



oomaa
metal sources

An ISO 9001:2015 Certified Co.



COMPANY PROFILE

Omaa Metal Sources is a formidable player and one of the leading Suppliers of all kinds of Stainless Steel, Carbon Steel & Alloy Steel products. We have set up our business empire since last three decades serving many core industries all through out most satisfactorily.

We always strive to meet the exacting standards of quality for our products, which are as per accepted International standards. We supply better quality and better value for money to our customers using best quality control, state of the art machines, technology, trained manpower coupled with cost effectiveness that will sustain our future growth.

Today we are one of the leading manufacturers, exporters and stockists of stainless steel, carbon steel, alloy steel in the shape of Pipes, Tubes, Sheets, Plates, Coils, Strips, Fittings, Flanges, Rods, Wires, Angle and entire range of Buttweld and socketweld pipe fittings supplying to various core industries like

- Refineries & Petrochemicals
- Oil & Gas
- Chemicals & Fertilisers Cement
- Engineering
- Construction
- Sugar
- Nuclear & Thermal
- Paper & Pulp
- Shipping
- Power Plant
- Pharmaceutical
- We are also certified and approved by many third party inspection agencies.

EXPORTS

Having established our presence in the Indian market, we are now aggressively venturing into exporting of our products to various countries. We are already exporting our products to Europe, Middle East, Far East and African countries .

ISO 9001-2008 : In recognition of our efforts in quality control we have been awarded the coveted ISO 9001-2008 : quality certification from reputed agency.

PIPES & TUBES



Stainless Steel : ASTM A312 TP 304/ 304L/ 304H/ 316/ 316L/ 317/ 317L/ 321/310/ 347/ 904L etc.

Carbon Steel : ASTM A53 GR. B/ A105 GR. / A106 GR. B/ API 5L GRADE B/ API 5L GR.X42/46/52/56/60/ 65/70, etc.

Low Temperature, Carbon Steel : A333 Gr.3/Gr.6 etc.

Alloy Steel : ASTM A335 GR. P1/ P5/ P9/ P11/ P22/ P91 etc.

High Nickel Alloys : Monel, Nickel, Inconel, Hastelloy, Titanium, Tantalum, Bismuth, Aluminium, High Speed Steel, Non Ferrous Metal : Copper, Brass, Bronze, Zinc, Lead etc.

Types : Round , Square, Rectangular.

