

TECHNICAL INFORMATION

Bar Tolerances

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

Specified Sizes, In.	Size Tolerances, Inch		Out-of-Round or Out-of-Square Section, In.
	Over	Under	
To 5/16 incl.	0.005	0.005	0.008
Over 5/16 to 7/16 incl.	0.006	0.006	0.009
Over 7/16 to 5/8 incl.	0.007	0.007	0.010
Over 5/8 to 7/8 incl.	0.008	0.008	0.012
Over 7/8 to 1 incl.	0.009	0.009	0.013
Over 1 to 1 1/8 incl.	0.010	0.010	0.015
Over 1 1/8 to 1 1/4 incl.	0.011	0.011	0.016
Over 1 1/4 to 1 3/8 incl.	0.012	0.012	0.018
Over 1 3/8 to 1 1/2 incl.	0.014	0.014	0.021
Over 1 1/2 to 2 incl.	1/64	1/64	0.023

Specified Sizes, In.	Size Tolerances, Inch		Out-of-Round or Out-of-Square Section, In.
	Over	Under	
Over 2 to 2 1/2 incl.	1/32	0	0.023
Over 2 1/2 to 3 1/2 incl.	3/64	0	0.035
Over 3 1/2 to 4 1/2 incl.	1/16	0	0.046
Over 4 1/2 to 5 1/2 incl.	5/64	0	0.058
Over 5 1/2 to 6 1/2 incl.	1/8	0	0.070
Over 6 1/2 to 8 1/2 incl.	5/32	0	0.085
Over 8 1/2 to 9 1/2 incl.	3/16	0	0.100
Over 9 1/2 to 10 incl.	1/4	0	0.120

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

Out-of-square is the difference in the two dimensions at the same cross section of a square bar, each dimension being the distance between opposite sides.

Cold Finished Carbon and Alloy Steel Round Bar Size Tolerances

All tolerances are in inches and are minus

Size In Inches	Maximum of Carbon Range -28 percent or less	Maximum of Carbon Range over 0.28 percent to 0.55 percent incl. Annealing or Normalizing before cold finishing	Maximum of Carbon Range to 0.55 percent incl., stress relieved or annealed after cold finishing	Maximum of Carbon Range over 0.55 percent, with or without stress relieving or annealing after cold finishing. Also, all carbons, quenched and tempered (heat treated) or normalized and tempered, before cold finishing
To 1 incl.	0.002	0.003	0.004	0.005
To 1-1/2 incl.	0.003	0.004	0.005	0.006
Over 1-1/2 to 2-1/2 incl.	0.004	0.005	0.006	0.007

Size In Inches	Maximum of Carbon Range -28 percent or less	Maximum of Carbon Range over 0.28 percent to 0.55 percent incl. Annealing or Normalizing before cold finishing	Maximum of Carbon Range to 0.55 percent incl., stress relieved or annealed after cold finishing	Maximum of Carbon Range over 0.55 percent, with or without stress relieving or annealing after cold finishing. Also, all carbons, quenched and tempered (heat treated) or normalized and tempered, before cold finishing
Over 2-1/2 to 4 incl.	0.005	0.006	0.007	0.008
Over 4 to 6 incl.	0.006	0.007	0.008	0.009
Over 6 to 8 incl.	0.007	0.008	0.009	0.010
Over 8 to 9 incl.	0.008	0.009	0.010	0.011
Over 9	0.009	0.010	0.011	0.012