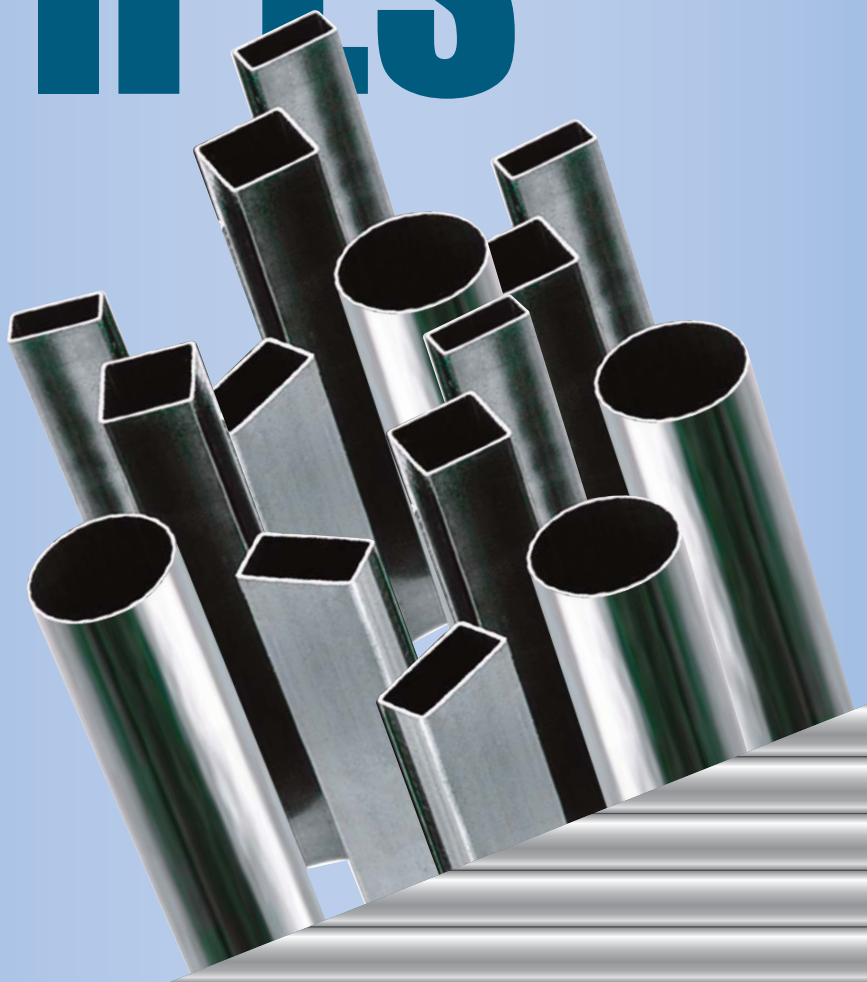
النمر للصناعات المعدنية ذ.م.م.
TIGER STEEL INDUSTRIES L.L.C.

STEEL TUBES AND PIPES



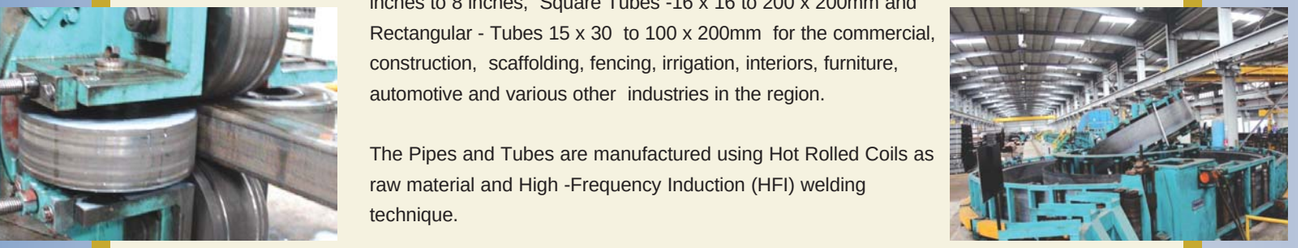
About Us

Tiger Steel Industries LLC popularly known in the market as "TIGER Tube & Pipe Mill" was established in 1997 in Dubai UAE, for the manufacture and supply of ERW Steel Tubes and Pipes to the local industry and has over decades has begun exporting into the GCC markets and beyond is part of UAE based Tiger Group since 1968.

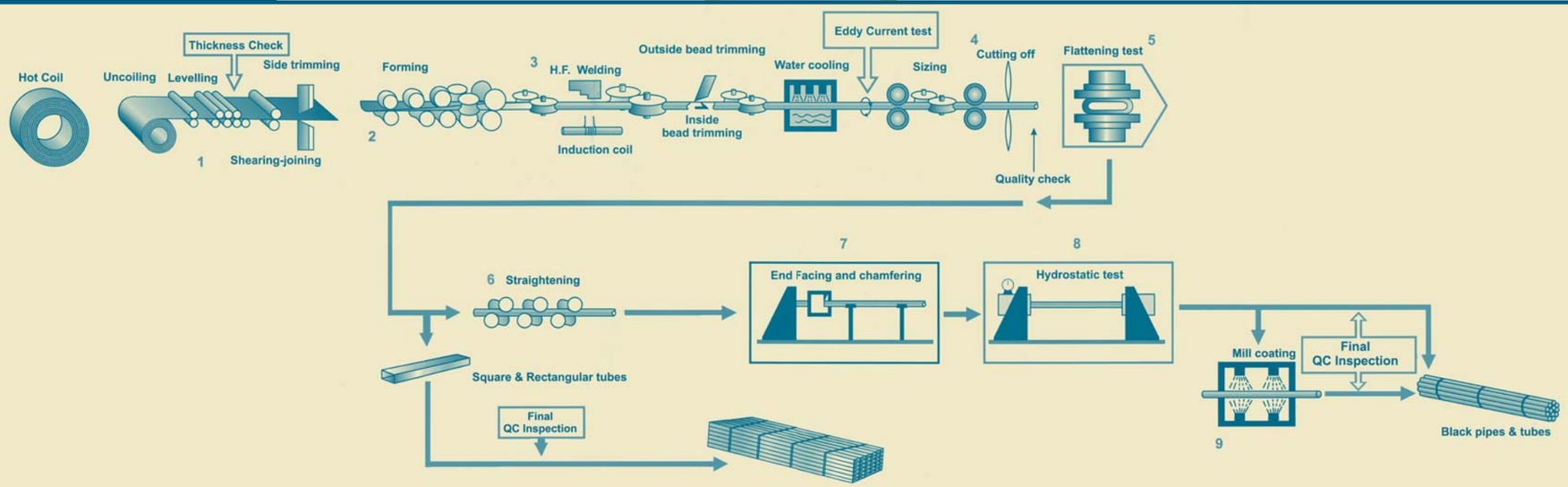
The company has two plants, one located in Dubai at Al Ghusais Industrial Sector 1 and the other in the Industrial City of Abu Dhabi (ICAD - II), in the manufacturing hubs of the UAE. The combined production facilities have Four Tube Forming Lines, Three Coil Slitting lines and Two Cut to Length Lines with a manufacturing operation that caters to the Hydrocarbon (Oil & Gas sector), Construction, Marine, offshore, mechanical and automotive industries.

Tiger Steel Industries product dimensions range from Circular - 1/2 inches to 8 inches, Square Tubes -16 x 16 to 200 x 200mm and Rectangular - Tubes 15 x 30 to 100 x 200mm for the commercial, construction, scaffolding, fencing, irrigation, interiors, furniture, automotive and various other industries in the region.

The Pipes and Tubes are manufactured using Hot Rolled Coils as raw material and High -Frequency Induction (HFI) welding technique.



Process Workflow



Quality Management

Expect the best from us.

