

Embosal
T U B E M I L L S

Specialized in Producing
SMALL & LARGE DIAMETER HIGHER THICKNESS
Standard and Non Standard Steel Tubes & Pipes

CHS 1" - 250"
THICKNESS 2mm - 80mm

SHS 30x30 - 800x800mm
THICKNESS 2mm - 40mm

RHS 30x35 - 800x750mm
THICKNESS 2mm - 40mm

HOT ROLLED & COLD ROLLED

CAPACITY **1.50** MILLION TONS PER YEAR

**HOLLOW
SECTIONS**

SQUARE | RECTANGULAR | CIRCULAR



LSAW Pipe Mill



ERW Pipe Mill



SSAW Pipe Mill



Square/Rectangular
Tube Mill

01

HOT ROLLED & COLD ROLLED

02

CIRCULAR HOLLOW SECTION
(PIPES)

03

SQUARE HOLLOW SECTION
(SHS)

04

RECTANGULAR HOLLOW SECTION
(RHS)

05

SPECIAL SHAPES



LSAW Pipe Mill



ERW Pipe Mill



SSAW Pipe Mill



Square/Rectangular
Tube Mill

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COMPANY INTRODUCTION

Building A Better Future

Embosal Tube Mills are Located in Al Ghail (Ras Al Khaimah), United Arab Emirates with the installed combined capacity of 1.5 Million Tons per annum. We are equipped with advanced state of art production machineries in large well organized factories.

We are designed to produce precision square and rectangular tubes with specification range of 30x30x2mm to 800x800x40mm. and RHS 35x30x2mm to 800x750x40mm.

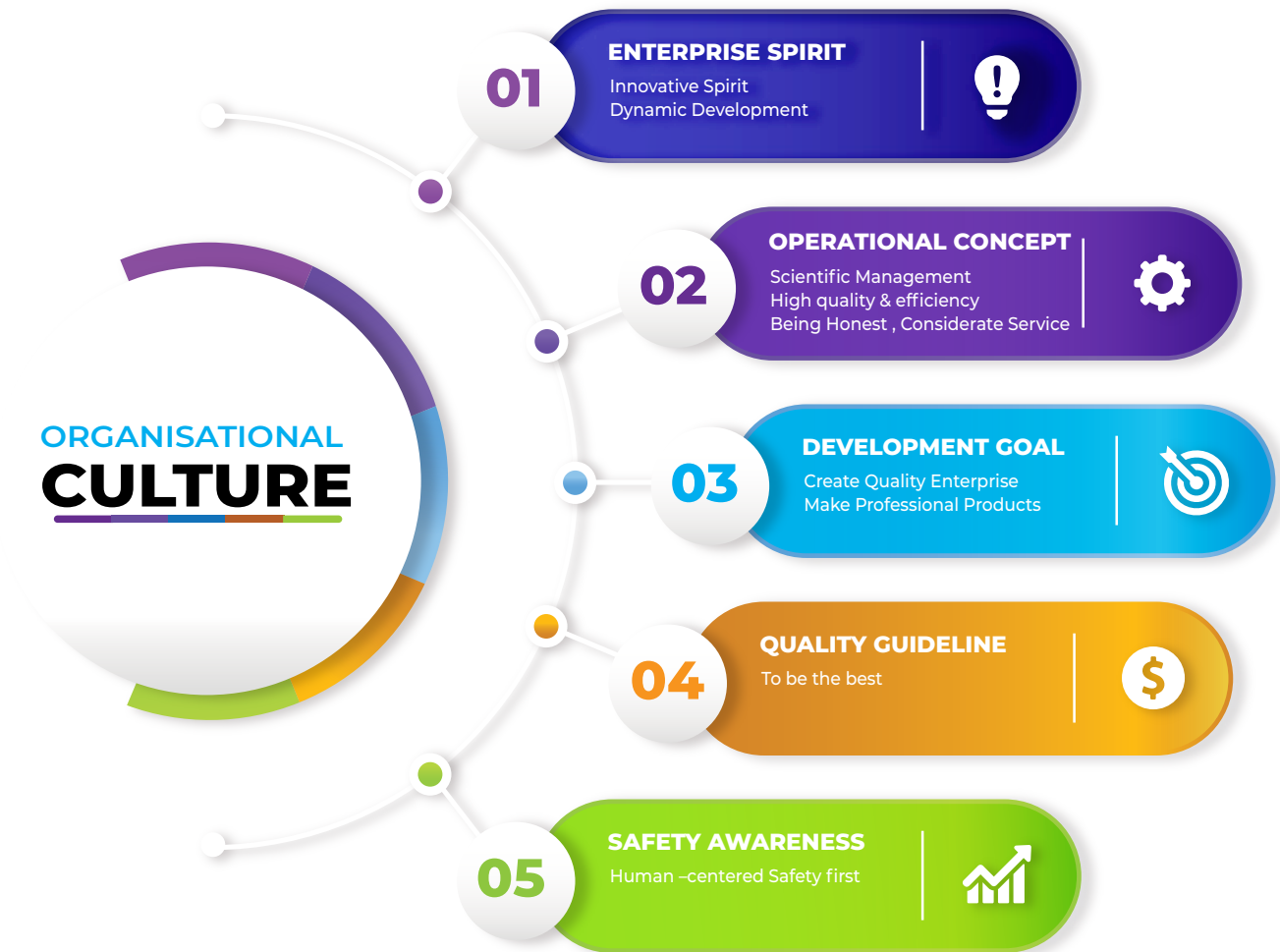
Also we are equipped with other production lines starting from 1" dia to 250" dia pipes in different thickness from 2mm to 80mm. All the products are widely used in machinery, large construction, bridge, airports, ship building purposes etc.

Mission

We will continue to be the first name in the region's steel industry by reinforcing our assets, and resources in order to achieve growth, operational and organizational excellence by participating in the economical and positive social expansion of the United Arab Emirates.

Vision

We endeavor to be recognized as one of the leading and constantly growing force in the steel industry of the region, and to be admired for our business culture and adding value to our customers and enhancing inspiration to our people.



QUALITY ASSURANCE

Embosal Tube Mill is committed enhancing its customers value with the product and services and to set industry standards for quality and performance. We strive to deliver the best and understand the value of continuous improvement by setting goals and objectives throughout the organization in order to ensure that we are meeting our customer expectations beyond their imagination.

QUALITY POLICY

Embosal is committed to produce round, rectangular, square, hexagonal, and conical, elliptical tubular products to various standards and customer requirements with high quality & economical cost and ensuring all of our efforts for timely delivery.

QUALITY OBJECTIVE

- To improve customers satisfaction levels
- To maximize yield through continuous improvement & resource optimization
- To monitor and ensure on time delivery
- Training and developments of employees at all levels

Certificate

Conformity of the factory production control

according Regulation 305/2011/EU:
System 2+

Certificate number: 0035-CPR- A280

Scope:

In compliance with Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011 (the Construction Products Regulation - CPR), this certificate applies to the construction product:

Hot finished structural hollow sections of non-alloy and fine grain steels for metal structures or in composite metal and concrete structures (see Annex)

Cold formed welded structural hollow sections of non-alloy and fine grain steels for metal structures or in composite metal and concrete structures (see Annex)

Name and address of the manufacturer:

**Embosal Tube Mills LLC
Po, Box – 95801, Al Ghail Industrial Area
Ras Al Khaimah, UAE**

Manufacturing plant:

Embosal Tube Mills LLC
Po, Box – 95801, Al Ghail Industrial Area
Ras Al Khaimah, UAE

Specification:

This certificate attests that all provisions concerning the assessment and verification of constancy of performance described in Annex ZA of the standard(s):

EN 10210-1:2006

EN 10219-1:2006

under system 2+ are applied and that the factory production control fulfills all the prescribed requirements set out above.

Validity period:

This certificate was first issued on 24.09.2018 and will remain valid as long as the test methods and/or factory production control requirements included in the harmonized standard used to assess the performance of the declared characteristics, do not change, and the product, and the manufacturing conditions in the plant are not modified significantly, but not longer than 23.09.2021.

Köln, 24.09.2018

I.A. Dipl.-Ing. A. Makowka
Certification body for construction products

TÜV Rheinland Industrie Service GmbH
Notified Body for construction products (NB 0035)
Am Grauen Stein
51105 Köln, Deutschland
e-mail: CPR-materials@de.tuv.com



Rev. 3



Certificate Of Registration

Awarded to

EMBOSAL TUBE MILLS LLC

at

P.O.BOX NO: 95801, PLOT NO: L1, L2, L22 & L23, AL GHAIL INDUSTRIAL PARK, RAS AL
KHAIMAH, UAE

Quality Registrar Systems certify that the management system of the above
organization has been audited and found to be in compliance with the QRS
requirements for registration of the management system standard detailed
below:

ISO 9001:2015

Quality Management Systems

Scope of work

- MANUFACTURING OF STEEL TUBES
- MANUFACTURING OF STEEL PIPES

EA 17

Certificate No: ARU-1069

Originally Registered: 05 SEP 2020

Latest Issue: 05 SEP 2020

Valid up-to: 04 SEP 2023


Quality Registrar Systems



MANAGING OFFICE ADDRESS:
Quality Registrar Systems
P.O. Box :26826
United Arab Emirates



WORLD WIDE CERTIFICATION

Tel: +971-2-6714302
Fax: +971-2-6741449
www.qrsyst.com

This is an accredited certificate authorized for issue by Accreditation Service for Certifying Bodies (Europe) Limited who have assessed QRS as a Certifying Body for compliance with ISO 17021:2015 'Conformity Assessment - Requirements for bodies providing audit and certification of management systems. This certificate is only valid when confirmed by the register listed in the Quality Registrar Systems (qrsyst.com)



Certificate Of Registration

Awarded to

EMBOSAL TUBE MILLS LLC

at

P.O.BOX NO: 95801, PLOT NO: L1, L2, L22 & L23, AL GHAIL INDUSTRIAL PARK, RAS AL
KHAIMAH, UAE

Quality Registrar Systems certify that the management system of the above
organization has been audited and found to be in compliance with the QRS
requirements for registration of the management system standard detailed
below:

ISO 14001:2015

Environmental Management Systems

Scope of work

- MANUFACTURING OF STEEL TUBES
- MANUFACTURING OF STEEL PIPES

EA 17

Certificate No: ARU-5032

Originally Registered: 05 SEP 2020

Latest Issue: 05 SEP 2020

Valid up-to: 04 SEP 2023

Quality Registrar Systems



MANAGING OFFICE ADDRESS:

Quality Registrar Systems
P.O. Box :26826
United Arab Emirates



Tel: +971-2-6714302
Fax: +971-2-6741449
www.qrsyst.com

This is an accredited certificate authorized for issue by Accreditation Service for Certifying Bodies (Europe) Limited who have assessed QRS as a Certifying
Body for compliance with ISO 17021:2015 'Conformity Assessment - Requirements for bodies providing audit and certification of management systems.

This certificate is only valid when confirmed by the register listed in the quality registrar system (qrsyst.com)



Certificate Of Registration

Awarded to

EMBOSAL TUBE MILLS LLC

at

P.O.BOX NO: 95801, PLOT NO: L1, L2, L22 & L23, AL GHAIL INDUSTRIAL PARK, RAS AL
KHAIMAH, UAE

Quality Registrar Systems certify that the management system of the above
organization has been audited and found to be in compliance with the QRS
requirements for registration of the management system standard detailed
below:

ISO 45001:2018

Occupational Health and Safety Management Systems

Scope of work

- MANUFACTURING OF STEEL TUBES
- MANUFACTURING OF STEEL PIPES

EA 17

Certificate No: ARU-3033

Originally Registered: 05 SEP 2020

Latest Issue: 05 SEP 2020

Valid up-to: 04 SEP 2023


Quality Registrar Systems



MANAGING OFFICE ADDRESS:
Quality Registrar Systems
P.O. Box :26826
United Arab Emirates



WORLD WIDE CERTIFICATION

Tel: +971-2-6714302
Fax: +971-2-6741449
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LSAW PIPE & TUBE MILL

The solution for LSAW Pipe & Tube Production

Pipe Diameter
Range

9" - 250"

Pipe Length

12M

Wall Thickness

6_{mm} - 80_{mm}

Square Tube Size

**200x200_{mm}
-
800x800_{mm}**

Tube Length

6M- 12M

Wall Thickness

8 - 40_{mm}

Rectangular Tube Size

**200x150_{mm}
-
800x750_{mm}**

Tube Length

6M- 12M

Wall Thickness

8 - 40_{mm}

LSAW PIPE MANUFACTURING PROCESS

Production machines are the key factor to the quality of the pipes which need to be produced.