Size : 1/4" NB to 32" NB (Seamless & Welded)
1/4" OD to 6"OD

Wall Thickness : Sch. 5S to Sch. XXS
22 SWG to 10 SWG

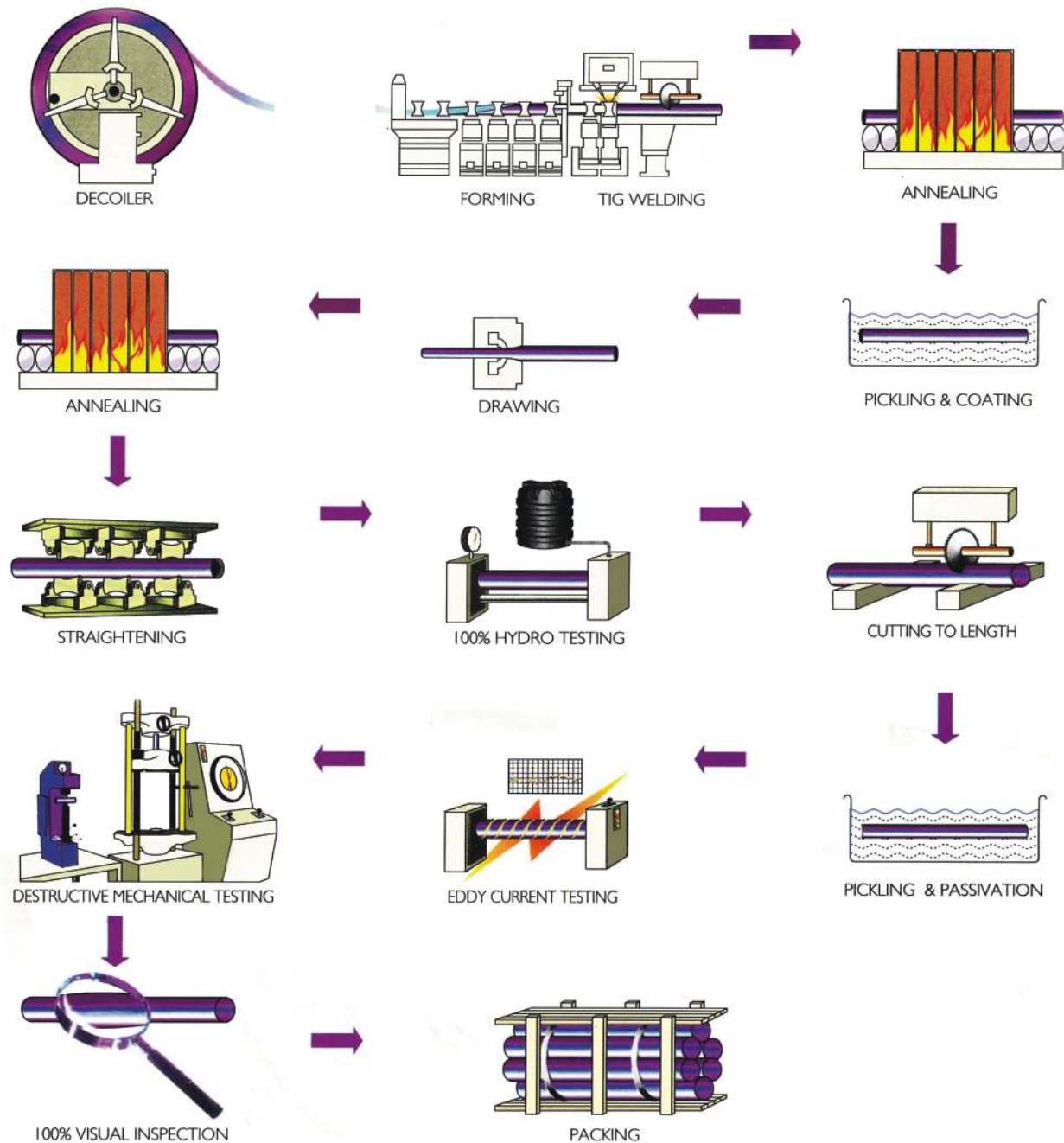


omaa
metal sources

An ISO 9001:2015 Certified Co.

PROCESS FLOW CHART

FOR AUTOMATIC WELDING STAINLESS STEEL PIPES & TUBES



CHEMICAL COMPOSITION OF STAINLESS STEEL

Stainless Steel is essentially a low carbon steel which contains chromium at 10% or more by weight. It is this addition of chromium that gives the steel its unique stainless corrosion resisting Properties. The corrosion resistance and other useful properties of the steel are enhanced by increased chromium content and the addition of other elements such as molybdenum, nickel and nitrogen

Chemical Composition of Stainless Steel											Nearest Equivalent Specification		
UNS NO.	EN	BS	AISI Grade	C Max	Mn Max	P Max	S Max	Si Max	Cr	Ni	Mo	Cu	I.S.

Austentic

S30100	-	301S21	301	0.15	2.0max	0.045	0.040	1.0	16.0/18.0	6.0/8.0	-	-	10Cr17Ni7
S30200	-	-	302	0.15	2.0	0.045	0.030	1.0	17.0/19.0	8.0/10.0	-	-	07Cr18Ni9
S30300	-	303S31	303	0.15	2.0	0.045	0.15min	1.0	17.0/19.0	8.0/10.0	-	-	15Cr18
S30400	1.4301	-	304	0.08	2.0	0.045	0.030	1.0	18.0/20.0	8.0/10.0	-	-	04Cr18Ni10
S30403	1.4307	304S11	304L	0.030	2.0	0.045	0.030	1.0	18.0/20.0	8.0/12.0	-	-	02Cr18Ni11
S30453	1.4306	304S61	304LN	0.030	2.0	0.045	0.030	0.75	18.0/20.0	8.0/11.0	-	-	-
S30409	-	-	304H	0.05	2.0	0.045	0.03	1	18.0/20.0	8.5/9.5	-	-	-
S30900	-	309S16	309	0.20	2.0	0.045	0.030	1.0	22.0/24.0	12.0/15.0	-	-	20Cr24Ni12
S30908	1.4833	-	309S	0.08	2.0	0.045	0.030	1.0	22.0/24.0	12.0/15.0	-	-	-
S31009	-	-	310H	0.25	2.0	0.045	0.030	1.50	24.0/26.0	19.0/22.0	-	-	10Cr25Ni12
S31008	1.4845	-	310S	0.08	2.0	0.045	0.030	1.50	24.0/26.0	19.0/22.0	-	-	-
S31600	-	316S31	316	0.08	2.0	0.045	0.030	1.0	16.0/18.0	10.0/14.0	2.0/3.0	-	04Cr17Ni12Mo2
S31603	1.4404	316S11	316L	0.030	2.0	0.045	0.030	1.0	16.0/18.0	10.0/14.0	2.0/3.0	-	03Cr17Ni12Mo2
S31653	-	316S61	316LN	0.030	2.0	0.045	0.030	0.75	16.0/18.0	10.0/14.0	2.0/3.0	-	-
S31635	1.4571	320S31	316Ti	0.080	2.0	0.045	0.030	1.0	16.0/18.0	10.0/14.0	2.0/3.0	-	-
S31700	-	-	317	0.08	2.0	0.045	0.030	1.0	18.0/2.0	11.0/15.0	3.0/4.0	-	-
S31703	-	317S12	317L	0.030	2.0	0.045	0.030	1.0	18.0/20.0	11.0/15.0	3.0/4.0	-	-
S31753	-	-	317LN	0.03	2.0	0.045	0.03	1	18.0/2.0	11.0/15.0	3.0/4.0	-	-
S32100	1.4541	321S31	321	0.08	2.0	0.045	0.030	1.0	17.0/19.0	9.0/12.0	-	-	04Cr18Ni10Ti20
S34700	-	347S31	347	0.08	2.0	0.045	0.030	1.0	17.0/19.0	9.0/12.0	-	-	04Cr18Ni10Nb-40
N08904	1.4539	-	904L	0.02	2.0	0.045	0.035	1	19.0/23.0	23.0/28.0	4.0-5.0	-	-