A commitment to maintain consistent product quality is a hallmark of Tiger Tubes & Pipes. Customer satisfaction is what Tiger Steel Industries strives for and ensures in its products. In pursuit of maintaining and improving the set standards in pipe manufacture, each pipe is viewed with the same care and passes through the same quality management from

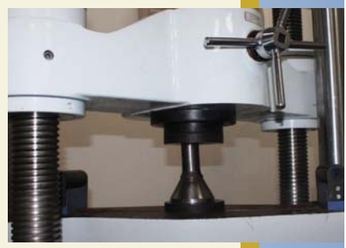
integral part of all aspects of the process flow, governing our daily work to an extent far beyond the requirements laid down in the applicable standards.

Testing and Quality Control Facilities

Besides the numerous quality assurance measures during the manufacturing process and at various inspection points, the following facilities are available for ensuring stringent quality standards.

1. Universal Testing Machines (Digital)	For material testing (mechanical properties)
2. Eddy Current Testing Machine (NDT)	For online flaw detection on welds
3. Vickers Micro Hardness Tester (Digital)	For checking hardness on Raw material& weld
4. Digital Ultrasonic Thickness Gauge	For checking thickness of pipes
5. Bending machine	For pipe bend test

Apart from the above important testing machines, trained and committed work force ensures high quality pipes made to various national and international standards.



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Tiger Steel Tube and Pipe Range

Circular Sections can be manufactured as per below table.

Std	THICKNESS (mm)																			
O.D (mm)	1	1.2	1.5	1.8	2	2.5	2.8	3	3.2	3.5	3.8	4	4.5	4.8	5	5.5	6	6.5	6.8	7	7.5
21.3	■	■	■	■	■	■	■														
26.7	■	■	■	■	■	■	■														
33.7	■	■	■	■	■	■	■	■	■												
42.2	■	■	■	■	■	■	■	■	■	■	■										
48.3	■	■	■	■	■	■	■	■	■	■	■	■									
60.3				■	■	■	■	■	■	■	■	■	■	■	■						
73.0				■	■	■	■	■	■	■	■	■	■	■	■						
76.1				■	■	■	■	■	■	■	■	■	■								
88.9					■	■	■	■	■	■	■	■	■	■	■						
101.6							■	■	■	■	■	■	■	■	■						
114.3							■	■	■	■	■	■	■	■	■	■					
139.7							■	■	■	■	■	■	■	■	■						
141.3							■	■	■	■	■	■	■	■	■	■					
165.1							■	■	■	■	■	■	■	■	■						
168.3							■	■	■	■	■	■	■	■	■	■					
219.1							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

Square & Rectangular Sections can be manufatured as per below table.

	THICKNESS (mm)															
Size (mm)	1.0	1.2	1.5	1.8	2.0	2.5	2.8	3.0	3.5	4.0	4.5	4.8	5	5.5	5.8	6.0
Square																
16x16	■	■	■	■	■											
19x19	■	■	■	■	■											
25x25	■	■	■	■	■	■	■									
30x30	■	■	■	■	■	■	■	■								
38x38	■	■	■	■	■	■	■	■	■	■						
40x40	■	■	■	■	■	■	■	■	■	■						
50x50	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
60x60				■	■	■	■	■	■	■	■	■	■	■	■	■
75x75				■	■	■	■	■	■	■	■	■	■	■	■	■
100x100				■	■	■	■	■	■	■	■	■	■	■	■	■
120x120								■	■	■	■	■	■	■	■	■
150x150								■	■	■	■	■	■	■	■	■
180x180																
Rectangular																
40x20	■	■	■	■	■	■										
50x25	■	■	■	■	■	■										
60x30				■	■	■	■	■	■	■	■	■	■	■		
80x40			■	■	■	■	■	■	■	■	■	■	■	■	■	■
100x50			■	■	■	■	■	■	■	■	■	■	■	■	■	■
120x60			■	■	■	■	■	■	■	■	■	■	■	■	■	■
150x75			■	■	■	■	■	■	■	■	■	■	■	■	■	■
200x100							■	■	■	■	■	■	■	■	■	■

High Frequency Induction (HFI) Welded Steel Pipes & Tubes

Description and specification.

Usage: Used for low pressure liquid delivery, such as water, gas, and oil.
Oil drilling and machinery manufacturing, fencing, construction, irrigation etc.

TIGER STEEL INDUSTRIES PRODUCT RANGE vs. SPECIFICATIONS			
Section	Specifications	Steel Grade	Size Range (mm)
CHS - Circular Hollow Sections	ASTM A500, EN10219, EN10255, ASTM A53 Gr. A/Gr. B	ST37.2, S235, S275, S355	Dia 21.3 - 219.1
SHS - Square Hollow Sections	ASTM A500 Gr. A/B/C, EN10219	S235, S275, S355	16x16 - 180x180
RHS - Rectangular Hollow Sections	ASTM A500 Gr. A/B/C, EN10219	S235, S275, S355	40x20 - 200x100

Wall thickness : 1.0 - 8.0mm
Length : 4 - 12M
Surface : Varnish Coating, Bitumen Coating, Oil coating as per customer's requirement.

Test: Chemical Component Analysis, Mechanical Properties (Ultimate tensile strength, Yield strength, Elongation), Technical Properties (Flattening Test, Bending Test) Exterior Size Inspection, Hydrostatic Test.

Mill Test Certification: EN 10204/3.1B

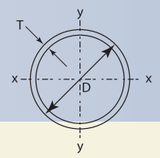
TECHNICAL DATA SHEET FOR ASTM A 500 GR A/GR B & AS PER EN 10219 IN GRADES S235& S275

Circular hollow sections shall be manufactured from 1/2" to 8" as per clients requirements for structural purposes. And the tolerances are shown in the following table.

Specification	Tolerance on O.D	Tolerance On Thickness	Yst (Mpa) min	Uts (Mpa) min	El%	c%	Mn%	P%	S%
ASTM A500 GR A	Upto 1 1/2" +/- 0.7% Of Std O.D.	-10% of Std thickness	228	310	25	0.3	-"	0.045	0.045
	2" & ABOVE +/- 0.50% of Std O.D.								
ASTM A500 GR B	Upto 1 1/2" +/- 0.7% Of Std O.D.	-10% of Std thickness	290	400	23	0.3	-"	0.045	0.045
	2" & ABOVE +/- 0.50% of Std O.D.								
EN: 10219 S 235 GRADE	± 1% with a minimum of ± 0.50mm a maximum of 1.0mm	Thickness ≤ 5mm ± 10%	235	360-510	24	0.17	1.4	0.04	0.04
		Thickness > 5mm ± 0.50mm							
EN: 10219 S 275 GRADE	± 1% with a minimum of ± 0.50mm a maximum of 1.0mm	Thickness ≤ 5mm ± 10%							
		Thickness > 5mm ± 0.50mm	275	<3mm 430-580 >3mm 410-560	20	0.2	1.5	0.035	0.035

TOLERANCES ON DIMENSIONS, MECHANICAL AND CHEMICAL PROPERTIES						
Spec	Tolerance on outside dimensions	Thickness tolerance	Squareness	Corner radii	Twist	Straightness
ASTM A500	Upto 63.5 MM — ±0.51mm	-10%	90°±2°	3 times the thickness	4 mm max	1 in 500 mm
	over 63.5mm to 88.9mm—±0.64mm					
	over 88.9mm to 139.7mm—±0.76mm					
	over 139.7mm—±0.01* of larger dia					
EN 10219	<100 mm ± 1% with a min of ±0.50mm	≤ 5mm—- -10%	90° ± 1°	1.6*T -2.4* T	2mm +	0.15% of total length
	≤100≤200mm—±0.80%	> 5mm—±0.50mm			0.50mm/meter	

MECHANICAL & CHEMICAL PROPERTIES								
Specifications	Grade	MECHANICAL			CHEMICAL			
		Yst min	Uts min	El%	C%	Mn%	P%	S%
		Mpa	Mpa		Max	Max	Max	Max
ASTM A500	A	269	310	25	0.3		0.045	0.035
	B	317	400	23				
EN 10219	S235	235	360-510	24	0.17	1.4	0.04	0.04
	S275	275	410-580	20	0.2	1.5	0.035	0.035