All parameters, which must confirm to the relevant standards, are set here. Based on their physical requirements and the factors which influence the process, there are three production steps which have a main influence on the pipe quality:

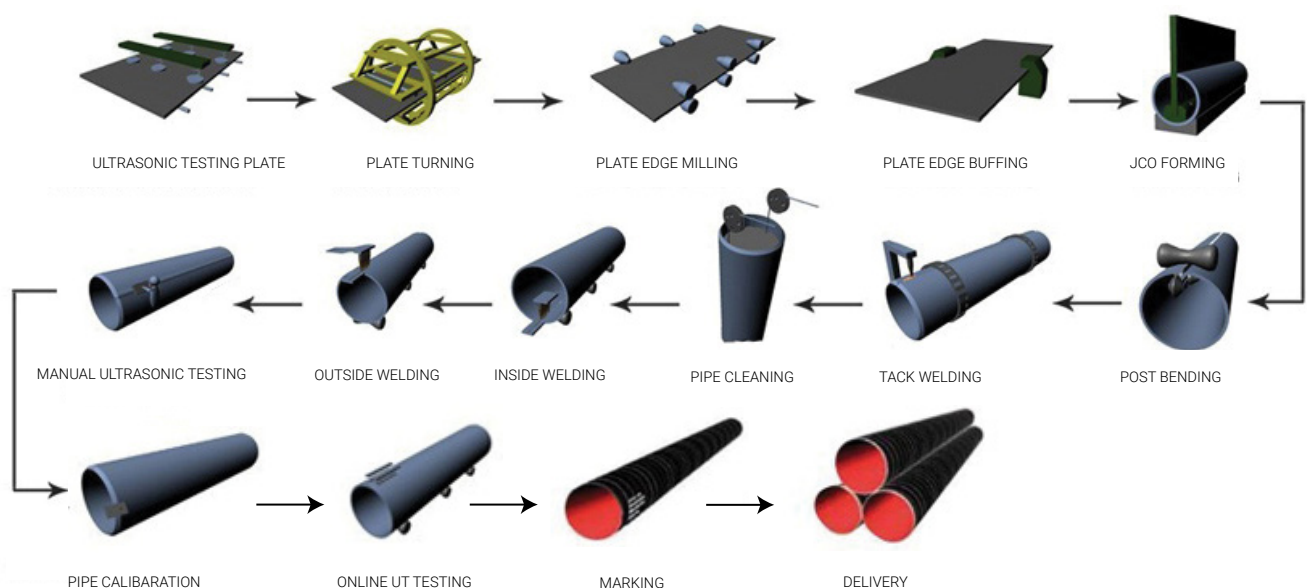
- LSAW Pipe Forming
- LSAW Pipe Welding
- LSAW Pipe calibration

As a general contractor for turnkey pipe mill solutions, Embosal offers all key machines as in-house products. Therefore all critical sections of the Embosal pipe mill process are produced from one source.
A number of interacting operations are part of the overall pipe mill process.

Three main process categories can be defined:

Production > Quality Control > Pipe Transport

LSAW STEEL PIPE PRODUCTION FLOW CHART



PRODUCTION LINE

Plate edge milling, Plate edge crimping, JCO forming, Tack welding, ID/OD welding, Calibration are producing by the professional manufacturer of large diameter equipment .All are adopt first class design and manufacturing technologies internationally with automatic control systems .

All NDT are performed by online testing equipment and it is prestigious in the field of steel pipe manufacturing.

WELDING OF PIPES

The welding of the pipes is one of the most demanding production steps within the pipe mill.

It is done in three steps:

- 1. Continuous root welding (GMAW)**
- 2. Internal submerged arc welding (SAW)**
- 3. External submerged arc welding (SAW)**



The open pipe will be fed through hydraulically controlled cage for proper alignment of the edges and Continuous root welding. To weld the pipe without offset and with homogeneous seam are the main Quality criteria within this process. Additional to the pipe assembling, the root weld serves as backing for the following internal welding. Simultaneous closing, transporting and seam tracking of the pipe as well as controlling the welding parameters are run by an easy to-use CNC system. The integrated digital Weld Control and laser tracking systems ensure high and reproducible pipe quality

INTERNAL AND EXTERNAL WELDING

Both internal and external welding is carried out by stationary multi-wire submerged arc welding, while the pipe is transported on a carriage. For internal welding, the boom in which the supply for wires and flux are integrated. For external welding, these components are fitted onto a gantry with a height adjustable operator platform. The speed of the pipe carriages is precisely controlled to match the welding parameters.



The flux supply and recovery system, as well as the electrical grounding system, are integral parts of all welding stations. Depending on the required output, two or more internal and external welding stations are integrated into the production line.

LSAW Pipe

Size Range : 9" - 250"

OD		6	8	10	12	14	15	16	18	20	22	25	30	35	40	45	50	55	60	65	70	75	80
Inch	mm																						
9	244.5																						
10	273.0																						
11	298.5																						
12	323.0																						
13	330.0																						
14	355.0																						
15	381.0																						
16	406.0																						
17	432.0																						
18	457.0																						
19	460.0																						
20	508.0																						
21	533.0																						
22	559.0																						
23	584.0																						
24	610.0																						
25	630.0																						
26	660.0																						
27	686.0																						
28	711.0																						
29	737.0																						
30	762.0																						
31	787.0																						
32	813.0																						
33	838.0																						
34	864.0																						
35	889.0																						
36	914.0																						
37	940.0																						
38	965.0																						
39	991.0																						
40	1016.0																						
41	1041.4																						
42	1066.8																						
43	1092.2																						
44	1117.6																						

Note : If you are looking for a special size which is not shown in above chart, Please contact us on joby@embosal.com

LSAW Pipe Size Range : 9" - 250"

OD		6	8	10	12	14	15	16	18	20	22	25	30	35	40	45	50	55	60	65	70	75	80
Inch	mm																						
45	1143.0																						
46	1168.4																						
47	1193.8																						
48	1219.2																						
49	1244.6																						
50	1270.0																						
51	1295.4																						
52	1320.8																						
53	1346.2																						
54	1371.6																						
55	1397.0																						
56	1422.4																						
57	1447.8																						
58	1473.2																						
59	1498.6																						
60	1524.0																						
61	1549.4																						
62	1574.8																						
63	1600.2																						
64	1625.6																						
65	1651.0																						
66	1676.4																						
67	1701.8																						
68	1727.2																						
69	1752.6																						
70	1778.0																						
71	1803.4																						
72	1828.8																						
73	1854.2																						
74	1879.6																						
75	1905.0																						
76	1930.4																						
77	1955.8																						
78	1981.2																						
79	2006.6																						
80	2032.0																						

Note : If you are looking for a special size which is not shown in above chart, Please contact us on joby@embosal.com

LSAW Pipe

Size Range : 9" - 250"

OD		6	8	10	12	14	15	16	18	20	22	25	30	35	40	45	50	55	60	65	70	75	80
Inch	mm																						
81	2057.4																						
82	2082.8																						
83	2108.2																						
84	2133.6																						
85	2159.0																						
86	2184.4																						
87	2209.8																						
88	2235.2																						
89	2260.6																						
90	2286.0																						
91	2311.4																						
92	2336.8																						
93	2362.2																						
94	2387.6																						
95	2413.0																						
96	2438.4																						
97	2463.8																						
98	2489.2																						
99	2514.6																						
100	2540.0																						
101	2565.4																						
102	2590.8																						
103	2616.2																						
104	2641.6																						
105	2667.0																						
106	2692.4																						
107	2717.8																						
108	2743.2																						
109	2768.6																						
110	2794.0																						
111	2819.4																						
112	2844.8																						
113	2870.2																						
114	2895.6																						
115	2921.0																						
116	2946.4																						

Note : If you are looking for a special size which is not shown in above chart, Please contact us on joby@embosal.com

LSAW Pipe

Size Range : 9" - 250"

OD		6	8	10	12	14	15	16	18	20	22	25	30	35	40	45	50	55	60	65	70	75	80
Inch	mm																						
117	2971.8																						
118	2997.2																						
119	3022.6																						
120	3048.0																						
121	3073.4																						
122	3098.8																						
123	3124.2																						
124	3149.6																						
125	3175.0																						
126	3200.4																						
127	3225.8																						
128	3251.2																						
129	3276.6																						
130	3302.0																						
131	3327.4																						
132	3352.8																						
133	3378.2																						
134	3403.6																						
135	3429.0																						
136	3454.4																						
137	3479.8																						
138	3505.2																						
139	3530.6																						
140	3556.0																						
141	3581.4																						
142	3606.8																						
143	3632.2																						
144	3657.6																						
145	3683.0																						
146	3708.4																						
147	3733.8																						
148	3759.2																						
149	3784.6																						
150	3810.0																						
151	3835.4																						
152	3860.8																						

Note : If you are looking for a special size which is not shown in above chart, Please contact us on joby@embosal.com

LSAW Pipe

Size Range : 9" - 250"

OD		6	8	10	12	14	15	16	18	20	22	25	30	35	40	45	50	55	60	65	70	75	80
Inch	mm																						
153	3886.2																						
154	3911.6																						
155	3937.0																						
156	3962.4																						
157	3987.8																						
158	4013.2																						
159	4038.6																						
160	4064.0																						
161	4089.4																						
162	4114.8																						
163	4140.2																						
164	4165.6																						
165	4191.0																						
166	4216.4																						
167	4241.8																						
168	4267.2																						
169	4292.6																						
170	4318.0																						
171	4343.4																						
172	4368.8																						
173	4394.2																						
174	4419.6																						
175	4445.0																						
176	4470.4																						
177	4495.8																						
178	4521.2																						
179	4546.6																						
180	4572.0																						
181	4597.4																						
182	4622.8																						
183	4648.2																						
184	4673.6																						
185	4699.0																						
186	4724.4																						
187	4749.8																						
188	4775.2																						

Note : If you are looking for a special size which is not shown in above chart, Please contact us on joby@embosal.com

LSAW Pipe

Size Range : 9" - 250"

OD		6	8	10	12	14	15	16	18	20	22	25	30	35	40	45	50	55	60	65	70	75	80
Inch	mm																						
189	4800.6																						
190	4826.0																						
191	4851.4																						
192	4876.8																						
193	4902.2																						
194	4927.6																						
195	4953.0																						
196	4978.4																						
197	5003.8																						
198	5029.2																						
199	5054.6																						
200	5080.0																						
201	5105.4																						
202	5130.8																						
203	5156.2																						
204	5181.6																						
205	5207.0																						
206	5232.4																						
207	5257.8																						
208	5283.2																						
209	5308.6																						
210	5334.0																						
211	5359.4																						
212	5384.8																						
213	5410.2																						
214	5435.6																						
215	5461.0																						
216	5486.4																						
217	5511.8																						
218	5537.2																						
219	5562.6																						
220	5588.0																						
221	5613.4																						
222	5638.8																						
223	5664.2																						

Note : If you are looking for a special size which is not shown in above chart, Please contact us on joby@embosal.com

LSAW Pipe

Size Range : 9" - 250"

OD		6	8	10	12	14	15	16	18	20	22	25	30	35	40	45	50	55	60	65	70	75	80
Inch	mm																						
224	5689.6																						
225	5715.0																						
226	5740.4																						
227	5765.8																						
228	5791.2																						
229	5816.6																						
230	5842.0																						
231	5867.4																						
232	5892.8																						
233	5918.2																						
234	5943.6																						
235	5969.0																						
236	5994.4																						
237	6019.8																						
238	6045.2																						
239	6070.6																						
240	6096.0																						
241	6121.4																						
242	6146.8																						
243	6172.2																						
244	6197.6																						
245	6223.0																						
246	6248.4																						
247	6273.8																						
248	6299.2																						
249	6324.6																						
250	6350.0																						



Need Help?

If you need help deciding which item to use on your project
then please don't hesitate to call us on
+971 6 5013 111 or email : joby@embosal.com

Square Hollow Section -LSAW

Size Range : 200x200 - 800x800



Sqaure Hollow Section			8	10	12	14	15	16	18	20	22	25	30	32	35	40
200	200	12M														
215	215	12M														
225	225	12M														
240	240	12M														
250	250	12M														
260	260	12M														
280	280	12M														
300	300	12M														
320	320	12M														
340	340	12M														
350	350	12M														
360	360	12M														
380	380	12M														
400	400	12M														
410	410	12M														
420	420	12M														
440	440	12M														
450	450	12M														
460	460	12M														
480	480	12M														
500	500	12M														
520	520	12M														
540	540	12M														
550	550	12M														
560	560	12M														
580	580	12M														
600	600	12M														
620	620	12M														
640	640	12M														
650	650	12M														
660	660	12M														
680	680	12M														
700	700	12M														
720	720	12M														
740	740	12M														
750	750	12M														
760	760	12M														
780	780	12M														
800	800	12M														

Note : If you are looking for a special size which is not shown in above chart, Please contact us on joby@embosal.com

Rectangular Hollow Section -LSAW

Size Range : 200x150 - 800x750



Rectangular Hollow Section			8	10	12	14	15	16	18	20	22	25	30	32	35	40
200	150	12M														
200	160	12M														
200	180	12M														
220	100	12M														
220	120	12M														
220	140	12M														
220	150	12M														
220	160	12M														
220	180	12M														
220	200	12M														
230	100	12M														
230	120	12M														
230	150	12M														
230	160	12M														
230	180	12M														
230	200	12M														
230	220	12M														
240	100	12M														
240	120	12M														
240	140	12M														
240	150	12M														
240	160	12M														
240	180	12M														
240	200	12M														
240	220	12M														
250	100	12M														
250	120	12M														
250	140	12M														
250	150	12M														
250	160	12M														
250	180	12M														
250	200	12M														
250	220	12M														
250	240	12M														
260	100	12M														
260	120	12M														
260	140	12M														
260	150	12M														
260	160	12M														
260	180	12M														
260	200	12M														
260	220	12M														
260	240	12M														
260	250	12M														
280	100	12M														
280	120	12M														
280	140	12M														
280	150	12M														
280	160	12M														
280	180	12M														
280	200	12M														
280	220	12M														
280	240	12M														
280	250	12M														
280	260	12M														
300	100	12M														
300	120	12M														
300	140	12M														
300	150	12M														
300	160	12M														
300	180	12M														
300	200	12M														
300	220	12M														
300	240	12M														
300	250	12M														
300	260	12M														

