Thickness mm	Weight kg/m Plain end	mtr. per Ton
15	21.3	2.00	0.952	1050
		2.60	1.20	833
		3.20	1.43	699
20	26.9	2.30	1.40	714
		2.60	1.56	641
		3.20	1.87	535
25	33.7	2.60	1.99	503
		3.20	2.41	415
		4.00	2.93	341
32	42.4	2.60	2.55	392
		3.20	3.09	324
		4.00	3.79	264
40	48.3	2.90	3.25	308
		3.20	3.56	281
		4.00	4.37	229
50	60.3	2.90	4.11	243
		3.60	5.03	199
		4.50	6.19	162
65	76.1	2.90	5.24	191
		3.60	6.44	155
		4.50	7.95	126
80	88.9	3.20	6.76	148
		4.00	8.38	119
		4.80	9.96	100
90	101.6	3.60	8.70	115
		4.00	9.63	104
		4.80	11.46	87
100	114.3	3.60	9.83	102
		4.50	12.19	82
		5.40	14.50	69
110	127.0	4.50	13.59	74
		4.80	14.47	69
		5.40	16.19	62
125	139.7	4.50	15.00	67
		4.80	15.97	63
		5.40	17.87	56
135	152.4	4.50	16.41	61
		4.80	17.47	57
		5.40	19.58	51

Size N.B. mm	Outside Diameter mm	Wall Thickness mm	Weight kg/m Plain end	mtr. per Ton
150	165.1	4.50	17.82	56
		4.80	18.98	53
		5.40	21.27	47
		5.90	23.20	43
		6.30	24.67	41
150	168.3	8.0	30.99	32
		4.5	18.18	55
		4.80	19.35	52
		5.40	21.69	46
		6.30	25.17	40
150	168.3	8.00	31.63	32
		10.00	39.04	26
		4.80	22.36	45
		5.40	25.08	40
		5.90	27.33	37
175	193.7	6.30	29.12	34
		8.00	36.64	27
		10.00	45.30	22
		12.00	53.77	19
		4.80	25.37	39
200	219.1	5.60	29.49	34
		5.90	31.02	32
		6.30	33.06	30
		8.00	41.65	24
		10.00	51.57	19
200	219.1	12.00	61.29	16
		5.90	34.72	29
		6.30	37.01	27
		8.00	46.66	21
		10.00	57.83	17
225	244.5	5.90	38.86	26
		6.30	41.44	24
		8.00	52.28	19
		10.00	64.86	15
		12.00	77.24	13
250	273.0	5.90	38.86	26
		6.30	41.44	24
		8.00	52.28	19
		10.00	64.86	15
		12.00	77.24	13
300	323.9	6.30	49.34	20
		8.00	62.32	16
		10.00	77.41	13
		12.00	92.30	11
		8.00	68.58	15
350	355.6	10.00	85.23	12
		12.00	101.68	10

TOLERANCES

A. Outside Diameter

- upto and including 48.3 mm
+ 0.4 mm
- 0.8 mm
- over 48.3 mm ± 1.0%

B. Thickness (For all size)

Welded tubes ± 10%

C. Weight

- Single tubes ± 10%
10 Tons Lots ± 7.5%

Note :

- 1 MPa = IN/mm² = 0.102 kgf/mm²
- Elongation percent for tubes upto and including 25 mm nominal bore for all grades shall be 12% minimum

D. PHYSICAL PROPERTIES

Grade	Tensile Strength (min)	Yield Stress (min)	Elongation on Gauge length 5.65u So (min)
	MPa	MPa	Percent
Yst 210	330	210	20
Yst 240	410	240	17
Yst 310	450	310	14
Yst 355	490	355	10

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

NPS Designator	DN Designator	Outside Diameter		Schedule No	Wall Thickness		Mass of Plain end Pipe		Test Pressure		Pieces / Bundle
		Inch	MM		Inch	MM	Kg/Mtr	Lb/Ft	Grade A	Grade B	
									Mpa	Mpa	
1/2	15	0.840	21.3	40	0.109	2.77	1.27	0.85	4.8	4.8	120
3/4	20	1.050	26.7	40	0.113	2.87	1.69	1.13	4.8	4.8	84
1	25	1.315	33.4	40	0.133	3.38	2.50	1.68	4.8	4.8	60
1 1/4	32	1.660	42.2	40	0.140	3.56	3.39	2.27	8.3	9	42
1 1/2	40	1.900	48.3	40	0.145	3.68	4.05	2.72	8.3	9	36
2	50	2.375	60.3	40	0.154	3.91	5.44	3.66	15.9	17.2	26
2 1/2	65	2.875	73.0	40	0.203	5.16	8.63	5.80	17.2	17.2	18
3	80	3.500	88.9	40	0.216	5.49	11.29	7.58	15.3	17.2	14
3 1/2	90	4.000	101.6	40	0.226	5.74	13.57	9.12	14.0	16.3	12
4	100	4.500	114.3	40	0.237	6.02	16.07	10.80	13.1	15.2	10
5	125	5.563	141.3	40	0.258	6.55	21.77	14.63	11.5	13.4	7
6	150	6.625	168.3	40	0.280	7.11	28.58	18.99	10.5	12.3	7
8	200	8.625	219.1	40	0.322	8.18	43.73	28.58	9.2	10.8	-
10	250	10.750	273.0	20	0.250	6.35	41.75	28.06	5.8	6.8	-
10	250	10.750	273.0	40	0.365	9.27	60.29	40.52	8.4	9.9	-
12	300	12.750	323.8	20	0.250	6.35	49.71	33.41	4.9	5.7	-
12	300	12.750	323.8	30	0.330	8.38	65.18	43.81	6.4	7.5	-
12	300	12.750	323.8	STD	0.375	9.52	73.78	49.61	7.3	8.5	-
12	300	12.750	323.8	40	0.406	10.31	79.70	53.57	7.9	9.2	-
14	350	14.000	355.6	10	0.250	6.35	54.69	36.75	4.4	5.2	-
14	350	14.000	355.6	30	0.375	9.52	81.25	54.62	6.6	7.7	-
14	350	14.000	355.6	40	0.438	11.13	94.55	63.50	7.8	9	-
16	400	16.000	406.4	10	0.250	6.35	62.64	42.09	3.9	4.5	-
16	400	16.000	406.4	30	0.375	9.52	93.17	62.64	5.8	6.8	-
16	400	16.000	406.4	40	0.500	12.70	123.30	82.85	7.7	9	-