High Frequency Induction (HFI) Welded Steel Pipes & Tubes

NOMINAL DIMENSION AND SECTIONAL PROPERTIES OF COLD FORMED CIRCULAR HOLLOW SECTIONS

Outside Diameter D mm	Thickness T mm	Mass kg/mtr M mm	Sectional area A cm2	Moment of Inertia I cm4	Radius of gyration I cm	Elastic modulus i cm	Plastic modulus i cm	Torsional constants		Superficial area / m As m2 / m	Approx. Length /tonne m/t
								It cm4	Ct cm3		
21.3	1.0	0.50	0.64	0.33	1.23	0.31	0.41	0.66	0.62	0.07	199.75
	1.2	0.59	0.76	0.38	1.22	0.36	0.49	0.77	0.72	0.07	168.11
	1.5	0.73	0.93	0.46	1.20	0.43	0.59	0.92	0.86	0.07	136.53
	1.8	0.87	1.10	0.53	1.18	0.50	0.69	1.06	1.00	0.07	115.52
	2.0	0.95	1.21	0.57	1.16	0.54	0.75	1.14	1.07	0.07	105.05
	2.5	1.16	1.48	0.66	0.67	0.62	0.89	1.33	1.25	0.07	86.27
	2.8	1.28	1.63	0.71	0.66	0.67	1.18	1.42	1.34	0.07	78.28
26.9	1.0	0.64	0.81	0.74	0.96	0.55	0.67	1.49	1.10	0.08	156.56
	1.2	0.76	0.97	0.80	0.91	0.60	0.79	1.60	1.19	0.08	131.48
	1.5	0.94	1.20	0.97	0.90	0.72	0.97	1.94	1.44	0.08	106.43
	1.8	1.11	1.42	1.12	0.89	0.83	1.14	2.25	1.67	0.08	89.75
	2.0	1.23	1.56	1.22	0.88	0.91	1.24	2.44	1.81	0.08	81.42
	2.5	1.50	1.92	1.44	0.87	1.07	1.49	2.88	2.14	0.08	66.47
	2.8	1.66	2.12	1.56	0.86	1.16	1.63	3.12	2.32	0.08	60.09
33.7	1.0	0.81	1.03	1.37	1.15	0.81	1.07	2.74	1.63	0.11	124.00
	1.2	0.96	1.23	1.62	1.15	0.96	1.27	3.24	1.92	0.11	103.97
	1.5	1.19	1.52	1.97	1.14	1.17	1.56	3.94	2.34	0.11	83.95
	1.8	1.42	1.80	2.30	1.13	1.36	1.83	4.60	2.73	0.11	70.62
	2.0	1.56	1.99	2.51	1.12	1.49	2.01	5.02	2.98	0.11	63.96
	2.5	1.92	2.45	3.00	1.11	1.78	2.44	6.00	3.56	0.11	51.99
	2.8	2.13	2.72	3.27	1.10	1.94	2.68	6.54	3.88	0.11	46.87
	3.0	2.27	2.89	3.44	1.09	2.04	2.84	6.88	4.08	0.11	44.03
	3.2	2.41	3.07	3.61	1.08	2.14	2.99	7.21	4.28	0.11	41.55
42.4	1.0	1.02	1.30	2.79	1.46	1.32	1.71	5.58	2.63	0.13	97.94
	1.2	1.22	1.55	3.30	1.46	1.56	2.04	6.60	3.11	0.13	82.02
	1.5	1.51	1.93	4.04	1.45	1.90	2.51	8.07	3.81	0.13	66.09
	1.8	1.80	2.30	4.74	1.44	2.24	2.97	9.48	4.47	0.13	55.49
	2.0	1.99	2.54	5.19	1.43	2.45	3.27	10.38	4.90	0.13	50.18
	2.5	2.46	3.13	6.26	1.41	2.95	3.99	12.52	5.91	0.13	40.65
	2.8	2.73	3.48	6.86	1.40	3.24	4.40	13.73	6.47	0.13	36.57
	3.0	2.91	3.71	7.25	1.40	3.42	4.67	14.50	6.84	0.13	34.31
	3.2	3.09	3.94	7.62	1.39	3.59	4.93	15.24	7.19	0.13	32.33
	3.5	3.36	4.28	8.16	1.38	3.85	5.31	16.31	7.70	0.13	29.78
	3.8	3.62	4.61	8.67	1.37	4.09	5.68	17.33	8.18	0.13	27.64
48.3	1.0	1.17	1.49	4.16	1.67	1.72	2.24	8.32	3.44	0.15	85.73
	1.2	1.39	1.78	4.93	1.33	2.04	2.66	9.86	4.08	0.15	71.74
	1.5	1.73	2.21	6.05	1.65	2.50	3.29	12.09	5.01	0.15	57.76
	1.8	2.06	2.63	7.12	1.65	2.95	3.89	14.24	5.90	0.15	48.45
	2.0	2.28	2.91	7.81	1.64	3.23	4.29	15.62	6.47	0.15	43.79
	2.5	2.82	3.60	9.46	1.62	3.92	5.25	18.92	7.84	0.15	35.41
	2.8	3.14	4.00	10.40	1.61	4.31	5.80	20.80	8.61	0.15	31.83
	3.0	3.35	4.27	11.00	2.58	4.56	6.17	22.00	9.11	0.15	29.84
	3.2	3.56	4.53	11.59	1.60	4.80	6.52	23.17	9.60	0.15	28.10
	3.5	3.87	4.93	12.44	1.59	5.15	7.04	24.87	10.30	0.15	25.86
	3.8	4.17	5.31	13.25	1.58	5.49	7.54	26.50	10.97	0.15	23.98
	4.0	4.37	5.57	13.77	1.57	5.70	7.87	27.54	11.40	0.15	22.88
60.3	1.8	2.60	3.31	14.17	2.07	4.70	6.16	28.33	9.40	0.19	38.51
	2.0	2.88	3.66	15.58	2.06	5.17	6.80	31.17	10.34	0.19	34.78
	2.5	3.56	4.54	19.00	2.05	6.30	8.36	37.99	12.60	0.19	28.06
	2.8	3.97	5.06	20.96	2.04	6.95	9.27	41.91	13.90	0.19	25.19
	3.0	4.24	5.40	22.23	2.03	7.37	9.86	44.45	14.74	0.19	23.59
	3.2	4.51	5.74	23.47	2.02	7.78	10.44	46.94	15.57	0.19	22.19
	3.5	4.90	6.25	25.29	2.01	8.39	11.31	50.57	16.77	0.19	20.40
	3.8	5.29	6.75	27.04	2.00	8.97	12.15	54.08	17.94	0.19	18.89
	4.0	5.55	7.08	28.18	2.00	9.35	12.70	56.35	18.69	0.19	18.01
	4.5	6.19	7.89	30.91	1.98	10.25	14.04	61.81	20.50	0.19	16.15

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Products are sold at piece rate basis only.