Ferritic

S41100	-	410S21	410	0.15	1.00	0.040	0.030	1.0	11.50-13.50	0.75	...	...	...
S41008	1.4000	403S17	410S	0.08	1.00	0.040	0.030	1.0	11.50-13.50	0.60	...	...	...
S42900	-	-	429 ^S	0.12	1.00	0.040	0.030	1.0	14.00-16.00	...	...	...	...
S43000	1.4016	430S17	430	0.12	1.00	0.040	0.030	1.0	16.00-18.00	0.75	...	...	...
S43035	-	-	439	0.07	1.00	0.040	0.030	1.0	17.00-19.00	0.050	...	0.04	...
S44400	-	-	444	0.025	1.00	0.040	0.030	1.0	17.5-19.5	1.00	1.75-2.50	0.035	...
			446	0.20	1.50	0.040	0.030	0.50	11.40/13.00	-			...
	-	-	409L	≤ 0.030	≤ 1.00	≤ 1.00	-	-	-	10.50-11.75	-	-	-

Duplex & Super Duplex

S31803	1.4462	-	-	0.030	2.0	0.030	0.020	1.0	21.0-23.0	4.5-6.5	2.5-3.5	-	0.08-0.20
S32250	-	-	255 ^S	0.040	1.50	0.040	0.030	1.0	24.0-27.0	4.5-6.5	2.9-3.9	1.50-2.50	0.10-0.25
S32750	1.441	-	2507	0.030	1.20	0.035	0.020	0.8	24.0-26.0	6.0-8.0	3.0-5.0	0.50	0.24-0.32
S32760	-	-	-	0.030	1.0	0.030	0.010	1.0	24.0-26.0	6.0-8.0	3.0-4.0	0.50-1.00	0.20-0.30

STAINLESS STEEL PIPE DIMENSION AS PER ASTM AND WEIGHT-KG. PER MTR. (ANSI B 36.19-1965)

Nominal Bore		Outside Diameter	Schedule 5S		Schedule 10S		Schedule 20S		Schedule 40S		Schedule 80S		Schedule 160S		Schedule XXS	
mm	Inch	Inch	Wt mm	Weight (Kg/mt)	Wt mm	Weight (Kg/mt)	Wt mm	Weight (Kg/mt)	Wt mm	Weight (Kg/mt)	Wt mm	Weight (Kg/mt)	Wt mm	Weight (Kg/mt)	Wt mm	Weight (Kg/mt)
3	1/8	10.3	1.2	0.26	1.24	0.28	1.5	0.33	1.73	0.37	2.41	0.47	-	-	-	-
6	1/4	13.7	1.2	0.37	1.65	0.49	2.00	0.58	2.24	0.63	3.02	0.80	-	-	-	-
10	3/8	17.1	1.2	0.47	1.65	0.63	2.00	0.74	2.31	0.84	3.20	1.10	-	-	-	-
15	1/2	21.3	1.65	0.80	2.11	1.00	2.30	1.07	2.77	1.27	3.73	1.62	4.78	1.94	7.47	2.55
20	3/4	26.7	1.65	1.02	2.11	1.28	2.55	1.52	2.87	1.69	3.91	2.20	5.56	2.90	7.82	3.64
25	1	33.4	1.65	1.30	2.77	2.09	3.00	2.25	3.38	2.50	4.55	3.24	6.35	4.24	9.09	5.45
32	1.1/4	42.2	1.65	1.65	2.77	2.70	3.0	2.90	3.58	3.39	4.85	4.47	6.35	5.61	9.70	7.77
40	1.1/2	48.3	1.65	1.91	2.77	3.11	3.00	3.35	3.68	4.05	5.08	5.41	7.14	7.25	10.15	9.55
50	2	60.3	1.65	2.39	2.77	3.93	3.00	4.24	3.91	5.44	5.54	7.48	8.74	11.11	11.07	13.44
65	2.1/2	73.0	2.11	3.69	3.05	5.26	4.00	6.81	5.16	8.63	7.01	11.41	9.53	14.91	14.02	20.39
80	3	88.9	2.11	4.51	3.05	6.45	4.00	8.37	5.49	11.29	7.62	15.27	11.10	21.30	15.24	27.68
100	4	114.3	2.11	5.84	3.05	8.36	4.50	12.18	6.02	16.07	8.56	22.32	13.49	33.54	17.12	41.03
125	5	141.3	2.77	9.47	3.40	11.57	5.00	16.80	6.55	21.80	9.53	30.97	15.88	49.11	19.05	57.43
150	6	168.3	2.77	11.32	3.40	13.82	6.35	25.36	7.11	28.26	10.97	42.58	18.25	67.53	21.95	79.22
200	8	219.1	2.77	14.78	3.76	19.96	6.35	33.31	8.18	42.55	12.70	64.64	23.01	111.27	22.23	107.92
250	10	273.1	3.40	22.61	4.19	27.78	6.35	41.77	8.27	60.31	12.70	81.55	28.58	172.33	25.40	155.15
300	12	323.8	3.96	31.24	4.57	36.00	6.35	49.70	9.53	73.85	12.70	97.43	33.32	238.68	25.40	186.90
350	14	355.6	3.96	34.34	4.76	41.3	7.92	67.90	9.53	82.367						
400	16	406.4	4.19	41.56	4.78	47.34	7.92	77.83	9.53	94.457						
450	18	457.2	4.19	46.81	4.76	53.32	7.92	87.74	9.53	106.547						
500	20	508.0	4.78	59.31	5.54	68.64	9.53	117.14	9.53	117.14						
600	24	610.0	5.54	82.57	6.35	94.52	9.53	114.11	9.53	141.11						
650	26	660.4					12.70	205.97	9.53	155.32	12.70	222.13				
700	28	711.2					12.70	222.13	9.53	167.44	12.70	238.28				
750	30	762.0	6.35	120.15	7.92	149.55	12.70	238.28	9.53	179.56	12.70	254.44				
800	32	812.8					12.70	254.44	9.53	191.69	12.70	270.50				