TOLERANCES

Outside Diameter	Pipe Size upto & including DN 40 Pipe size Dn 50 or larger	+/- 0.4 mm of OD +/- 1% of OD
Thickness	- 12.5% (max)	
Weight	+/- 10%	

TESTING

Online NDT	For pipes NPS 2 (DN 50) or larger weld seam of each pipe shall be tested by eddy current test
Bend Test	For pipes upto & including DN 50 Bending angle 90° Bending radius 12 times to the OD of Tube (no crack in body & weld)
Flattening	For pipes over DN 50 1. Flatten upto 2/3 of OD for ductility of weld 2. Flatten upto 1/3 of OD for ductility of steel 3. Full Flattening for testing of lamination

Mechanical Properties

	Grade A	Grade B
Yield Strength	205 Mpa (Min)	240 Mpa (Min)
Tensile Strength	330 Mpa (Min)	415 Mpa (Min)
Elongation	As per ASTM A-53	



Composition, Max %

	Carbon	Manganese	Phosphorus	Sulphur	Copper	Nickel	Chromium	Molybdenum	Vanadium
Grade A	0.25	0.95	0.05	0.045	0.50	0.4	0.4	0.15	0.08
Grade B	0.3	1.2	0.05	0.045	0.50	0.4	0.4	0.15	0.08

Cu + Ni + Cr + Mb + V < 1%

Galvanizing

Minimum at any end	(As per Astm A-90) 0.490 Kg/Mtr (70 microns approx)
Average of both ends	0.550 Kg/Mtr (79 microns approx)

Marking: Online stenciling as per this standard & as per customer requirements

TECHNICAL DATA OF PIPES CONFORMING TO BS: 1387 / EQUIVALENT TO EN: 10255

	Normal Bore	Outside Diameter		Thickness	Weight of Black Pipe		Pcs Per Bundle		
		Inch	MM		MM	MM		(Kg/Mtr)	
								Plain end	Screwed & Socketed
Light	1/2	15	21.4	21.000	2.0	0.947	0.956	169	
	3/4	20	26.9	26.400	2.3	1.380	1.390	127	
	1	25	33.8	33.200	2.6	1.980	2.000	91	
	1 1/4	32	42.5	41.900	2.6	2.540	2.570	61	
	1 1/2	40	48.4	47.800	2.9	3.230	3.270	61	
	2	50	60.2	59.600	2.9	4.080	4.150	37	
	2 1/2	65	76.0	75.200	3.2	5.710	5.830	37	
	3	80	88.7	87.900	3.2	6.720	6.890	19	
	4	100	113.9	113.000	3.6	9.750	10.000	19	
	5	125	140.6	138.700	4.0	12.200	12.500	14	
Medium	1/2	15	21.7	21.100	2.6	1.210	1.220	169	
	3/4	20	27.2	26.600	2.6	1.560	1.570	127	
	1	25	34.2	33.400	3.2	2.410	2.430	91	
	1 1/4	32	42.9	42.100	3.2	3.100	3.130	61	
	1 1/2	40	48.8	48.000	3.2	3.570	3.610	61	
	2	50	60.8	59.600	3.6	5.030	5.100	37	
	2 1/2	65	76.6	75.400	3.6	6.430	6.550	37	
	3	80	89.5	88.100	4.0	8.370	8.540	19	
	4	100	114.9	113.300	4.5	12.200	12.500	14	
	5	125	140.6	138.700	5.0	16.600	17.100	10	
Heavy	1/2	15	21.7	21.100	3.2	1.440	1.450	169	
	3/4	20	27.2	26.600	3.2	1.870	1.880	127	
	1	25	34.2	33.400	4.0	2.940	2.960	91	
	1 1/4	32	42.9	42.100	4.0	3.800	3.830	61	
	1 1/2	40	48.8	48.000	4.0	4.380	4.420	61	
	2	50	60.8	59.800	4.5	6.190	6.260	37	
	2 1/2	65	76.6	75.400	4.5	7.930	8.050	37	
	3	80	89.5	88.100	5.0	10.300	10.500	19	
	4	100	114.9	113.300	5.4	14.500	14.800	14	
	5	125	140.6	138.700	5.4	17.900	18.400	10	
6	150	166.1	164.100	5.4	21.300	21.900	7		

