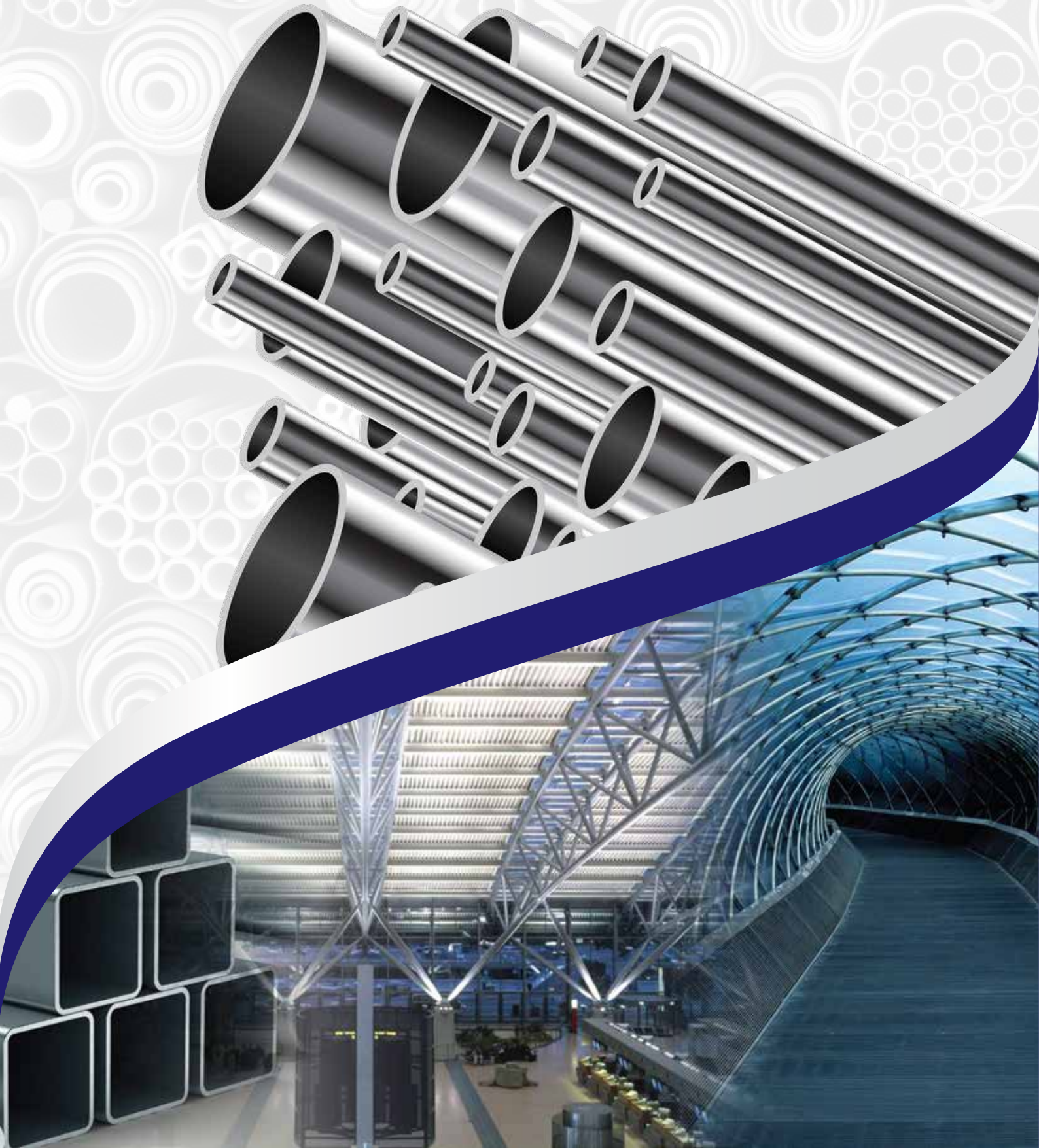


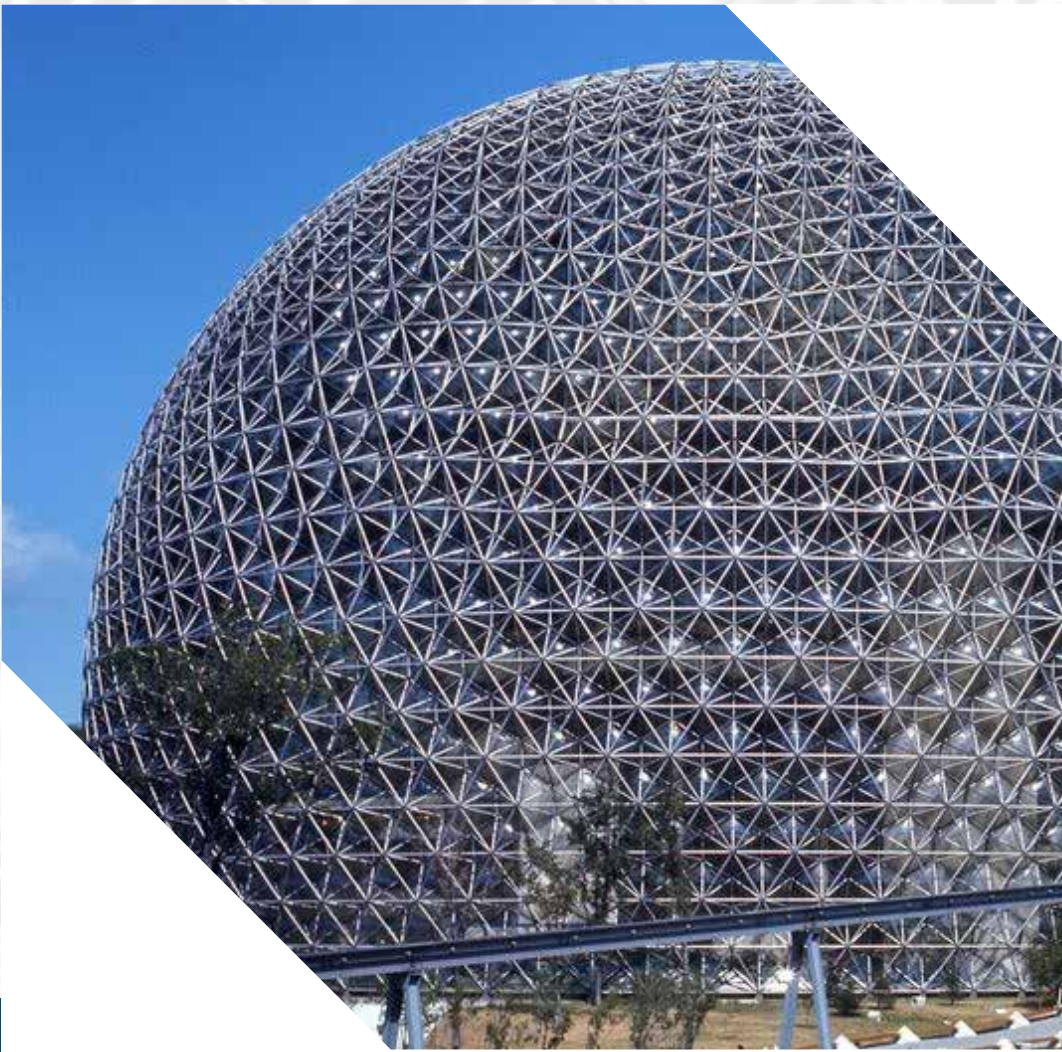


شاطئ البحر للأنابيب
SEASHORE PIPES

STEEL TUBES & PIPES







About Us

Seashore Pipe, is the group company of Seashore group, which is the largest Multi-disciplined business conglomerate in the state of Qatar Owned by Mr. Saeed Al Mohannadi. The Group was established in the year 1989. From its humble beginning with small work force and meager finance, SEASHORE GROUP, today has grown; having a work force of over 4000 employees with current assets of over QR 1 Billion. Seashore Group, now has companies in different Verticals, headed & operated by experienced and Qualified Managers across the business profile. To know more about our group companies please log on to www.seashoregroup.com / www.seashoresteel.com.

In line with our policy of having presence in infrastructure field, we have come -up with state of Art ERW Pipe Manufacturing Plant at New Industrial Area, Doha, Qatar.

Our product range for ERW Black and Galvanized Circular Pipes is from 25 mm NB (1" NB) to 100mm NB (4" NB) in a thickness band of 1.00mm to 6.0mm, Square Tubes from 25x25mm to 80x80mm and Rectangular Tubes from 50x25 120x60mm. The tubes and pipes are mainly used in commercial, construction, scaffolding, fencing, irrigation, interiors, furniture, automotive, scaffolding structures, fluid conveyance systems and light to medium duty structural applications.

Quality Management

