DIVINE

STAINLESS STEEL TUBES & PIPES

AN ISO 9001 : 2000 CERTIFIED COMPANY

History Of The Company

We Have Build Our LEADERSHIP With You in Mind

"Divine" made a modest beginning in the year 2004. Within a short span it established a reputation as a reliable manufacturer & exporters of quality stainless steel tubes & pipes.

Divine has been granted an ISO 9001:2000 Certificate by BVQI Management Services UKAS for Quality Management System for the manufacturing of Stainless Steel Tubes/Pipes.

Today Divine has geared itself to meet any requirement of Stainless Steel Tubes & Pipes in both welded and seamless quality and covers the widest range possible under one roof from 6mm OD to 600mm OD.

Divine stainless steel tubes & pipes are synonymous with improved mechanical as durability, better corrosion resistance smooth finish and high pressure conductivity. Truly Divine Stainless Steel Tubes / Pipes are here to match the most demanding and most exacting requirements of process industry. Design Engineers have world wide conceptualized Stainless steel Pipes / Tubes for most critical application for continuous process industries. Divine has centralized the manufacturing activities at CHHATRAL, Dist.GANDHINAGAR, Gujarat with National & International standard manufacturing facilities and state of the art technology.

The stainless steel welded and seamless Tubes / Pipes are used in various field and process industries such as Sugar Industries, Chemical Plants, Fertilizer Plants, Pharmaceutical, Railway Coaches, Refrigeration, Metallurgical Industries, Oil & Gas Industries, Decoratives, Dairies & Food Products, Instrumentation, Power Plants, Heat Exchanger, Pulp & Paper Mills, Food Industries, Ornamental, Energy Industries, Ships, Fabrication, Automobile Industries, Sanitary/Plumbing, Boilers, Space Applications etc.

Manufacturing Process

The process commences with the formation of welded mother tube on the tube mill from imported and tested prime quality stainless steel strips. The latest TIG multi electrode welding technique is employed for superior weld quality and 100% Fusion, with argon purging, No filler metal added.
These mother tubes are solution annealed at 1060° to 1100°C in continuous annealing furnace followed by immediate quenching to prevent chromium carbide precipitation.

Annealing of mother tuber ensures :

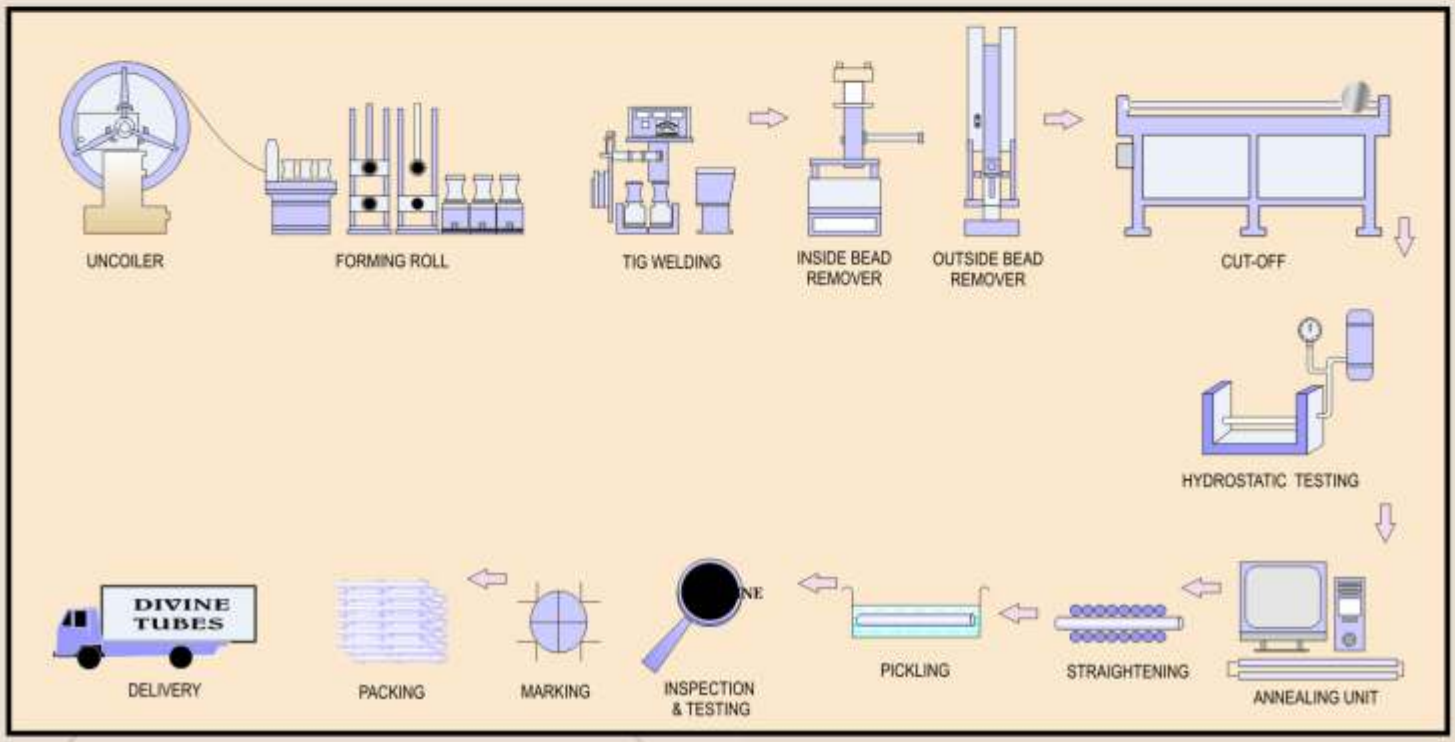
A) Removal of stress induced during tube forming and cold drawing :
B) Sufficient ductility and softness for cold drawing :
C) Transformation of the weld zone to austentic nature,
D) Re crystallization of metallic grains to original form and thereby improving corrosion resistance.