TOLERANCES

Outside Diameter as per above table

Thickness	Light -8%	Medium -10%	Heavy -10%
Weight	-8% & + 10% (for single tube)		

Mechanical Properties		Chemical Properties	
Yield Strength	195 N/sq mm (Minimum)	Carbon	0.20 % max
Tensile Strength	320 to 520 N/sq mm	Manganese	1.20 % Max
% Elongation	20 % Min	Phosphorous	0.045 % Max
		Sulphur	0.045 % Max

Bend Test For Tubes upto & including 2"

Black Tube	Bending angle	180°
	Bending radius	6 times the OD of Tube
	weld position	3 'O' clock

Galvanized Tubes

	Bending angle	90°
	Bending radius	8 times the OD of Tube
	weld position	3 'O' clock

Flattening Test

For Tubes above 2"
1. Flatten upto 75% of tube dia for weld test (weld at 3 'O' clock position)
2. Flatten upto 60% of tube dia for raw material test

Leak Tightness Test

100% Hydrotesting at 50 bar online eddy current testing

Galvanizing Test

1. Bore test (for tubes upto and including 1")
2. Copper Sulphate Test
3. Mass of Zinc coating Min 400g/m2

Threading

As per BS-21-1985



Hollow Section

(RHS) Confirming to IS 4923 / 1997

RHS D X B mm	Thickness T mm	Sec. Area A cm ²	Unit wt. W kg/m	Moment of Inertia		Radius of Gyration		Elastic Modulus		Torsional Constants		Outer Surface Area per m ²
				I _{xx} cm ⁴	I _{yy} cm ⁴	r _{xx} cm	r _{yy} cm	Z _{xx} cm ³	Z _{yy} cm ³	J cm ³	B cm ³	
50 x 25	2.0	2.74	2.15	8.38	2.81	1.75	1.01	3.35	2.25	6.79	3.79	0.142
	2.6	3.46	2.71	10.16	3.36	1.71	0.99	4.06	2.69	8.27	4.53	0.137
	3.2	4.13	3.24	11.63	3.80	1.68	0.96	4.65	3.04	9.52	5.12	0.134
	4.0	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	2.6	4.76	3.73	22.76	12.09	2.19	1.59	7.59	6.05	25.59	9.83	0.187
	2.9	5.25	4.12	24.74	13.11	2.17	1.58	8.25	6.56	28.02	10.66	0.185
	3.6	6.35	4.98	28.90	15.23	2.13	1.55	9.63	7.62	33.30	12.41	0.181
	4.5	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	2.6	4.70	3.69	25.15	8.43	2.31	1.34	7.62	5.11	20.75	8.71	0.185
	2.9	5.19	4.07	27.33	9.12	2.29	1.33	8.28	5.53	22.65	9.43	0.183
	3.6	6.28	4.93	31.87	10.52	2.25	1.29	9.66	6.37	26.71	10.90	0.179
	4.5	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	2.6	5.80	4.55	46.58	15.74	2.84	1.65	11.65	7.87	38.50	13.46	0.227
	2.9	6.41	5.03	50.87	17.11	2.82	1.63	12.72	8.56	42.23	14.66	0.225
	3.2	7.01	5.50	54.94	18.41	2.80	1.62	13.74	9.21	45.83	15.78	0.224
	4.0	8.55	6.71	64.79	21.49	2.75	1.59	16.20	10.74	54.77	18.49	0.219
	4.8	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	3.2	8.54	6.71	98.61	33.28	3.40	1.97	20.54	13.87	82.13	23.82	0.272
	4.0	10.47	8.22	117.54	39.32	3.35	1.94	24.49	16.38	99.11	28.24	0.267
	4.8	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	3.6	12.32	9.67	232.61	78.83	4.34	2.53	38.13	25.84	193.91	44.50	0.347
	4.5	15.14	11.88	278.94	93.78	4.29	2.49	45.73	30.75	235.39	53.13	0.343
	5.4	17.85	14.01	320.83	107.03	4.24	2.45	52.60	35.09	274.29	60.89	0.338
120 x 60	3.2	10.85	8.51	199.88	67.95	4.29	2.50	33.31	22.65	165.83	38.95	0.344
	3.6	12.11	9.5	220.75	74.77	4.27	2.48	36.79	24.92	184.10	42.91	0.341
	4.5	14.87	11.67	264.52	88.88	4.22	2.44	44.09	29.63	223.34	51.19	0.337
145 x 82	4.8	20.28	15.92	555.16	228.50	5.23	3.36	76.57	55.73	534.27	94.45	0.429
	5.4	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	4.8	23.83	18.71	917.13	346.91	6.20	3.82	106.64	75.41	826.04	128.85	0.503
	5.4	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	4.0	22.95	18.01	1199.71	410.78	7.23	4.23	119.97	82.16	991.10	141.46	0.579
	5.0	28.36	22.26	1459.25	496.94	7.17	4.19	145.93	99.39	1216.96	171.53	0.574
	6.0	33.63	26.40	1703.31	576.91	7.12	4.14	170.33	115.38	1434.03	199.68	0.569
	7.0	38.78	30.44	1932.19	650.93	7.06	4.10	193.22	130.19	1642.92	226.04	0.564
	8.0	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 or 240 x 120	4.0	27.75	21.78	1892.55	947.64	8.26	5.84	172.05	135.38	2000.01	223.99	0.699
	5.0	34.36	26.97	2313.36	1155.23	8.21	5.80	210.31	165.03	2467.63	273.47	0.694
310 x 210	6.0	40.83	32.05	2713.97	1351.66	8.15	5.75	246.72	193.09	2922.95	320.55	0.689
	7.0	47.18	37.03	3094.76	1537.22	8.10	5.71	281.34	219.60	3366.29	365.35	0.684
310 x 210	4.0	38.95	30.57	5072.88	2736.56	11.41	8.38	338.19	273.66	5555.71	448.64	0.979
	5.0	48.36	37.96	6241.05	3360.92	11.36	8.34	416.07	336.09	6882.77	551.49	0.974
	6.0	57.63	45.24	7370.23	3962.19	11.31	8.29	491.35	396.22	8186.02	650.85	0.969
	7.0	66.78	52.42	8460.93	4540.76	11.26	8.25	564.06	454.08	9465.89	746.83	0.964
	8.0	75.79	59.50	9513.66	5097.04	11.20	8.20	634.24	509.70	10722.83	839.51	0.959