Pipes and Tubes are manufactured using Hot Rolled Coils, produced in conformity with prominent standards under EN, ASTM & AS/NZ. Quality assurance is an integral part of all aspects of the manufacturing activities, which include:

- Sourcing of quality HR Coils from globally reputed mills.
- High Frequency Induction (HFI) welding through advanced Lines.
- Quality control and checks for high precision output.

The company continuously aims to achieve finest quality of products complying with leading global standards. Pipes and Tubes are inspected for accuracy and precision and pass various quality management checks through all stages of manufacturing activities.

Testing and Quality Control Facilities

The manufacturing process involves extensive inspection checks to ensure tubes and pipes conform to highest quality standards. Testing and Quality Control Facilities include:

- | | |
|--|--|
| • Universal Testing Machines (Digital) | For material testing (mechanical properties) |
| • Eddy Current Testing Machine (NDT) | For online flaw detection |
| • Rockwell Hardness Testing Machine | For checking hardness on raw material & weld |
| • Bending Machine | For pipe bend test |
| • Portable Hardness Tester | For checking hardness on pipe surface |
| • Elcometer (Digital) | For checking the coating thickness of GI pipes |

The company employs trained and committed work force to ensure high quality pipes are made to various national and international standards.



Areas of Application

High Frequency Induction Welded Steel Tubes and Pipes are extremely versatile, making them suitable for many different applications as pipeline and construction elements.