Note : If you are looking for a special size which is not shown in above chart, Please contact us on joby@embosal.com

Rectangular Hollow Section -LSAW

Size Range : 200x150 - 800x750



Rectangular Hollow Section			8	10	12	14	15	16	18	20	22	25	30	32	35	40
300	280	12M														
320	100	12M														
320	120	12M														
320	140	12M														
320	150	12M														
320	160	12M														
320	180	12M														
320	200	12M														
320	220	12M														
320	240	12M														
320	250	12M														
320	260	12M														
320	280	12M														
320	300	12M														
340	100	12M														
340	120	12M														
340	140	12M														
340	150	12M														
340	160	12M														
340	180	12M														
340	200	12M														
340	220	12M														
340	240	12M														
340	250	12M														
340	260	12M														
340	280	12M														
340	300	12M														
340	320	12M														
350	100	12M														
350	120	12M														
350	140	12M														
350	150	12M														
350	160	12M														
350	180	12M														
350	200	12M														
350	220	12M														
350	240	12M														
350	250	12M														
350	260	12M														
350	280	12M														
350	300	12M														
350	320	12M														
350	340	12M														
360	100	12M														
360	120	12M														
360	140	12M														
360	150	12M														
360	160	12M														
360	180	12M														
360	200	12M														
360	220	12M														
360	240	12M														
360	250	12M														
360	260	12M														
360	280	12M														
360	300	12M														
380	320	12M														
380	340	12M														
380	350	12M														
380	360	12M														
400	100	12M														
400	120	12M														
400	140	12M														
400	150	12M														
400	160	12M														
400	180	12M														

Note: If you are looking for a special size which is not shown in above chart, Please contact us on joby@embosal.com

Rectangular Hollow Section -LSAW

Size Range : 200x150 - 800x750



Rectangular Hollow Section			8	10	12	14	15	16	18	20	22	25	30	32	35	40
400	200	12M														
400	220	12M														
400	240	12M														
400	250	12M														
400	260	12M														
400	280	12M														
400	300	12M														
400	320	12M														
400	340	12M														
400	350	12M														
400	360	12M														
400	380	12M														
420	100	12M														
420	120	12M														
420	140	12M														
420	150	12M														
420	160	12M														
420	180	12M														
420	200	12M														
420	220	12M														
420	240	12M														
420	250	12M														
420	260	12M														
420	280	12M														
420	300	12M														
420	320	12M														
420	340	12M														
420	350	12M														
420	360	12M														
420	380	12M														
420	400	12M														
440	100	12M														
440	120	12M														
440	140	12M														
440	150	12M														
440	160	12M														
440	180	12M														
440	200	12M														
440	220	12M														
440	240	12M														
440	250	12M														
440	260	12M														
440	280	12M														
440	300	12M														
440	320	12M														
440	340	12M														
440	350	12M														
440	360	12M														
440	380	12M														
440	400	12M														
440	420	12M														
450	100	12M														
450	120	12M														
450	140	12M														
450	150	12M														
450	160	12M														
450	180	12M														
450	200	12M														
450	220	12M														
450	240	12M														
450	250	12M														
450	260	12M														
450	280	12M														
450	300	12M														
450	320	12M														
450	340	12M														

Note : If you are looking for a special size which is not shown in above chart, Please contact us on joby@embosal.com

Rectangular Hollow Section -LSAW

Size Range : 200x150 - 800x750



Rectangular Hollow Section			8	10	12	14	15	16	18	20	22	25	30	32	35	40
450	350	12M														
450	360	12M														
450	380	12M														
450	400	12M														
450	420	12M														
450	440	12M														
460	100	12M														
460	120	12M														
460	140	12M														
460	150	12M														
460	160	12M														
460	180	12M														
460	200	12M														
460	220	12M														
460	240	12M														
460	250	12M														
460	260	12M														
460	280	12M														
460	300	12M														
460	320	12M														
460	340	12M														
460	350	12M														
460	360	12M														
460	380	12M														
460	400	12M														
460	420	12M														
460	440	12M														
480	100	12M														
480	120	12M														
480	140	12M														
480	150	12M														
480	160	12M														
480	180	12M														
480	200	12M														
480	220	12M														
480	240	12M														
480	250	12M														
480	260	12M														
480	280	12M														
480	300	12M														
480	320	12M														
480	340	12M														
480	350	12M														
480	360	12M														
480	380	12M														
480	400	12M														
480	420	12M														
480	440	12M														
480	460	12M														
500	100	12M														
500	120	12M														
500	140	12M														
500	150	12M														
500	160	12M														
500	180	12M														
500	200	12M														
500	220	12M														
500	240	12M														
500	250	12M														
500	260	12M														
500	280	12M														
500	300	12M														
500	320	12M														
500	340	12M														
500	350	12M														
500	360	12M														

Note : If you are looking for a special size which is not shown in above chart, Please contact us on joby@embosal.com

Rectangular Hollow Section -LSAW

Size Range : 200x150 - 800x750



Rectangular Hollow Section			8	10	12	14	15	16	18	20	22	25	30	32	35	40
500	380	12M														
500	400	12M														
500	420	12M														
500	440	12M														
500	460	12M														
500	480	12M														
520	200	12M														
520	220	12M														
520	240	12M														
520	250	12M														
520	260	12M														
520	280	12M														
520	300	12M														
520	320	12M														
520	340	12M														
520	350	12M														
520	360	12M														
520	380	12M														
520	400	12M														
520	420	12M														
520	440	12M														
520	460	12M														
520	480	12M														
540	250	12M														
540	260	12M														
540	280	12M														
540	300	12M														
540	320	12M														
540	340	12M														
540	350	12M														
540	360	12M														
540	380	12M														
540	400	12M														
540	420	12M														
540	440	12M														
540	460	12M														
540	480	12M														
540	500	12M														
540	520	12M														
550	250	12M														
550	260	12M														
550	280	12M														
550	300	12M														
550	320	12M														
550	340	12M														
550	350	12M														
550	360	12M														
550	380	12M														
550	400	12M														
550	420	12M														
550	440	12M														
550	460	12M														
550	480	12M														
550	500	12M														
550	520	12M														
560	250	12M														
560	260	12M														
560	280	12M														
560	300	12M														
560	320	12M														
560	340	12M														
560	350	12M														
560	360	12M														
560	380	12M														
560	400	12M														
560	420	12M														

Note : If you are looking for a special size which is not shown in above chart, Please contact us on joby@embosal.com

Rectangular Hollow Section -LSAW

Size Range : 200x150 - 800x750



Rectangular Hollow Section			8	10	12	14	15	16	18	20	22	25	30	32	35	40
560	440	12M														
560	460	12M														
560	480	12M														
560	500	12M														
560	520	12M														
560	540	12M														
560	550	12M														
580	250	12M														
580	260	12M														
580	280	12M														
580	300	12M														
580	320	12M														
580	340	12M														
580	350	12M														
580	360	12M														
580	380	12M														
580	400	12M														
580	420	12M														
580	440	12M														
580	460	12M														
580	480	12M														
580	500	12M														
580	520	12M														
580	540	12M														
580	550	12M														
580	560	12M														
600	250	12M														
600	260	12M														
600	280	12M														
600	300	12M														
600	320	12M														
600	340	12M														
600	350	12M														
600	360	12M														
600	380	12M														
600	400	12M														
600	420	12M														
600	440	12M														
600	460	12M														
600	480	12M														
600	500	12M														
600	520	12M														
600	540	12M														
600	550	12M														
600	560	12M														
600	580	12M														
620	250	12M														
620	260	12M														
620	280	12M														
620	300	12M														
620	320	12M														
620	340	12M														
620	350	12M														
620	360	12M														
620	380	12M														
620	400	12M														
620	420	12M														
620	440	12M														
620	460	12M														
620	480	12M														
620	500	12M														
620	520	12M														
620	540	12M														
620	550	12M														
620	560	12M														
620	580	12M														

Note : If you are looking for a special size which is not shown in above chart, Please contact us on joby@embosal.com

Rectangular Hollow Section -LSAW

Size Range : 200x150 - 800x750



Rectangular Hollow Section			8	10	12	14	15	16	18	20	22	25	30	32	35	40
620	600	12M														
640	250	12M														
640	260	12M														
640	280	12M														
640	300	12M														
640	320	12M														
640	340	12M														
640	350	12M														
640	360	12M														
640	380	12M														
640	400	12M														
640	420	12M														
640	440	12M														
640	460	12M														
640	480	12M														
640	500	12M														
640	520	12M														
640	540	12M														
640	550	12M														
640	560	12M														
640	580	12M														
640	600	12M														
640	620	12M														
650	250	12M														
650	260	12M														
650	280	12M														
650	300	12M														
650	320	12M														
650	340	12M														
650	350	12M														
650	360	12M														
650	380	12M														
650	400	12M														
650	420	12M														
650	440	12M														
650	460	12M														
650	480	12M														
650	500	12M														
650	520	12M														
650	540	12M														
650	550	12M														
650	560	12M														
650	580	12M														
650	600	12M														
650	620	12M														
650	640	12M														
660	250	12M														
660	260	12M														
660	280	12M														
660	300	12M														
660	320	12M														
660	340	12M														
660	350	12M														
660	360	12M														
660	380	12M														
660	400	12M														
660	420	12M														
660	440	12M														
660	460	12M														
660	480	12M														
660	500	12M														
660	520	12M														
660	540	12M														
660	550	12M														
660	560	12M														
660	580	12M														

Note : If you are looking for a special size which is not shown in above chart, Please contact us on joby@embosal.com

Rectangular Hollow Section -LSAW

Size Range : 200x150 - 800x750



Rectangular Hollow Section			8	10	12	14	15	16	18	20	22	25	30	32	35	40
660	600	12M														
660	620	12M														
660	640	12M														
660	650	12M														
680	250	12M														
680	260	12M														
680	280	12M														
680	300	12M														
680	320	12M														
680	340	12M														
680	350	12M														
680	360	12M														
680	380	12M														
680	400	12M														
680	420	12M														
680	440	12M														
680	460	12M														
680	480	12M														
680	500	12M														
680	520	12M														
680	540	12M														
680	550	12M														
680	560	12M														
680	580	12M														
680	600	12M														
680	620	12M														
680	640	12M														
680	650	12M														
680	660	12M														
700	250	12M														
700	260	12M														
700	280	12M														
700	300	12M														
700	320	12M														
700	340	12M														
700	350	12M														
700	360	12M														
700	380	12M														
700	400	12M														
700	420	12M														
700	440	12M														
700	460	12M														
700	480	12M														
700	500	12M														
700	520	12M														
700	540	12M														
700	550	12M														
700	560	12M														
700	580	12M														
700	600	12M														
700	620	12M														
700	640	12M														
700	650	12M														
700	660	12M														
700	680	12M														
720	250	12M														
720	260	12M														
720	280	12M														
720	300	12M														
720	320	12M														
720	340	12M														
720	350	12M														
720	360	12M														
720	380	12M														
720	400	12M														

Note : If you are looking for a special size which is not shown in above chart, Please contact us on joby@embosal.com

Rectangular Hollow Section -LSAW

Size Range : 200x150 - 800x750



Rectangular Hollow Section			8	10	12	14	15	16	18	20	22	25	30	32	35	40
720	420	12M														
720	440	12M														
720	460	12M														
720	480	12M														
720	500	12M														
720	520	12M														
720	540	12M														
720	550	12M														
720	560	12M														
720	580	12M														
720	600	12M														
720	620	12M														
720	640	12M														
720	650	12M														
720	660	12M														
720	680	12M														
720	700	12M														
740	250	12M														
740	260	12M														
740	280	12M														
740	300	12M														
740	320	12M														
740	340	12M														
740	350	12M														
740	360	12M														
740	380	12M														
740	400	12M														
740	420	12M														
740	440	12M														
740	460	12M														
740	480	12M														
740	500	12M														
740	520	12M														
740	540	12M														
740	550	12M														
740	560	12M														
740	580	12M														
740	600	12M														
740	620	12M														
740	640	12M														
740	650	12M														
740	660	12M														
740	680	12M														
740	700	12M														
740	720	12M														
750	250	12M														
750	260	12M														
750	280	12M														
750	300	12M														
750	320	12M														
750	340	12M														
750	350	12M														
750	360	12M														
750	380	12M														
750	400	12M														
750	420	12M														
750	440	12M														
750	460	12M														
750	480	12M														
750	500	12M														
750	520	12M														
750	540	12M														
750	550	12M														
750	560	12M														
750	580	12M														

Note : If you are looking for a special size which is not shown in above chart, Please contact us on joby@embosal.com