TOLERANCES
The following tolerances shall be permitted on Hollow section

A) Thickness ±10%

B) Outside Dimension of sides ±1%
With a minimum of ±0.5mm

C) Weight
1. On individual lengths + 10%
- 8%

2. On lots of 10 tonne ±7.5%

D) Squareness of Corner 90° ±02

E) Radius of Corner outside R=3T Max,
where T is the thickness of the section.

Physical Properties

	T.S. Min. MPA	Y.S. Min MPA	Elongation	
			25.4mm & Under	Over 25.4mm
YST - 210	330	210	12	20
YST - 240	410	240	10	15
YST - 310	450	310	08	10

(SHS) Confirming to IS 4923 / 1997

RHS D X B mm	Thickness T mm	Sec. Area A cm ²	Unit wt. W kg/m	Moment of Inertia		Radius of Gyration		Elastic Modulus		Torsional Constants		Outer Surface Area per m ²
				I _{xx} cm ⁴	I _{yy} cm ⁴	r _{xx} cm	r _{yy} cm	Z _{xx} cm ³	Z _{yy} cm ³	J cm ³	B cm ³	
25 x 25	1.6	1.43	1.12	1.28	1.28	0.94	0.94	1.02	1.02	1.96	1.46	0.092
	2.0	1.74	1.36	1.48	1.48	0.92	0.92	1.19	1.19	2.29	1.68	0.090
	2.6	2.16	1.69	1.72	1.72	0.89	0.89	1.38	1.38	2.68	1.92	0.087
	3.2	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	2.0	2.30	1.80	3.36	3.36	1.21	1.21	2.10	2.10	5.30	3.05	0.118
	2.6	2.88	2.26	4.02	4.02	1.18	1.18	2.51	2.51	6.45	3.63	0.115
	3.2	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	2.0	2.78	2.18	5.88	5.88	1.46	1.46	3.10	3.10	9.31	4.54	0.142
	2.6	3.51	2.75	7.14	7.14	1.43	1.43	3.76	3.76	11.51	5.49	0.139
	3.2	4.19	3.29	8.18	8.18	1.40	1.40	4.30	4.30	13.45	6.28	0.136
	4.0	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	2.6	3.72	2.92	8.45	8.45	1.51	1.51	4.22	4.22	13.63	6.20	0.147
	2.9	4.09	3.21	9.11	9.11	1.49	1.49	4.56	4.56	14.85	6.68	0.145
	3.2	4.45	3.49	9.72	9.72	1.48	1.48	4.86	4.86	16.00	7.12	0.144
	4.0	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	2.6	4.76	3.74	17.47	17.47	1.92	1.92	6.99	6.99	28.53	10.37	0.187
	2.9	5.25	4.12	18.99	18.99	1.90	1.90	7.60	7.60	31.15	11.23	0.185
	3.6	6.35	4.98	22.15	22.15	1.87	1.87	8.86	8.86	36.58	12.98	0.181
	4.5	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	2.6	5.80	4.55	31.33	31.33	2.33	2.33	10.44	10.44	50.08	15.52	0.227
	2.9	6.41	5.03	34.21	34.21	2.31	2.31	11.40	11.40	56.12	16.95	0.225
	3.2	7.01	5.50	36.94	36.94	2.30	2.30	12.31	12.31	60.02	18.31	0.224
	4.0	8.55	6.71	43.55	43.55	2.26	2.26	14.52	14.52	72.41	21.62	0.219
72 x 72	4.8	10.01	7.85	49.22	49.22	2.22	2.22	16.41	16.41	83.86	24.51	0.215
	3.2	8.54	6.71	66.32	66.32	2.79	2.79	18.42	18.42	106.81	27.47	0.272
	4.0	10.47	8.22	79.03	79.03	2.75	2.75	21.95	21.95	129.85	32.78	0.267
	4.8	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	3.2	9.57	7.51	92.71	92.71	3.11	3.11	23.18	23.18	148.55	34.60	0.304
	4.0	11.75	9.22	111.04	111.04	3.07	3.07	27.76	27.76	181.22	41.49	0.299
	4.8	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	3.6	12.32	9.67	156.49	156.49	3.56	3.56	34.21	34.21	251.17	51.14	0.347
	4.5	15.14	11.88	187.57	187.57	3.52	3.52	41.00	41.00	306.78	61.40	0.343
	5.4	17.85	14.01	215.68	215.68	3.48	3.48	47.14	47.14	359.76	70.77	0.338