STANDARD TYPES OF STAINLESS STEEL GAUGE PIPES

Standard Types of Stainless Steel Gauge Pipes

Size	O.D in mm	10G (3.25) (0.120")	12G (2.64) (0.104")	14G (2.03) (0.080")	16G (1.65) (0.065")	186G (1.21) (0.049")	20G (0.91) (0.035")	22G (0.71) (0.028")
1/4	6.35	0.075	0.070	0.065	0.058	0.046	0.037	0.030
5/16"	7.93	0.114	0.105	0.089	0.079	0.060	0.048	0.038
3/8"	9.52	0.152	0.135	0.113	0.097	0.080	0.058	0.046
1/2"	12.7	0.226	0.200	0.157	0.134	0.105	0.079	0.063
5/8"	15.87	0.310	0.264	0.212	0.174	0.134	0.103	0.081
3/4"	19.05	0.386	0.326	0.256	0.215	0.161	0.124	0.097
7/8"	22.25	0.465	0.390	0.310	0.252	0.192	0.145	0.113
1"	25.4	0.541	0.450	0.351	0.294	0.218	0.167	0.131
1 1/4"	31.750	0.696	0.580	0.448	0.375	0.275	0.200	0.162
1 1/2"	38.1	0.851	0.700	0.542	0.452	0.332	0.250	0.196
1 3/4"	44.45	1.020	0.832	0.646	0.530	0.390	0.294	0.230
2"	50.8	1.161	0.960	0.733	0.607	0.447	0.336	0.263
2 1/4"	57.15	1.315	1.085	0.828	0.687	0.504	-	-
2 1/2"	63.5	1.472	1.210	0.924	0.792	0.562	All Schedule size pipes are available in (+/-) Tolerance Thickness Length as requirement and gauges pipes & tubes also available in various outside diameter & thickness & length as requirement Finishing : Aluminium, Bright, Polished, Matt, EP as requirement.	
2 3/4"	69.85	1.630	1.338	1.022	0.847	0.619		
3"	76.2	1.782	1.460	1.115	0.924	0.676		
3 1/2"	88.9	2.092	1.718	1.306	1.082	0.791		
4"	101.6	2.403	1.971	1.497	1.239	0.905		
4 1/2"	114.3	2.713	2.224	1.608	1.397	1.020		
5"	127.0	3.023	2.477	1.879	1.554	1.134		
5 1/2"	139.7	3.336	2.730	2.070	1.713	1.250		
6"	152.4	3.654	2.983	2.261	1.875	1.364		

MECHANICAL PROPERTIES OF S. S. PIPES

Table-2 Annealing Requirements

A312/A 312M

Table-3 Tensile Requirements

Grade or UNS Designation	Solution Treating Temperature	Cooling Requirements
All Grades not individually listed below	1900° (1040°C)	rapid°
TP321H, TP347H, TP348H		
Cold Rolled	2000°F (1100°C)	
Hot Rolled only	1925°F (1050°C)	
TP304H, TP316H,		
Cold Rolled	1900°F (1040°C)	
Hot rolled only	1900°F (1040°C)	
TP309H, TP309HCb, TP310H	1900°F (1040°C)	
TP310HCb		
S30815	1920°F (1050°C)	rapid°
s31272	1920°F (1050°C)	rapid°
S31254	2100°F (1050°C)	rapid°
S24565	2050-2140°F (1120-1170°C)	rapid°
S35315	2010°F (1100°C)	rapid°
N08367	2010°F (1100°C)	rapid°
N08904	2010°F (1100°C)	rapid°



Grade	UNS Designation	Tensile Strength, min Ksi (MPa)	Yield Strength, Min Ksi (MPa)
TP304L	S30403	70 (485)	25 (170)
TP316L	S31603	70 (485)	25 (170)
TP304	S30400	75 (515)	30 (205)
TP304h	S30409	75 (515)	30 (205)
TP309Cb	S30940	75 (515)	30 (205)
TP309H	S30909	75 (515)	30 (205)
TP309HCb	S30941	75 (515)	30 (205)
TP309s	S30908	75 (515)	30 (205)
TP310Cb	S31040	75 (515)	30 (205)
TP310H	S31009	75 (515)	30 (205)
TP310HCb	S31041	75 (515)	30 (205)
TP310s	S31008	75 (515)	30 (205)
	S31272	65 (450)	29 (200)
TP316	S31600	75 (515)	30 (205)
TP316H	S31609	75 (515)	30 (205)
TP317	S31700	75 (515)	30 (205)
TP317L	S31703	75 (515)	30 (205)
TP321	S32100		
Welded Seamless		75 (515)	30 (205)
≤ 3/8 in.		75 (515)	30 (205)
> 3/8 in.		70 (485)	25 (170)
TP321H	S32109		
Welded Seamless		75 (515)	30 (205)
< 3/8 in.		75 (515)	30 (205)
> 3/8 in.		70 (485)	25 (170)
TP347	S34700	75 (515)	30 (205)
TP347H	S34700	75 (515)	30 (205)
TP347LN	S34751	75 (515)	30 (205)
TP348	S34800	75 (515)	30 (205)
TP348H	S34809	75 (515)	30 (205)
TPXM-10	S21900	90 (620)	50 (345)
TPXM-11	S21904	90 (620)	50 (345)
TPXM-15	S38100	75 (515)	30 (205)
TPXM-29	S24000	100 (690)	55 (380)
TPXM-19	S20910	100 (690)	55 (380)
TP304N	S30451	80 (550)	35 (240)
TP316N	S31651	80 (550)	35 (240)
TP304LN	S31653	75 (515)	30 (205)
-	S31254	94 (650)	44 (300)
-	S30615	90 (620)	40 (275)
-	S30815	87 (600)	45 (310)
-	S30600	75 (540)	35 (240)
-	S31725	75 (515)	30 (205)
-	S31726	80 (550)	35 (240)
-	S31050		
T<0.25 in.		84 (580)	39 (270)
T>0.25 in.		78 (540)	37 (255)
-	s32615	80 (550)	32 (220)
-	S33228	73 (500)	27 (185)
-	S24565	115 (795)	60 (415)
-	S30415	87 (600)	42 (290)
-	S32654	109 (750)	62 (430)
-	S35315	94 (650)	39 (270)
-	N08367:		
t<0.187		100 (690)	45 (310)
t>0.187		95 (655)	45 (310)
-	N08904	71 (490)	31 (215)

