

ASTM STANDARDS FOR STAINLESS STEEL SEAMLESS, WELDED TUBES PIPES

	Allowable Outside Diameter Variation in mm			Allowable wall		Exact Length		Testing
	Nominal Diameter	Over	Under	Over %	Under %	Over %	Under %	
ASTM A-213 Seamless Boiler Superheater & Heat Exchange tubes	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.	.1016 .1524 .2032 .254 .3048 .381	.1016 .1524 .2032 .254 .3048 .381	+20 +20 +22 +22 +22 +22	-0 -0 -0 -0 -0 -0	3.175 3.175 3.176 3.76 4.76 4.76	0 0 0 0 0 0	Tension Test Flattening Test Flaring Test Hardness Test 100% Hydrostatic Test Refer to ASTM A - 1016
ASTM A-249 Welded Boiler Superheater & Heat Exchange & Condenser tubes	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.	.1016 .1524 .2032 .254 .3048 .381	.1016 .1524 .2032 .254 .3048 .381	+10 +10 +10 +10 +10 +10	-10 -10 -10 -10 -10 -10	3.175 3.175 3.176 3.76 4.76 4.76	0 0 0 0 0 0	Tension Test Flattening Test Flaring Test * Reverse Bend Test Hardness Test 100% Hydrostatic Test * Reverse Flattening Test Refer to ASTM A - 1016 * Whenever Applicable
ASTM A-269 Seamless Boiler Tubing for General Service	Under 12.7 12.7- 38.1 excl. 38.1- 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 (Seamless Tube) Flange Test (Welded only) Hardness Test Reverse Flattening Test (Welded Only) 100% Hydrostatic Test Refer to ASTM A - 1016
ASTM A-312 Seamless & Weldec Austenitic Pipes	10.29 - 48.26 48.9 - 73.03 73.03 - 114.3 114.3 - 219.08	0.40 0.80 0.80 1.60	0.80 0.80 0.80 0.80	+20 % -12.5 % +22.5 % -12.5 %				Tension Test Flattening Test 100% Hydrostatic Test
ASTM A-270 Seamless & Weldec Austenitic Pipes	25.4 38.1 50.8 63.5 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 3.2 3.2	0 0 0 0 0 0	Reverse Flattening Test 100% Hydrostatic Test External Polish on all tubes Refer to ASTM A - 1016
ASTM A-268 Seamless & Weldec Ferritic & Martenitic Stainless Steel Tubes	Under 12.7 12.7- 38.1 excl. 38.1 excl. 88.9 excl. 88.9- 168.3 excl.	.13 .13 .25 .38	.13 .13 .25 .38	+15 +10 +10 +10	-15 -10 -10 -10	3.2 3.2 4.8 4.8	0 0 0 0	Tension Test, Flaring Test, Flange Test (ERW only) Hardness Test, Reverse Fla- ttening Test, 100% hydrostatic Test, Refer to ASTM A - 450
ASTM A-358 for Welded big diameter Pipes	for all sizes 5" NB & above	+0.5%	-0.5%	-	-0.3 mm	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 Reverse bend, Flange, Flattening Hydrostatic Test, Pneumatic Test Non Destructive Test
ASTM A-409 Welded Large Diameter Austenitic Steel Pipe	wall thickness < 4.8 mm +0.2% > 4.8 mm +0.2% Oveality <1.5% of O/D	0.2% 0.4%	0.2% 0.4%	0.46 mm	0.46 mm	<NPS 22" _NPS 22"	less than 9 to 12 feet minimum 5 ft.	Bend Test Hydro Test
ASTM A-778 Austenitic Stainless Steel Tubular Product	As per Table 1 Welded Unannealed ASTM A 530			12.5%	12.5%	RL 10ft > 3 meter FL 6 meter + 6mm - 0mm		Transverse Tension Test Transverse Guided Test

* Eddy current non destructive test & inter granular corrosion test can be offered on request

ASTM	American Society for Testing of Materials	ASME	American Society for Mechanical Engineers
SAE	Society of Automotive Engineers	DIN	Deutsches Institute for Normung
JIS	Japan Industrial Standards	UNS	Unified Numbering System
GOST	Gosudarstvenil Standards	TEMA	Tubular Exchanger Manufacturers Association
PED	Pressure Equipment Directive	IBR	Indian Boiler Regulation

S.S. PIPES SCHEDULE, DIMENSION, WALL THICKNESS, WT./MTR. (KG)