During annealing, scales are formed on the surface of the tubes. In order to remove these, the tubes are pickled by immersing into hot pickling solution made of nitric acid, sulphuric acid and hydrofluric acid.

The tubes are then coated with proper lubricant and then cold drawn over a drew bench :
1)To vary the metallurgical structure and restore the properties to the parent material :
2) To achieve mechanical properties other than those available in annealed condition :
3) To achieve a tube having closer dimensional tolerances :
4) To produce tubing of smaller size and wall thickness.
5) To reorient the grain structure of weld portion with that of the parent material and
6)To remove / minimize the internal bead.

Drawing is followed by subsequent annealing and pickling to restore the properties of the entire tube to that of the parent material. The tubes are then passiated to impart extra corrosion resistance. Thereafter every tube is electrically marked with material grade, size and manufacturing standard.

MANUFACTURING PROCESS



Quality Our Commitment

DIVINE has always been committed to development of manufacturing process that combine indigenous technology with world-class production process. A well equipped testing laboratory to carry out Metallurgical and Mechanical tests ensures highest standards in output delivery. To make our activity environment friendly very strict environment policies are followed throughout the production process besides efficient usages of precious resources, setting up water treatment plant and recycling of water.

DIVINE has an effective Quality Management in place and accords high priority on quality to ensure market competitiveness and to enable supply of cost effective products to the customers. An ISO 9001:2000 Certification has been granted by BVQI Management Services UKAS for Quality Management System for the manufacturing of Stainless Steel Tubes/Pipes.


BVQI

Certification

DIVINE TUBES PVT. LTD.
401, PHASE-1, G.I.D.C. IND. ESTATE,
CHHATRAL – 382 729. DIST. GANDHINAGAR, GUJARAT, INDIA.

ISO 9001:2000

MANUFACTURING AND SUPPLY OF STAINLESS STEEL TUBES, PIPES AND BRASS TUBES.