Outside Diameter D mm	Thickness T mm	Mass kg/mtr M mm	Sectional area A cm2	Moment of Inertia I cm4	Radius of gyration I cm	Elastic modulus i cm	Plastic modulus i cm	Torsional constants		Superficial area / m As m2 / m	Approx. Length /tonne m/t
								It cm4	Ct cm3		
73.0	1.8	3.16	4.03	25.53	2.52	7.00	9.13	51.07	13.99	0.23	31.64
	2.0	3.50	4.46	28.14	2.51	7.71	10.09	56.27	15.42	0.23	28.56
	2.5	4.35	5.54	34.45	2.49	9.44	12.43	68.90	18.88	0.23	23.01
	2.8	4.85	6.18	38.10	2.48	10.44	13.81	76.21	20.88	0.23	20.63
	3.0	5.18	6.60	40.49	2.48	11.09	14.71	80.98	22.19	0.23	19.31
	3.2	5.51	7.02	42.83	2.47	11.73	15.60	85.66	23.47	0.23	18.15
	3.5	6.00	7.64	46.26	2.46	12.68	16.92	92.53	25.35	0.23	16.67
	3.8	6.48	8.26	49.61	2.45	13.59	18.22	99.21	27.18	0.23	15.42
	4.0	6.81	8.67	51.78	2.44	14.19	19.07	103.56	28.37	0.23	14.69
	4.5	7.60	9.69	57.05	2.43	15.63	21.15	114.10	31.26	0.23	13.15
	4.8	8.07	10.29	60.10	2.42	16.47	22.36	120.20	32.93	0.23	12.39
	5.0	8.38	10.68	62.08	2.41	17.01	23.16	124.16	34.02	0.23	11.93
76.1	1.8	3.30	4.20	29.01	2.63	7.63	9.94	58.03	15.25	0.24	30.32
	2.0	3.65	4.66	31.98	2.62	8.41	10.98	63.97	16.81	0.24	27.36
	2.5	4.54	5.78	39.19	2.60	10.30	13.55	78.38	20.60	0.24	22.04
	2.8	5.06	6.45	43.37	2.59	11.40	15.05	86.75	22.80	0.24	19.76
	3.0	5.41	6.89	46.10	2.59	12.12	16.04	92.20	24.23	0.24	18.49
	3.2	5.75	7.33	48.79	2.58	12.82	17.02	97.57	25.64	0.24	17.38
	3.5	6.27	7.98	52.72	2.57	13.86	18.46	105.45	27.71	0.24	15.96
	3.8	6.78	8.63	56.56	2.56	14.86	19.88	113.12	29.73	0.24	14.76
	4.0	7.11	9.06	59.06	2.55	15.52	20.82	118.13	31.04	0.24	14.06
	4.5	7.95	10.12	65.13	2.54	17.12	23.10	130.26	34.23	0.24	12.59
88.9	2.0	4.29	5.46	51.58	3.07	11.60	15.11	103.15	23.21	0.28	23.33
	2.5	5.33	6.79	63.38	3.06	14.26	18.67	126.76	28.52	0.28	18.77
	2.8	5.95	7.57	70.27	3.05	15.81	20.76	140.53	31.62	0.28	16.82
	3.0	6.36	8.10	74.77	3.04	16.82	22.15	149.55	33.64	0.28	15.73
	3.2	6.76	8.62	79.22	3.03	17.82	23.51	158.43	35.64	0.28	14.79
	3.5	7.37	9.39	85.76	3.02	19.29	25.54	171.52	38.59	0.28	13.57
	3.8	7.98	10.16	92.16	3.01	20.73	27.54	184.32	41.47	0.28	12.54
	4.0	8.38	10.67	96.35	3.01	21.68	28.85	192.70	43.35	0.28	11.94
	4.5	9.37	11.93	106.56	8.93	23.97	32.09	213.12	47.95	0.28	10.68
	4.8	9.96	12.68	112.50	2.98	25.31	33.99	225.00	50.62	0.28	10.04
	5.0	10.35	13.18	116.39	2.97	26.18	35.24	232.78	52.37	0.28	9.67
101.6	2.8	6.82	8.69	106.14	3.50	20.89	27.34	212.29	41.79	0.32	14.66
	3.0	7.29	9.29	113.05	3.49	22.25	29.18	226.10	44.51	0.32	13.71
	3.2	7.77	9.89	119.87	3.48	23.60	31.00	239.74	47.19	0.32	12.88
	3.5	8.47	10.79	129.94	3.47	25.58	33.70	259.88	51.16	0.32	11.81
	3.8	9.17	11.68	139.82	3.46	27.52	36.37	279.64	55.05	0.32	10.91
	4.0	9.63	12.27	146.30	3.45	28.80	38.12	292.61	57.60	0.32	10.39
	4.5	10.78	13.73	161.92	3.43	31.87	42.46	323.83	63.75	0.32	9.28
	4.8	11.46	14.60	171.42	3.43	33.74	45.01	342.83	67.49	0.32	8.73
	5.0	11.91	15.18	177.49	3.42	34.94	46.70	354.98	69.88	0.32	8.40
114.3	2.8	7.70	9.81	152.54	3.94	26.69	34.82	305.07	53.38	0.36	12.99
	3.0	8.23	10.49	162.57	3.94	28.45	37.17	325.14	56.89	0.36	12.14
	3.2	8.77	11.17	172.49	3.93	30.18	39.51	344.98	60.36	0.36	11.41
	3.5	9.56	12.18	187.17	3.92	32.75	42.98	374.34	65.50	0.36	10.46
	3.8	10.36	13.19	201.60	3.91	35.28	46.42	403.21	70.55	0.36	9.66
	4.0	10.88	13.86	211.09	3.90	36.94	48.69	422.19	73.87	0.36	9.19
	4.5	12.19	15.52	234.35	3.89	41.01	54.28	468.70	82.01	0.36	8.21
	4.8	12.96	16.51	247.99	3.88	43.39	57.59	495.98	86.79	0.36	7.71
	5.0	13.48	17.17	256.95	3.87	44.96	59.77	513.91	89.92	0.36	7.42
	5.5	14.76	18.80	278.92	3.85	48.80	65.16	557.83	97.61	0.36	6.78
139.7	3.0	10.11	12.89	301.13	4.83	43.11	56.07	602.26	86.22	0.44	9.89
	3.2	10.77	13.72	319.82	4.83	45.79	59.63	639.64	91.57	0.44	9.28
	3.5	11.76	14.98	347.54	4.82	49.75	64.94	695.08	99.51	0.44	8.51
	3.8	12.74	16.23	374.89	4.81	53.67	70.20	749.77	107.34	0.44	7.85
	4.0	13.39	17.05	392.91	4.80	56.25	73.68	785.82	112.50	0.44	7.47
	4.5	15.00	19.12	437.26	4.78	62.60	82.29	874.52	125.20	0.44	6.66
	4.8	15.97	20.35	463.39	4.77	66.34	87.39	926.77	132.68	0.44	6.26
	5.0	16.61	21.16	480.60	4.77	68.81	90.76	961.21	137.61	0.44	6.02