Elongation in 2 in or 50mm (or 4D), min, % Longitudinal Transverse
All Grades except S31050 and S32615 35 25 S32615, S31050 25 - N08367
Prior to the issuance of A312/A 312 M -88a, the tensile and yield strength values were 76 (515) and 30 (205) respectively, for nominal wall greater than 3/8 in. (9.5mm)

TOLERANCE : ASTM SPECIFICATION FOR TUBING & PIPING

Specification	Allowable Outside Diameter Variation in mm			Allowable Wall Thickness Variation		Exact Length Testing Tolerance in mm		
ASTM-A213 Seamless Boiler Superheater and Heat Exchanger Tubes	Nominal Diameter Under 25.4 25.4-38.1 incl 38.1-50.8 excl 50.8-63.5 excl 63.5-76.2 excl 76.2-101.6 incl	Over .1016 .1524 .2032 .254 .3048 .381	Under .1016 .1524 .2032 .254 .3048 .381	%Over +20 +22 +22 +2 +22 +22	%Under -0 -0 -0 -0 -0 -0	Over 3.175 3.175 3.176 4.46 4.76 4.76	Under 0 0 0 0 0 0	Tension Test Flattening Test Flare Test Hardness Test 100% Hydrostatic test Refer to ASTM A-450
ASTM-A249 Welded Boiler Superheater, Heat Exchanger And Condenser Tubes	Under 25.4 25.4 - 38.1 incl 38.1-50.8 Excl 50.0-63.5 excl 63.5-76.2 excl 76.2-101.6 incl	.1016 .1524 .2032 .254 .3848 .381	.1016 .1524 .2032 .254 .3048 .381	+10 +10 +10 +10 +10 +10	-10 -10 -10 -10 -10 -10	3.175 3.175 3.175 4.76 4.76 4.76	0 0 0 0 0 0	Tension Test Flattening Test Flare Test Reverse Bend Test Hardness Test 100% Hydrostatic Test *Reverse flattening Test Refer to ASTM A-450 *Wherever applicable
ASTM-A269 Seamless & Welded Tubing for General Service	Upto 12.7 12.7- 38.1 excl 38.3 - 88.9 excl 88.9 -139.7 excl 139.7-203.2 excl	.13 .13 .25 .38 .76	.13 .13 .25 .38 .76	+15 +10 +10 +10 +10	-15 -10 -10 -10 -10	3.2 3.2 4.8 4.8 4.8	0 0 0 0 0	Flare Test Flange Test (Welded Only) Hardness Test Reverse Flattening Test (Welded only) 100% Hydrostatic Test Refer to ASTM-A269
ASTM-A270 Seamless & Welded Sanitary Tubing	25.4 38.1 50.8 60.5 76.2 101.6	.05 .05 .05 .05 .08 .08	.20 .20 .28 .28 .30 .38	+12.5 +12.5 +12.5 +12.5 +12.5 +12.5	-12.5 -12.5 -12.5 -12.5 -12.5 -12.5	3.2 3.2 3.2 3.2 4.8 4.8	0 0 0 0 0 0	Reverse flattening Test 100% Hydrostatic Test External polish on all tubes Refer to ASTM A-270
ASTM-A312 Seamless & Welded pipe	3.175-38.1 Incl 38.1-1016 Incl 101.6-203.2 Incl	.79 .4 1.59	.79 .79 .79	12.5% under Minimum Wall Nominal Wall Specified		6.4 6.4 6.4 (Normally Random Lengths ordered)	0 0 0	Tension Test Flattening Test 100% Hydrostatic Test Refer to ASTM A-530
ASTM A-358 Welded Pipe	219.06-750mm or 0.01 Inch							Refer to ASTM A-530





omaa
metal sources

An ISO 9001:2015 Certified Co.