06 January 2006

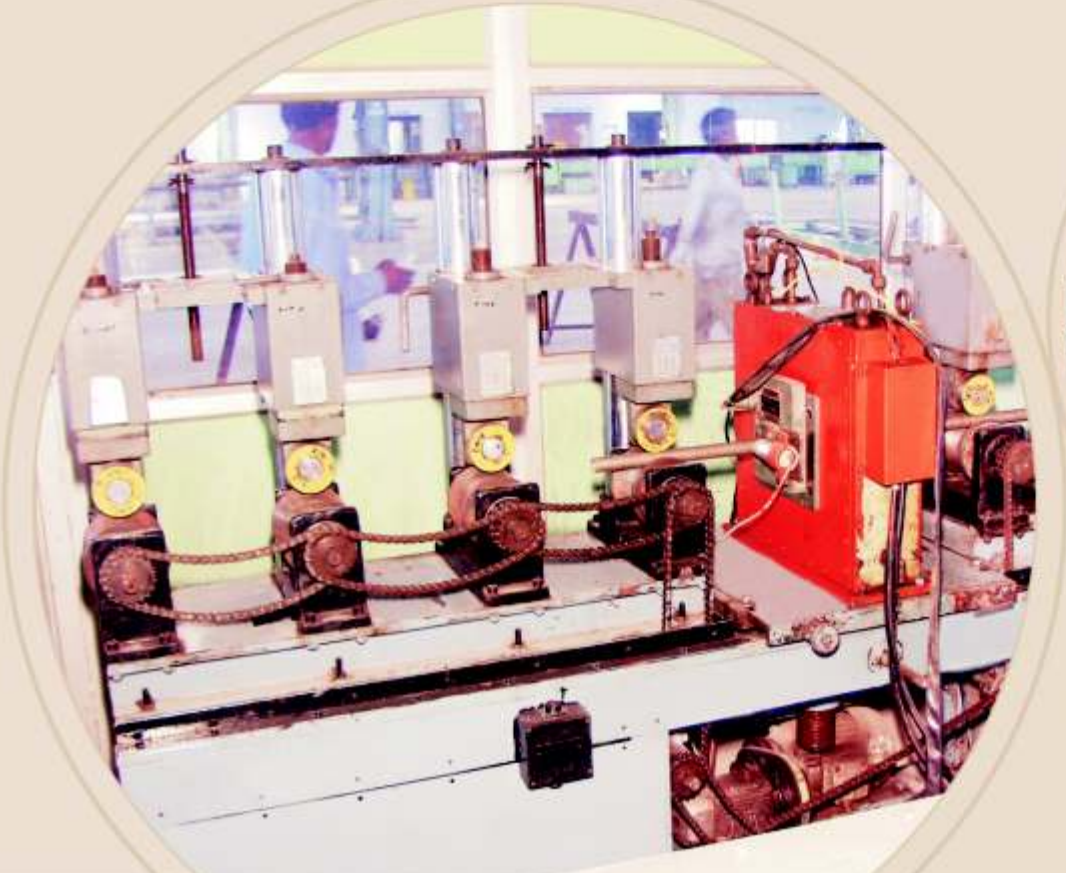
06 January 2009

01 February 2006

Richard Kenzuka
Chief Executive

People - We Care

At DIVINE we have always believed in developing and maintaining diverse team of highly committed individuals. It provides them with the work environment that is safe, secure and congenial and which fosters accomplishment, creativity and mutual respect within the employees.



◀ EDDY CURRENT TEST

Testing and quality control

Testing and quality control

CORROSION TEST :
This test is only conducted only when specifically requested.

FLANGE TEST :
There are no cracks on the welded section or on the base metal.

BENDING TEST :
Each length of finished pipe is subjected to the hydrostatic or pneumatic pressure test. Each pipe must withstand the pressure without leakage.

FLATTENING TEST :
This test is conducted to check the strength of the welded section by subjecting, it to extreme compression stress. If the test piece with stands the specified compression stress without cracking, it is determined to be acceptable.

REVERSE FLATTENING TEST :
There are no cracks or blow holes can be observed on the welded section.

HARDNESS TEST :

FLARING TEST :
The standard procedure for this test is to flare the end of the pipe to a diameter 1.2 times the outside diameter.

HYDROSTATIC / PNEUMATIC PRESSURE TEST :
As per ASTM-A450 & 530
Standards, 100% Hydrostatic is carried out on all pipes & tubes using Hydraulic & pneumatic system.

EDDY CURRENT TEST
This Test is Carried out on the entire length of tube as per ASTM E-426 to determine the sub surface in homogenities. The Test is carried out on demand only.

RADIOGRAPHY TEST
On demand, We can also provide the Radiography testing through the Approved Inspection Agencies.