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Outside Diameter D mm	Thickness T mm	Mass kg/mtr M mm	Sectional area A cm2	Moment of Inertia I cm4	Radius of gyration I cm	Elastic modulus i cm	Plastic modulus i cm	Torsional constants		Superficial area / m As m2 / m	Approx. Length /tonne m/t
								It cm4	Ct cm3		
141.3	3.0	10.23	13.04	311.82	4.89	44.14	57.39	623.65	88.27	0.44	9.77
	3.2	10.90	13.89	331.19	4.88	46.88	61.04	662.38	93.76	0.44	9.18
	3.5	11.89	15.15	359.93	4.87	50.94	66.48	719.85	101.89	0.44	8.41
	3.8	12.89	16.42	388.28	4.86	54.96	71.86	776.55	109.92	0.44	7.76
	4.0	13.54	17.26	406.96	4.86	57.60	75.43	813.93	115.21	0.44	7.38
	4.5	15.18	19.34	452.96	4.84	64.11	84.24	905.91	128.23	0.44	6.59
	4.8	16.16	20.59	480.06	4.83	67.95	89.47	960.11	135.90	0.44	6.19
	5.0	16.81	21.41	497.92	4.82	70.48	92.93	995.84	140.95	0.44	5.95
	5.5	18.42	23.47	541.86	4.81	76.70	101.48	1083.73	153.39	0.44	5.43
165.1	3.0	11.99	15.28	502.04	5.73	60.82	78.84	1004.07	121.63	0.52	8.34
	3.2	12.78	16.28	533.55	5.73	64.63	83.89	1067.10	129.27	0.52	7.83
	3.5	13.95	17.77	580.38	5.72	70.31	91.42	1160.76	140.61	0.52	7.17
	3.8	15.12	19.26	626.68	5.70	75.91	98.89	1253.35	151.83	0.52	6.62
	4.0	15.89	20.25	657.25	5.70	79.62	103.83	1314.50	159.24	0.52	6.29
	4.5	17.82	22.71	732.67	5.68	88.75	116.10	1465.33	177.51	0.52	5.61
	4.8	18.98	24.18	777.23	5.67	94.15	123.38	1554.45	188.30	0.52	5.27
	5.0	19.74	25.15	806.65	5.66	97.72	128.20	1613.29	195.43	0.52	5.07
168.3	3.0	12.23	15.58	532.35	5.85	63.26	81.98	1064.70	126.52	0.53	8.18
	3.2	13.03	16.60	565.81	5.84	67.24	87.24	1131.62	134.48	0.53	7.68
	3.5	14.22	18.12	615.53	5.83	73.15	95.07	1231.07	146.29	0.53	7.03
	3.8	15.42	19.64	664.71	5.82	78.99	102.85	1329.41	157.98	0.53	6.49
	4.0	16.21	20.65	697.18	5.81	82.85	108.00	1394.36	165.70	0.53	6.17
	4.5	18.18	23.16	777.32	5.79	92.37	120.77	1554.63	184.75	0.53	5.50
	4.8	19.35	24.66	824.68	5.78	98.00	128.35	1649.36	196.00	0.53	5.17
	5.0	20.14	25.65	855.96	5.78	101.72	133.38	1711.91	203.44	0.53	4.97
	5.5	22.08	28.13	933.12	5.76	110.89	145.83	1866.24	221.78	0.53	4.53
219.1	3.0	15.99	20.37	1189.28	7.64	108.56	140.11	2378.57	217.12	0.69	6.25
	3.2	17.04	21.71	1265.08	7.63	115.48	149.17	2530.17	230.96	0.69	5.87
	3.5	18.61	23.71	1377.99	7.62	125.79	162.71	2755.97	251.57	0.69	5.37
	3.8	20.18	25.71	1489.93	7.61	136.00	176.16	2979.87	272.01	0.69	4.96
	4.0	21.22	27.03	1564.04	7.61	142.77	185.09	3128.08	285.54	0.69	4.71
	4.5	23.82	30.34	1747.47	7.59	159.51	207.27	3494.93	319.03	0.69	4.20
	4.8	25.37	32.32	1856.27	7.58	169.45	220.47	3712.55	338.89	0.69	3.94
	5.0	26.40	33.64	1928.29	7.57	176.02	229.24	3856.59	352.04	0.69	3.79
	5.5	28.97	36.91	2106.54	7.56	192.29	250.99	4213.09	384.58	0.69	3.45
	6.0	31.53	40.17	2282.24	7.54	208.33	272.54	4564.49	416.66	0.69	3.17
	6.5	34.08	43.42	2455.42	7.52	224.14	293.88	4910.83	448.27	0.69	2.93
	6.8	35.60	45.36	2558.12	7.51	233.51	306.59	5116.23	467.02	0.69	2.81
	7.0	36.61	46.65	2626.09	7.50	239.72	315.02	5252.17	479.43	0.69	2.73
	7.5	39.14	49.86	2794.28	7.49	255.07	335.95	5588.56	510.14	0.69	2.56

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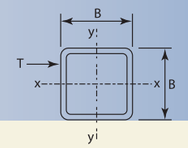

NOMINAL DIMENSION AND SECTIONAL PROPERTIES OF COLD FORMED SQUARE HOLLOW SECTIONS

Size B x B mm	Thickness T mm	Mass kg/mtr M mm	Sectional area A cm^2	Moment of Inertia I cm^4	Radius of gyration I cm	Elastic modulus i cm^3	Plastic modulus i cm^3	Torsional constants		Superficial area / m As m^2/m	Approx. Length /tonne m/t
								It cm^4	Ct cm^3		
16x16	1	0.451	0.57	0.202	0.595	0.253	0.306	0.35	0.4	0.061	2218.3
	1.2	0.529	0.67	0.228	0.583	0.285	0.035	0.4	0.45	0.0599	1891.9
	1.5	0.637	0.81	0.259	0.565	0.324	0.406	0.48	0.52	0.0588	1568.7
	1.8	0.737	0.94	0.281	0.547	0.351	0.451	0.54	0.58	0.0578	1356.6
	2	0.798	1.02	0.293	0.536	0.366	0.475	0.57	0.61	0.0571	1252.5
19x19	1	0.545	0.69	0.356	0.712	0.375	0.448	0.6	0.58	0.0725	1834.9
	1.2	0.642	0.82	0.405	0.703	0.426	0.517	0.7	0.67	0.0718	1558.6
	1.5	0.779	0.99	0.468	0.688	0.493	0.608	0.83	0.78	0.0708	1284.0
	1.8	0.907	1.16	0.518	0.668	0.545	0.685	0.95	0.88	0.0698	1102.9
	2	0.987	1.26	0.545	0.658	0.574	0.729	1.02	0.93	0.0691	1013.4
25x25	1	0.733	0.93	0.862	0.963	0.69	0.813	1.41	1.06	0.0965	1363.5
	1.2	0.868	1.11	0.995	0.947	0.796	0.948	1.66	1.24	0.0958	1152.5
	1.5	1.061	1.35	1.173	0.932	0.938	1.13	2.01	1.47	0.0948	942.2
	1.8	1.246	1.59	1.325	0.913	1.06	1.30	2.33	1.68	0.0938	802.7
	2	1.364	1.74	1.48	0.924	1.19	1.47	2.53	1.8	0.0931	733
	2.5	1.640	2.09	1.69	0.899	1.35	1.71	2.97	2.07	0.0914	610
30x30	1	0.890	1.13	1.537	1.166	1.02	1.2	2.49	1.57	0.116	1123.1
	1.2	1.056	1.35	1.785	1.15	1.19	1.41	2.93	1.84	0.115	946.9
	1.5	1.297	1.65	2.123	1.134	1.42	1.69	3.57	2.21	0.114	771.1
	1.8	1.528	1.95	2.421	1.114	1.61	1.96	4.16	2.54	0.113	654.3
	2	1.678	2.14	2.72	1.13	1.81	2.21	4.54	2.75	0.113	596.1
	2.5	2.032	2.59	3.16	1.1	2.1	2.61	5.4	3.2	0.111	492
	2.8	2.233	2.84	3.32	1.09	2.21	2.67	5.86	3.44	0.11	447.8
	3	2.362	3.01	3.5	1.08	2.34	2.96	6.15	3.58	0.11	423
38x38	1	1.142	1.45	3.23	1.49	1.7	1.98	5.15	2.6	0.148	876.0
	1.2	1.358	1.73	3.78	1.478	1.99	2.33	6.09	3.05	0.147	736.6
	1.5	1.674	2.13	4.55	1.462	2.39	2.83	7.46	3.7	0.146	597.5
	1.8	1.981	2.52	5.25	1.443	2.76	3.29	8.76	4.29	0.145	
	2	2.180	2.78	5.68	1.43	2.99	3.59	9.6	4.67	0.145	458.7
	2.5	2.660	3.39	6.63	1.4	3.49	4.27	11.56	5.53	0.143	375.9
	2.8	2.936	3.74	7.13	1.38	3.75	4.63	12.66	5.99	0.142	340.6
	3	3.115	3.97	7.43	1.37	3.91	4.86	13.35	6.28	0.141	321.0
	3.5	3.544	4.51	8.07	1.34	4.25	5.38	14.96	6.93	0.139	282.2
	3.8	3.789	4.83	8.39	1.32	4.42	5.66	15.83	7.27	0.138	263.9
	4	3.947	5.03	8.58	1.31	4.52	5.83	16.38	7.48	0.138	253.4
40X40	1	1.204	1.53	3.79	1.574	1.9	2.20	6.02	2.89	0.156	830.3
	1.2	1.433	1.83	4.44	1.56	2.22	2.59	7.13	3.4	0.155	697.9
	1.5	1.768	2.25	5.35	1.54	2.67	3.15	8.75	4.13	0.154	565.6
	1.8	2.094	2.67	6.19	1.52	3.1	3.68	10.29	4.8	0.153	477.6
	2	2.306	2.94	6.94	1.54	3.47	4.13	11.3	5.23	0.153	434
	2.5	2.817	3.59	8.22	1.51	4.11	4.97	13.6	6.21	0.151	355
	2.8	3.112	3.96	8.48	1.46	4.24	5.21	14.92	6.74	0.15	321.3
	3	3.304	4.21	9.32	1.49	4.66	5.72	15.8	7.07	0.15	303
	3.5	3.764	4.79	9.66	1.42	4.83	6.08	17.7	7.83	0.147	265.7
	3.8	4.028	5.13	10.06	1.4	5.03	6.4	18.77	8.23	0.146	248.3
	4	4.198	5.35	11.1	1.44	5.54	7.01	19.8	8.48	0.146	238
50X50	1	1.518	1.93	7.59	1.98	3.04	3.50	11.91	4.61	0.196	658.6
	1.2	1.810	2.31	8.93	1.97	3.57	4.14	14.15	5.45	0.195	552.6
	1.5	2.239	2.85	10.85	1.95	4.34	5.06	17.42	6.65	0.194	446.7
	1.8	2.659	3.39	12.64	1.93	5.06	5.94	20.58	7.79	0.193	376.1
	2	2.934	3.74	14.1	1.95	5.66	6.66	22.6	8.51	0.193	341
	2.5	3.602	4.59	16.9	1.92	6.78	8.07	27.5	10.2	0.191	278
	2.8	3.991	5.08	17.8	1.87	7.12	8.58	30.33	11.16	0.19	250.5
	3	4.246	5.41	19.5	1.9	7.79	9.39	32.1	11.8	0.189	236
	3.5	4.863	6.19	20.7	1.83	8.28	10.17	36.43	13.17	0.187	205.6
	3.8	5.221	6.65	21.77	1.81	8.71	10.79	38.86	13.94	0.186	191.5
	4	5.454	6.95	23.7	1.85	9.49	11.7	40.4	14.4	0.186	183
	4.5	6.020	7.67	23.92	1.77	9.57	12.08	44.09	15.56	0.184	166.1
	4.8	6.347	8.09	24.69	1.75	9.88	12.58	46.15	16.18	0.183	157.6