113.5 x 113.5	4.8	20.28	15.92	393.30	393.30	4.40	4.40	69.30	69.30	637.45	103.89	0.429
	5.4	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	4.8	23.83	18.71	634.39	634.39	5.16	5.16	96.12	96.12	1018.30	144.11	0.503
	5.4	26.59	20.88	700.11	700.11	5.13	5.13	106.08	106.08	1134.25	159.18	0.500
150 x 150	4.0	22.95	18.01	807.82	807.82	5.93	5.93	107.71	107.71	1273.46	161.38	0.579
	5.0	28.36	22.26	982.12	982.12	5.89	5.89	130.95	130.95	1569.09	196.38	0.574
	6.0	33.63	26.40	1145.91	1145.91	5.84	5.84	152.79	152.79	1856.18	229.44	0.569
	7.0	38.78	30.44	1299.44	1299.44	5.79	5.79	173.26	173.26	2134.99	260.65	0.564
180 x 180	8.0	43.79	34.38	1443.00	1443.00	5.74	5.74	192.40	192.40	2405.78	290.12	0.559
	4.0	27.75	21.78	1421.74	1421.74	7.16	7.16	157.97	157.97	2224.31	236.76	0.699
	5.0	34.36	26.97	1736.87	1736.87	7.11	7.11	192.99	192.99	2747.93	289.40	0.694
	6.0	40.83	32.05	2036.52	2036.52	7.06	7.06	226.28	226.28	3259.23	339.65	0.689
220 x 220	7.0	47.18	37.03	2321.04	2321.04	7.01	7.01	257.89	257.89	3758.53	387.59	0.684
	8.0	53.39	41.91	2590.73	2590.73	6.97	6.97	287.86	287.86	4246.16	433.32	0.679
	4.0	34.15	26.61	2639.14	2639.14	8.79	8.79	239.92	239.92	4099.49	359.65	0.859
	5.0	42.36	33.25	3238.02	3238.02	8.74	8.74	294.37	294.37	5076.22	441.43	0.854
260 x 260	6.0	50.43	39.59	3813.36	3813.36	8.70	8.70	346.67	346.67	6034.53	520.18	0.849
	7.0	58.38	45.83	4365.55	4365.55	8.65	8.65	396.67	396.67	6974.82	596.00	0.844
	8.0	66.19	51.96	4894.99	4894.99	8.60	8.60	445.00	445.00	7897.48	668.99	0.839
	4.0	38.95	30.57	3907.30	3907.30	10.02	10.02	312.58	312.58	6045.40	468.61	0.979
260 x 260	5.0	48.36	37.96	4805.01	4805.01	9.97	9.97	384.40	384.40	7494.83	576.44	0.974
	6.0	57.63	45.24	5672.00	5672.00	9.92	9.92	453.76	453.76	8920.44	680.77	0.969
	7.0	66.78	52.42	6508.73	6508.73	9.87	9.87	520.70	520.70	10322.70	781.69	0.964
	8.0	75.79	59.50	7315.65	7315.65	9.82	9.82	585.25	585.25	11702.07	879.31	0.959



ERW Idlers Steel Tubes for Belt Conveyors

As Per IS : 9295/1983

Outside Diameter (OD) mm	Thickness mm	Weight		Outside Diameter (OD) mm	Thickness mm	Weight	
		kg/mtr.	Mtr/tonne			kg/mtr.	Mtr/tonne
63.5	3.65	5.39	186	139.7	4.50	15.00	67
	4.50	6.55	153		4.85	16.13	62
76.1	3.65	6.52	153	152.4	5.40	17.89	56
	4.50	7.95	126		6.30	20.73	48
88.9	4.05	8.47	118	159.0	4.50	16.40	61
	4.85	10.05	100		4.85	17.65	57
	6.30	12.83	78		5.40	19.58	51
101.6	4.05	9.74	103	165.1	6.30	22.70	44
	4.85	11.57	86		4.50	17.10	58
	6.30	14.81	68		4.85	18.44	54
108.0	4.05	10.38	96	168.3	5.40	20.46	47
	4.85	12.34	81		4.85	19.17	52
	6.30	15.80	63		5.40	21.27	47
114.3	4.50	12.19	82	193.7	6.30	24.67	41
	5.40	14.50	69		4.50	18.20	55
	6.30	16.78	60		4.85	19.55	51
120.0	4.50	12.82	78	219.1	5.40	21.69	46
	5.40	15.26	66		6.30	25.17	40
	6.30	17.67	57		5.40	25.10	40
127.0	4.50	13.60	74	219.1	6.30	29.12	34
	4.85	14.61	68		7.10	32.67	31
	5.40	16.19	62		5.40	28.50	35
133.0	6.30	18.75	53	219.1	6.30	33.06	30
	4.50	14.30	70		7.10	37.12	27
	4.85	15.33	65				
	5.40	16.99	59				
	6.30	19.69	51				