UNIVERSAL TEST

HARDNESS TEST

CHEMICAL TESTING LABORATORY

Export - Our Global Accessibility

With world class quality, superb customers services and competitive pricing the "DIVINE" has gained a substantial position in the domestic market and there has been tremendous increase in the export.

Application

Application

SS Pipes & Tubes Application Area :

Sugar Industries
Chemical Plants
Fertilizer Plants
Pharmaceutical
Railway Coaches
Refrigeration
Metallurgical Industries
Oil & Gas Industries
Decoratives
Dairies & Food Products
Instrumentation
Power Plants
Heat Exchangers
Pulp & Paper Mills
Food Industries
Ornamental
Energy Industries
Ships
Fabrication
Automobile Industries
Sanitary / Plumbing
Boilers
Space
Textile Machinery

STAINLESS STEEL TUBING SERIES

STAINLESS STEEL TUBING SERIES

Wall Thickness in mm / Wall Thickness in mm / Bwg	0.711 22 Swg / 0.711 22 Bwg	0.914 20 Swg / 0.889 20 Bwg	1.219 18 Swg / 1.245 18 Bwg	1.626 16 Swg / 1.651 16 Bwg	1.829 15 Swg / 1.829 15 Bwg	2.032 14 Swg / 2.108 14 Bwg	2.612 12 Swg / 2.769 12 Bwg	3.251 10 Swg / 2.769 12 Bwg
O.D. in mm	Weight in kg / mt.							
6.32 / 6.32	0.100 / 0.100	0.124 / 0.121	0.155 / 0.158	0.191 / 0.193	0.205 / 0.205			
10.00 / 10.00	0.165 / 0.165	0.208 / 0.202	0.268 / 0.272	0.340 / 0.340	0.374 / 0.374	0.405 / 0.416	0.482 / 0.501	0.549 / 0.561
12.70 / 12.70	0.213 / 0.213	0.269 / 0.262	0.350 / 0.357	0.450 / 0.456	0.497 / 0.497	0.542 / 0.558	0.659 / 0.687	0.768 / 0.791
15.87 / 15.87	0.270 / 0.270	0.342 / 0.333	0.447 / 0.455	0.579 / 0.587	0.642 / 0.642	0.703 / 0.726	0.866 / 0.907	1.026
19.05 / 19.05	0.326 / 0.326	0.414 / 0.404	0.543 / 0.554	0.708 / 0.718	0.787 / 0.787	0.865 / 0.893	1.073 / 1.127	
23.00 / 23.00		0.505 / 0.491	0.664 / 0.677	0.869 / 0.881	0.968 / 0.968	1.065 / 1.101	1.331 / 1.400	
25.40 / 25.40		0.560 / 0.545	0.737 / 0.752	0.966 / 0.980	1.078 / 1.078	1.187 / 1.227	1.488 / 1.567	
31.75 / 31.75			0.930 / 0.949	1.225 / 1.242	1.368 / 1.368	1.510 / 1.562	1.903 / 2.006	
38.10 / 38.10			1.124 / 1.147	1.483 / 1.504	1.658 / 1.658	1.832 / 1.897	2.317 / 2.446	
45.00 / 45.00			1.334 / 1.362	1.763 / 1.789	1.974 / 1.974	2.183 / 2.260	2.768 / 2.923	
50.80 / 50.80			1.512 / 1.544	1.999 / 2.029	2.239 / 2.239	2.477 / 2.566	3.147 / 3.325	
63.50 / 63.50			1.900 / 1.940	2.518 / 2.555	2.820 / 2.820	3.123 / 3.123	3.976 / 3.976	
76.20 / 76.20				3.035 / 3.080	3.404 / 3.404	3.768 / 3.905	4.805 / 5.083	
88.90 / 88.90				3.551 / 3.605	3.986 / 3.986	4.413 / 4.574	5.635 / 5.962	
101.60 / 101.60				4.068 / 4.130	4.567 / 4.567	5.058 / 5.243	6.464 / 6.842	

STAINLESS STEEL PIPE SERIES (ANSI B 36.10; B36.19)