Rectangular Hollow Section -LSAW

Size Range : 200x150 - 800x750



Rectangular Hollow Section			8	10	12	14	15	16	18	20	22	25	30	32	35	40
750	600	12M														
750	620	12M														
750	640	12M														
750	650	12M														
750	660	12M														
750	680	12M														
750	700	12M														
750	720	12M														
750	740	12M														
760	250	12M														
760	260	12M														
760	280	12M														
760	300	12M														
760	320	12M														
760	340	12M														
760	350	12M														
760	360	12M														
760	380	12M														
760	400	12M														
760	420	12M														
760	440	12M														
760	460	12M														
760	480	12M														
760	500	12M														
760	520	12M														
760	540	12M														
760	550	12M														
760	560	12M														
760	580	12M														
760	600	12M														
760	620	12M														
760	640	12M														
760	650	12M														
760	660	12M														
760	680	12M														
760	700	12M														
760	720	12M														
760	740	12M														
760	750	12M														
780	250	12M														
780	260	12M														
780	280	12M														
780	300	12M														
780	320	12M														
780	340	12M														
780	350	12M														
780	360	12M														
780	380	12M														
780	400	12M														
780	420	12M														
780	440	12M														
780	460	12M														
780	480	12M														
780	500	12M														
780	520	12M														
780	540	12M														
780	550	12M														
780	560	12M														
780	580	12M														
780	600	12M														
780	620	12M														
780	640	12M														
780	650	12M														
780	660	12M														
780	680	12M														

Note : If you are looking for a special size which is not shown in above chart, Please contact us on joby@embosal.com

Rectangular Hollow Section -LSAW

Size Range : 200x150 - 800x750



Rectangular Hollow Section			8	10	12	14	15	16	18	20	22	25	30	32	35	40
780	700	12M														
780	720	12M														
780	740	12M														
780	750	12M														
780	760	12M														
800	250	12M														
800	260	12M														
800	280	12M														
800	300	12M														
800	320	12M														
800	340	12M														
800	350	12M														
800	360	12M														
800	380	12M														
800	400	12M														
800	420	12M														
800	440	12M														
800	460	12M														
800	480	12M														
800	500	12M														
800	520	12M														
800	540	12M														
800	550	12M														
800	560	12M														
800	580	12M														
800	600	12M														
800	620	12M														
800	640	12M														
800	650	12M														
800	660	12M														
800	680	12M														
800	700	12M														
800	720	12M														
800	740	12M														
800	750	12M														



Embosal can also produce other non standard size/thickness as per customer requirement. Please contact us in, case the required size of Pipes and Tubes are not in above chart.

Need Help?

If you need help deciding which item to use on your project then please don't hesitate to call us on

+971 6 5013 111 or email : joby@embosal.com

ERW TUBE & PIPE MILL

The solution for ERW Tube & Pipe Production

Pipe Diameter
Range

1" - 20"

Pipe Length

3M-18M

Wall Thickness

2_{mm} - 20_{mm}

Square Tube Size

30x30_{mm}

400x400_{mm}

Tube Length

3M- 18M

Wall Thickness

2 - 20_{mm}

Rectangular Tube Size

30x35_{mm}

500x300_{mm}

Tube Length

3M- 18M

Wall Thickness

2 - 20_{mm}

ERW PIPES

Size Range : 1/2" - 20"

Note: STD, Sch 40, XS, Sch 80, Sch160, XXS

Size	2 mm	3 mm	4 mm	5 mm	6 mm	8 mm	10 mm	12 mm	14 mm	16 mm	18 mm	20 mm
CHS 21												
CHS 26												
CHS 33												
CHS 42												
CHS 60												
CHS 73												
CHS 89												
CHS 101												
CHS 114												
CHS 141												
CHS 168												
CHS 190												
CHS 219												
CHS 244												
CHS 273												
CHS 323												
CHS 355												
CHS 406												
CHS 457												
CHS 508												

Note : If you are looking for a special size which is not shown in above chart, Please contact us on joby@embosal.com



Square Hollow Section -ERW

Size Range : 30x30 - 400x400



Sqaure Hollow Section			2	3	4	5	6	8	10	12	14	15	16	18	20
30	30	6M													
40	40	6M													
50	50	6M													
60	60	6M													
70	70	6M													
75	75	6M													
80	80	6M													
90	90	6M													
100	100	12M													
110	110	12M													
115	115	12M													
120	120	12M													
125	125	12M													
130	130	12M													
140	140	12M													
150	150	12M													
160	160	12M													
170	170	12M													
180	180	12M													
190	190	12M													
200	200	12M													
215	215	12M													
225	225	12M													
240	240	12M													
250	250	12M													
260	260	12M													
280	280	12M													
300	300	12M													
320	320	12M													
340	340	12M													
350	350	12M													
360	360	12M													
380	380	12M													
400	400	12M													

Note : If you are looking for a special size which is not shown in above chart, Please contact us on joby@embosal.com

Rectangular Hollow Section -ERW

Size Range : 35x30 - 500x300



Rectangular Hollow Section			2	3	4	5	6	8	10	12	14	15	16	18	20
35	30	6M													
40	30	6M													
50	30	6M													
50	40	6M													
60	30	6M													
60	40	6M													
60	50	6M													
70	30	6M													
70	40	6M													
70	50	6M													
70	60	6M													
75	30	6M													
75	40	6M													
75	50	6M													
75	60	6M													
75	70	6M													
80	30	6M													
80	40	6M													
80	50	6M													
80	60	6M													
80	70	6M													
80	75	6M													
90	30	6M													
90	40	6M													
90	50	6M													
90	60	6M													
90	70	6M													
90	80	6M													
100	40	12M													
100	50	12M													
100	60	12M													
100	80	12M													
120	50	12M													
120	60	12M													
120	80	12M													
120	100	12M													
125	50	12M													
125	60	12M													
125	75	12M													
125	100	12M													
130	50	12M													
130	60	12M													
130	80	12M													
130	100	12M													
140	50	12M													
140	60	12M													
140	80	12M													
140	100	12M													
140	120	12M													
150	50	12M													
150	75	12M													
150	100	12M													
150	120	12M													
150	140	12M													
160	60	12M													
160	80	12M													
160	100	12M													
160	120	12M													
160	140	12M													
160	150	12M													
175	75	12M													
175	100	12M													
175	125	12M													
175	150	12M													
180	50	12M													
180	60	12M													
180	80	12M													

Note : If you are looking for a special size which is not shown in above chart, Please contact us on joby@embosal.com

Rectangular Hollow Section -ERW

Size Range : 35x30 - 500x300



Rectangular Hollow Section			2	3	4	5	6	8	10	12	14	15	16	18	20
180	100	12M													
180	120	12M													
180	140	12M													
180	150	12M													
180	160	12M													
200	50	12M													
200	75	12M													
200	100	12M													
200	120	12M													
200	140	12M													
200	150	12M													
200	160	12M													
200	180	12M													
220	100	12M													
220	120	12M													
220	140	12M													
220	150	12M													
220	160	12M													
220	180	12M													
220	200	12M													
230	100	12M													
230	120	12M													
230	150	12M													
230	160	12M													
230	180	12M													
230	200	12M													
230	220	12M													
240	100	12M													
240	120	12M													
240	140	12M													
240	150	12M													
240	160	12M													
240	180	12M													
240	200	12M													
240	220	12M													
250	100	12M													
250	120	12M													
250	140	12M													
250	150	12M													
250	160	12M													
250	180	12M													
250	200	12M													
250	220	12M													
250	240	12M													
260	100	12M													
260	120	12M													
260	140	12M													
260	150	12M													
260	160	12M													
260	180	12M													
260	200	12M													
260	220	12M													
260	240	12M													
260	250	12M													
280	100	12M													
280	120	12M													
280	140	12M													
280	150	12M													
280	160	12M													
280	180	12M													
280	200	12M													
280	220	12M													
280	240	12M													
280	250	12M													
280	260	12M													
300	100	12M													
300	120	12M													

Note : If you are looking for a special size which is not shown in above chart, Please contact us on joby@embosal.com

Rectangular Hollow Section -ERW

Size Range : 35x30 - 500x300



Rectangular Hollow Section			2	3	4	5	6	8	10	12	14	15	16	18	20
300	140	12M													
300	150	12M													
300	160	12M													
300	180	12M													
300	200	12M													
300	220	12M													
300	240	12M													
300	250	12M													
300	260	12M													
300	280	12M													
320	100	12M													
320	120	12M													
320	140	12M													
320	150	12M													
320	160	12M													
320	180	12M													
320	200	12M													
320	220	12M													
320	240	12M													
320	250	12M													
320	260	12M													
320	280	12M													
320	300	12M													
340	100	12M													
340	120	12M													
340	140	12M													
340	150	12M													
340	160	12M													
340	180	12M													
340	200	12M													
340	220	12M													
340	240	12M													
340	250	12M													
340	260	12M													
340	280	12M													
340	300	12M													
340	320	12M													
350	100	12M													
350	120	12M													
350	140	12M													
350	150	12M													
350	160	12M													
350	180	12M													
350	200	12M													
350	220	12M													
350	240	12M													
350	250	12M													
350	260	12M													
350	280	12M													
350	300	12M													
350	320	12M													
350	340	12M													
360	100	12M													
360	120	12M													
360	140	12M													
360	150	12M													
360	160	12M													
360	180	12M													
360	200	12M													
360	220	12M													
360	240	12M													
360	250	12M													
360	260	12M													
360	280	12M													
360	300	12M													
380	320	12M													
380	340	12M													

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Rectangular Hollow Section -ERW

Size Range : 35x30 - 500x300



Rectangular Hollow Section			2	3	4	5	6	8	10	12	14	15	16	18	20
380	350	12M													
380	360	12M													
400	100	12M													
400	120	12M													
400	140	12M													
400	150	12M													
400	160	12M													
400	180	12M													
400	200	12M													
400	220	12M													
400	240	12M													
400	250	12M													
400	260	12M													
400	280	12M													
400	300	12M													
400	320	12M													
400	340	12M													
400	350	12M													
400	360	12M													
400	380	12M													
420	100	12M													
420	120	12M													
420	140	12M													
420	150	12M													
420	160	12M													
420	180	12M													
420	200	12M													
420	220	12M													
420	240	12M													
420	250	12M													
420	260	12M													
420	280	12M													
420	300	12M													
420	320	12M													
420	340	12M													
420	350	12M													
420	360	12M													
420	380	12M													
420	400	12M													
440	100	12M													
440	120	12M													
440	140	12M													
440	150	12M													
440	160	12M													
440	180	12M													
440	200	12M													
440	220	12M													
440	240	12M													
440	250	12M													
440	260	12M													
440	280	12M													
440	300	12M													
440	320	12M													
440	340	12M													
440	350	12M													
440	360	12M													
440	380	12M													
440	400	12M													
440	420	12M													
450	100	12M													
450	120	12M													
450	140	12M													
450	150	12M													
450	160	12M													
450	180	12M													
450	200	12M													
450	220	12M													
450	240	12M													

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Rectangular Hollow Section -ERW

Size Range : 35x30 - 500x300



Rectangular Hollow Section			2	3	4	5	6	8	10	12	14	15	16	18	20
450	250	12M													
450	260	12M													
450	280	12M													
450	300	12M													
450	320	12M													
450	340	12M													
450	350	12M													
450	360	12M													
450	380	12M													
450	400	12M													
450	420	12M													
450	440	12M													
460	100	12M													
460	120	12M													
460	140	12M													
460	150	12M													
460	160	12M													
460	180	12M													
460	200	12M													
460	220	12M													
460	240	12M													
460	250	12M													
460	260	12M													
460	280	12M													
460	300	12M													
460	320	12M													
460	340	12M													
460	350	12M													
460	360	12M													
460	380	12M													
460	400	12M													
460	420	12M													
460	440	12M													
480	100	12M													
480	120	12M													
480	140	12M													
480	150	12M													
480	160	12M													
480	180	12M													
480	200	12M													
480	220	12M													
480	240	12M													
480	250	12M													
480	260	12M													
480	280	12M													
480	300	12M													
480	320	12M													
480	340	12M													
480	350	12M													
480	360	12M													
480	380	12M													
480	400	12M													
480	420	12M													
480	440	12M													
480	460	12M													
500	100	12M													
500	120	12M													
500	140	12M													
500	150	12M													
500	160	12M													
500	180	12M													
500	200	12M													
500	220	12M													
500	240	12M													
500	250	12M													
500	260	12M													
500	280	12M													
500	300	12M													

Note : If you are looking for a special size which is not shown in above chart, Please contact us on joby@embosal.com

SSAW PIPE MILL

The solution for Spiral Pipe Production



Pipe Diameter
Range

16" - 110"

Pipe Length

6-50 M

Wall Thickness

6_{mm} - 25.4_{mm}

**Specialized in Producing
Large Diameter Higher Thickness
Standard and Non Standard Spiral Pipe**

SSAW- Spiral Pipe

Size Range : 16 " - 110 "

Size	6 mm	8 mm	9 mm	10 mm	12 mm	13 mm	14 mm	15 mm	16 mm	18 mm	19 mm	20 mm	22 mm	24 mm	25.5 mm
Inches	6 mm	8 mm	9 mm	10 mm	12 mm	13 mm	14 mm	15 mm	16 mm	18 mm	19 mm	20 mm	22 mm	24 mm	25.5 mm
CHS 16															
CHS 18															
CHS 20															
CHS 22															
CHS 24															
CHS 26															
CHS 28															
CHS 30															
CHS 32															
CHS 34															
CHS 36															
CHS 38															
CHS 40															
CHS 42															
CHS 44															
CHS 46															
CHS 48															
CHS 50															
CHS 52															
CHS 54															
CHS 56															
CHS 58															
CHS 60															
CHS 62															
CHS 64															
CHS 66															
CHS 68															
CHS 70															

