

Tensile strength is the maximum tension applied load a fastener can support prior to, or coincident with, its fracture.

Fastener Type	Grade or Special Material	Size Range	Tension Strength In PSI (Minimum) (Pounds per square inch)
Machine Screws		Diameter #6 to 1/2" inclusive - 1/2" or 3D (where D is the nominal screw size in inches) or longer in length	60,000 psi
Machine Screws	Stainless Steel	Diameter #6 to 1/2" inclusive - 1/2" or 3D (where D is the nominal screw size in inches) or longer in length	80,000 psi
Hex Cap Screw	Grade 2	1/4" - 3/4" dia., 6" and shorter in length	74,000 psi
		1/4" - 3/4" dia., Over 6" in length and 7/8" - 1-1/2" dia., all lengths	60,000 psi
Hex Cap Screw	Grade 5	1/4" - 1" dia., all lengths	120,000 psi
		1-1/8" - 1-1/2" dia., all lengths	105,000 psi
Hex Cap Screw	Grade 8	1/4" - 1-1/2" dia., all lengths	150,000 psi
Hex Cap Screw	Stainless Steel 18-8 & 316	1/4" - 5/8" dia., (2-1/4 x dia.) and longer	10,000 psi (min.) 150,000 psi (max.)
		3/4" dia., (2-1/4 x dia.) and longer 7/8" - 1" dia., (3 x dia.) and longer	85,000 psi (min.) 140,000 psi (max.)
Carriage Bolt			60,000 psi
Carriage Bolt	Galvanized		60,000 psi
Carriage Bolt	Stainless Steel	1/4" - 1/2" dia., 2.25D and longer	100,000 psi
Lag Screw			60,000 psi
Lag Screw	Stainless Steel		100,000 psi
Plow Bolt	Grade 5		120,000 psi

Proof Load is a tension-applied load that the fastener must support without evidence of permanent deformation.

Fastener Type	Grade or Special Material	Size Range	Proof Load
Hex Nut	Grade 2	Coarse	90,000 psi
		Fine	80,000 psi
Hex Nut	Grade 5	1/4" - 1" Coarse	120,000 psi
		1/4" - 1" Fine	109,000 psi
		1-1/8" - 1-1/2" Coarse	105,000 psi
		1-1/8" - 1-1/2" Fine	94,000 psi
Hex Nut	Grade 8	1/4" - 1-1/2" Coarse & Fine	150,000 psi
Hex Nut	Stainless Steel	Coarse	100,000 psi
		Fine	85,000 psi
Hex Nut	Galvanized	Coarse	68,000 psi
		Fine	60,000 psi
Hex Jam Nut		Coarse	54,000 psi
		Fine	48,000 psi
Hex Jam Nut	Stainless Steel	Coarse & Fine	60,000 psi
Heavy Hex Nut		Coarse	100,000 psi
		Fine	90,000 psi
Heavy Hex Nut	Stainless Steel	1/4" - 5/8" Coarse & Fine	100,000 psi
		3/4" - 1" Coarse & Fine	85,000 psi
Socket Cap Screw		0-1/2" dia.	180,000 psi
		5/8" dia. and larger	170,000 psi
Socket Cap Screw	Stainless Steel		80,000 psi

These tensile strengths are offered as guides only. Actual testing of an item from an individual manufacturing lot is recommended when strength of a particular fastener is critical.