

Not For Production Use (For Reference Only)

ASTM A554-03

Specification for Welded Stainless Steel Mechanical Tubing
Reapproved 1995

ASTM Chemical Requirements

Elements	304	304L	309S	316	316L	321
(C) Carbon, max	0.08	0.035	0.08	0.08	0.035	0.08
(Mn) Manganese, max	2.00	2.00	2.00	2.00	2.00	2.00
(P) Phosphorus, max	0.040	0.040	0.040	0.040	0.045	0.045
(S) Sulfur, max	0.030	0.030	0.030	0.030	0.030	0.030
(Si) Silicon	1.00	1.00	1.00	1.00	1.00	1.00
(Ni) Nickel	8.0-11.0	8.0-13.0	12.0-15.0	10.0-14.0	10.0-15.0	9.0-13.0
(Cr) Chromium	18.0-20.0	18.0-20.0	22.0-24.0	16.0-18.0	16.0-18.0	17.0-20.0
(Mo) Molybdenum	N/A	N/A	N/A	2.0-3.0	2.0-3.0	N/A
(Ti) Titanium	N/A	N/A	N/A	N/A	N/A	5xC - 0.060

Mechanical Testing Test

Test	ASTM	United
Flare	Not Required	Required
Flatten	Not Required	Required
Eddy Current	Not Required	Required

Length Requirements*

Cut Length	O.D.	ASTM	United
Up to 4', incl.	Up to 2", incl.	-0 +1/16	-0 +1/16
	Over 2" tp 4" incl.	-0 +3/32	-0 +3/32
Over 4' to 10' incl.	Up to 2", incl.	-0 +3/32	-0 +3/32
	Over 2"	-0 +1/8	-0 +1/8
Over 10' to 24', incl.	All sized	-0 +3/16	-0 +3/16

* For lengths over 24', add a tolerance of 1/8" for each 10', or fraction thereof, up to maximum of 1/2".

Dimensional Requirements

Size	Outside Diameter		Squareness		Straightness		Weld Height**		Wall	
	ASTM	United	ASTM	United	ASTM	United	ASTM	United	ASTM	United
1"	+/- .005	+/- .005	N/A	.020	.030/36"	.030/36"	.005	.005	+/- 10%	+/- 10%
1-1/2"	+/- .006	+/- .006	N/A	.025	.030/36"	.030/36"	.005	.005	+/- 10%	+/- 10%
2"	+/- .007	+/- .007	N/A	.035	.030/36"	.030/36"	.005	.005	+/- 10%	+/- 10%
2-1/2"	+/- .010	+/- .010	N/A	.040	.030/36"	.030/36"	.005	.005	+/- 10%	+/- 10%
3"	+/- .010	+/- .010	N/A	.045	.030/36"	.030/36"	.005	.005	+/- 10%	+/- 10%
3-1/2"	+/- .015	+/- .015	N/A	.045	.030/36"	.030/36"	.005	.005	+/- 10%	+/- 10%
4"	+/- .015	+/- .015	N/A	.045	.030/36"	.030/36"	.005	.005	+/- 10%	+/- 10%

(See ASTM A554 6.2.2 for var.)

** Weld Height is .005" or 15% of wall thickness, whichever is greater.