CARBON STEEL & ALLOY STEEL PIPE DIMENSIONS ANSI B 36.10

Nominal Pipe size	O/D	Schedule 10		Schedule 20		Schedule 30		Schedule STD		Schedule 40		Schedule 60		Schedule XS		Schedule 80		Schedule 100		Schedule 120		Schedule 140		Schedule 160		Schedule XXS	
		MM	INCH	W.T.	KG/M	W.T.	KG/M	W.T.	KG/M	W.T.	KG/M	W.T.	KG/M	W.T.	KG/M	W.T.	KG/M	W.T.	KG/M	W.T.	KG/M	W.T.	KG/M	W.T.	KG/M	W.T.	KG/M
3	1/8	10.3						1.73	0.37	1.73	0.37			2.41	0.47	2.41	0.47										
6	1/4	13.7						2.24	0.63	2.24	0.63			3.02	0.80	3.02	0.80										
10	3/8	17.1						2.31	0.84	2.31	0.84			3.20	1.10	3.20	1.10										
15	1/2	21.3						2.77	1.27	2.77	1.27			3.73	1.62	3.73	1.62							4.78	1.95	7.5	2.55
20	3/4	26.7						2.87	1.69	2.87	1.69			3.91	2.20	3.91	2.20							5.56	2.90	7.82	3.64
25	1	33.4						3.38	2.50	3.38	2.50			4.55	3.24	4.55	3.24							6.35	4.24	9.1	5.45
32	1 1/4	42.2						3.56	3.39	3.56	3.39			4.85	4.47	4.85	4.47							6.35	5.61	9.7	7.77
40	1 1/2	48.3						3.68	4.05	3.68	4.05			5.08	5.41	5.08	5.41							7.14	7.25	10.2	9.56
50	2	60.3						3.91	5.44	3.91	5.44			5.54	7.48	5.54	7.48							8.74	11.11	11.1	13.4
65	2 1/2	73.0						5.16	8.63	5.16	8.63			7.01	11.41	7.01	11.41							9.53	14.92	14.0	20.4
80	3	88.9						5.49	11.3	5.49	11.3			7.62	15.3	7.62	15.3							11.13	21.35	15.24	27.7
90	3 1/2	101.6						5.74	13.57	5.74	13.57			8.08	18.63	8.08	18.63							-			
100	4	114.3						6.02	16.07	6.02	16.07			8.56	22.3	8.56	22.3			11.13	28.32			13.5	33.5	17.12	41.03
125	5	141.3						6.55	21.77	6.55	21.77			9.53	30.9	9.53	30.9			12.7	40.2			15.9	49.11	19.0	57.4
150	6	168.3						7.11	28.26	7.11	28.26			10.97	42.5	10.97	42.5			14.3	54.2			18.3	67.5	21.95	79.22
200	8	219.1						8.18	42.5	8.18	42.5	10.31	53.1	12.7	64.6	12.7	64.5	15.1	75.92	18.3	90.4	20.6	100.9	23.0	111.27	22.23	108.0
250	10	273.0						9.27	60.3	9.27	60.3	12.7	81.5	12.7	81.5	15.1	96.0	18.3	114.7	21.44	133.0	25.4	155	28.6	172.3	25.4	155.0
300	12	323.8						9.53	73.8	10.31	79.7	14.27	109.0	12.7	97.4	17.5	132.0	21.4	160.0	25.4	187.0	28.6	208	33.3	238.7	25.4	187.0
350	14	355.6						9.53	81.3	11.13	94.6	15.09	126.0	12.7	107.0	19.0	158.0	23.8	195.0	27.8	224.0	31.8	253.5	35.7	281		
400	16	406.4						9.53	93.3	12.7	123.0	16.66	160.0	12.7	123.0	21.44	203.0	26.2	245.0	30.9	286.0	36.53	333	40.5	366.0		
450	18	457.2						9.53	105.0	14.20	156.0	19.05	206.0	12.7	139.0	23.8	254.6	29.36	310.0	34.0	363.0	39.7	408.3	45.2	459.0		
500	20	508.0						9.53	117.2	15.09	183.0	20.62	248.0	12.7	155.1	26.2	311.0	32.5	381.0	38.1	441.0	44.4	508	50.0	564.0		
550	22	558.8						9.53	129.0			22.2	294.0	12.7	171.0	28.6	373.0	34.9	451.0	41.3	527.0	47.6	600	54.0	672.0		
600	24	610.0						9.53	141.0	17.48	255.0	24.61	355.0	12.7	187.0	30.9	442.08	38.8	547.7	46.0	640.0	52.4	720.15	59.5	808.22		
650	26	660.0						9.53	153.0					12.7	202												
700	28	711.0						9.53	165.0					12.7	218												
750	30	762.0						9.53	176.0					12.7	235												
800	32	812.8						9.53	188.2	17.48	342.0			12.7	251												
850	34	863.6						9.53	200.0	17.48	364.9			12.7	266												
900	36	914.4						9.53	212.0	19.05	420.6			12.7	282												



All Dimensions in millimeters. W.T. = Wall Thickness. KG/M = Kilograms per Meter.

