

Carbon and Alloy Steel Hot Rolled Bar Rounds, Squares, and Round Cornered Squares

Size Tolerances and Out-of-Round or Out-of-Square Tolerances

Specified Sizes, In.	Size Tolerance, in.	
	Over Under	Out-of-Round or Out-of-Square, In.
To 5/16 incl.	.005 .005	.008
Over 5/16 to 7/16 incl.	.006 .006 .007 .007	.009 .010
Over 7/16 to 5/8 incl. Over 5/8 to 7/8 incl.	.008 .008	.012
Over 7/8 to 1 incl.	.009 .009	.013
Over 1 to 1 1/8 incl.	.010 .010	.015
Over 1 1/8 to 1 1/4 incl.	.011 .011	.016
Over 1 1/4 to 1 3/8 incl.	.012 .012	.018
Over 1 3/8 to 1 1/2 incl.	.014 .014	.021
Over 1 1/2 to 2 incl.	1/64 - 1/64	.023
Over 2 to 2 1/2 incl.	1/32 - 0	.023
Over 2 1/2 to 3 1/2 incl.	3/64 - 0	.035
Over 3 1/2 to 4 1/2 incl.	1/16 - 0	.046
Over 4 1/2 to 5 1/2 incl.	5/64 - 0	.058
Over 5 1/2 to 6 1/2 incl.	1/8 - 0	.070
Over 6 1/2 to 8 1/4 incl.	5/32 - 0	.085
Over 8 1/4 to 9 1/2 incl.	3/16 - 0	.100
Over 9 1/2 to 10 incl.	1/4 - 0	.120

Out-of-round is the difference between the maximum and minimum diameters of the bar, measured at the same transverse cross section.

Out-of-square section is the difference in perpendicular distance between opposite faces, measured at the same transverse cross section.

Tolerances shown are based upon ASTM A29. Reference: AISI Steel Products Manual, Alloy, Carbon and HSLA Steels. March, 1986.