Nominal	Nominal Pipe Size	Outside Diameter	Wall Thickness and weight							
			Sch. 5 S		Sch. 10 S		Sch. 40 S		Sch. 80 S	
Inches	mm	mm	mm	kg/m	mm	kg/m	mm	kg/m	mm	kg/m
1/8	6	10.29	-	-	1.24	0.281	1.73	0.370	2.041	0.475
1/4	8	13.72	-	-	1.65	0.498	2.24	0.643	3.02	0.808
3/8	10	17.15	-	-	1.65	0.639	2.31	0.857	3.20	1.116
1/2	15	21.34	1.65	0.812	2.11	1.014	2.77	1.286	3.73	1.642
3/4	20	26.67	1.65	1.032	2.11	1.296	2.87	1.708	3.91	2.225
1	25	33.40	1.65	1.310	2.77	2.121	3.38	2.537	4.55	3.282
1.1/4	32	42.16	1.65	1.671	2.77	2.728	3.56	3.435	4.85	4.524
1.1/2	40	48.26	1.65	1.923	2.77	3.150	3.68	4.101	5.08	5.484
2	50	60.33	1.65	2.421	2.77	3.986	3.91	5.515	5.54	7.588
2.1/2	65	73.03	2.11	3.741	3.05	5.336	5.16	8.755	7.01	11.570
3	80	88.90	2.11	4.578	3.05	6.546	5.49	11.448	7.62	15.484
3.1/2	90	101.6	2.11	5.248	3.05	7.514	5.74	13.756	8.08	18.891
4	100	114.30	2.11	5.918	3.05	8.483	6.02	16.296	8.56	22.628
5	125	141.30	2.77	9.593	3.40	11.722	6.55	22.065	9.52	31.364
6	150	168.28	2.77	11.462	3.40	14.015	7.11	28.648	10.97	43.142
8	200	219.08	2.77	14.979	3.76	20.240	8.18	43.129	12.70	65.526
10	250	273.05	3.40	22.920	4.19	28.163	9.27	61.131	12.70	82.661
12	300	323.85	3.96	31.669	4.57	36.478	9.52	74.811	12.70	98.790
14	350	355.60	3.96	34.812	4.78	41.923	9.53	82.451	12.70	108.871
16	400	406.40	4.19	42.131	4.78	47.994	9.53	94.554	12.7	125.000
18	450	457.20	4.19	47.453	4.78	54.064	9.53	106.657	12.7	141.129
20	500	508.00	4.78	60.135	5.54	69.591	9.53	118.760	12.7	157.258
22	550	558.8	4.78	66.205	5.54	76.627	9.53	130.864	12.7	173.387
24	600	609.6	5.54	83.662	6.35	95.766	9.53	142.967	12.7	189.516