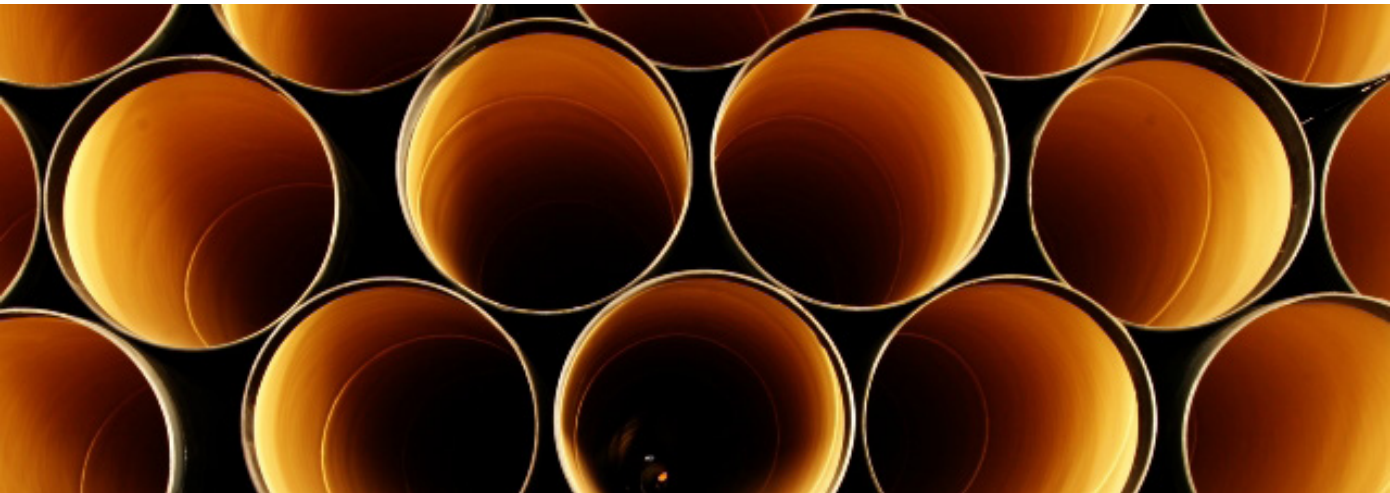
Note : If you are looking for a special size which is not shown in above chart, Please contact us on joby@embosal.com

SSAW- Spiral Pipe

Size Range : 16" - 110"

Size	6 mm	8 mm	9 mm	10 mm	12 mm	13 mm	14 mm	15 mm	16 mm	18 mm	19 mm	20 mm	22 mm	24 mm	25.5 mm
CHS 72															
CHS 74															
CHS 76															
CHS 78															
CHS 80															
CHS 82															
CHS 84															
CHS 86															
CHS 88															
CHS 90															
CHS 92															
CHS 94															
CHS 96															
CHS 98															
CHS 100															
CHS 102															
CHS 104															
CHS 106															
CHS 108															
CHS 110															

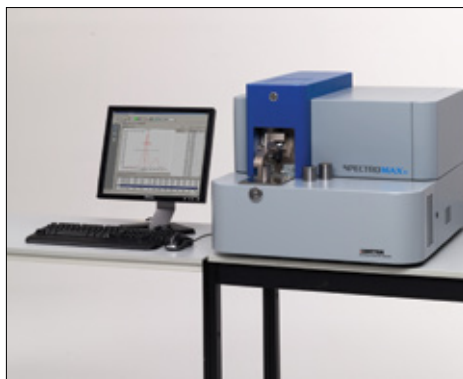
Note : If you are looking for a special size which is not shown in above chart, Please contact us on joby@embosal.com



TESTING EQUIPMENTS

To ensure the product quality and deliver the qualified product to our customer, company is equipped with latest inspection and testing equipment, such as industrial television, online UT tester, Universal testing machine, spectrometer and impact testing machine.

We have also an in-house approved testing facility to perform the chemical and mechanical test.



Direct Reading Spectrometer



Universal Testing Machine



Impact Testing Machine



Chemical Analysis



Automatic Ultrasonic Testing Machine



Manual UT Machine

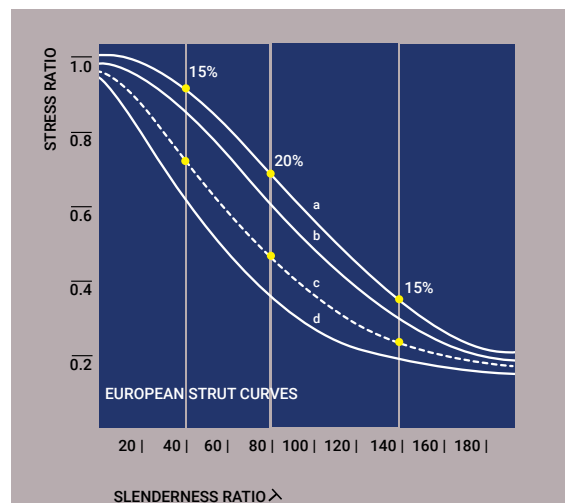
TEST PLAN

S.NO	TYPES OF TESTING	TEST METHOD	FREQUENCY OF TESTING
1	Visual inspection	Surface defects	100%
2	Dimensional inspection	Measuring tape and micrometer	100%
3	Automatic Ultrasonic Testing	Weld Defect	100%
4	Mechanical properties	Ultrasonic Testing Machine	Sample testing
5	Chemical composition	Spectro	Sample testing

HOT FINISHED PROCESS

Hot finishing is used to treat the tubes and or pipes hardened parts made out of low carbon steels ($< 0.25\%$). This allows the parts to be soft enough to undergo further cold working without fracturing. The process is done by raising the temperature to just below the ferrite-austenite region. This temperature is about 727°C .

This temperature is held enough to allow recrystallization of the ferrite phase of the steel, and then cooled with normal room temperature air, since the materials stays in the same phase throughout the process, the only change that occurs is the size, shapes and re-distribution of rudiment stresses in the material.



QUALITY CONTROL

International Standard for LSAW Pipes

The inspection stations include all process steps, in which the pipe is inspected as required by the different international standards.

EN 10210-1 hot finished structural hollow sections of non alloy and fine grain steels

EN 10219-1 cold formed welded structural hollow sections of non alloy and fine grain steels .



NON DESTRUCTIVE TESTING

- Online Plate UT
- Online Long Seam UT
- Magnetic particle inspection
- Manual UT
- Visual inspections

INSPECTION AND TEST PLAN

Embosal carries out quality inspection and testing with updated technology over from raw material to finished product to meet the customer requirements

Sr.No	Performed Test	Square and Rectangular Section	LSAW Pipe
1	Chemical Analysis	✓	✓
2	Mechanical Testing	✓	✓
	Tensile Test		
	Impact Test		
	Hardness Test		
3	U.T test	✓	✓
	Automatic		
	Manual		
4	Dimensional And Visual	✓	✓
	Weld Visual		
	Undercut		
	OD/ID		
	Squareness		
	Straightness		
	Roundness		
	Length		
	Width		

CHARACTERISTICS & QUALITY NORMS

Superior Material

Embosal Pipe Mill production system begins with advanced metallurgy and clean steel making practices.

High Dimensional Accuracy

High uniform wall thickness and smooth finish free from nonmetallic incisions and surface defects provide pipe with a superior level of quality and excellent dimensional accuracy as well as high performance properties.

Excellent Quality

Quality is strictly controlled through every production step to ensure pipe product. Testing and inspection includes full body UT, highly sensitive UT for weld seam and numerous mechanical tests

VARIETY OF PRODUCT

HIGH STRENGTH LINE PIPE
HIGH TOUGHNESS LINE PIPE
ANTI-SOUR LINE PIPE
HIGH RELIABILITY OF WELD

The unique welding condition control and monitoring system ensure quality of the weld along its entire length.

CUTTING & SLITTING LINE

Technical Specification 2300×4.0-16.0 SLITTER & CTL

Machine Description
2300×16.0 Slitter & Cut to length combined Line
Material: S275, S355
Thickness: 4.0- 16.0mm
Width: Max.2300 mm
I.D. of coils: φ760mm
O.D. of coils: φ800-φ2100 mm

Finish Product Details
Product length: 2000 – 12000mm
Leveling accuracy: $\leq \pm 2.0$ mm/m ²
Length accuracy: $\leq \pm 1.5$ mm
Diagonal accuracy: $\leq \pm 2.0$ mm
Slitting accuracy: $\leq \pm 1.0$ mm

COATING PLANT

BLASTING & PAINTING 3PE COATING PLANT

BLASTING & PAINTING

In this method, dry abrasive is propelled against the surface to be cleaned so that rust, contaminates, and old paint are removed by the impact of the abrasive particles. Moreover, the surface must be cleaned of blasting residue before painting. This is usually done by blowing clean air across the surfaces.

3PE COATING PLANT

3PE coated steel pipe is commonly used in the pipeline project. As carbon steel pipe is widely used in pipeline systems for transportation of oil, gas, water and other fluids. In such cases, they should have high resistant to corrosive from chemicals, moisture, harmful environment and etc. So it is necessary to make pipes coating to anti-corrosion.

GALVANISING PLANT

Galvanization is the process of applying a protective zinc coating to steel or iron, to prevent rusting. The most common method is hot-dip galvanizing, in which the parts are submerged in a bath of molten hot zinc.

Hot dip galvanizing is the process of coating iron or steel with a layer of zinc by immersing the metal in a bath of molten zinc at a temperature of around 450 °C (842 °F). ... Galvanizing is probably the most environmentally friendly process available to prevent corrosion.

BS EN 10219-1:2006

Cold formed welded structural hollow sections of fine grain steels

This part of this European Standard specifies the technical delivery conditions for cold formed welded structural hollow sections of circular, square or rectangular forms and applies to structural hollow sections formed cold without subsequent heat treatment.

Chemical Requirements

Table A.1 – Chemical composition – Cast analysis for product thickness ≤ 40 mm

Steel grade	Type of deoxidation ^a	% by mass, maximum					
Steel name		C	Si	Mn	P	S	N ^b
S235JRH	FF	0,17	—	1,40	0,040	0,040	0.009
S275J0H	FF	0,20	—	1,50	0,035	0,035	0,009
S275J2H	FF	0,20	—	1,50	0,030	0,030	—
S355J0H	FF	0,22	0,55	1,60	0,035	0,035	0,009
S355J2H	FF	0,22	0,55	1,60	0,030	0,030	—
S355K2H	FF	0,22	0,55	1,60	0,030	0,030	—

^a The deoxidation method is designated as follows:

FF: Fully killed steel containing nitrogen binding elements in amounts sufficient to bind available nitrogen (e.g. min. 0,020 % total Al or 0,015 % soluble Al).

^b The maximum value for nitrogen does not apply if the chemical composition shows a minimum total Al content of 0,020 % with a minimum Al/N ratio of 2:1, or if sufficient other N-binding elements are present. The N-binding elements shall be recorded in the Inspection Document.

The maximum carbon equivalent value (CEV) for all grades, based on the cast analyses, given in Table A.2 shall apply. When determining the CEV the following formula shall be used.

$$CEV = C + \frac{Mn}{6} + \frac{Cr + Mo + V}{5} + \frac{Ni + Cu}{15}$$

Table A.2 – Maximum carbon equivalent value (CEV) based on cast analysis

Steel Grade	Maximum CEV for nominal thicknesses ≤ 40 mm %
S235JRH	0,35
S275J0H	0,40
S275J2H	0,40
S355J0H	0,45
S355J2H	0,45
S355K2H	0,45

Table A.3 – Mechanical properties of non-alloy steel hollow sections in thicknesses ≤ 40 mm

Steel Grade	Minimum yield strength R_{eH} MPa		Tensile strength R_m MPa		Minimum elongation A^d %	Minimum impact energy KV^e J		
	Specified thickness mm		Specified thickness mm		Specified thickness mm			
	≤ 16	> 16 ≤ 40	< 3	≥ 3 ≤ 40	≤ 40	-20 °C	0 °C	20 °C
S235JRH a	235	225	360-510	360-510	24 ^b	-	-	27
S275J0H a	275	265	430-580	410-560	20 ^c	-	27	-
S275J2H						27	-	-
S355J0H a	355	345	510-680	470-630	20 ^c	-	27	-
S355J2H						27	-	-
S355K2H						40 ^f	-	-

a The impact properties are verified only when Option 1.3 is specified.

b For thicknesses > 3 mm and section sizes $D/T < 15$ (round) and $(B+H)/2T < 12,5$ (square and rectangular) the minimum elongation is reduced by 2. For thicknesses ≤ 3 mm the minimum value for elongation is 17 %.

c For section sizes $D/T < 15$ (circular) and $(B+H)/2T < 12,5$ (square and rectangular) the minimum elongation is reduced by 2.

d For thicknesses < 3 mm see 9.2.2.

e For impact properties for reduced section test pieces see 6.7.2.

f This value corresponds to 27J at -30 °C (see EN 1993-1-1).