ERW STEEL TUBES & PIPES

FIRE AND HVAC APPLICATION

Safety and Fire-Fighting water line pipes

AIR & WATER APPLICATIONS

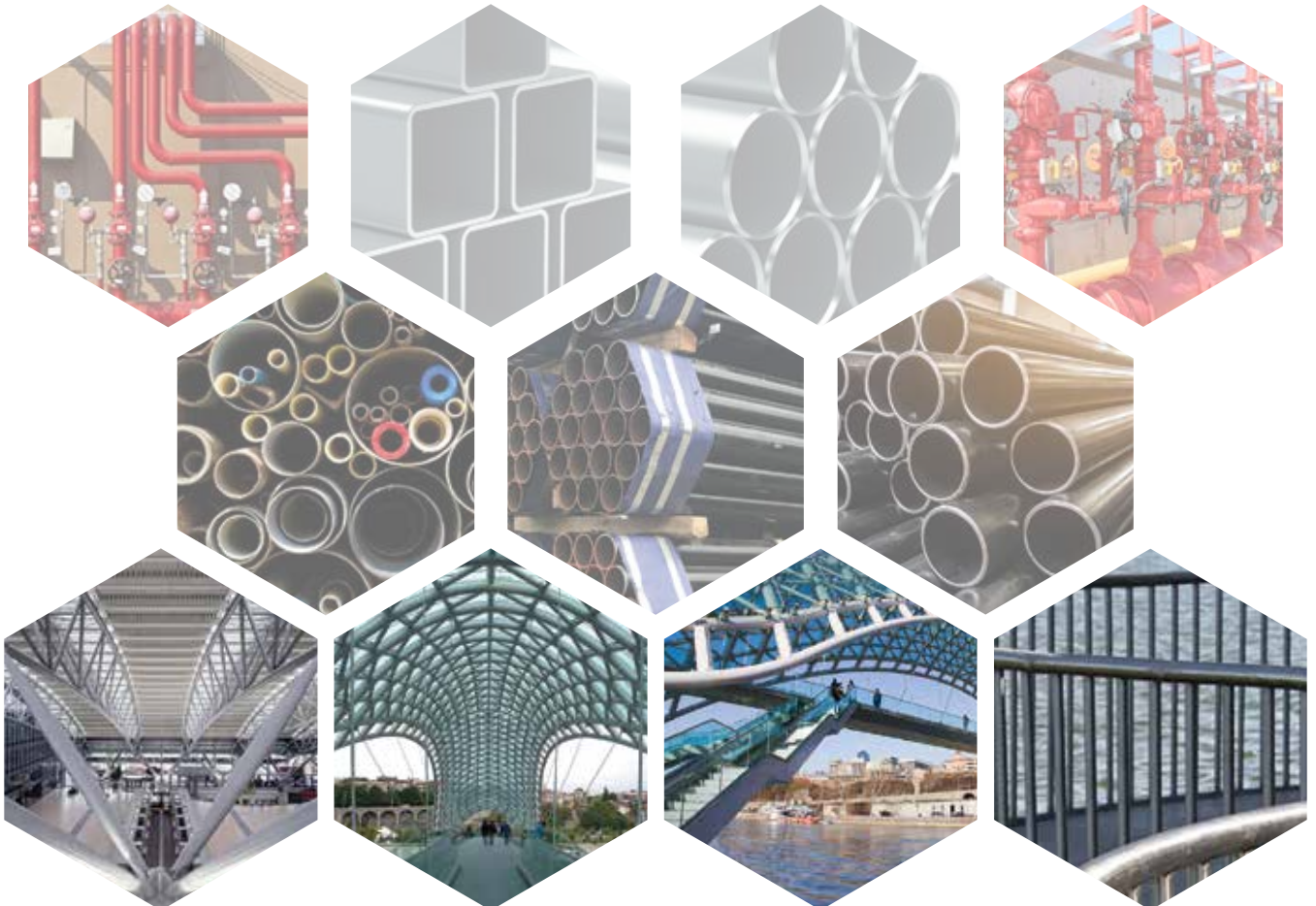
Gas and Water transportation, Power Station technology, Chemical and Petrochemical industry, Refineries and Plants, Agriculture, Irrigation water line pipes,

STRUCTURAL APPLICATION

Industrial applications, like small structures, pipe towers, scaffoldings, Machine construction & Heavy Equipment, Pipe fabricators. Fencing, Furniture, Tubular poles & structures.

GENERAL ENGINEERING APPLICATIONS

Manufacturing, automotive industry, , Steel and Paper Mills, Pressure Vessel Fabricators, Fabricators, Shipbuilders, Offshore Platform builders, Construction Industry, Housing Projects, Irrigation, Engineering, Piling and Casing, Logistics / Storage and Shelving, Electro mechanical, Commercial Tubes.