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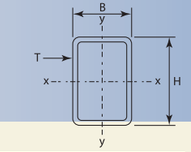
Size B x B mm	Thickness T mm	Mass kg/mtr M mm	Sectional area A cm^2	Moment of Inertia I cm^4	Radius of gyration I cm	Elastic modulus i cm^3	Plastic modulus i cm^3	Torsional constants		Superficial area / m As m^2/m	Approx. Length /tonne m/t
								It cm^4	Ct cm^3		
60X60	1.8	3.224	4.11	22.49	2.34	7.5	8.75	36.12	11.49	0.234	310.2
	2	3.562	4.54	25.1	2.35	8.38	9.79	39.8	12.6	0.233	281
	2.5	4.387	5.59	30.3	2.33	10.1	11.9	48.7	15.2	0.231	228
	2.8	4.871	6.20	32.23	2.28	10.74	12.8	53.77	16.7	0.23	205.3
	3	5.188	6.61	35.1	2.31	11.7	14	57.1	17.7	0.229	193
	3.5	5.962	7.59	38.00	2.24	12.67	15.32	65.09	19.9	0.227	167.7
	3.8	6.414	8.17	40.2	2.22	13.4	16.31	69.67	21.17	0.226	155.9
	4	6.710	8.55	43.6	2.26	14.5	17.6	72.6	22	0.226	149
	4.5	7.433	9.47	44.79	2.17	14.93	18.47	79.76	23.87	0.224	134.5
	4.8	7.854	10.01	46.53	2.16	15.51	19.31	83.81	24.94	0.223	127.3
75X75	1.8	4.072	5.19	45.22	2.95	12.06	13.96	71.62	18.39	0.293	245.6
	2	4.504	5.74	49.61	2.94	13.23	15.37	79.05	20.22	0.293	222.0
	2.5	5.565	7.09	60.04	2.91	16.01	18.75	97.13	24.6	0.291	179.7
	2.8	6.189	7.88	65.94	2.89	17.58	20.7	107.66	27.11	0.29	161.6
	3	6.601	8.41	69.73	2.88	18.59	21.96	114.54	28.73	0.289	151.5
	3.5	7.610	9.69	78.7	2.85	21.00	25.00	131.27	32.62	0.287	131.4
	3.8	8.204	10.45	83.75	2.83	22.33	26.74	140.98	34.84	0.286	121.9
	4	8.594	10.95	86.98	2.82	23.19	27.87	147.32	36.28	0.286	116.4
	4.5	9.552	12.17	94.58	2.79	25.22	30.57	162.68	39.71	0.284	104.7
	4.8	10.115	12.89	98.84	2.77	26.36	32.12	171.57	41.66	0.283	98.9
100X100	1.8	5.485	6.99	110.00	3.97	22	25.36	172.34	33.49	0.394	182.3
	2	6.074	7.74	121.00	3.95	24.2	27.98	190.54	36.92	0.393	164.6
	2.5	7.527	9.59	148.00	3.93	29.6	34.36	235.2	45.23	0.391	132.8
	2.8	8.387	10.68	164.00	3.92	32.8	38.07	261.43	50.05	0.39	119.2
	3	8.956	11.41	177	3.94	35.4	41.2	279	53.2	0.389	112
	3.5	10.358	13.19	198	3.87	39.60	46.39	320.94	60.81	0.387	96.5
	3.8	11.187	14.25	211	3.85	42.2	49.82	345.73	65.22	0.386	89.4
	4	11.734	14.95	226	3.89	45.3	53.3	362	68.1	0.386	85.2
	4.5	13.085	16.67	242	3.81	48.4	57.50	401.87	75.07	0.384	76.4
	4.8	13.883	17.69	254	3.79	50.8	60.65	425.2	79.1	0.383	72.0
120X120	2.8	10.146	12.92	289	4.73	48.17	55.74	457.12	73.43	0.47	98.6
	3	10.840	13.81	312	4.76	52.1	60.2	488	78.2	0.469	92.3
	3.5	12.556	15.99	351	4.68	58.5	68.23	563.01	89.66	0.468	79.6
	3.8	13.573	17.29	377	4.37	62.83	73.42	607.35	96.36	0.467	73.7
	4	14.246	18.15	402	4.71	67	78.3	637	101	0.466	70.2
	4.5	15.911	20.27	434	4.63	72.33	85.12	708.4	111.45	0.464	62.8
	4.8	16.897	21.53	457	4.61	76.17	89.96	750.66	117.68	0.463	59.2
150X150	2.8	12.783	16.28	577	5.95	76.93	88.55	903.29	116.92	0.59	78.2
	3	13.666	17.41	615	5.94	82.00	94.43	964.61	124.6	0.589	73.2
	3.5	15.853	20.19	706	5.91	94.13	108.87	1116	143.43	0.587	63.1
	3.8	17.153	21.85	759	5.89	101.2	117.36	1206	154.47	0.586	58.3
	4	18.014	22.95	808	5.93	108	125	1265	162	0.586	55.5
	4.5	20.150	25.67	879	5.85	117.20	136.66	1411	179.51	0.584	49.6
	4.8	21.419	27.29	928	5.83	123.73	144.73	1497	189.94	0.583	46.7
	5	22.260	28.36	982	5.89	131	153	1554	197	0.583	44.9
	5.5	24.344	31.01	1040	5.79	138.67	163.04	1695	213.56	0.581	41.1
	5.8	25.582	32.59	1085	5.77	144.67	170.68	1778	223.39	0.58	39.1
	6	26.402	33.63	1146	5.84	153	180	1833	230	0.579	37.9
180X180	2.8	15.421	19.64	1012	7.18	112	128.92	1573	170.48	0.71	64.8
	3	16.492	21.01	1079	7.17	120.00	137.59	1681	181.84	0.709	60.6
	3.5	19.150	24.39	1242	7.14	138	158.95	1947	209.79	0.708	52.2
	3.8	20.732	26.41	1338	7.12	149	171.56	2105	226.25	0.707	48.2
	4	21.782	27.75	1422	7.16	158	182	2210	237	0.706	45.9
	4.5	24.389	31.07	1555	7.07	173.00	200.36	2469	263.77	0.704	41.0
	4.8	25.941	33.05	1646	7.06	183	212.45	2623	279.47	0.703	38.5
	5	26.970	34.36	1737	7.11	193	224	2724	290	0.703	37.1
	5.5	29.525	37.61	1851	7.02	206	240.05	2975	315.23	0.701	33.9
	5.8	31.046	39.55	1936	7	215	251.62	3124	330.19	0.7	32.2
	6	32.054	40.83	2037	7.06	226	264	3223	340	0.699	31.2