BS EN 10219-1:2006

Cold formed welded structural hollow sections of non-alloy steels - Tolerances

This part of EN 10219 specifies tolerances for cold formed welded circular, square and rectangular structural hollow sections, manufactured in wall thicknesses up to 40 mm, in the following size ranges:

Circular: Outside diameters up to 2 500 mm

Square: Outside dimensions up to 500 mm x 500 mm

Rectangular: Outside dimensions up to 500 mm x 300 mm

Table 1 – Symbols and definitions

Symbol	Unit	Definition
D	mm	Specified outside diameter of a circular hollow section
B	mm	Specified side dimension of a square hollow section. Specified dimension of the shorter side of a rectangular hollow section
H	mm	Specified dimension of the longer side of a rectangular hollow section
T	mm	Specified thickness
O	%	Out-of-roundness
x_1	mm	Concavity of a side of a square or rectangular hollow section
x_2	mm	Convexity of a side of a square or rectangular hollow section
θ	°	Angle between adjacent sides of a square or rectangular hollow section
V	mm	Total measured twist
e	mm	Deviation from straightness
M	kg/m	Mass per unit length

Tolerances

Tolerances shall not exceed the values given in Table 1 for shape and mass, Table 2 for manufacturer's delivered length and

Table 1 – Tolerances on shape and mass

Characteristic	Circular hollow sections	Square and rectangular hollow sections	
Outside dimensions (D, B and H)	± 1 % with a minimum of ± 0,5 mm and a maximum of ±1 0 mm	Side length mm	Tolerance
		H, B <100	± 1 % with a minimum of ± 0,5 mm
		100 ≤ H, B ≤ 200	± 0,8 %
		H,B > 200	± 0,6 %
Thickness (T)	For D ≤ 406,4 mm: T ≤ 5 mm ± 10 % T > 5 mm ± 0,5 mm For D > 406,4 mm: ± 10 % with a maximum of ± 2 mm	T ≤ 5 mm ± 10% T > 5 mm ± 0,5 mm	
Out-of-roundness (O)	2 % for hollow sections having a diameter to thickness ratio not exceeding 100 ^a	-	
Concavity/convexity (x ₁ , x ₂) ^b	-	Max. 0,8 % with a minimum of 0,5 mm	
Squareness of side (θ)	-	90° ± 1°	
Twist (V)	-	2 mm plus 0,5 mm/m length	
Straightness (e)	0,20 % of total length and 3 mm over any 1 m length	0,15 % of total length and 3 mm over any 1 m length	
Mass per unit length (M)	± 6 % on individual delivered lengths		

^a Where the diameter to thickness ratio exceeds 100 the tolerance on out-of-roundness shall be agreed.

^b The tolerance on convexity and concavity is independent of the tolerance on outside dimensions.

Table 2 – Tolerances on manufacturer's delivered length

Dimensions in millimetres

Type of length ^a	Range of length or length L	Tolerance
Random length	$4\,000 < L \leq 16\,000$ with a range of 2 000 per order item	10 % of sections supplied may be below the minimum for the ordered range but not shorter than 75 % of the minimum range length
Approximate length	$\geq 4\,000$	+50 mm 0
Exact length ^b	< 6 000	+5 mm 0
	$6\,000 \leq L \leq 10\,000$	+15 mm 0
	> 10 000	+5 mm +1 mm/m 0

^a Where the diameter to thickness ratio exceeds 100 the tolerance on out-of-roundness shall be agreed.

^b The tolerance on convexity and concavity is independent of the tolerance on outside dimensions.

BS EN 10210-1:2006

Hot finished structural hollow sections of fine grain steels

This part of this European Standard specifies technical delivery conditions for hot finished hollow sections of circular, square, rectangular or elliptical forms and applies to hollow sections formed hot, with or without subsequent heat treatment, or formed cold with subsequent heat treatment to obtain equivalent metallurgical conditions to those obtained in the hot formed product. Requirements for tolerances, dimensions and sectional properties are contained in EN 10210-2.

Chemical Requirements

Table A.1 – Chemical composition – Cast analysis for product thickness ≤ 120 mm

Steel grade	Type of deoxidation ^a	% by mass, maximum						
		C Specified thickness (mm)		Si	Mn	P	S	N ^{b c}
		≤ 40	>40 ≤ 120					
S235JRH	FN	0,17	0,20	—	1,40	0,040	0,040	0,009
S275J0H	FN	0,20	0,22	—	1,50	0,035	0,035	0,009
S275J2H	FF	0,20	0,22	—	1,50	0,030	0,030	—
S355J0H	FN	0,22	0,22	0,55	1,60	0,035	0,035	0,009
S355J2H	FF	0,22	0,22	0,55	1,60	0,030	0,030	—
S355K2H	FF	0,22	0,22	0,55	1,60	0,030	0,030	—

The deoxidation methods are designated as follows:

FN = Rimmed steel not permitted

FF = Fully killed steel containing nitrogen binding elements in amounts sufficient to bind available nitrogen

(e.g. min. 0,020 % total Al, or 0,015 % soluble Al).

b It is permissible to exceed the specified values provided that for each increase of 0,001 % N the P max. content is also reduced by 0,005 %. The N content of the cast analysis, however, shall not be more than 0,012 %.

c The maximum value for nitrogen does not apply if the chemical composition shows a minimum total Al content of 0,020 % with a minimum Al/N ratio of 2:1, or if sufficient other N-binding elements are present. The N-binding elements shall be recorded in the Inspection Document.

Table A.2 – Maximum carbon equivalent value (CEV) based on cast analysis

The maximum carbon equivalent value (CEV) for all grades, based on the cast analyses, given in Table A.2 shall apply. When determining the CEV the following formula shall be used.

$$CEV = C + \frac{Mn}{6} + \frac{Cr + Mo + V}{5} + \frac{Ni + Cu}{15}$$

Steel grade	Maximum CEV in % for specified thicknesses in mm			
	≤ 16	> 16 ≤ 40	> 40 ≤ 65	> 65 ≤ 120
S235JRH	0,37	0,39	0,41	0,44
S275J0H	0,41	0,43	0,45	0,48
S275J2H	0,41	0,43	0,45	0,48
S355J0H	0,45	0,47	0,50	0,53
S355J2H	0,45	0,47	0,50	0,53
S355K2H	0,45	0,47	0,50	0,53

Table A.3 — Mechanical properties of non-alloy structural steel hollow section

Steel Grade	≤ 16	> 16 ≤ 40	> 40 ≤ 63	> 63 ≤ 80	> 80 ≤ 100	> 100 ≤ 120	≤ 3	> 3 ≤ 100	> 100 ≤ 120	≤ 40	> 40 ≤ 63	> 63 ≤ 100	> 100 ≤ 120	-20 ° C	0 ° C	20 ° °C
S235JRH	235	225	215	215	215	195	360-510	360-510	350-500	26	25	24	22	-	-	27
S275J0H	275	265	255	245	235	225	430-580	410-560	400-540	23	22	21	19	-	27	-
S275J2H														345	-	-
S355J0H	355	345	335	325	315	295	510-680	470-630	450-600	22	21	20	18	-	27	-
S355J2H														27	-	-
S355K2H														40 ^e	-	-

a Longitudinal values. Transverse values are 2 % lower.

b For thicknesses < 3 mm,

c The impact properties are verified only when Option 1.3 is specified.

d For impact properties for reduced section test pieces

e This value corresponds to 27J at -30 °C

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Hot finished structural hollow sections of non-alloy steels Tolerances

This part of EN 10210 specifies tolerances for hot finished circular, square, rectangular and elliptical structural hollow sections, manufactured in wall thicknesses up to 120 mm, in the following size ranges:

Circular: Outside diameters up to 2 500 mm

Square: Outside dimensions up to 800 mm x 800 mm

Rectangular: Outside dimensions up to 750 mm x 500 mm

Elliptical: Outside dimensions up to 500 mm x 250 mm

Table 1 — Symbols and definitions

Symbol	Unit	Definition
D	mm	Specified outside diameter of a circular hollow section
B	mm	Specified side dimension of a square hollow section. Specified dimension of the shorter side of a rectangular hollow section
H	mm	Specified dimension of the longer side of a rectangular hollow section
T	mm	Specified thickness
O	%	Out-of-roundness
x ₁	mm	Concavity of a side of a square or rectangular hollow section
x ₂	mm	Convexity of a side of a square or rectangular hollow section
θ	°	Angle between adjacent sides of a square or rectangular hollow section
V	mm	Total measured twist
e	mm	Deviation from straightness
M	kg/m	Mass per unit length

Table 1 – Tolerances on shape, straightness and mass

Characteristic	Circular hollow sections	Square and rectangular hollow sections	Elliptical hollow sections
Outside dimensions (D, B, H)	±1 % with a minimum of ± 0,5 mm and a maximum of ± 10 mm	± 1 % ^a with a minimum of ± 0,5 mm	
Thickness (T)	-10 % ^{b, c}		
Out-of-roundness (O)	2 % for hollow sections having a diameter to thickness ratio not exceeding 100 ^d	—	
Concavity/Convexity (x ₁ , x ₂) ^e	—	1%	1
Squareness of side (θ)	—	90° ± 1°	—
External corner profile (C ₁ , C ₂ or R) ^f	—	3T maximum at each corner	—
Twist (V)	—	2 mm ^a plus 0,5 mm/m length ^a	
Straightness (e)	0,2 ^a % of total length and 3 mm over any 1 m length		
Mass (M)	± 6 % on individual delivered lengths ^g		

a For elliptical hollow sections of sizes H < 250 mm the permitted tolerance is twice the value given in this table.

b The positive deviation is limited by the tolerance on mass.

c For seamless sections thicknesses of less than 10 % but not less than 12,5 % of the nominal thickness may occur in smooth transition areas over not more than 25 % of the circumference.

d Where the diameter to thickness ratio exceeds 100, the tolerance on out-of-roundness shall be agreed.

e The tolerance on convexity and concavity is independent of the tolerance on outside dimensions.

f The sides need not be tangential to the corner arcs.

g The positive tolerance on the mass of seamless hollow sections is 8 %.

Table 3 – Tolerances on shape, straightness and mass

Dimensions in millimetres

Type of length a	Range of length or length L	Tolerance
Random length	4 000 ≤ L ≤ 16 000 with a range of 2 000 per order item	10 % of sections supplied may be below the minimum for the ordered range but not shorter than 75 % of the minimum range length
Approximate length	4 000 ≤ L ≤ 16 000	± 500 mm ^b
Exact length	2 000 ≤ L ≤ 6 000	+10 0 mm
	> 6 000 ^c	+15 0 mm

a The manufacturer shall establish at the time of enquiry and order the type of length required and the length range or length.

*b Option 2.1 the tolerance on approximate length is 150 + mm.
0*

c Common lengths available are 6 m and 12 m.

ASTM A 500 Grade A, B and D

Standard Specification for

Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes

This specification covers cold-formed welded and seamless carbon steel round, square, rectangular, or special shape structural tubing for welded, riveted, or bolted construction of bridges and buildings, and for general structural purposes.

Chemical Requirements

Element	Composition, %			
	Grades A, B and D		Grade C	
	Heat Analysis	Product Analysis	Heat Analysis	Product Analysis
Carbon, max ^A	0.26	0.30	0.23	0.27
Manganese, max ^A	1.36	1.40	1.35	1.40
Phosphorus, max	0.035	0.045	0.035	0.045
Sulfur, max	0.035	0.045	0.035	0.045
Copper, min ^B	0.20	0.18	0.20	0.18

A For each reduction of 0.01 percentage point below the specified maximum for carbon, an increase of 0.06 percentage point above the specified maximum for manganese is permitted, up to a maximum of 1.50 % by heat analysis and 1.60 % by product analysis.

B If copper-containing steel is specified in the purchase order.

Tensile Requirements

Round Structural Tubing				
	Grade A	Grade B	Grade C	Grade D
Tensile strength, min, psi [MPa]	45 000 [310]	58 000 [400]	62 000 [425]	58 000 [400]
Yield strength, min, psi [MPa]	33 000 [230]	42 000 [290]	46 000 [315]	36 000 [250]
Elongation in 2 in. [50 mm], min, % ^D	25 ^A	23 ^B	21 ^C	23 ^B

Shaped Structural Tubing				
	Grade A	Grade B	Grade C	Grade D
Tensile strength, min, psi [MPa]	45 000 [310]	58 000 [400]	62 000 [425]	58 000 [400]
Yield strength, min, psi [MPa]	39 000 [270]	46 000 [315]	50 000 [345]	36 000 [250]
Elongation in 2 in. [50 mm], min, % ^D	25 ^A	23 ^B	21 ^C	23 ^B

A Applies to specified wall thicknesses (t) equal to or greater than 0.120 in. [3.05 mm]. For lighter specified wall thicknesses, the minimum elongation values shall be calculated by the formula: percent elongation in 2 in. [50 mm] = 56t + 17.5, rounded to the nearest percent.

B Applies to specified wall thicknesses (t) equal to or greater than 0.180 in. [4.57 mm]. For lighter specified wall thicknesses, the minimum elongation values shall be calculated by the formula: percent elongation in 2 in. [50 mm] = 61t + 12, rounded to the nearest percent.

C Applies to specified wall thicknesses (t) equal to or greater than 0.120 in. [3.05 mm]. For lighter specified wall thicknesses, the minimum elongation values shall be by agreement with the manufacturer.

D The minimum elongation values specified apply only to tests performed prior to shipment of the tubing.

