

ASTM A307

Scope

The ASTM A307 specification covers carbon steel bolts and studs ranging from 1/4" through 4" diameter. This is your everyday, run of the mill bolt specification often manufactured using A36 round bar. There are three grades A, B, and C* which denote tensile strength, configuration, and application. Refer to the Mechanical Properties Chart for the subtle strength differences within each grade.

Grades

A	Headed bolts, threaded rods and bent bolts intended for general applications.
B	Heavy hex bolts and studs intended for flanged joints in piping systems with cast iron flanges.
C*	Nonheaded anchor bolts, either bent or straight, intended for structural anchorage purposes. The end of a grade C anchor bolt intended to project from the concrete will be painted green for identification purposes. Permanent marking is a supplemental requirement. *As of August 2007, grade C has been replaced by specification F1554 grade 36. We will continue to supply grade C, if required by the project.

Mechanical Properties

Grade	Tensile, ksi	Yield, min, ksi	Elong %, min
A	60 min	--	18
B	60 - 100	--	18
C*	58 - 80	36	23

Chemical Properties

Element	Grade A	Grade B
Carbon, max	0.29%	0.29%
Manganese, max	1.20%	1.20%
Phosphorus, max	0.04%	0.04%
Sulfur, max	0.15%	0.05%

Recommended Nuts and Washers

Nuts	Washers
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A307 Grades A & C*		A307 Grade B	
1/4 - 1-1/2	1-5/8 - 4	1/4 - 4	
A563A Hex	A563A Heavy Hex	A563A Heavy Hex	F844