NOMINAL DIMENSION AND SECTIONAL PROPERTIES OF COLD FORMED RECTANGULAR HOLLOW SECTIONS

Size B x B mm	Thickness T mm	Mass kg/mtr M mm	Sectional area A cm^2	Moment of Inertia cm^4		Radius of gyration cm		Elastic modulus cm^3		Plastic modulus cm^3 i		Torsional constants		Superficial area/m As m^2/m	Approx. Length /tonne m/t
				Iyy Major	Izz Minor	Iyy Major	Izz Minor	Major	Minor	Major	Minor	It cm^4	Ct cm^3		
40x20	1	0.890	1.13	2.33	0.79	1.436	0.84	1.165	0.79	1.42	0.90	1.93	1.38	0.117	1123.1
40x20	1.2	1.056	1.35	2.73	0.92	1.422	0.83	1.365	0.92	1.67	1.05	2.27	1.30	0.116	946.9
40x20	1.5	1.297	1.65	3.27	1.10	1.41	0.82	1.635	1.1	2.02	1.27	2.74	1.91	0.115	771.1
40x20	1.8	1.528	1.95	3.75	1.25	1.39	0.8	1.875	1.25	2.36	1.47	3.18	2.19	0.114	654.3
40x20	2	1.678	2.14	4.05	1.34	1.38	0.79	2.025	1.34	2.57	1.60	3.45	2.36	0.113	596.1
40x20	2.5	2.032	2.59	4.69	1.54	1.35	0.77	2.345	1.54	3.05	1.88	4.06	2.72	0.111	492.0
50x25	1	1.126	1.43	4.69	1.60	1.81	1.06	1.876	1.28	2.27	1.43	3.85	2.22	0.147	888.2
50x25	1.2	1.339	1.71	5.50	1.88	1.79	1.05	2.2	1.504	2.69	1.69	4.54	2.59	0.146	747.0
50x25	1.5	1.650	2.10	6.65	2.25	1.78	1.04	2.66	1.8	3.29	2.05	5.54	3.13	0.145	606.0
50x25	1.8	1.952	2.49	7.72	2.60	1.76	1.02	3.088	2.08	3.86	2.40	6.47	3.62	0.144	512.2
50x25	2	2.149	2.74	8.38	2.81	1.75	1.01	3.352	2.248	4.22	2.62	7.06	3.92	0.143	465.4
50x25	2.5	1.126	1.43	9.32	3.28	2.55	1.51	3.728	2.624	4.96	3.12	8.43	4.60	0.147	888.2
60x30	1.8	1.621	2.07	13.80	4.67	2.58	1.5	4.6	3.113	5.70	3.55	11.48	5.40	0.176	616.8
60x30	2	2.003	2.55	15.05	5.08	2.43	1.41	5.017	3.387	6.26	3.89	12.57	5.88	0.175	499.2
60x30	2.5	2.376	3.03	17.94	6.00	2.43	1.41	5.98	4	7.56	4.67	15.14	6.98	0.174	420.8
60x30	2.8	2.620	3.34	19.51	6.49	2.42	1.39	6.503	4.327	8.30	5.11	16.57	7.58	0.173	733
60x30	3	3.210	4.09	20.50	6.80	2.24	1.29	6.833	4.533	8.77	5.39	17.48	7.95	0.171	610
60x30	3.5	4.313	5.49	22.75	7.48	2.04	1.17	7.583	4.987	9.87	6.04	19.59	8.80	0.168	231.8
60x30	3.8	4.624	5.89	23.96	7.84	2.02	1.15	7.987	5.227	10.48	6.40	20.74	9.25	0.167	216.3
60x30	4	4.826	6.15	24.70	8.05	2	1.14	8.233	5.367	10.87	6.62	21.47	9.52	0.166	207.2
80x40	1.8	3.224	4.11	34.08	11.64	2.88	1.68	8.52	5.82	10.50	6.53	28.09	10.06	0.234	310.2
80x40	2	3.562	4.54	37.36	12.72	2.87	1.67	9.34	6.36	11.56	7.17	30.88	11.00	0.233	280.8
80x40	2.5	4.387	5.59	45.10	15.26	2.84	1.65	11.275	7.63	14.07	8.72	37.58	13.24	0.231	492
80x40	2.8	4.871	6.20	49.46	16.66	2.82	1.64	12.365	8.33	15.53	9.60	41.41	14.49	0.23	205.3
80x40	3	5.188	6.61	52.25	17.56	2.81	1.63	13.063	8.78	16.47	10.16	43.88	15.28	0.23	423
80x40	3.5	5.962	7.59	58.81	19.63	2.78	1.61	14.703	9.815	18.73	11.52	49.76	17.15	0.228	167.7
80x40	3.8	6.414	8.17	62.47	20.77	2.77	1.59	15.618	10.385	20.01	12.28	53.10	18.19	0.227	155.9
80x40	4	6.710	8.55	64.79	21.48	2.75	1.59	16.198	10.74	20.84	12.77	55.24	18.84	0.226	149.0
100x50	1.8	4.072	5.19	68.21	23.41	3.62	2.12	13.642	9.364	16.72	10.41	55.88	16.15	0.294	245.6
100x50	2	4.504	5.74	74.98	25.67	3.61	2.11	14.996	10.268	18.44	11.46	61.59	17.73	0.293	222.0
100x50	2.5	5.565	7.09	91.20	31.06	3.59	2.09	18.24	12.424	22.67	14.01	75.39	21.49	0.291	179.7
100x50	2.8	6.189	7.88	100.47	34.10	3.57	2.08	20.094	13.64	25.09	15.48	83.37	23.63	0.29	161.6
100x50	3	6.601	8.41	106.46	36.06	3.56	2.07	21.292	14.424	26.66	16.44	88.56	25.01	0.29	151.5
100x50	3.5	7.610	9.69	120.77	40.68	3.53	2.05	24.154	16.272	30.47	18.74	101.10	28.30	0.288	131.4
100x50	3.8	8.204	10.45	128.90	43.28	3.51	2.04	25.78	17.312	32.67	20.07	108.31	30.15	0.287	121.9
100x50	4	8.594	10.95	134.14	44.95	3.5	2.03	26.828	17.98	34.10	20.93	112.99	31.35	0.286	116.4
100x50	4.5	9.552	12.17	146.61	48.87	3.47	2	29.322	19.548	37.56	23.00	124.25	34.18	0.285	104.7
100x50	4.8	10.115	12.89	153.66	51.06	3.45	1.99	30.732	20.424	39.55	24.18	130.70	35.78	0.284	98.9
120x60	1.8	4.920	6.27	119.79	41.24	4.37	2.56	19.965	13.747	24.46	15.19	97.75	23.68	0.354	203.3
120x60	2	5.446	6.94	131.92	45.33	4.54	2.55	21.987	15.11	27.00	16.75	107.88	26.05	0.353	183.6
120x60	2.5	6.742	8.59	161.23	55.15	4.33	2.53	26.872	18.383	33.20	20.56	132.57	31.75	0.351	434
120x60	2.8	7.508	9.56	178.13	60.77	4.32	2.52	29.688	20.257	36.81	22.77	146.94	35.02	0.35	355
120x60	3	8.014	10.21	189.12	64.40	4.3	2.51	31.52	21.467	39.18	24.21	156.33	37.14	0.35	124.8
120x60	3.5	9.259	11.79	215.62	73.10	4.28	2.49	35.937	24.367	44.94	27.72	179.18	42.24	0.348	303
120x60	3.8	9.994	12.73	230.86	78.05	4.26	2.48	38.477	26.017	48.29	29.76	192.45	45.16	0.347	100.1
120x60	4	10.478	13.35	240.74	81.18	4.25	2.47	40.123	27.06	50.49	31.07	201.12	47.05	0.346	95.4
120x60	4.5	11.672	14.87	264.53	88.88	4.22	2.44	44.088	29.627	55.82	34.30	222.13	51.58	0.345	238
120x60	4.8	12.376	15.77	278.15	93.21	4.2	2.43	46.358	31.07	58.92	36.17	234.30	54.17	0.344	80.8
150x75	2.8	9.486	12.08	356.86	122.36	5.43	3.18	47.581	32.629	58.60	36.32	292.59	56.29	0.44	105.4
150x75	3	10.133	12.91	379.60	129.97	5.42	3.17	50.613	34.659	62.45	38.69	311.78	59.82	0.44	98.7
150x75	3.5	11.732	14.94	434.91	148.37	5.39	3.15	57.988	39.565	71.90	44.47	358.73	68.39	0.438	85.2
150x75	3.8	12.678	16.15	467.03	158.98	5.38	3.14	62.271	42.395	77.43	47.85	386.22	73.35	0.437	341
150x75	4	13.304	16.95	487.99	165.88	5.36	3.13	65.065	44.235	81.07	50.06	404.26	76.59	0.436	278
150x75	4.5	14.851	18.92	538.95	182.54	5.34	3.11	71.86	48.677	89.97	55.48	448.35	84.42	0.435	67.3
150x75	4.8	15.767	20.09	568.48	192.13	5.32	3.09	75.797	51.235	95.19	58.64	474.12	88.94	0.434	236
150x75	5	16.372	20.86	587.75	198.36	5.31	3.08	78.367	52.896	98.61	60.71	491.01	91.89	0.433	61.1
200x100	2.8	12.783	16.28	867	299	7.3	4.29	87	59.8	106	66	707	103	0.59	78.2
200x100	3	13.666	17.41	924	318	7.28	4.27	92	63.6	113	70	754	110	0.59	281
200x100	3.5	15.853	20.19	1064	365	7.26	4.25	106	73	131	81	871	126	0.588	228
200x100	3.8	17.153	21.85	1146	393	7.24	4.24	115	78.6	141	88	940	136	0.587	58.3
200x100	4	18.014	22.95	1200	411	7.23	4.23	120	82.2	148	92	985	142	0.586	193
200x100	4.5	20.150	25.67	1331	455	7.2	4.21	133.1	91	165	102	1097	157	0.585	49.6
200x100	4.8	21.419	27.29	1409	480	7.19	4.19	141	96	175	108	1163	166	0.584	46.7
200x100	5	22.260	28.36	1459	497	7.17	4.19	146	99.4	181	112	1206	172	0.583	149