Other sizes can be made on request

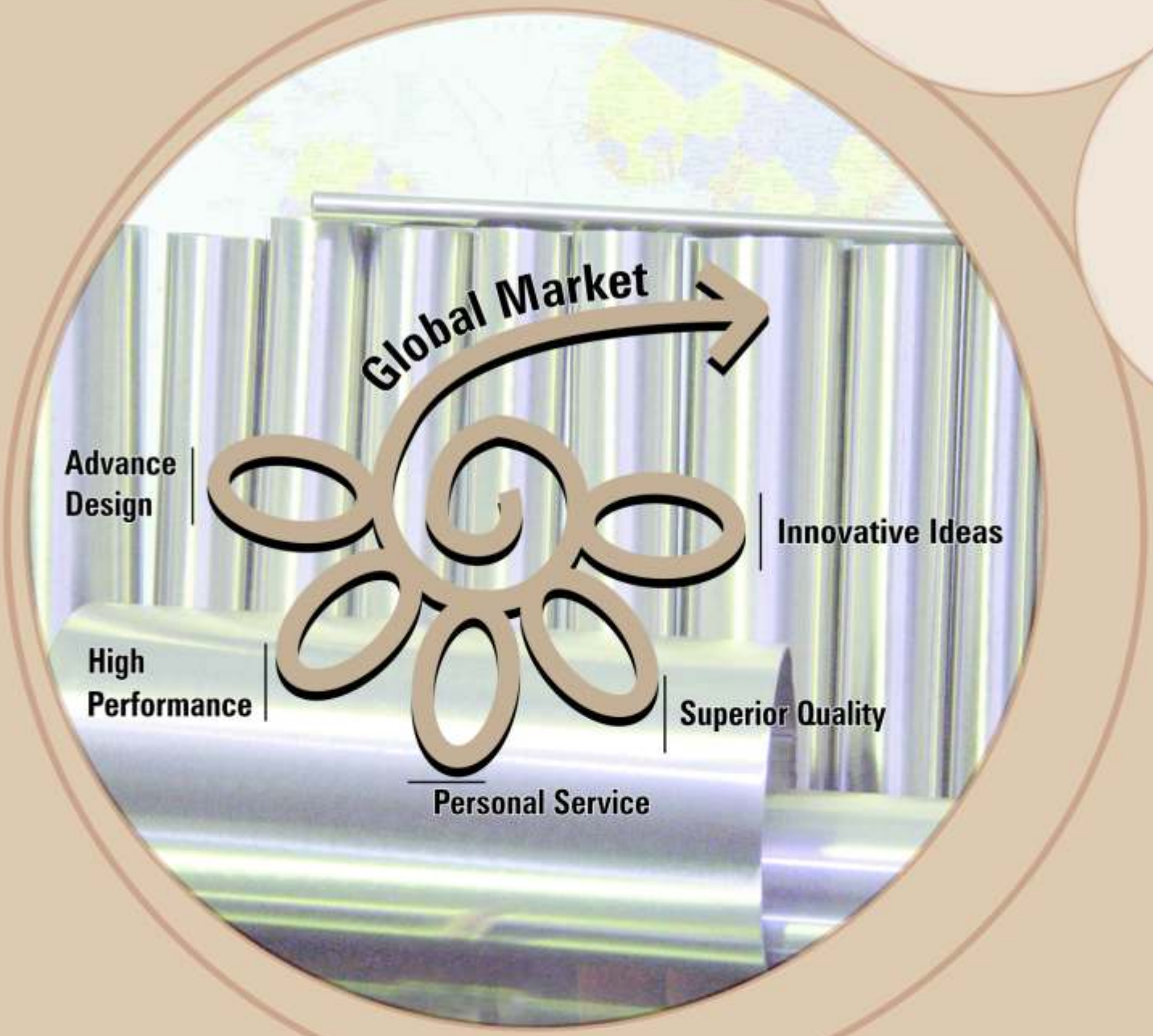
CONDENSED ASTM SPECIFICATIONS FOR STAINLESS STEEL TUBING AND PIPING

Specification	Allowable Outside Diameter variations in mm				Allowable wall		Exact Length		Testing
	Nominal Diameter		Over	Under	Over%	Under%	Over%	Under%	
ASTM A -213 Seamless Boiler Super heater and heat Exchanger tubes	Under 25.4		.1016	.1016	+20	-0	3.175	0	Tension Test Flattening Test Flaring Test Hardness Test 100% Hydrostatic Test Refer to ASTM-450
	25.4 -	38.1 incl.	.1524	.1524	+20	-0	3.175	0	
	38.1 -	50.8 excl.	.2032	.2032	+22	-0	3.176	0	
	50.8 -	63.5 excl.	.254	.254	+22	-0	3.76	0	
	63.5 -	76.2 excl.	.3048	.3048	+22	-0	4.76	0	
	76.2 -	101.6 incl.	.381	.381	+22	-0	4.76	0	
ASTM A -249 Welded Boiler Super heater and heat Exchanger Condenser tubes	Under 25.4		.1016	.1016	+10	-10	3.175	0	Tension Test Flattening Test Flaring Test * Reverse Bend Test Hardness Test 100% Hydrostatic Test * Reverse Flattening test refer to ASTM-450 *Wherever applicable
	25.4 -	38.1 incl.	.1524	.1524	+10	-10	3.175	0	
	38.1 -	50.8 excl.	.2032	.2032	+10	-10	3.175	0	
	50.8 -	63.5 excl.	.254	.254	+10	-10	4.76	0	
	63.5 -	76.2 excl.	.3048	.3048	+10	-10	4.76	0	
	76.2 -	101.6 incl.	.381	.381	+10	-10	4.76	0	
					Minimum Wall tubes + 18 % - 0 available on request				
ASTM A -269 Seamless & Welded Tubing for General Service	Up to 12.7		.13	.13	+15	-15	3.2	0	Flare Test (Seamless Tube) Flange Test (Welded only) Hardness Test Reverse Flattening test 100% Hydrostatic Test Refer to ASTM-450
	12.7 -	38.1 excl.	.13	.13	+10	-10	3.2	0	
	38.1 -	88.9 excl.	.25	.25	+10	-10	4.8	0	
	88.9 -	139.7 excl.	.38	.38	+10	-10	4.8	0	
	139.7 -	203.2 excl.	.76	.76	+10	-10	4.8	0	
ASTM A -270 Seamless & Welded Sanitary Tubing	25.4		.05	.20	+12.5	-12.5	3.2	0	Reverse Flattening test 100 Hydrostatic Test External Polish on all tubes Refer to ASTM - 450