Technical Data

PIPES

CONFORMING TO ASTM A53 GRADE A & B

NPS	DN	DIAMETER		THICKNESS		SCH	WEIGHT (PE)			WEIGHT (TC)			LENGTH (PE)		LENGTH (TC)		TEST PRESSURE (GRADE A)		TEST PRESSURE (GRADE B)	
		Inch	mm				NO	Kg/Mtr	Kg/ft	lbs/ft	Kg/Mtr	Kg/ft	lbs/ft	Mtr/Ton	Ft/Ton	Mtr/Ton	Ft/Ton	PSI	KPa	PSI
1/2	15	0.840	21.30	0.083	2.11	10	1.00	0.305	0.670	1.00	0.305	0.670	1000.0	3280.8	1000.0	3280.8	700	4800	700	4800
				0.095	2.41	30	1.12	0.341	0.760	1.12	0.341	0.760	892.9	2929.3	892.9	2929.3	700	4800	700	4800
				0.109	2.77	40	1.27	0.387	0.850	1.27	0.387	0.860	787.4	2583.3	787.4	2583.3	700	4800	700	4800
3/4	20	1.050	26.70	0.083	2.11	10	1.28	0.390	0.860	1.28	0.390	0.860	781.3	2563.2	781.3	2563.2	700	4800	700	4800
				0.095	2.41	30	1.44	0.439	0.970	1.44	0.439	0.970	694.4	2278.4	694.4	2278.4	700	4800	700	4800
				0.113	2.87	40	1.69	0.515	1.130	1.69	0.515	1.140	591.7	1941.3	591.7	1941.3	700	4800	700	4800
1	25	1.315	33.40	0.109	2.77	10	2.09	0.637	1.410	2.09	0.637	1.410	478.5	1569.8	478.5	1569.8	700	4800	700	4800
				0.114	2.90	30	2.18	0.664	1.460	2.18	0.664	1.460	458.7	1505.0	458.7	1505.0	700	4800	700	4800
				0.133	3.38	40	2.50	0.762	1.680	2.50	0.762	1.690	400.0	1312.3	400.0	1312.3	700	4800	700	4800
1-1/4	32	1.660	42.20	0.109	2.77	10	2.69	0.820	1.810	2.69	0.820	1.810	371.7	1219.6	371.7	1219.6	1000	6900	1000	6900
				0.117	2.97	30	2.87	0.875	1.930	2.87	0.875	1.930	348.4	1143.1	348.4	1143.1	1000	6900	1000	6900
				0.140	3.56	40	3.39	1.033	2.270	3.40	1.036	2.280	295.0	967.8	294.1	965.0	1200	8300	1300	9000
1-1/2	40	1.900	48.30	0.109	2.77	10	3.11	0.948	2.090	3.11	0.948	2.090	321.5	1054.9	321.5	1054.9	1000	6900	1000	6900
				0.125	3.18	30	3.53	1.076	2.370	3.53	1.076	2.370	283.3	929.4	283.3	929.4	1000	6900	1000	6900
				0.145	3.68	40	4.05	1.234	2.720	4.04	1.231	2.740	246.9	810.1	247.5	812.1	1200	8300	1300	9000
2	50	2.375	60.30	0.109	2.77	10	3.93	1.198	2.640	3.93	1.198	2.640	254.5	834.8	254.5	834.8	1640	11300	1920	13300
				0.125	3.18	30	4.48	1.366	3.010	4.48	1.366	3.010	223.2	732.3	223.2	732.3	1880	13000	2200	15200
				0.154	3.91	40	5.44	1.658	3.660	5.46	1.664	3.680	183.8	603.1	183.2	600.9	2300	15900	2500	17200
2-1/2	65	2.875	73.00	0.120	3.05	10	5.26	1.603	3.530	5.26	1.603	3.530	190.1	623.7	190.1	623.7	1490	10300	1750	12100
				0.188	4.78	30	8.04	2.451	5.400	8.04	2.451	5.400	124.4	408.1	124.4	408.1	2340	16200	2500	17200
				0.203	5.16	40	8.63	2.630	5.800	8.67	2.643	5.850	115.9	380.2	115.3	378.4	2500	17200	2500	17200
3	80	3.500	88.90	0.120	3.05	10	6.46	1.969	4.340	6.46	1.969	4.340	154.8	507.9	154.8	507.9	1230	8500	1440	9900
				0.188	4.78	30	9.92	3.024	6.660	9.92	3.024	6.660	100.8	330.7	100.8	330.7	1930	13330	2260	15600
				0.216	5.49	40	11.29	3.441	7.580	11.35	3.459	7.680	88.6	290.6	88.1	289.1	2220	15300	2500	17200
3-1/2	90	4.000	101.60	0.120	3.05	10	7.41	2.259	4.980	7.41	2.259	4.980	135.0	442.8	135.0	442.8	1080	7400	1270	8700
				0.188	4.78	30	11.41	3.478	7.660	11.41	3.478	7.660	87.6	287.5	87.6	287.5	1690	11700	1970	13600
				0.226	5.74	40	13.57	4.136	9.120	13.71	4.179	9.270	73.7	241.8	72.9	239.3	2030	14000	2370	16300
4	100	4.500	114.30	0.120	3.05	10	8.37	2.551	5.620	8.37	2.551	5.620	119.5	392.0	119.5	392.0	970	6600	1130	7700
				0.188	4.78	30	12.91	3.935	8.670	12.91	3.935	8.670	77.5	254.1	77.5	254.1	1500	10300	1750	12100
				0.237	6.02	40	16.07	4.898	10.800	16.23	4.947	10.920	62.2	204.2	61.6	202.1	1900	13100	2210	15200
5	125	5.563	141.30	0.134	3.40	10	11.56	3.523	7.780	11.56	3.523	7.780	86.5	283.8	86.5	283.8	870	6000	1020	7000
				0.258	6.55	40	21.77	6.635	14.630	22.07	6.727	14.900	45.9	150.7	45.3	148.7	1670	11500	1950	13400
6	150	6.625	168.30	0.134	3.40	10	13.83	4.215	9.300	13.83	4.215	9.300	72.3	237.2	72.3	237.2	730	5000	860	5900
				0.280	7.11	40	28.26	8.614	18.990	28.58	8.711	19.340	35.4	116.1	35.0	114.8	1520	10500	1780	12300
8	200	8.625	219.10	0.148	3.76	10	19.97	6.087	13.410	19.97	6.087	13.410	50.1	164.3	50.1	164.3	630	4300	730	5000
				0.250	6.35	20	33.31	10.153	22.380	33.31	10.153	22.380	30.0	98.5	30.0	98.5	1040	7200	1220	8400
				0.277	7.04	30	36.81	11.220	24.720	38.07	11.604	25.530	27.2	89.1	26.3	86.2	1160	7800	1350	9300
				0.322	8.18	40	42.55	12.969	28.580	43.73	13.329	29.350	23.5	77.1	22.9	75.0	1340	9200	1570	10800