Permissible Variations in Dimensions

1. Outside Dimensions:

Round Structural Tubing—The outside diameter shall not vary more than 60.5 %, rounded to the nearest 0.005 in. [0.1 mm], from the specified outside diameter for specified outside diameters 1.900 in. [48 mm] and smaller, and 6 0.75 %, rounded to the nearest 0.005 in. [0.1 mm], from the specified outside diameter for specified outside diameters 2.00 in. [5 cm] and larger. The outside diameter measurements shall be made at positions at least 2 in. [5 cm] from the ends of the tubing.

Square and Rectangular Structural Tubing—The outside dimensions, measured across the flats at positions at least 2 in. [5 cm] from the ends of the tubing, shall not vary from the specified outside dimensions by more than the applicable amount given in Table 3, which includes an allowance for convexity or concavity.

Wall Thickness—The minimum wall thickness at any point of measurement on the tubing shall be not more than 10 % less than the specified wall thickness. The maximum wall thickness, excluding the weld seam of welded tubing, shall be not more than 10 % greater than the specified wall thickness. For square and rectangular tubing, the wall thickness requirements shall apply only to the centers of the flats.

Length—Structural tubing is normally produced in random lengths 5 ft [1.5 m] and over, in multiple lengths, and in specific lengths. When specific lengths are ordered, the length tolerance shall be in accordance with the below table

Straightness—The permissible variation for straightness of structural tubing shall be 1/8 in. times the number of feet [10 mm times the number of metres] of total length divided by 5.

Squareness of Sides—For square and rectangular structural tubing, adjacent sides shall be square (90°), with a permissible variation of 62° max.

Radius of Corners—For square and rectangular structural tubing, the radius of each outside corner of the section shall not exceed three times the specified wall thickness.

Twist—For square and rectangular structural tubing, the permissible variations in twist shall be as given in below Table. Twist shall be determined by holding one end of the tubing down on a flat surface plate, measuring the height that each corner on the bottom side of the tubing extends above the surface plate near the opposite ends of the tubing, and calculating the twist (the difference in heights of such corners), except that for heavier sections it shall be permissible to use a suitable measuring device to determine twist. Twist measurements shall not be taken within 2 in. [5 cm] of the ends of the tubing.

Length Tolerances for Specific Lengths of Structural Tubing

	22 ft [6.5 m] and Under		Over 22 ft [6.5 m]	
	Over	Under	Over	Under
Length tolerance for specific lengths, in. [mm]	1/2 [13]	1/4 [6]	3/4 [19]	1/4 [6]

Permissible Variations in Twist for Square and Rectangular Structural Tubing

Specified Outside Large Flat Dimension, in. [mm]	Maximum Permissible Variations in Twist per 3 ft of Length [Twist per Metre of Length]	
	in.	[mm]
1 1/2 [40] and under	0.050	[1.3]
Over 1 1/2 to 2 1/2 [40 to 65], incl	0.062	[1.6]
Over 2 1/2 to 4 [65 to 100], incl	0.075	[1.9]
Over 4 to 6 [100 to 150], incl	0.087	[2.2]
Over 6 to 8 [150 to 200], incl	0.100	[2.5]
Over 8 [200]	0.112	[2.8]

ASTM A53 Grade A & B

Standard Specification for

Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless

This specification covers seamless and welded black and hot-dipped galvanized steel pipe in NPS 1/8 to NPS 26 [DN 6 to DN 650] (Note 1), inclusive, with nominal wall thickness. It shall be permissible to furnish pipe having other dimensions provided that such pipe complies with all other requirements of this specification.

Chemical Requirements

	Composition, max, %								
	Carbon	Manganese	Phosphorus	Sulfur	Copper ^A	Nickel ^A	Chromium ^A	Molybdenum ^A	Vanadium ^A
Type S (seamless pipe)									
Grade A	0.25	0.95	0.05	0.045	0.40	0.40	0.40	0.15	0.08
Grade B	0.30	1.20	0.05	0.045	0.40	0.40	0.40	0.15	0.08
Type E (electric-resistance-welded)									
Grade A	0.25	0.95	0.05	0.045	0.50	0.40	0.40	0.15	0.08
Grade B	0.30	1.20	0.05	0.045	0.50	0.40	0.40	0.15	0.08
Type F (furnace-welded pipe)									
Grade A	0.30	1.20	0.05	0.045	0.40	0.40	0.40	0.15	0.08

^A The total composition for these five elements shall not exceed 1.00 %.

Tensile Requirements

Round Structural Tubing		
	Grade A	Grade B
Tensile strength, min, psi [MPa]	48 000 [330]	60 000 [415]
Yield strength, min, psi [MPa]	30 000 [205]	35 000 [240]
Elongation in 2 in. or 50 mm	A,B	A,B

^A The minimum elongation in 2 in. [50 mm] shall be that determined by the following equation

$$e = 625\,000 [1940] A^{0.2}/U^{0.9}$$

where:

e = minimum elongation in 2 in. or 50 mm in percent, rounded to the nearest percent,

A = the lesser of 0.75 in.² [500 mm²] and the cross-sectional area of the tension test specimen, calculated using the specified outside diameter of the pipe, or the nominal width of the tension test specimen and the specified wall thickness of the pipe, with the calculated value rounded to the nearest 0.01 in.² [1 mm²], and

U = specified minimum tensile strength, psi [MPa].

Permissible Variations in Weight (Mass) and Dimensions

Weight (Mass)—The weight (mass) of the pipe shall not vary more than 6 10 % from its specified weight (mass), as derived by multiplying its measured length by its specified weight (mass) per unit length.

Diameter—For pipe NPS 11/2 [DN 40] or smaller, the outside diameter at any point shall not vary more than 6 1/64 in. [0.4 mm] from the specified outside diameter. For pipe NPS 2 [DN 50] or larger, the outside diameter shall not vary more than 6 1 % from the specified outside diameter.

Thickness—The minimum wall thickness at any point shall be not more than 12.5 % under the specified wall thickness. The minimum wall thickness on inspection shall conform to the requirements given below

Minimum Permissible Wall Thicknesses on Inspection for Pipe Specified Wall Thicknesses

The following equation, shall be applied to calculate minimum permissible wall thickness

$$t_s \times 0.875 = t_m$$

where:

t_s = specified wall thickness, in. [mm], and t_m = minimum permissible wall thickness, in. [mm].

API 5L : Specification for Line Pipe

PURPOSE AND COVERAGE

The purpose of this specification is to provide standards for pipe suitable for use in conveying gas, water, and oil in both the oil and natural gas industries. This specification covers seamless and welded steel line pipe. It includes plain-end, threaded-end, and belled-end pipe, as well as through-the-flowline (TFL) pipe and pipe with ends prepared for use with special couplings.

Although the plain-end line pipe meeting this specification is primarily intended for field makeup by circumferential welding, the manufacturer will not assume responsibility for field welding.

GRADES

The grades (see the note) covered by this specification are the standard Grades A25, A, B, X42, X46, X52, X56, X60, X65, X70 and X80; and any intermediate grades (grades that are higher than X42, intermediate to two sequential standard grades, and agreed upon by the purchaser and manufacturer). PSL I pipe can be supplied in Grades A25 through X70. PSL 2 pipe can be supplied in Grades B through X80. Class II (CI II) steel is rephosphorized and probably has better threading properties than Class I (CI I). Because Class II (CI II) has higher phosphorus content than Class I (CI I), it may be somewhat more difficult to bend. Pipe manufactured as Grade X60 or higher shall not be substituted for pipe ordered as Grade X52 or lower without purchaser approval.

Note: The grade designations are dimensionless. Grades A and B do not include reference to the specified minimum yield strength; however, other grade designations are composed of the letter A or X, followed by the first two digits of the specified minimum yield strength in U.S. Customary units.

API SPECIFICATION 5L
Table 2A-PSL 1 Chemical Requirements for Heat and Product Analyses by Percentage of Weight

1	2	3	4		5	6	7
Grade & Class	Carbon, Maximum ^a	Manganese, Maximum ^a	Phosphorus		Sulfur, Maximum	Titanium Maximum	Other
			Minimum	Maximum			
Seamless							
A25,CII	0.21	0.60		0.030	0.030		
A25, CIII	0.21	0.60	0.045	0.080	0.030		
A	0.22	0.90		0.030	0.030		
B	0.28	1.20		0.030	0.030	0.04	b, c, d
X42	0.28	1.30		0.030	0.030	0.04	c,d
X46, X52, X56	0.28	1.40		0.030	0.030	0.04	c,d
X60 ^f ,	0.28	1.40		0.030	0.030	0.04	c,d
X65 ^f , X70 ^f	0.28	1.40		0.030	0.030	0.06	c,d
Welded							
A25, C11	0.21	0.60		0.030	0.030		
A25, C111	0.21	0.60	0.045	0.080	0.030		
A	0.22	0.90		0.030	0.030		
B	0.26	1.20		0.030	0.030	0.04	b,c,d
X42	0.26	1.30		0.030	0.030	0.04	c,d
X46, X52, X56	0.26	1.40		0.030	0.030	0.04	c,d
X60F	0.26	1.40		0.030	0.030	0.04	c,d
X65F	0.26	1.40		0.030	0.030	0.06	c,d
X70F	0.26	1.65		0.030	0.030	0.06	c,d

API SPECIFICATION 5L

Table 2B-PSL 2 Chemical Requirements for Heat and Product Analyses by Percentage of Weight

1	2	3	4	5	6	7
Grade & Class	Carbon, Maximum ^a	Manganese, Maximum ^a	Phosphorus Minimum	Sulfur, Maximum	Titanium Maximum	Other
Seamless						
B	0.24	1.20	0.025	0.015	0.04	c,d,e
X42	0.24	1.30	0.025	0.015	0.04	c,d
X46, X52, X56, X60 ^f	0.24	1.40	0.025	0.015	0.04	c,d
X65 ^f , X70 ^f , X80 ^f	0.24	1.40	0.025	0.015	0.06	c,d
Welded						
B	0.22	1.20	0.025	0.015	0.04	c,d,e
X42	0.22	1.30	0.025	0.015	0.04	c,d
X46, X52, X56	0.22	1.40	0.025	0.015	0.04	c,d
X60 ^f	0.22	1.40	0.025	0.015	0.04	c,d
X65 ^f	0.22	1.40	0.025	0.015	0.06	c,d
X70 ^f	0.22	1.65	0.025	0.015	0.06	c,d
X80 ^f	0.22	1.85	0.025	0.015	0.06	c,d

Footnotes to Tables 2A and 2B:

^a For each reduction of 0.01 % below the specified maximum carbon content, an increase of 0.05% above the specified maximum manganese content is permissible, up to a maximum of 1.50% for Grades X42 through X52, up to a maximum of 1.65% for grades higher than X52 but less than X70, and up to 2.00% for Grades X70 and higher.

^b The sum of columbium [niobium] and vanadium contents shall not exceed 0.03%, except that, by agreement between the purchaser and the manufacturer, an alternative maximum may be established.

^c Columbium [niobium], vanadium, or combinations thereof may be used at the discretion of the manufacturer.

^d The sum of the columbium [niobium], vanadium, and titanium contents shall not exceed 0.15%.

^e The sum of the columbium [niobium], and vanadium contents shall not exceed 0.06% except that, by agreement between the purchaser and the manufacturer, an alternative maximum may be established.

^f Other chemical compositions may be furnished by agreement between purchaser and manufacturer, providing that the limits of footnote d, and the tabular limits for phosphorus and sulfur are met.

API SPECIFICATION 5L

Table 3A-Tensile Requirements for PSL 1

1	2		3		4
Grade	Yield Strength, Minimum		Ultimate Tensile Strength, Minimum		Elongation in 2 in. (50.8 mm). Minimum, Percent
	psi	MPa	psi	MPa	
A25	25,000	(172)	45,000	(310)	a
A	30,000	(207)	48,000	(331)	a
8	35,000	(241)	60,000	(414)	a
X42	42,000	(290)	60,000	(414)	a
X46	46,000	(317)	63,000	(434)	a
X52	52,000	(359)	66,000	(455)	a
X56	56,000	(386)	71,000	(490)	a
X60	60,000	(414)	75,000	(517)	a
X65	65,000	(448)	77,000	(531)	a
X70	70,000	(483)	82,000	(565)	a

API SPECIFICATION 5L
Table 3B-Tensile Requirements for PSL 2

1	2		3		4		5		6
	Yield Strength, Minimum		Yield Strength, Maximum ^b		Ultimate Tensile Strength, Minimum		Ultimate Tensile Strength, Maximum ^c		Elongation in 2 in. (50.8 mm), Minimum, Percent
Grade	psi	MPa	psi	MPa	psi	MPa	psi	MPa	
8	35,000	(241)	65,000 ^d	(448)	60,000	(414)	110,000	(758)	a
X42	42,000	(290)	72,000	(496)	60,000	(414)	110,000	(758)	a
X46	46,000	(317)	76,000	(524)	63,000	(434)	110,000	(758)	a
X52	52,000	(359)	77,000	(531)	66,000	(455)	110,000	(758)	a
X56	56,000	(386)	79,000	(544)	71,000	(490)	110,000	(758)	a
X60	60,000	(414)	82,000	(565)	75,000	(517)	110,000	(758)	a
X65	65,000	(448)	87,000	(600)	77,000	(531)	110,000	(758)	a
X70	70,000	(483)	90,000	(621)	82,000	(565)	110,000	(758)	a
X80	80,000	(552)	100,000 ^e	(690)	90,000	(621)	120,000	(827)	a

Footnotes to Tables 3A and 3B:

^a The minimum elongation in 2 in. (50.8 mm) shall be that determined by the following equation:

U.S. Customary Unit Equation

SI Unit Equation

$$e = 625000 \frac{A^{0.2}}{U^{0.9}}$$

$$e = 1944 \frac{A^{0.2}}{U^{0.9}}$$

Where

e = minimum elongation in 2 in. (50.8 mm) in percent rounded to the nearest percent.