CARBON STEEL, ALLOY STEEL, LOW TEMP, PIPE AND TUBES SPECIFICATION

CHEMICAL ANALYSIS									MECHANICAL PROPERTIES			SPECIFIC REQUIREMENT
									TENSILE STRENGTH	YIELD TRESS	ELONGA-TION	
SPECIFICATION	WT	C%	Mn %	P % MAX	S% MAX	Si%	Cr%	Mo%	Mpa	Mpa	50mm MIN	
ASTM A 53/A	AW	0.25MAX	0.95MAX	0.050	0.060	-	-	-	330MIN	205MIN	36	Cr Mo Cu Ni Va 40 15 40 40 08 Five elements not to exceed 1%
ASTM A 53/B	AW	0.30MAX	1.20MAX	0.050	0.060	-	-	-	415MIN	240MIN	29/5	
ASTM A 106/A	AW	0.25MAX	0.27-0.93	0.035	0.025	0.10MIN	0.40MAX	0.15MAX	330MIN	205MIN	35/2	
ASTM A 106/B	AW	0.35MAX	0.29-1.06	0.035	0.025	0.10MIN	0.40MAX	0.15MAX	415 MIN	240MIN	30/22	
ASTM A 106/C	AW	0.35MAX	0.29-1.06	0.035	0.025	0.10MIN	0.40MAX	0.15MAX	485MIN	275MIN	30/22	
ASTM A 179	MW	0.06-0.18	0.27-0.63	0.035	0.035	-	-	-	325MIN	180MIN	35.0	Hardness 72 HRB Max
ASTM A 214	MW	0.18MAX	0.27-0.63	0.035	0.035	-	-	-	385MIN	180MIN	35.0	Hardness 72 HRB Max
ASTM A 192	MW	0.06-0.18	0.27-0.63	0.035	0.035	0.25MAX	-	-	325MIN	180MIN	35.0	Hardness 77 HRB Max
ASTM A 209/T1	MW	0.10-0.20	0.30-0.80	0.025	0.025	0.10-0.50	-	0.44-0.65	380MIN	205MIN	30/22	Hardness 80 HRB Max
ASTM A 209/T1a	MW	0.15-0.25	0.30-0.80	0.025	0.025	0.10-0.50	-	0.44-0.65	365MIN	195MIN	30/22	Hardness 81 HRB Max
ASTM A 209/T1b	MW	0.14MAX	0.30-0.80	0.025	0.025	0.10MIN	-	0.44-0.65	415MIN	220MIN	30/22	Hardness 77 HRB Max
ASTM A 210/A-1	MW	0.27max	0.93max	0.048	0.035	0.10MIN	-	-	415MIN	255MIN	30/22	Hardness 79 HRB Max
ASTM A 210/C	MW	0.35MAX	0.29-1.06	0.048	0.035	0.10MIN	-	-	485MIN	275MIN	30/22	Hardness 89 HRB Max
ASTM A 213/T2	MW	0.10/0.20	0.30-0.61	0.025	0.025	0.10-0.30	0.50-0.81	0.44-0.65	415MIN	205MIN	30/22	Hardness 85 HRB Max
ASTM A 213/T5	MW	0.15MAX	0.30-0.60	0.025	0.025	0.50MAX	4.00-6.00	0.44-0.65	415MIN	205MIN	30/22	Hardness 85 HRB Max
ASTM A 213/T11	MW	0.15MAX	0.30-0.60	0.025	0.025	0.50-1.00	1.00-1.50	0.44-0.65	415MIN	205MIN	30/22	Hardness 85 HRB Max
ASTM A 213/T12	MW	0.15MAX	0.30-0.61	0.025	0.025	0.50MAX	0.80-1.25	0.44-0.65	415MIN	205MIN	30/22	Hardness 85 HRB Max
ASTM A 213/T22	MW	0.15MAX	0.30-0.60	0.025	0.025	0.50MAX	1.90-2.60	0.87-1.13	415MIN	205MIN	30/22	Hardness 85 HRB Max
ASTM A 333/3	AW	0.19MAX	0.31-1.64	0.025	0.025	0.18-0.37	Ni	3.18-3.82	380MIN	205MIN	35/25	IMPACT AS -50F FOR 40X10/18/1490 MRB -50F40X10/18/14 90 HRB MAX
ASTM A 333/6	AW	0.30MAX	0.29-1.06	0.025	0.025	0.10MIN	-	-	415MIN	240MIN	30/22	
ASTM A 334/3	AW	0.19MAX	0.31-1.64	0.025	0.025	0.18-0.37	Ni	3.18-3.82	380MIN	205MIN	35/28	
ASTM A 334/6	MW	0.30MAX	0.9-1.06	0.025	0.025	0.10MIN	-	-	415MIN	240MIN	30/22	
ASTM A 335/P1	AW	0.10-0.20	0.30-0.80	0.025	0.025	0.10-0.50	-	0.40-0.65	380MIN	205MIN	30/22	
ASTM A 335/P2	AW	0.10-0.20	0.30-0.61	0.025	0.025	0.10-0.30	0.50-0.81	0.40-0.65	380MIN	205MIN	30/22	
ASTM A 335/P5	AW	0.15MAX	0.30-0.60	0.025	0.025	0.50-1.00	4.00-6.00	0.40-0.65	415MIN	205MIN	30/22	
ASTM A 335/P11	AW	0.15MAX	0.30-0.61	0.025	0.025	0.50MAX	0.80-1.25	0.40-0.65	415MIN	205MIN	50/22	
ASTM A 335/P12	AW	0.15MAX	0.30-0.60	0.025	0.025	0.50MAX	1.90-2.60	0.87-1.13	415MIN	205MIN	30/22	
ASTM A 335/P22	AW	0.15MAX	0.30-0.60	0.025	0.025	0.50MAX	1.90-2.60	0.87-1.13	415MIN	205MIN	30/22	
BS/3059/1/33		0.15Max	0.30-0.70	0.050	0.050	-	-	-	324-441	186MIN	25	
BS/3059/2/33		0.15MAX	0.40-0.70	0.050	0.050	0.10-0.35	-	-	324-441	186MIN	21	
BS/3059/245		0.12-0.18	0.90-1.20	0.035	0.035	0.10-0.35	-	-	441-560	245MIN	22	
DIN/17175/ST35.8		0.17MAX	0.40MIN	0.040	0.040	0.35MAX	-	-	340-441	235MIN	25	
DIN/17175/ST45.8		0.22MAX	0.45MIN	0.040	0.040	0.10-0.35	-	-	441-540	255 MIN	25	
DIN/17175/15MO3		0.12-0.20	0.50-0.80	0.040	0.040	0.10-0.35	-	0.25-0.35	441-540	284MIN	21	
DIN/17175/13CrMO44		0.10-0.18	0.40-0.60	0.040	0.040	0.10-0.35	0.70-1.60	0.40-0.50	441-570	294MIN	22	
DIN/17175/10CrM910		0.15MAX	0.40-0.60	0.040	0.040	0.15-0.50	2.0-2.5	0.9-1.10	441-570	249MIN	22	
ASTM A 199/T5	MW	0.50-0.15	0.30-0.60	0.025	0.025	0.50MAX	4.00-6.00	0.45-0.65	415MIN	170MIN	30/22	HARDNESS 85 HRB MAX HARDNESS 85 HRB MAX HARDNESS 85 HRB MAX HARDNESS 85 HRB MAX HARDNESS 85 HRB MAX HARDNESS 85 HRB MAX HARDNESS 85 HRB MAX HARDNESS 85 HRB MAX HARDNESS 85 HRB MAX HARDNESS 85 HRB MAX HARDNESS 85 HRB MAX HARDNESS 85 HRB MAX HARDNESS 85 HRB MAX HARDNESS 85 HRB MAX HARDNESS 85 HRB MAX HARDNESS 85 HRB MAX
ASTM A 199/T11	MW	0.05-0.15	0.30-0.60	0.025	0.025	0.50-1.00	1.00-1.50	0.44-0.65	415MIN	170MIN	30/22	
ASTM A 199/T22	MW	0.05-0.15	0.30-0.60	0.025	0.025	0.50MAX	1.90-2.60	0.87-1.13	415MIN	170MIN	30/22	
ASTM A 199/T4	MW	0.15MAX	0.30-0.60	0.025	0.025	0.50-1.00	2.15-2.85	0.44-0.65	415MIN	170MIN	30/22	
ASTM A 199/T7	MW	0.15MAX	0.30-0.60	0.025	0.025	0.50-1.00	6.00-8.00	0.45-0.65	415MIN	170MIN	30/22	
ASTM A 200/T5	MW	0.15MAX	0.30-0.60	0.025	0.025	0.50-1.00	4.00-6.00	0.45-0.65	415MIN	170MIN	30/22	
ASTM A 200/T11	MW	0.05-0.15	0.30-0.60	0.025	0.025	0.50-1.00	1.00-1.50	0.44-0.65	415MIN	170MIN	30/22	
ASTM A 200/T22	MW	0.05-0.15	0.30-0.60	0.030	0.030	0.50MAX	1.90-2.60	0.87-1.13	415MIN	170MIN	30/22	
ASTM A 200/T4	MW	0.05-0.15	0.30-0.60	0.030	0.030	0.50-1.00	2.15-2.85	0.44-0.65	415MIN	170MIN	30/22	
ASTM A 200/T7	MW	0.15MAX	0.30-0.60	0.030	0.030	0.50-1.00	6.00-8.00	0.45-0.65	415MIN	170MIN	30/22	
ASTM A 199/T9	MW	0.15MAX	0.30-0.60	0.030	0.030	0.25-1.00	8.00-10.0	0.90-1.10	415MIN	170MIN	30/22	
ASTM A335/P9	MW	0.15MAX	0.30-0.60	0.025	0.025	0.25-1.00	8.00-10.00	0.09-1.10	415MIN	172MIN	30/22	
ASTM A178A	MW	0.06-0.18	0.30-0.60	0.035	0.035	-	-	-	325MIN	160MIN	35	
ASTM A178C	MW	0.35MAX	0.27-0.63	0.035	0.035	-	-	-	415MIN	170MIN	30	
ASTM A178B	MW	0.27MAX	0.80 MAX	0.030	0.015	0.10MIN	-	-	485MIN	275MIN	30	