TOLERANCES

OUTSIDE DIAMETER : +/- 1/64" (0.40mm) for size upto & including NPS 1-1/2" and +/-1% of the specified O.D. for NPS 2" & above

THICKNESS : Minimum wall thickness 12.5% max under the specified wall thickness and not specified on positive side

WEIGHT : +/-10% of specified weight

LENGTH : 4.5 to 7.5 Mtr for black & galvanized pipes and 4.5 to 12.8 Mtr for black pipes NPS 3" to 8"

IN-PROCESS TESTING

ON-LINE NDT : tested by Eddy Current Test Machine

BEND TEST : For upto NPS 2" – Bending Angle 90° and Bending Radius 12 times the O.D. of pipe (No crack on body and weld)

FLATTENING TEST : For above NPS 2" – Flatten upto 2/3 of O.D. for weld, upto 1/3 of O.D. for body and full flattening for lamination

GRADE	CHEMICAL COMPOSITION (%) Max.										MECHANICAL PROPERTIES (MPa) Min.		
	C	Mn	P	S	Cr	Cu	Ni	Mo	V	Cr+Cu+Ni+Mo+V	YS	UTS	%EI
A	0.250	0.950	0.045	0.045	0.400	0.400	0.400	0.150	0.080	1.00	205	330	To be calculated as per formula
B	0.300	1.200	0.045	0.045	0.400	0.400	0.400	0.150	0.080	1.00	240	415	

WORKMANSHIP : As per ASTM A53, all pipes are finished with Black Lacquer Coating or Galvanizing (as per ASTM A90)

THREADING : As per ANSI B120.1

MARKING : Each pipe shall be stenciled as per ASTM A53 / Client Requirement

WE CAN ALSO MANUFACTURE AND SUPPLY THE PIPES AS PER ASTM A795 GR.A & B SCH-10/30/40 WITH BLACK COATING OR GALVANIZING.