	38.1		.05	.20	+12.5	-12.5	3.2	0	
	50.8		.05	.28	+12.5	-12.5	3.2	0	
	63.5		.05	.28	+12.5	-12.5	3.2	0	
	76.2		.08	.30	+12.5	-12.5	3.2	0	
	101.6		.08	.38	+12.5	-12.5	3.2	0	
ASTM A -312 Seamless & Welded Pipe	13.7 -	48.3 incl.	.4	.8	Minimum Value 12.5% under nominal wall Specified		6.4	0	Tension Test Flattening Test 100% Hydrostatic Test Refer to ASTM A-450
	48.3 -	114.3 incl.	.8	.8			6.4	0	
	114.3 -	219.18 incl.	1.6	.8			6.4 (Normally Random Length ordered)	0	
ASTM A -268 Seamless & Welded Ferritic Stainless Steel Tubes	Under 12.7		.13	.13	+15	-15	3.2	0	Tension Test Flaring test, flange test (ERW only) hardness test reverse flattening test 100% hydrostatic test, Refer to ASTM A-450
	12.7	38.1 excl.	.13	.13	+10	-10	3.2	0	
	38.1	88.9 excl.	.25	.25	+10	-10	4.8	0	
	88.9 -	168.3 excl.	.38	.38	+10	-10	4.8	0	
ASTM A -358 for Welded big Diameter Pipe	For all sizes 5" NB & Above		+0.5%	-0.5%	-	-0.3 Min	Customer's Specification		Transverse tension test Transverse guided bend test Hydrostatic test radiographic examination (as specified) dye penetrant (optional)
ASTM A -688 for Welded feed Water heater 'U' tubes	Under 25.4 mm.		.1016	.1016	+20 +10	-0 (for min wall thk) -10 (for Avg.wall thk)	3 to 13	0	Tension, Hardness, Corrosion, Reversebend, Flange, Flattening, Hydrostatic Test, Pneumatic Test, Non Destructive Test
ASTM A -409 Welded Large Diameter Austenitic Steel pipe	Wall thickness <4.8mm + 0.2% >4.8mm + 0.2% Ovality		0.2% 0.4% <1.5%of O/D	0.2% 0.4%	0.46mm	0.46mm	Less than <NPS22" _NPS22"	9to 12' min. 5'ft.	Bend Test Hydro Test
ASTM A -778 Austenitic Stainless Steel Tubuler Product	As per table 1 Welded Unannealed of ASTM A - 530				12.5%	12.5%	Rl10ft> Fl6meter -0mm	3meter +6mm	Transverse Tension Test Transverse guided bend.