CAPILLARY OR HYPODERMIC TUBING - TYPICAL SIZES & COIL TUBE

Outside Diameter		Wall Thickness
Inch	mm	
1/32	0.79	0.20
0.040	1.02	0.20
0.049	1.25	0.20
0.050	1.27	0.20
1/16	1.63	0.15 / 0.20 / 0.25 / 0.30 / 0.40 / 0.51 / 0.56
0.072	1.83	0.23
0.083	2.11	0.25
3/32	2.38	0.15 / 0.20 / 0.30 / 0.40 / 0.51 / 0.91
0.118	3.00	0.30 / 0.50 / 0.70 / 0.90
1/8	3.18	0.20 / 0.25 / 0.51 / 0.81 / 0.91 / 1.22
0.138	3.51	0.40
0.157	4.00	0.70 / 0.90 / 1.00
0.177	4.50	0.50
0.197	5.00	0.50 / 0.75 / 1.00 / 1.50



Coil Tube - Seamless / Semi Welded

Grade : 304, 304L, 316, 316L, 321

OD : 1mm OD x 1/2" OD

Thickness : 0.25 mm to 1.65 mm

As per Customer Requirement, Bright Annealed





omaa
metal sources

An ISO 9001:2015 Certified Co.

**Exporters, Importer, Stockiest & Suppliers of :
Stainless Steel, High Nickel Alloys, Duplex & Carbon Steel**

Corp., Office : Office No. 56, 1st Floor, P C Building, Plot No. 74/80, Maruti Mandir Lane,
5th Kumbharwada, Mumbai - 400 004, INDIA.

Regd., Off. : 803, 8th Floor, Sethna Mansion, 10th Khetwadi Back Road, Mumbai - 400 004.



+91 22 6638 1377



info@omaa.co.in



www.omaa.co.in