TOLERANCES :

A) Ovality	
Below 168.3	0.5mm
Including 168.3mm & above	1.0mm
B) Eccentricity	5% Max
C) Mass	
I) Single Tube	± 10%
II) Per Load of 10 M.T	± 7.5%
D) Outside Diameter	± 0.8%

E) Thickness	± 10%
F) Straightness	1/1000 of any length
G) length	
I) Random	4 to 7 Mtr.
II) Exact	(+)6mm (-)0mm

Steel Tube for Mechanical & General Purpose is 3601 : 2006

Dimensions and design properties of Steel Tubes Grade WT 160 & WT 210, WT 240, WT 310

Outside Diameter	Thickness	Mass	Area of Cross	Moment of Inertia	Modulus of Section	Modulus of Gyration
mm1	mm2	Kg/m3	Section Cm4	Cm5	Cm6	Cm7
21.3	1.8	0.866	1.10	0.53	0.50	0.69
	2.0	0.952	1.21	0.57	0.54	0.69
	2.6	1.20	1.53	0.68	0.64	0.67
	3.2	1.43	1.82	0.77	0.72	0.65
26.9	1.8	1.11	1.42	1.12	0.83	0.89
	2.0	1.23	1.56	1.22	0.91	0.88
	2.3	1.40	1.78	1.36	1.01	0.87
	2.6	1.56	1.98	1.48	1.10	0.86
	3.2	1.87	2.38	1.70	1.27	0.85
33.7	2.0	1.56	1.99	2.51	1.49	1.12
	2.3	1.78	2.27	2.81	1.67	1.11
	2.6	1.99	2.54	3.09	1.84	1.10
	3.2	2.41	3.07	3.60	2.14	1.08
	4.0	2.93	3.73	4.19	2.49	1.06
44.4	2.3	2.27	2.90	5.85	2.76	1.42
	2.6	2.55	3.25	6.46	3.05	1.41
	3.2	3.09	3.94	7.62	3.59	1.39
	3.6	3.44	4.39	8.33	3.93	1.38
	4.0	3.79	4.83	8.90	4.24	1.36
48.3	2.3	2.61	3.32	8.80	3.64	1.63
	2.6	2.93	3.73	9.77	4.05	1.62
	2.9	3.25	4.14	10.70	4.43	1.61
	3.2	3.56	4.53	11.59	4.80	1.60
	3.6	3.97	5.05	12.69	5.25	1.59
	4.0	4.37	5.57	13.77	5.70	1.57
60.3	2.3	3.29	4.19	17.65	5.85	2.05
	2.6	3.70	4.71	19.64	6.51	2.04
	2.9	4.11	5.23	21.59	7.16	2.03
	3.2	4.51	5.74	23.47	7.78	2.02
	3.6	5.03	6.41	25.87	8.58	2.01
	4.0	5.55	7.07	28.15	9.34	2.00
	4.5	6.19	7.89	30.90	10.20	1.98
76.1	2.6	5.24	6.00	40.57	10.66	2.60
	2.9	5.75	6.67	44.74	11.76	2.59
	3.2	6.44	7.33	48.78	12.80	2.58
	3.6	7.11	8.20	54.01	14.20	2.57
	4.5	7.95	10.10	65.12	17.10	2.54
	5.0	8.77	11.16	70.87	18.63	2.52
88.9	2.9	6.15	7.83	72.47	16.30	3.04
	3.2	6.76	8.62	79.21	17.80	3.03
	4.0	8.38	10.70	96.34	21.70	3.00
	5.0	10.30	13.20	116.40	26.20	2.97
	5.4	11.10	14.00	123.60	27.80	2.97
	5.6	11.50	14.65	127.64	28.72	2.95
101.6	3.6	8.70	11.10	133.20	26.20	3.47
	4.0	9.63	12.30	149.20	28.80	3.45
	5.0	11.90	15.20	177.50	34.90	3.42
114.3	3.2	8.77	11.16	172.33	30.15	3.93
	3.6	9.83	12.50	192.00	33.60	3.92
	4.5	12.20	15.50	234.30	41.00	3.89
	5.4	14.50	18.50	274.50	48.00	3.86
	6.3	16.80	21.20	315.00	55.10	3.83
139.7	3.60	12.10	15.38	356.36	51.02	4.81
	4.00	13.40	17.04	392.57	56.20	4.80
	4.50	15.00	19.10	437.20	62.60	4.78
	5.00	16.60	21.20	480.50	68.80	4.77
	5.40	17.90	22.80	514.50	73.70	4.75
	6.30	20.70	26.30	591.00	84.70	4.73
152.4	4.50	16.40	20.90	572.20	75.10	5.23
	5.00	18.20	23.20	629.50	82.60	5.21
	5.40	19.60	24.90	674.50	88.50	5.20

D. PHYSICAL PROPERTIES

Grade	Y.S. (min.) (Mpa)	T.S. (min.) (Mpa)	% age Elongation (min.)	
			As welded (less than or equal to 33.7 mm OD)	As welded (Above to 33.7 mm OD)
WT 160	160	310	15	22
WT 210	210	330	12	20
WT 240	240	410	10	15
WT 310	310	450	5	10