Technical Data

PIPES

CONFORMING EN 10255

Nominal Size			Class	Outside Diameter (mm)		Thick (mm)	Weight (PE) (Kg/Mtr)	Weight (PE) (Kg/FT)	Weight (TS) (Kg/Mtr)	Weight (TS) (Kg/FT)	Length (PE) (Mtr/TON)	Length (PE) (FT/TON)	Length (TS) (Mtr/TON)	Length (TS) (FT/TON)
OD	DN	Inch		Min	Max									
21.3	15	1/2	L1	21.0	21.7	2.30	1.080	0.329	1.090	0.332	925.9	3037.8	917.4	3009.9
26.9	20	3/4	L1	26.4	27.1	2.30	1.390	0.424	1.400	0.427	719.4	2360.3	714.3	2343.5
33.7	25	1	L1	33.2	34.0	2.90	2.200	0.671	2.220	0.677	454.5	1491.3	450.5	1477.9
42.4	32	1 1/4	L1	41.9	42.7	2.90	2.820	0.860	2.850	0.869	354.6	1163.4	350.9	1151.2
48.3	40	1 1/2	L1	47.8	48.6	2.90	3.240	0.988	3.280	1.000	308.6	1012.6	304.9	1000.3
60.3	50	2	L1	59.6	60.7	3.20	4.490	1.369	4.560	1.390	222.7	730.7	219.3	719.5
76.1	65	2 1/2	L1	75.2	76.3	3.20	5.730	1.747	5.850	1.783	174.5	572.6	170.9	560.8
88.9	80	3	L1	87.9	89.4	3.60	7.550	2.301	7.720	2.353	132.5	434.5	129.5	425.0
114.3	100	4	L1	113.0	114.9	4.00	10.800	3.292	11.100	3.383	92.6	303.8	90.1	295.6
21.3	15	1/2	L2	21.0	21.4	2.00	0.947	0.289	0.956	0.291	1056.0	3464.5	1046.0	3431.8
26.9	20	3/4	L2	26.4	26.9	2.30	1.380	0.421	1.390	0.424	724.6	2377.4	719.4	2360.3
33.7	25	1	L2	33.2	33.8	2.60	1.980	0.604	2.000	0.610	505.1	1657.0	500.0	1640.4
42.4	32	1 1/4	L2	41.9	42.5	2.60	2.540	0.774	2.570	0.783	393.7	1291.7	389.1	1276.6
48.3	40	1 1/2	L2	47.8	48.4	2.90	3.230	0.985	3.270	0.997	309.6	1015.7	305.8	1000.3
60.3	50	2	L2	59.6	60.2	2.90	4.080	1.244	4.150	1.265	245.1	804.1	241.0	790.6
76.1	65	2 1/2	L2	75.2	76.0	3.20	5.710	1.740	5.830	1.777	175.1	574.6	171.5	562.8
88.9	80	3	L2	87.9	88.7	3.20	6.720	2.048	6.890	2.100	148.8	488.2	145.1	476.2
114.3	100	4	L2	113.0	113.9	3.60	9.750	2.972	10.000	3.048	102.6	336.5	100.0	328.1
21.3	15	1/2	L	21.0	21.7	2.30	1.080	0.329	1.090	0.332	925.9	3037.8	917.4	3009.9
26.9	20	3/4	L	26.4	27.1	2.30	1.400	0.427	1.410	0.430	714.3	2343.5	709.2	2326.8
33.7	25	1	L	33.2	34.0	2.90	2.200	0.671	2.220	0.677	454.5	1491.3	450.5	1477.9
42.4	32	1 1/4	L	41.9	42.7	2.90	2.820	0.860	2.850	0.869	354.6	1163.4	350.9	1151.2
48.3	40	1 1/2	L	47.8	48.6	2.90	3.250	0.991	3.290	1.003	307.7	1009.5	304.0	997.2
60.3	50	2	L	59.6	60.7	3.20	4.510	1.375	4.580	1.396	221.7	727.5	218.3	716.3
76.1	65	2 1/2	L	75.2	76.0	3.20	5.750	1.753	5.870	1.789	173.9	570.6	170.4	558.9
88.9	80	3	L	87.9	88.7	3.20	6.760	2.060	6.930	2.112	147.9	485.3	144.3	473.4
114.3	100	4	L	113.0	113.9	3.60	9.830	2.996	10.100	3.078	101.7	333.8	99.0	324.8
139.7	125	5	L	138.5	140.8	4.50	15.000	4.572	15.500	4.724	66.7	218.7	64.5	211.7
165.1	150	6	L	163.9	166.5	4.50	17.800	5.425	18.400	5.608	56.2	184.3	54.3	178.3
21.3	15	1/2	M	21.0	21.8	2.60	1.210	0.369	1.220	0.372	826.4	2711.4	819.7	2689.2
26.9	20	3/4	M	26.5	27.3	2.60	1.560	0.475	1.570	0.479	641.0	2103.1	636.9	2089.7
33.7	25	1	M	33.3	34.2	3.20	2.410	0.735	2.430	0.741	414.9	1361.3	411.5	1350.1
42.4	32	1 1/4	M	42.0	42.9	3.20	3.100	0.945	3.130	0.954	322.6	1058.3	319.5	1048.2
48.3	40	1 1/2	M	47.9	48.8	3.20	3.560	1.085	3.600	1.097	280.9	921.6	277.8	911.3
60.3	50	2	M	59.7	60.8	3.60	5.030	1.533	5.100	1.554	198.8	652.3	196.1	643.3
76.1	65	2 1/2	M	75.3	76.6	3.60	6.420	1.957	6.540	1.993	155.8	511.0	152.9	501.7
88.9	80	3	M	88.0	89.5	4.00	8.360	2.548	8.530	2.600	119.6	392.4	117.2	384.6
114.3	100	4	M	113.1	115.0	4.50	12.200	3.719	12.500	3.810	82.0	268.9	80.0	262.5
139.7	125	5	M	138.5	140.8	5.00	16.600	5.060	17.100	5.212	60.2	197.6	58.5	191.9
165.1	150	6	M	163.9	166.5	5.00	19.800	6.035	20.400	6.218	50.5	165.7	49.0	160.8
21.3	15	1/2	H	21.0	21.8	3.20	1.440	0.439	1.450	0.442	694.4	2278.4	689.7	2262.6
26.9	20	3/4	H	26.5	27.3	3.20	1.870	0.570	1.880	0.573	534.8	1754.5	531.9	1745.1
33.7	25	1	H	33.3	34.2	4.00	2.930	0.893	2.950	0.899	341.3	1119.7	339.0	1112.1
42.4	32	1 1/4	H	42.0	42.9	4.00	3.790	1.155	3.820	1.164	263.9	865.7	261.8	858.9
48.3	40	1 1/2	H	47.9	48.8	4.00	4.370	1.332	4.410	1.344	228.8	750.8	226.8	744.0
60.3	50	2	H	59.7	60.8	4.50	6.190	1.887	6.260	1.908	161.6	530.0	159.7	524.1
76.1	65	2 1/2	H	75.3	76.6	4.50	7.930	2.417	8.050	2.454	126.1	413.7	124.2	407.6
88.9	80	3	H	88.0	89.5	5.00	10.300	3.139	10.500	3.200	97.1	318.5	95.2	312.5
114.3	100	4	H	113.1	115.0	5.40	14.500	4.420	14.800	4.511	69.0	226.3	67.6	221.7
139.7	125	5	H	138.5	140.8	5.40	17.900	5.456	18.400	5.608	55.9	183.3	54.3	178.3
165.1	150	6	H	163.9	166.5	5.40	21.300	6.492	21.900	6.675	46.9	154.0	45.7	149.8

Tolerances

Outside Diameter as per above table

Thickness	Medium ±10%	Heavy ±10%	Light L ±10%	Light L1 -8%	Light L2 -8%	Flattening Test	For Tubes above 2" 1. Flatten upto 75% of tube dia for weld test (Weld at 12 or 3 O'clock position) 2. Flatten upto 60% of tube dia for raw material test
Weight	±7.5% for M, H & L series (on lot) and +10%/-8% for L1 & L2 series						
Mechanical Properties			Chemical Properties			Leak Tightness Test	100% Hydrotesting at 50 bar for at least 5 sec or online eddy current testing
Yield Strength	195 MPa (Minimum)		Carbon	0.20 % Max			
Tensile Strength	320 to 520 Mpa		Manganese	1.40 % Max			
%Elongation	20% Minimum		Phosphorous	0.035 % Max		Galvanizing Test	As per EN 10240 / EN ISO 1461
			Sulphur	0.030 % Max			
Bend Test	For Tubes upto & including 2"					Threading	As per EN 10226-1
Black Tube			Galvanized Tube				
Bending angle	90°		Bending angle	90°			
Bending radius	As per EN 10255		Bending radius	8 times to the OD of Tube			
Weld Position	outside of the bend		Weld Position	outside of the bend			