A = applicable tensile test specimen area, as follows:

a. For round bar specimens:

- 0.20 in.2 (130 mm2) for the 0.500 in. and 0.350 in. specimens,
- 0.10 in.2 (65 mm2) for the 0.250 in. specimen.

b. For full section specimens, the smaller of (i) 0.75 in.2 (485 mm2) and (ii) the cross-sectional area of the test specimen, calculated using the specified outside diameter of the pipe and the specified wall thickness of the pipe, rounded to the nearest 0.01 in2 (10 mm2);

c. For strip specimens, the smaller of (i) 0.75 in.2 (485 mm2) and (ii) the cross-sectional area of the test specimen, calculated using the specified width of the test specimen and the specified wall thickness of the pipe, rounded to the nearest 0.01 in2 (10 mm2).

U = specified minimum ultimate tensile strength in psi (MPa).

^b Maximum yield strength for an intermediate grade shall be the maximum for the next higher listed grade.

^c All intermediate grades have a maximum ultimate tensile strength of 110,000 psi (758 MPa).

^d Maximum yield strength for Grade B pipe in sizes subject to longitudinal testing is 72,000 psi (496 MPa).

^e For wall thickness greater than 0.984 in. (25.0 mm), the maximum yield strength shall be determined by agreement between the purchaser and the manufacturer

API SPECIFICATION 5L
Tolerances for Wall Thickness

Size	Type of Pipe	Tolerance ^a (Percent of Specified Wall Thickness)	
		Grade B or Lower	Grade X42 or Higher
≤ 2 7/8	All	+ 20.0, - 12.5	+ 15.0,-12.5
> 2 7/8 and <20	All	+ 15.0, - 12.5	+ 15.0,-12.5
≥ 20	Welded	+ 17.5,-12.5	+ 19.5, -8.0
≥ 20	Seamless	+ 15.0,-12.5	+ 17.5,-10.0

^a Where negative tolerances smaller than those listed are specified by the purchaser, the positive tolerance shall be increased to the applicable total tolerance range in percent less the wall thickness negative tolerance.

WHY USE STRUCTURAL HOLLOW SECTION

01

BROAD RANGE OF
LONG SPANS



HIGH STRENGTH
TO WEIGHT RATIO

02

03

AESTHETIC
APPEARANCE



COMPLEX ROOF
DESIGNS

04

05

CHOICE OF
MEMBERS



OPTIMIZATION BY
REDUCING CUTTING
LOSSES

06

ADVANTAGE OF JUMBO HOT FINISHED SHS & RHS

- Formed at normalizing temperature
- High sectional properties
- Fine grain structure
- Uniform mechanical properties
- Weldable in corner regions
- Higher compression capacity
- Negligible residual stress
- Tighter corner profile
- Suitability for galvanizing
[Less residual stresses]
- Fire resistance capability
- Proven dynamic performance

Hot finished structural hollow sections are produced with a standard grade with yield stress of 355N/mn2, which fully complies with EN 10210 S355J2H on request also S + 460 can be used.

The sections have a Charpy impact minimum average energy of 27J at -20°C. All hot finished structural hollow sections have improved Corner profile of 2T.

Hot finished SHS are manufactured in accordance with the European Standard for hot finished structural hollow sections EN 10210, with the technical delivery requirements of EN 10210-1:2006 and the dimensions and tolerances to EN 10210-2:2006 plus an improved corner profile of 2T.



WHY TO PREFER HOLLOW SECTION INSTEAD OF BUILTUP BEAM AND COLUMN SECTION



Design is an integration process between the functional behavior, architectural requirements, strength, fabrication and installation aspects to be considered in the design stage of the project. Due to the special features of hollow sections and optimization of connections it is even more important than for steel structures with open sections.

Many examples in nature show the excellent properties of the tubular shape with regard to loading in compression, torsion and bending in all directions, see above images.



SPECIAL SHAPE PRODUCTS

We are a professional producer of elliptical tubes semi-circle tubes, arch tubes, triangle tubes, hexagon tubes and other cross section tubes on request, which contains the welded and seamless with various materials and thousands of different sizes.

Elliptical Tube



Embosal's elliptical steel tubing Product is aesthetically pleasing to the eye and is ideal for architecture applications, as well as for cosmetic applications such as in car parking ,canopy structure Mall.

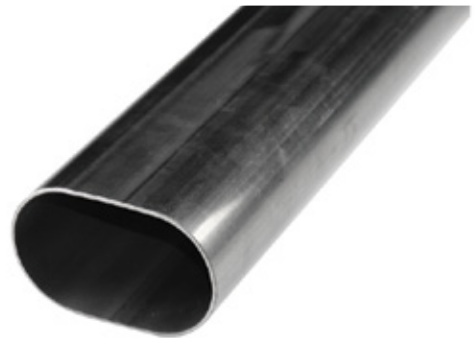
We manufacture elliptical steel tubing in a wide range of sizes including 120x60x3.2mm to 500x250x16mm thickness. Elliptical tubing can be produced in a variety of materials .

Triangular Tube



Triangular shapes steel comes in a variety of sizes, and normally it is used in house hold , kitchenware , structural components, bracing supports, industrial and construction industries

Oval Tube



We can also produce the oval tube in various types of steel including hot rolled and cold rolled.

Oval steel tube design is aesthetically pleasing for applications in structural and architectural including fitness equipments.

Advantage of Oval Tube

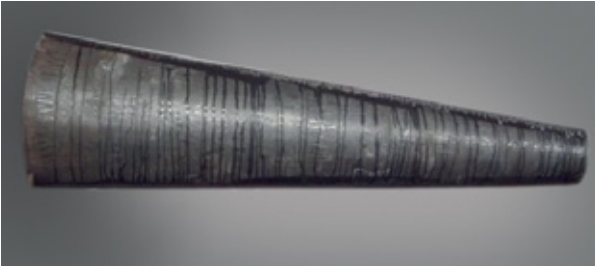
STRONGER : When used on its preferential axis, gauge per gauge, the oval is stronger than traditional round tubing.

ECONOMICAL: Increased strength means lighter gauges can be used, which translates into cost savings for you.

FABRICATION: The flat side on an oval eliminates the need for coping or wall flattening when welding. Sections can be joined directly to the flat side, reducing fabrication costs.

IMPROVED APPEARANCE: The oval shape provides a fresh look for more contemporary styling.

Conical Pipes



Conical Pipes/Tapered Pipes are manufactured from high grade quality material. It is used in a number of structural, mechanical and automotive industries. We offer this pipes in various sizes and material specifications. Further the offered pipes can be customized according to customers' requirements

Conical pipe is used in a multitude of applications where strength, appearance, ease of fabrication, resistance to torsion, and maximum strength to weight ratio are required.

Some typical uses for conical pipe

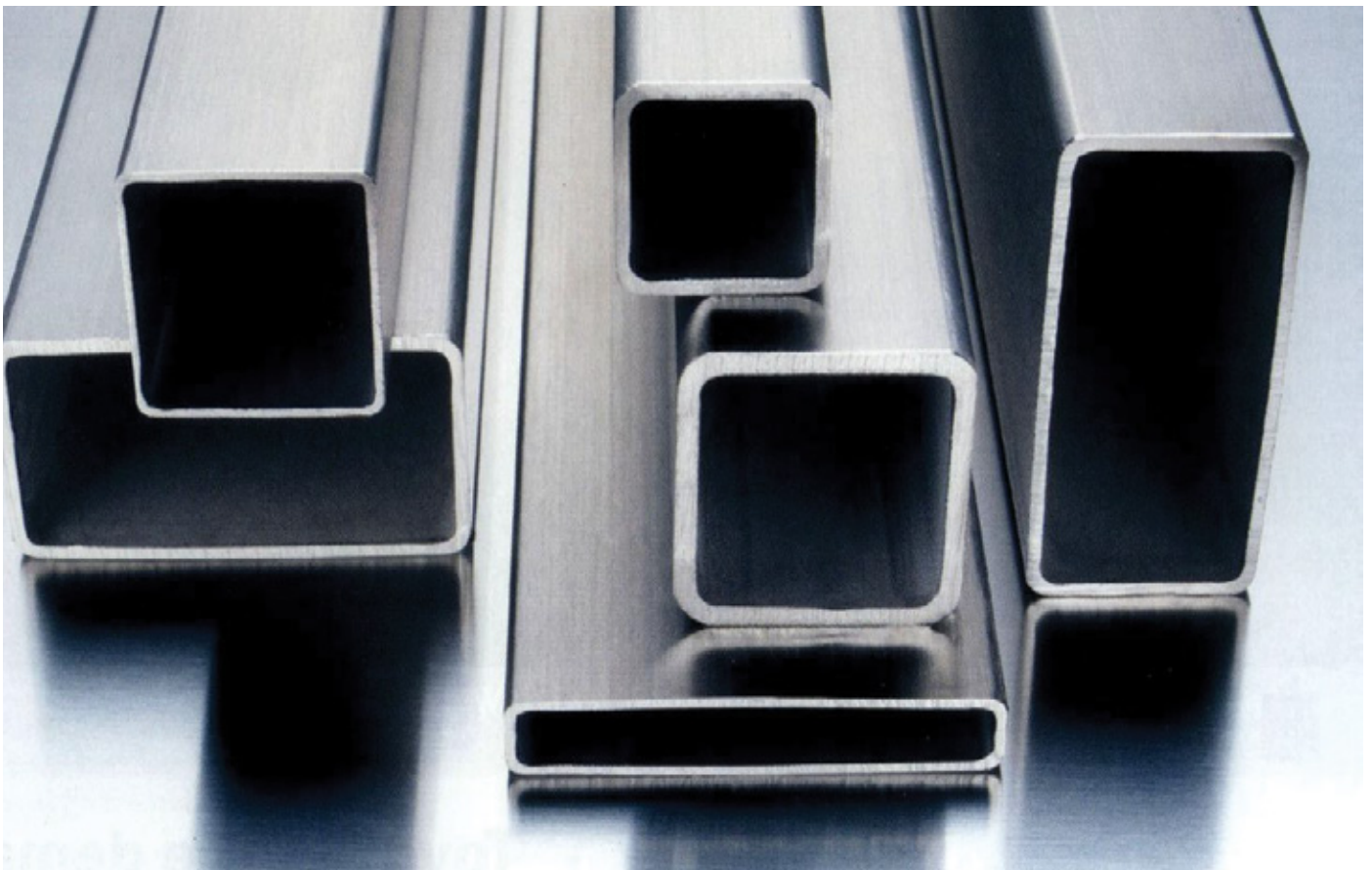
- Automotive industries
- Transmission pole
- Wind turbine
- Conical Mast

Hexagonal Tube



Hexagonal shape steel comes in a variety of sizes, and normally specified by width across the flat of hexagon. It is normally cold worked materials.

Hexagonal can be used for a wide variety of mechanical applications. It may be used either statically or dynamically. Its close tolerances, good finish, and dense structure make it ideal for parts such as structural support and parts, frames, racks, trailer beds and trailer components, structural components and supports for buildings, bridges, and highways, conveyors, machine parts, guides, and supports, safety and deck rails, sign posts, athletic equipment, ornamental usages and a wide range of applications in industrial, construction, automotive, appliance, furniture and agricultural industries



01

*Manufacturer of
Steel Hollow Section*

02

Wide Size Range

03

*No Minimum
Order Quantity*

04

*Can Produce
Sharp Edge Tubes*

05

*Immediate
Delivery*

06

*Customised Size &
Shapes*

07

*Value Engineering
Benefits*

08

*Approved by
TUV-Rheinland
Germany*

*WHY to Choose
**EMBOSAL
TUBE MILLS***

GROUP COMPANIES

- Core Metal LLC - Steel Stockist**
Structural Steel, GI, Aluminium & SS
- Coremetal Technical Services LLC**
Design and Engineering
- Embosal Tube Mills LLC**
Tubes and Pipe Mill
- Core Metallic Ind. LLC - Expanded Metal**
Expanded Metal & Profile Manufacturing
- Core Metallic Ind. LLC - Steel Fabrication**
Structural & Architectural Steel Fabrication
- Core Metallic Ind. LLC - Metal Processing**
Water jet, Plasma, Punching & Perforation
- Core Metallic Ind. LLC - Machine Shop**
CNC Machining & Tooling, Mandrel Manufacturing
- CorePac Industries LLC**
Manufacturer of Disposable Packaging & Solutions
- CorePac FZE**
Disposable Packing and Hospitality Items
- ASMECO Fire Protection LLC**
Fire proof Painting (Intumescent & Cementitious Coating)
- ASMECO Coating Industries LLC**
Abrasive Blast Cleaning, Specialized Protective Coating



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