TOLERANCE

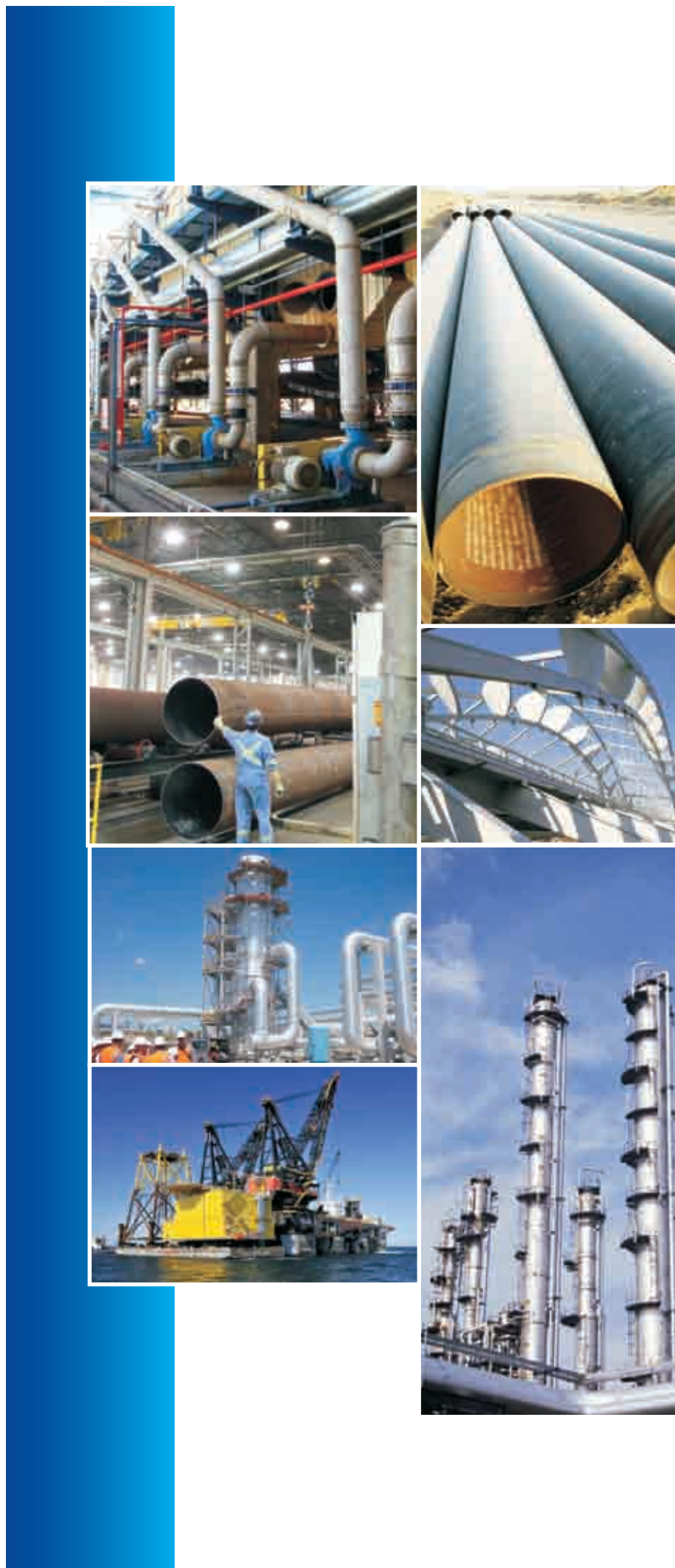
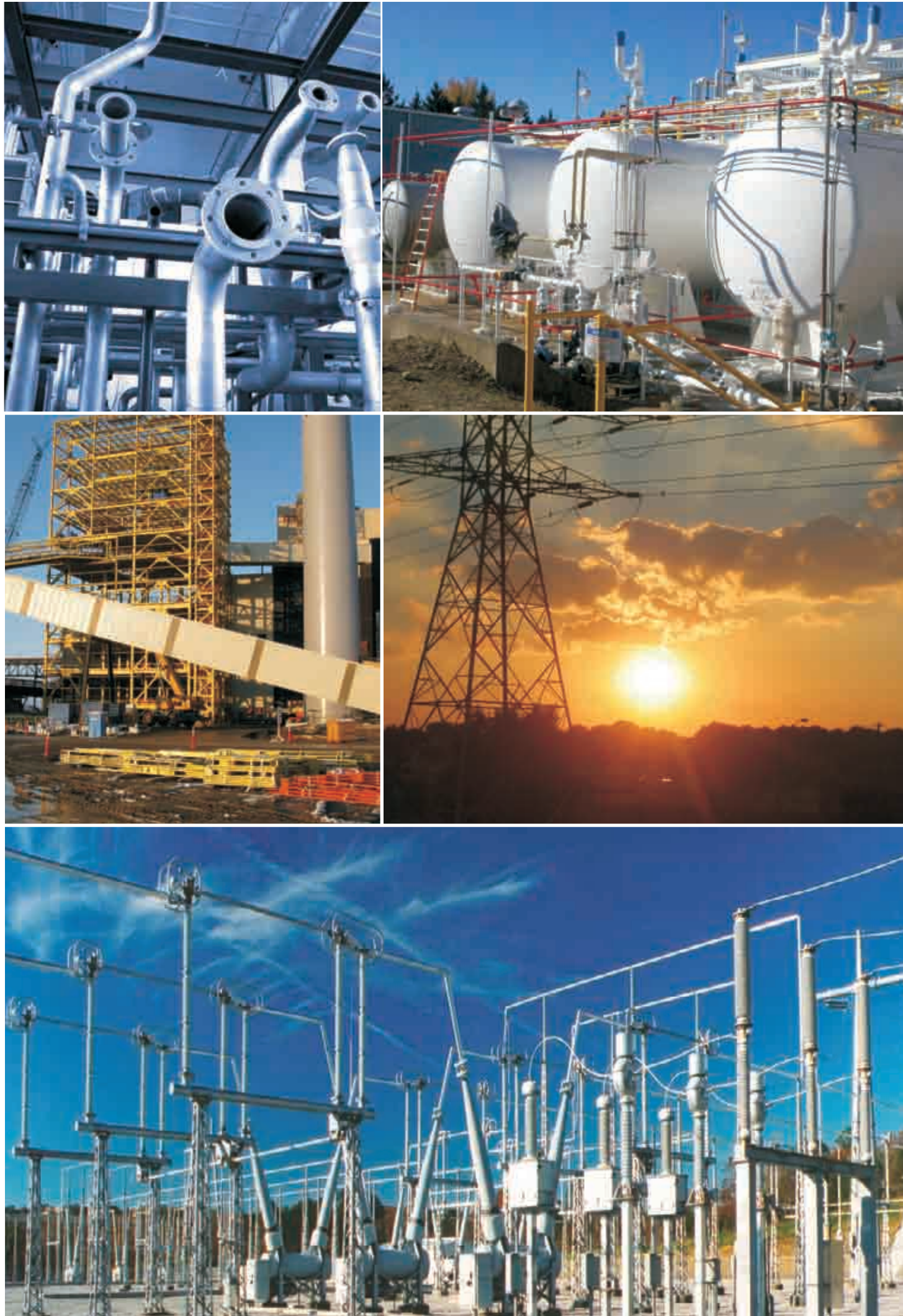
S.No	Over mm	Up to and Including mm	Tolerance on Outside Diameter mm
(1)	(2)	(3)	(4)
i)	-	25.4	± 0.15
ii)	25.4	51.0	± 0.18
iii)	51.0	63.5	± 0.25
iv)	63.5	76.1	± 0.25
v)	76.1	88.9	± 0.31
vi)	88.9	101.6	± 0.36
vii)	101.6	114.3	± 0.43
viii)	114.3	152.4	± 0.58
ix)	152.4	168.3	± 0.65
x)	168.3	-	± 0.75



