

ASTM A554 Wall Thickness/Outside Dimension Tolerances

Wall Thickness Tolerances

± 10% of specified wall thickness

Round Tubing Outside Dimension Tolerances

OD Size, in.(mm)	Wall Thickness		OD,±	
	in.	mm	in.	mm
Under ½ (12.7)	0.020 - 0.049	0.51 - 1.24	0.004	0.10
½ - 1 (12.7-25.4)	0.020 - 0.065	0.51 - 1.65	0.005	0.13
½ - 1 (12.7-25.4)	over 0.065 - 0.134	over 1.65 - 3.40	0.010	0.25
Over 1 - 1 ½ (25.4-38.1), incl	0.025 - 0.065	0.64 - 1.65	0.008	0.20
Over 1 - 1 ½ (25.4-38.1), incl	over 0.065 - 0.134	over 1.65 - 3.40	0.010	0.25
Over 1 ½ - 2 (38.1-50.8), incl	0.025 - 0.049	0.64 - 1.24	0.010	0.25
Over 1 ½ - 2 (38.1-50.8), incl	over 0.049 - 0.083	over 1.24 - 2.11	0.011	0.28
Over 1 ½ - 2 (38.1-50.8), incl	over 0.083 - 0.149	over 2.11 - 3.78	0.012	0.30
Over 2 - 2 ½ (50.8-63.5), incl	0.032 - 0.065	0.81 - 1.65	0.012	0.30
Over 2 - 2 ½ (50.8-63.5), incl	over 0.065 - 0.109	over 1.65 - 2.77	0.013	0.33
Over 2 - 2 ½ (50.8-63.5), incl	over 0.109 - 0.165	over 2.77 - 4.19	0.014	0.36
Over 2 ½ - 3 ½ (63.5-88.9), incl	0.032 - 0.165	0.81 - 4.19	0.014	0.36
Over 2 ½ - 3 ½ (63.5-88.9), incl	over 0.165	over 4.19	0.020	0.51
Over 3 ½ - 5 (88.9-127.0), incl	0.035 - 0.165	0.89 - 4.19	0.020	0.51
Over 3 ½ - 5 (88.9-127.0), incl	over 0.165	over 4.19	0.025	0.64
Over 5 - 7 ½ (127.0-190.5), incl	0.049 - 0.250	1.24 - 6.35	0.025	0.64
Over 5 - 7 ½ (127.0-190.5), incl	over 0.250	over 6.35	0.030	0.76
Over 7 ½ - 16 (190.5-406.4), incl	all	all	0.00125 in./in. or mm/mm of circumference	

Square & Rectangular Outside Dimension Tolerances

Largest Specified OD Across Flats, in.(mm)	Wall Thickness		across flats, Convexity or Concavity, ±	
	in.	mm	in.	mm
To 1 ¼ (31.8), incl	all		0.015	0.38
Over 1 ¼ to 2 ½ (31.8-63.5), incl	all		0.020	0.51
Over 2 ½ to 5 ½ (63.5-139.7), incl	all		0.030	0.76
Over 5 ½ to 8 (139.7-203.2), incl	all		0.060	1.52

Square & Rectangular Maximum Radii of Corners Tolerances

Wall Thickness, in.(mm)	Radii of Corners, max	
	in.	mm
Over 0.020-0.049 (0.51-1.24), incl	$\frac{3}{32}$	2.4
Over 0.049-0.065 (1.24-1.65), incl	$\frac{1}{8}$	3.2
Over 0.065-0.083 (1.65-2.11), incl	$\frac{9}{64}$	3.6
Over 0.083-0.095 (2.11-2.42), incl	$\frac{3}{16}$	4.8
Over 0.095-0.109 (2.42-2.77), incl	$\frac{13}{64}$	5.2
Over 0.109-0.134 (2.77-3.40), incl	$\frac{7}{32}$	5.6
Over 0.134-0.156 (3.40-3.96), incl	$\frac{1}{4}$	6.4
Over 0.156-0.200 (3.96-5.08), incl	$\frac{3}{8}$	9.5
Over 0.200-0.250 (5.08-6.35), incl	$\frac{1}{2}$	12.7
Over 0.250-0.375 (6.35-9.53), incl	$\frac{3}{4}$	19.1

Square & Rectangular Twist Tolerances

Largest Size, in.(mm)	Twist in 3 ft (1m), max	
	in.	mm
Under ½ (12.7)	0.050	1.4
½ to 1 ½ (12.7-38.1), incl	0.075	2.1
Over 1 ½ - 2 ½ (38.1-63.5), incl	0.095	2.6
Over 2 ½ - 4 (63.5-101.6), incl	0.125	3.5
Over 4 - 6 (101.6-152.4), incl	0.250	6.9
Over 6 (152.4)	0.375	10.4