Technical Data

TUBING/SHAPES

CONFORMING TO ASTM A500

Tubes - Tolerances on dimensions						Shapes - Tolerances on dimensions					
Characteristics		Tolerances				Characteristics		Tolerances			
External Dimensions		±0.50% for 48.3mm & smaller, and ±0.75% for 50.0mm and above				External Dimensions		±0.50mm for 65mm or under, ±0.60mm for 65 - 90 mm including, ±0.80mm for 90 - 140mm including and ±1% for over 140mm			
Wall Thickness		±10% of the specified Wall Thickness				Wall Thickness		±10% of the specified Wall Thickness			
Straightness		2.0 mm times of total length				Concavity/convexity		Included in the Flat Dimension Tolerances			
						Squareness of side		90° ± 2°			
						Twist/Mtr		1.3mm for 40mm or under, 1.6mm for 40 - 65 mm, 1.9mm for 65 - 100mm, 2.2mm for 100 - 150mm, 2.5mm for 150 - 200mm and			
						Straightness		2.0 mm times of total length			
Grade	CHEMICAL COMPOSITION (%)					MECHANICAL PROPERTIES - TUBES			MECHANICAL PROPERTIES - SHAPES		
	C Max	Mn Max	P Max	S Max	Cu Min	YS (MPa) Min	UTS (MPa) Min	%EI Min	YS (MPa) Min	UTS (MPa) Min	%EI Min
A (Heat)	0.260	1.350	0.035	0.035	0.200	230	310	25	270	310	25
A (Product)	0.300	1.400	0.045	0.045	0.180						
B (Heat)	0.260	1.350	0.035	0.035	0.200	290	400	23	315	400	23
B (Product)	0.300	1.400	0.045	0.045	0.180						
C (Heat)	0.230	1.350	0.035	0.035	0.200	315	425	21	345	425	21
C (Product)	0.270	1.400	0.045	0.045	0.180						

HOLLOW SECTIONS

CONFORMING TO EN 10219 – 1 & 2

Circular Section - Tolerances on dimensions								Square/Rectangular Section - Tolerances on dimensions						
Characteristics		Tolerances						Characteristics		Tolerances				
External Dimensions		±1%, with a minimum of ±0.5 mm and a maximum of ±10 mm						External Dimensions		For H, B < 100 ±1%, with a minimum of ±0.5 mm 100≤H,B≤200:±0.8%;H,B>200:±0.6%				
Thickness		For do ≤ 406.4 mm, T ≤ 5mm : ±10%, T > 5mm ± 0.5mm; For do > 406.4 mm: ±10%						Thickness		For T ≤ 5mm : ±10%, T > 5mm ± 0.5mm				
								Concavity/convexity		Max. 0.8% with a minimum of 0.5 mm				
Out-of-roundness		2% for hollow sections having d/t < 100						Squareness of side		90° ± 1°				
Straightness		0.20% of total length and 3 mm over any 1 m length						Twist		2mm plus 0.5mm/m length				
Mass per unit length		± 10% on individual delivered lengths						Straightness		0.15% of total length and 3 mm over any 1 m length				
								Mass per unit length		± 10% on individual delivered lengths				
Grade	CHEMICAL COMPOSITION (%) Max							MECHANICAL PROPERTIES (MPa)				Minimum impact energy		
	C	Si	Mn	P	S	N	CEV	YS Min	UTS		%EI Min	J		
S235 JRH	0.170	--	1.400	0.040	0.040	0.009	0.350	235	360-510	360-510	24	-20° C	0° C	20° C
S275 J0H	0.200	--	1.500	0.035	0.035	0.009	0.400	275	430-580	410-560	20	-20° C	27	--
S275 J2H	0.200	--	1.500	0.030	0.030	--	0.400					27	--	--
S355 J0H	0.220	0.550	1.600	0.035	0.035	0.009	0.450	355	510-680	470-630	20	-20° C	27	--
S355 J2H	0.220	0.550	1.600	0.030	0.030	--	0.450					27	--	--
S355 K2H	0.220	0.550	1.600	0.030	0.030	--	0.450					40	--	--

Technical Data

HOLLOW SECTIONS

CONFORMING TO AS / NZS 1163

Circular Shape - Tolerances on dimensions		Square/Rectangular Shape - Tolerances on dimensions												
Characteristics	Tolerances	Characteristics	Tolerances											
External Dimensions	±1%, with a minimum of ±0.5 mm and a maximum of ±10 mm	External Dimensions	±1% with a minimum of ±0.5 mm											
Thickness	For do ≤ 406.4 mm: ±10%	Thickness	±10%											
Out-of-roundness	2% for hollow sections having d/t < 100	Concavity/convexity	Max. 0.8% or 0.5 mm; whichever is greater											
Straightness	0.20% of total length	Squareness of side	90° ± 1°											
		Twist	2mm plus 0.5mm/m length											
		Straightness	0.15% of total length											
Manipulation (Bend Test)														
For Galvanized Tubes upto & including 60.3 mm														
Bending angle 90°														
Bending radius 6 times to the OD of Tube														
Flattening Test														
1. Flatten upto 75% of tube dia for weld test (Weld at 45° position for do≤60mm)														
2. Flatten upto 75% of tube dia for weld test (Weld at 90° position for do>60mm)														
MECHANICAL PROPERTIES														
Grade	YS (Min)	TS (Min)	%EI (Min)			Minimum Absorbed Energy, Joules								
	MPa	Pa	do/t			Avg. of 3 tests			Individual tests					
			≤15	>15≤30	>30	10x10	10x7.5	10x5.0	10x10	10x7.5	10x5.0			
C250, C250L0	250	320	18	20	22	27	22	18	20	16	13			
C350, C350L0	350	430	16	18	20	27	22	18	20	16	13			
CHEMICAL COMPOSITION (% Max.)														
Grade	C		Si		Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	Ti
C250, C250L0	0.120	0.05	0.50	0.03	0.03	0.25	0.25	0.15	0.10	0.02	0.01	0.04	0.10	0.03
C250, C250L0	0.120	0.05	0.50	0.03	0.03	0.25	0.25	0.15	0.10	0.02	0.01	0.04	0.10	0.25