List of Products with Equivalent Standards

Products	Indian Standard IS	American Standard ASTM/ANSI	British Standard BS	Japanese JIS	German DIN
H.R.Pipes					
Black Pipes - Structural	IS : 1161/2014	ASTM A500 GR A/1993	BS 4360 BS 1775/64	JIS G3444/1994	DIN 2439 - 2441
Black Pipes - Others	IS : 3589/2001	ASTM A53/1993	BS 1387/1985		EN 10255
Galvanized Pipes	IS : 1239 (Part-1)/2004				
Idlers Tubes	IS : 1239 (Part -1)/2004	ASTM A53/1993	BS 1387/1985		
General Engineering Tubes	IS : 9295/1983				
Hollow Section Tubes (RHS/SHS)	IS : 3601/2006		BS 1775 BS 6323/1982	JIS G3445/1983	DIN2393/1994
Air Heater Tubes	IS : 4923/1997	ASTM A500 GR A/1993	BS 6363	JIS G3466/1982	
Water Wells	IS : 3601/2006	ASTM A214/1990	BS 3059 (PART-1)/1987	JIS G3461/1984	DIN 17177/1979
IS : 4270/2001					
C.R. Tubes					
Furniture Tubes	IS : 7138/1973			JIS G3445/1983	
Bicycle Tubes	IS : 2039/1991		BS 1717/1983		
Automotive Tubes	IS : 3074/1979	ASTM A 513/1994	BS 980 BS 6323/1982	JIS G3445/1983	DIN2393/1994
Transformer Tubes	IS : 5429/1979				DIN 2394/1994
General Engineering Tubes	IS : 8036/1976				
IS : 3601/2006			BS 1775 BS 6323/1982	JIS G3445/1983	DIN 2393/1994
					DIN 2394/1994
Hollow Section Tubes (RHS/SHS)	IS : 4923/1997	ASTM A500 GR A/1993	BS 6363	JIS G3446/1982	
Electrical Conduit	IS : 9537 (Part-1)/1980	ANSI C 80 1	BS 4568		
Pregalva Pipes (Galva Bond)	IS : 3601/2006				
C.R.C.A. Strips					
Cold Rolled steel Sheets & Strips	IS : 513/1994	ASTM A622, A621, A569	BS1449	JIS G3131	DIN 1614 Part -1
Scaffolding			BS 1139 (Part -1)/1982		
Swaged Poles (Electrical)	IS : 2713/1980				





OUR APPLICATIONS

- Water Supply & Sewerage
- Power Plant
- Wind Mills
- Chemical Industry
- Cement Industry
- Sugar Industry
- Oil & Gas Industry
- Pole Manufacturing
- Green House
- Solar Power Plant
- Automobiles &
- Bus Body Building
- Furniture Industry
- Boiler Heat Exchange