Products are sold at piece rate basis only.

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Scaffolding Tube

Description and specification:

Scaffolding is a temporary structure used to support people and material in the construction and repair of buildings and other large structures. Material Strorage Racks, Pallets, Hydraulic Platforms, Trusses, Columns, Purlins, Greenhouses, Stands, Towers, Agricultural Equipment.

TECHNICAL DATA OF HFI WELDED STEEL TUBES CONFORMING TO EN: 39-2001

This specification is mainly for scaffolding pipes in which there are two types type 3 and type 4.
The size is 48.30mm.
Technical details are as below.

TYPE	SPECIFICATION O.D. (mm)	O.D. (Min.) mm	O.D. (Max) mm	THICKNESS (mm)		MASS (Kg/Mtr)	
				Specified	Min	Specified	Min
Type - 3	48.3	47.8	48.8	3.2	2.88	3.56	3.29
Type - 4	48.3	47.8	48.8	4.0	3.6	4.37	4.04

Tolerance on roundness is ± 0.50mm
Straightness: 0.002 times length.
Flattening test: Flatten the piece keeping the weld at 0°& 90° till 75% of O.D. with out any cracks on the weld.
And further flatten up to 60 % to ensure that no cracks in the metal other than weld.
A mandrel of 33.70mm to go freely on both sides for a minimum length of 200 mm.

MECHANICAL PROPERTIES		
Yield Strength(Yst)	Tensile Strength (Uts)	Elongation%
235 Mpa min	340-520 Mpa	24 min

CHEMICAL COMPOSITION (max) %					
C	Mn	P	S	Al (min)	Si
0.2	1.4	0.040	0.045	0.020	≤0.05

The pipes can be manufactured as per clients requirement with reference to mechanical properties.

Zinc Coating: As per EN :10240 B2 coating quality or as per EN: 1461.

NOTE: WITH REFERENCE TO THIS SPECIFICATION 38MM O.D PIPES SHALL BE MANUFACTURED WHICH ARE USED AS JACKS IN THE SCAFFOLDING PIPES.

Standard	:	BS 1139, EN 39, Certificate: EN39
Outer Diameter	:	27mm, 38mm, 42mm, 48.3mm
Wall Thickness	:	2.0mm, 2.5mm, 2.8mm, 3.0mm, 3.25mm, 3.85mm, 4.0mm
Length	:	1.52,2.50,3.00,4.90,5.0,5.2m, 6m, 6.4m, 6.5m
End	:	Square cut, Burr removed
Steel Grade	:	Q195, Q215, Q235, Q345, S235JR, S275J S355JR
Surface	:	Lightly oiled, Hot dip galvanized, Black
Packing	:	Hexagonal bundling approximately 1 ton
Test	:	Chemical Component Analysis, Mechanical Properties (Ultimate tensile strength, Yield strength, Elongation), Technical Properties (Flattening Test, Bending Test) , Exterior Size Inspection.
Mill Test Certificate	:	EN 10204/3.1B

Products are sold at piece rate basis only.

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Application Areas

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

ERW STEEL TUBES & PIPES :

ENERGY: Oil and natural gas production, Oil, Gas and Water transportation, Power station technology, Chemical and petrochemical industry, Refineries and plants.

MANUFACTURING: Automotive industry, Machine construction & Heavy Equipment, Steel and Paper Mills, Pressure Vessel Fabricators, Boiler Tubes, Hydraulic Pipes.

FABRICATORS: Shipbuilders, Offshore platform builders, Pipe fabricators.

CONSTRUCTION: Construction Industry, Housing Projects, Irrigation, Fire fighting, Agriculture, Engineering, Fencing, Furniture, Tubular poles & structures. Piling and Casing, Logistics / Storage and Shelving, Electro Mechanical, Commercial Tubes.

INDUSTRIAL: Agriculture - Irrigation water line Pipes, Safety - Fire fighting water line pipes.

USEFUL TECHNICAL INFORMATION

GUAGE / MM Conversion		
Imperial Guage	Imperial mm	Metric Sheet mm
10	3.25	3.0
12	2.64	2.5
14	2.03	2.0
16	1.63	1.5
18	1.22	1.2
20	0.91	0.9
22	0.71	0.7
24	0.56	0.6
26	0.46	0.5

ASTM / Metric Size Screening Cross-Reference		
ASTM Designation	Product Size in inches	Product Size in mm
No.1	3-1/2" — 1-1/2"	90 — 37.5 mm
No.3	2" — 1"	50 — 25 mm
No.4	1-1/2" — 3/4"	37.5 —19 mm
No.5	1" — 1/2"	25 — 12.5 mm
No.57	1" — No.4	25 — 4.75 mm
No.6	3/4" — 3/8"	19 — 9.5 mm
No.67	3/4" — No.4	19 — 4.75 mm
No.7	1/2" — No.4	12.5 — 4.75 mm
No.78	1/2" — No.8	12.5 — 2.36 mm
No.8	3/8" — No.8	9.5 — 2.36 mm
No.89	3/8" — No.16	9.5 — 1.18 mm
No.10	No.4 — 0"	4.75 mm

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النمر للصناعات المعدنية ذ.م.م.

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