TUBES

CONFORMING TO EN 39

Type	Size			Outside Diameter (mm)		Thickness (mm)	Weight (Plain End) (Kg/mtr.)		
	DN	Inch	OD	Min	Max				
Type-3	40	1 1/2	48.3	47.8	48.8	3.20	3.56		
Type-4	40	1 1/2	48.3	47.8	48.8	4.00	4.37		
			38.1	37.5	38.5	3.20	2.75		
			38.1	37.5	38.5	4.00	3.36		
Characteristics	OD		Thickness	Weight		Straightness		Insertion of ID gauge	
Tolerances	+/-0.50mm		-10%	-7.5%		0.002 of Length		37.7mm	
CHEMICAL PROPERTIES (%)						MECHANICAL PROPERTIES (MPa)			
C (Max)	Mn (Max)	P (Max)	S (Max)	Si (Max)	Al (Min)	YS (Min)	TS (Min)	%EI (Min)	
0.200	1.400	0.040	0.045	0.040	0.020	235	340-520	24	
Flattening Test Flatten upto 75% of tube diameter (Weld at 3 or 9 O'clock position) Galvanizing Test As per EN 10240 B2/ EN ISO 1461 These pipes can also be manufactured as per the client requirement with reference to the specification EN 39:2001 With reference to this specification 27mm, 38mm, 42mm, 63mm OD pipes are also manufactured which are used in scaffoldings.									

Technical Data

TUBES

CONFORMING TO AS: 1074

Size		Class	O.D. (mm)		Thickness (mm)	Weight (Plain End) (Kg/mtr.)	Weight (Socketed) (Kg/mtr.)
DN	Inch		Min	Max			
15	1/2"	L	21.0	21.4	2.00	0.947	0.956
20	3/4"	L	26.4	26.9	2.30	1.380	1.390
25	1"	L	33.2	33.8	2.60	1.980	2.000
32	1 1/4"	L	41.9	42.5	2.60	2.540	2.570
40	1 1/2"	L	47.8	48.4	2.90	3.230	3.270
50	2"	L	59.6	60.2	2.90	4.080	4.150
65	2 1/2"	L	75.2	76.0	3.20	5.710	5.830
80	3"	L	87.9	88.7	3.20	6.720	6.890
100	4"	L	113.0	113.9	3.60	9.750	10.000
15	1/2"	M	21.1	21.7	2.60	1.210	1.220
20	3/4"	M	26.6	27.2	2.60	1.560	1.570
25	1"	M	33.4	34.2	3.20	2.410	2.430
32	1 1/4"	M	42.1	42.9	3.20	3.100	3.130
40	1 1/2"	M	48.0	48.8	3.20	3.570	3.610
50	2"	M	59.8	60.8	3.60	5.030	5.100
65	2 1/2"	M	75.4	76.6	3.60	6.430	6.550
80	3"	M	88.1	89.5	4.00	8.370	8.540
100	4"	M	113.3	114.9	4.50	12.200	12.500
125	5"	M	138.7	140.6	5.00	16.600	17.100
150	6"	M	164.1	166.1	5.00	19.700	20.300
15	1/2"	H	21.1	21.7	3.20	1.440	1.450
20	3/4"	H	26.6	27.2	3.20	1.870	1.880
25	1"	H	33.4	34.2	4.00	2.940	2.960
32	1 1/4"	H	42.1	42.9	4.00	3.800	3.830
40	1 1/2"	H	48.0	48.8	4.00	4.380	4.420
50	2"	H	59.8	60.8	4.50	6.190	6.260
65	2 1/2"	H	75.4	76.6	4.50	7.930	8.050
80	3"	H	88.1	89.5	5.00	10.300	10.500
100	4"	H	113.3	114.9	5.40	14.500	14.800
125	5"	H	138.7	140.6	5.40	17.900	18.400
150	6"	H	164.1	166.1	5.40	21.300	21.900

Tolerances

Outside Diameter as per above table

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

Mechanical Properties

Yield Strength	195 MPa (Minimum)
Tensile Strength	320 to 460 MPa
%Elongation	20% Minimum

Chemical Properties

Phosphorous	0.045 % Max
Sulphur	0.045 % Max
Carbon	0.40 % Max
Equivalent	

Ductility Test

Black Tube

Bending angle
Bending radius
Weld Position

For Tubes upto & including 2"

180°
6 times to the OD of Tube
3 o'clock

Galvanized Tube

Bending angle
Bending radius
Weld Position

90°
8 times to the OD of Tube
3 o'clock

Ductility 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 5 MPa or online eddy current testing or ultrasonic testing

Galvanizing Test

As per AS 1650

Threading

As per AS 1722-1



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