DESIGNATION OF DIA		OD MM		SCH 5S		NORMAL WALL THICKNESS												NORMAL WALL THICKNESS													
						SCH 5S		SCH 10S		SCH 20S		SCH 30		SCH 40S STD		SCH 40		SCH 60		SCH 80 SXS		SCH 80		SCH 100		SCH 120		SCH 140		SCH 160	
OD (A) NB	OD (B) INCH	WALL Thk	Weight Kg/Mtr	WALL Thk	Weight Kg/Mtr	WALL Thk	Weight Kg/Mtr	WALL Thk	Weight Kg/Mtr	WALL Thk	Weight Kg/Mtr	WALL Thk	Weight Kg/Mtr	WALL Thk	Weight Kg/Mtr	WALL Thk	Weight Kg/Mtr	WALL Thk	Weight Kg/Mtr	WALL Thk	Weight Kg/Mtr	WALL Thk	Weight Kg/Mtr	WALL Thk	Weight Kg/Mtr	WALL Thk	Weight Kg/Mtr	WALL Thk	Weight Kg/Mtr	WALL Thk	Weight Kg/Mtr
6	1/8	10.3	1.24	0.28		1.24	0.28			1.5	0.33			1.73	0.37	1.73	0.37			2.41	0.47	2.41	0.47								
8	1/4	13.7	1.24	0.39		1.65	0.49			2.00	0.58			2.24	0.63	2.24	0.63			3.02	0.80	3.02	0.80								
10	3/8	17.1	1.24	0.49		1.65	0.63			2.00	0.74			2.31	0.84	2.31	0.84			3.20	1.10	3.20	1.10								
15	1/2	21.3	1.65	0.80	1.65	0.80	1.65	1.00	2.11	1.00	2.30	1.07		2.77	1.27	2.77	1.27			3.73	1.62	3.73	1.62								
20	3/4	26.7	1.65	1.03	1.65	1.03	1.65	1.28	2.11	1.28	2.55	1.52		2.87	1.69	2.87	1.69			3.91	2.20	3.91	2.20								
25	1	33.4	1.65	1.30	1.65	1.30	1.65	2.09	2.77	2.09	3.00	2.25		3.38	2.50	3.38	2.50			4.55	3.24	4.55	3.24								
32	1 1/4	42.2	1.65	1.65	1.65	1.65	1.65	2.77	2.77	2.77	3.00	2.90		3.56	3.39	3.56	3.39			4.85	4.47	4.85	4.47								
40	1 1/2	48.3	1.65	1.91	1.65	1.91	1.65	3.11	2.77	3.11	3.00	3.35		3.68	4.05	3.68	4.05			5.08	5.41	5.08	5.41								
50	2	60.3	1.65	2.40	1.65	2.40	1.65	3.93	2.77	3.93	3.00	4.24		3.91	5.44	3.91	5.44			5.54	7.48	5.54	7.48								
65	2 1/2	73.0	2.11	3.69	2.11	3.69	2.11	5.26	3.05	5.26	3.50	6.81		5.16	8.63	5.16	8.63			7.01	11.41	7.01	11.41								
80	3	88.9	2.11	4.51	2.11	4.51	2.11	6.45	3.05	6.45	4.00	8.37		5.49	11.30	5.49	11.30			7.62	15.30	7.62	15.30								
90	3 1/2	101.6	2.11	5.18	2.11	5.18	2.11	7.41	3.05	7.41	4.00	9.62		5.74	13.57	5.74	13.57			8.08	18.53	8.08	18.53								
100	4	114.3	2.11	5.84	2.11	5.84	2.11	8.36	3.05	8.36	4.50	12.18		6.02	16.07	6.02	16.07			8.56	22.30	8.56	22.30								
125	5	141.3	2.77	9.47	2.77	9.47	2.77	11.57	3.40	11.57	5.00	16.80		6.55	21.77	6.55	21.77			9.53	30.90	9.53	30.90								
150	6	168.3	2.77	11.32	2.77	11.32	2.77	13.84	3.40	13.84	6.35	25.36		7.11	28.26	7.11	28.26			10.97	42.50	10.97	42.50								
200	8	219.1	2.77	14.79	2.77	14.79	2.77	19.96	3.76	19.96	9.35	33.31		8.18	42.55	8.18	42.55			12.70	64.50	12.70	64.50								
250	10	273.0	3.40	22.63	3.40	22.63	3.40	27.78	4.19	27.78	11.57	41.77		9.27	60.31	9.27	60.31			12.70	81.50	12.70	81.50								
300	12	323.8	3.96	3.40	4.19	3.40	4.57	36.00	4.57	36.00	13.84	49.70		10.31	73.80	10.31	73.80			14.27	109.0	14.27	109.0								
350	14	355.6	3.96					47.8	41.3	6.35	54.6	7.92	67.90		9.53	81.30	11.13	94.6			15.09	126.0	12.70	107.0							
400	16	406.4	4.19					47.8	47.29	6.35	62.6	7.92	77.82		9.53	93.3	12.70	123.0			16.66	160.0	12.70	123.0							
450	18	457.2	4.19					47.8	53.42	6.35	70.50	7.92	87.74		11.13	122.0	15.09	156.0			19.05	206.0	12.70	139.0							
500	20	508.2	4.78					5.54	68.71	6.35	78.50	9.53	117.14		12.70	155.1	20.62	183.0			20.62	248.0	12.70	155.1							
550	22	558.8	4.78					5.54	75.58	6.35	86.40	9.53	129.08		12.70	171.0	22.23	200.0			22.23	294.0	12.70	171.0							
600	24	609.6	5.54					6.35	94.45	6.35	94.70	9.53	141.11		14.30	210.0	24.61	255.0			24.61	355.0	12.70	187.0							
650	26	660.4																													
700	28	711.2																													
750	30	762.0	6.35					7.92																							
800	32	812.8																													
850	34	863.8																													
900	36	914.4																													

24.66 D.t

1000

Wt/pam + formula

Weight Stainless Steel Pipe

OD (mm) - WT (mm) XWT (mm) x 0.02466 = kg per mtr