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### HIGHLIGHTS OF ASTM SPECIFICATIONS FOR STAINLESS STEEL TUBES AND PIPES

SPECIFICATIONS	ALLOWABLE OUTSIDE DIAMETER VARIATIONS IN MM			ALLOWABLE WALL VARIATIONS IN %		EXACT LENGTH TOLERANCEC IN MM		TESTING
	DIAMETER	OVER	UNDER	OVER	UNDER	OVER	UNDER	
ASTM A-213 seamless ferritic & austenitic steel,boiler & superheater tubes & austenitic steel heat exchange tubes	Under 25.4	0.1016	0.1016	20	0	3.175	0	Tension Test Flattening Test Flare Test Hardness Test 100% Hydrostatic Test or NDT
	25.4-38.1 incl.	0.1524	0.1524	20	0	3.175	0	
	38.1-50.8 excl.	0.2032	0.2032	22	0	3.175	0	
	50.8-63.5 excl.	0.254	0.254	22	0	3.76	0	
	63.5-76.2 excl.	0.3048	0.3048	22	0	4.76	0	
76.2-101.6 incl.	0.381	0.381	22	0	4.76	0		
ASTM A-249 welded austenitic steel boiler, super heater, heat exchanger and condenser tubes	Under 25.4	0.1016	0.1016	10	10	3.175	0	Tension Test Flattening Test Flare Test reverse bend test reverse flattening test Hardness Test 100% Hydrostatic Test or NDT
	25.4-38.1 incl.	0.1524	0.1524	10	10	3.175	0	
	38.1-50.8 excl.	0.2032	0.2032	10	10	3.175	0	
	50.8-63.5 excl.	0.254	0.254	10	10	4.76	0	
	63.5-76.2 excl.	0.3048	0.3048	10	10	4.76	0	
76.2-101.6 incl.	0.381	0.381	10	10	4.76	0		
ASTM A-269 Seamless & Welded austenitic steel tubing for general service	under 12.7	0.13	0.13	15	15	3.2	0	Reverse Flattening Test (welded only) Flange Test (welded only) Flare Test Hardness Test 100% Hydrostatic Test or NDT
	12.7-38.1 excl.	0.13	0.2	10	10	3.2	0	
	38.1-88.9 excl.	0.25	0.25	10	10	4.8	0	
	88.9-139.7 excl.	0.38	0.28	10	10	4.8	0	
	139.7-203.2 excl.	0.76	0.38	10	10	4.8	0	
ASTM A-270 seamless & welded austenitic steel for sanitary tubing	Under 25.4	0.13	0.13	12.5	12.5	3.2	0	Reverse flattening test 100% Hydrostatic Test or NDT External Polish on all Tubes Refer to ASTM A-270
	25.4-50.8 excl.	0.2	0.2	12.5	12.5	3.2	0	
	50.8-76.2 excl.	0.25	0.25	12.5	12.5	3.2	0	
	76.2-101.6 excl.	0.38	0.38	12.5	12.5	3.2	0	
ASTM A-312 seamless, welded & heavily cold worked austenitic SS pipes	1/8 to 2 1/2 incl. all t/D ratios	0.4	0.8	20	12.5	6.35	0	Tension Test Flattening Test 100% Hydrostatic Test Refer to ASTM A-999
	3 to 18 incl. t/D up to 5% incl.	0.8	0.8	22.5	12.5	6.35	0	
	3 to 18 incl. t/D > 5 %	1.6	0.8	15	12.5	6.35	0	
ASTM A-688 welded feed water heater 'U' tubes	Under 38.10 mm	0.1016	0.1016	+20 +10	(-10) for avg. wall thk -0 for min wall thk	3 to 13	0	Tension Test Flattening Test Flare Test reverse bend test reverse flattening test Hardness Test 100% Hydrostatic Test or NDT Air under Water Test.