CHEMICAL COMPOSITION

CHEMICAL COMPOSITION

	Grade	USA - Canada/ AISI - ASTM - ASME	% C (Max)	% Mn (Max)	% P (Max)	% S (Max)	% Si (Max)	% Cr	% Ni	% Mo	% N (Max)	% Cu (Max)	% OTHERS
AUSTENITIC	304	304	0.080	2.00	0.045	0.030	0.75	18.00-20.00	8.00-10.50	-	0.10	-	-
	304H	304H	0.04-0.10	2.00	0.045	0.030	0.75	18.00-20.00	8.00-10.50	-	-	-	-
	304L	304L	0.030	2.00	0.045	0.030	0.75	18.00-20.00	8.00-12.00	-	0.10	-	-
	304LN	304LN	0.030	2.00	0.045	0.030	0.75	18.00-20.00	8.00-12.00	-	0.10-0.16	-	-
	309	309	0.20	2.00	0.045	0.030	0.75	22.00-24.00	12.00-15.00	-	-	-	-
	309S	309S	0.08	2.00	0.045	0.030	0.75	22.00-24.00	12.00-15.00	-	-	-	-
	310	310	0.025	2.00	0.045	0.030	1.50	24.00-26.00	19.00-22.00	-	-	-	-
	310S	310S	0.08	2.00	0.045	0.030	1.50	24.00-26.00	19.00-22.00	-	-	-	-
	316	316	0.08	2.00	0.045	0.030	0.75	16.00-18.00	10.00-14.00	2.00-3.00	0.10	-	-
	316L	316L	0.030	2.00	0.045	0.030	0.75	16.00-18.00	10.00-14.00	2.00-3.00	0.10	-	-
	316LN	316LN	0.030	2.00	0.045	0.030	0.75	16.00-18.00	10.00-14.00	2.00-3.00	0.10-0.16	-	-
	316Ti	316Ti	0.08	2.00	0.045	0.030	0.75	16.00-18.00	10.00-14.00	2.00-3.00	0.10	-	Ti = 5X (C+N) Min., 0.70 Max.
	317	317	0.08	2.00	0.045	0.030	0.75	18.00-20.00	11.00-15.00	3.00-4.00	0.10	-	-
	317L	317L	0.030	2.00	0.045	0.030	0.75	18.00-20.00	11.00-15.00	3.00-4.00	0.10	-	-
	317LN	317LN	0.030	2.00	0.045	0.030	0.75	18.00-20.00	11.00-15.00	3.00-4.00	0.10-0.22	-	-
	321	321	0.08	2.00	0.045	0.030	0.75	17.00-19.00	9.00-12.00	-	0.10	-	Ti = 5X (C+N) Min., 0.70 Max.
	347	347	0.08	2.00	0.045	0.030	0.75	17.00-19.00	9.00-13.00	-	-	-	Cb = 10XC Min., 1.00 Max.
FERRITIC + MARTENSITIC	409	409	0.080	1.00	0.040	0.020	1.00	10.50-11.75	0.50 max.	-	0.030	-	Ti = 6X (C+N) Min., 0.70 Max.
	409RC	-	0.02	1.00	0.040	0.030	1.00	10.50-11.75	0.50 max.	-	0.020	-	Ti = 5X C Min., 0.75 Max.
	409M	-	0.03	0.8-1.5	0.03	0.030	1.00	10.80-12.50	1.50 max.	-	0.030	-	Ti = 0.75 Min.,
	410	410	0.15	1.00	0.040	0.030	1.00	11.50-13.50	0.75 max.	-	-	-	-
	410S	410S	0.08	1.00	0.040	0.030	1.00	11.50-13.50	0.60 max.	-	-	-	-
FERRITIC	405	405	0.80	1.00	0.04	0.030	1.00	11.50-14.50	0.60	-	-	-	Al = 0.10 - 0.30
	430	430	0.12	1.00	0.04	0.030	1.00	16.00-18.00	0.75 max.	-	-	-	-
	430Ti	430	0.030	1.00	0.04	0.030	1.00	16.00-19.00	-	-	-	-	Ti = 0.10 - 1.0
	436	436	0.12	1.00	0.040	0.030	1.00	16.00-18.00	-	0.75-1.25	-	-	Cb = 5X C Min., 0.80 max.
MARTENSITIC	420	420	0.15min.	1.00	0.040	0.030	1.00	12.00-14.00	0.75 max.	-	-	-	Mo = 0.50 Max.
	JBS	-	0.6-0.75	1.00	0.04	0.030	0.75	12.00-14.00	-	0.75 max	-	-	-
LOW NICKEL AUSTENITIC	JSL AUS(J1)	-	0.80	7.00-8.00	0.075	0.030	0.75	15.00-17.00	4.00-5.00	-	0.10	1.5	-
	J3	-	0.80	9.00-10.50	0.075	0.030	0.75	14.00-16.00	2.00-3.00	-	0.15	2.0	-
	J4	-	0.10	8.50-10.00	0.090	0.030	0.75	15.00-16.00	1.2(max)	-	0.20	2.0	-



Divine™

Tubes Pvt. Ltd.

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