



Grade & Material Identification Markings Required by ASTM Specifications

Identification Mark	Specification Number	Fastener Description	Material	Is MFR's Identification number required?	Nominal Size Range	Mechanical Properties					
						Bolts, Screws, Studs			Nuts	Hardness	
						Proof Load (psi)	Yield Strength (min. psi)	Tensile Strength (min. psi)	Proof Load (psi)	Brinell	Rockwell I
No Mark	A76	Track Bolts	Carbon Steel	Yes	1/2" to 1"	-	-	55,000	-	-	-
	A183	Track Bolts	Carbon Steel, Heat Treated	Yes	3/4" to 1-1/8"	-	80,000	100,000	-	-	-
	A394	Galvanized Transmission Tower Bolts	Carbon Steel	Yes	1/2" to 1"	-	-	60,000	-	121/207	B69/95
	A307, Grade A	Common Bolts	Carbon Steel	Yes	1/4" to 4"	-	-	55,000	-	104 min.	B64 min.
	A307, Grade B	Flange Bolts						55,000 min. 90,000 max.		104/187	B64/92
	A449	Bolts & Studs	Medium Carbon Steel, Heat Treated	Yes	1/4" to 3/4"	85,000	88,000	120,000	-	241/302	C23/32
					7/8" to 1"	78,000	81,000	115,000		235/302	C22/32
					1-1/8" to 1-1/2"	74,000	77,000	105,000		223/285	C19/30
					1-5/8" to 3"	55,000	-	90,000		183/235	-
 A325	A325	High Strength Structural Bolts	Medium Carbon Steel, Heat Treated	Yes	1/2", 5/8", 3/4"	85,000	88,000	120,000	-	241/331	C23/35
					7/8", 1"	78,000	81,000	115,000		235/321	C22/34
					1-1/8" to 1-1/2"	74,000	77,000	105,000		223/293	C19/31

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	A325	Nuts for High Strength Bolts	Carbon Steel	No	1/2" to 1-1/2"	-	-	-	144,000	143 min.	-
	A354, Grade BD	Bolts & Studs	Alloy Steel	Yes	1/4" to 1-1/2"	120,000	125,000	150,000	-	302/352	C32/38
BC	A354, Grade BC	Bolts & Studs	Alloy Steel	Yes	1/4" to 2-1/2" 2-5/8" to 4"	105,000 95,000	109,000 99,000	125,000 115,000	-	255/321	C25/34
BB	A354, Grade BB	Bolts & Studs	Alloy Steel	Yes	1/4" to 2-1/2" 2-5/8" to 4"	80,000 75,000	83,000 78,000	105,000 100,000	-	217/285	CS18/30
A490	A490	High Strength Structural Bolts	Alloy Steel	Yes	1/4" to 2-1/2" 2-5/8" to 4"	120,000 105,000	125,000 115,000	150,000 140,000	-	302/352 285/341	C32/38 C30/36
B5	A193	Bolts & Studs for elevated temp. applications	AISI 501	Yes	1/4" to 4"	-	80,000	100,000	-	-	-
B6	A193	Bolts & Studs for elevated temp. applications	AISI 410, 416 or 416Se Heat Treated	Yes	1/4" to 4"	-	85,000	110,000	-	-	-
B7	A193	Bolts & Studs for elevated temp. applications	AISI 4140, 4142 or 4145	Yes	1/4" to 2-1/2" 2-5/8" to 4" 4" to 7"	-	105,000 95,000 75,000	125,000 115,000 100,000	-	-	-

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B14	A193	Bolts & Studs for elevated temp. applications	Alloy Steel	Yes	1/4" to 2-1/2"	-	105,000	125,000	-	-	-
B16	A193	Bolts & Studs for elevated temp. applications	Alloy Steel	Yes	1/4" to 2-1/2"	-	105,000	125,000	-	-	-
					2-5/8" to 4"		95,000	110,000			
					4-1/8" to 7"		85,000	100,000			
B8	A193 & A320	Bolts & Studs for elevated temp. applications	AISI 304	Yes	1/4" and larger	-	30,000	75,000	-	-	-
B8C	A193 & A320	Bolts & Studs for elevated temp. applications	AISI 347	Yes	1/4" and larger	-	30,000	75,000	-	-	-
B8M	A193	Bolts & Studs for elevated temp. applications	AISI 316	Yes	1/4" and larger	-	30,000	75,000	-	-	-
B8T	A193 & A320	Bolts & Studs for elevated temp. applications	AISI 321	Yes	1/4" and larger	-	30,000	75,000	-	-	-
<u>B8</u>	A193 & A320	Bolts & Studs for elevated temp. applications	AISI 304 Strain Hardened	Yes	1/4" to 3/4"	-	100,000	125,000	-	320 max.	-
					7/8" to 1"		80,000	115,000			
					1-1/8" to 1-1/4"		65,000	105,000			
					1-3/8" to 1-1/2"		50,000	100,000			
<u>B8C</u>	A193 & A320	Bolts & Studs for elevated temp. applications	AISI 347 Strain Hardened	Yes	1/4" to 3/4"	-	100,000	125,000	-	320 max.	-
					7/8" to 1"		80,000	115,000			
					1-1/8" to 1-1/4"		65,000	105,000			
					1-3/8" to 1-1/2"		50,000	100,000			
<u>B8M</u>	A193	Bolts & Studs for elevated temp. applications	AISI 316 Strain Hardened	Yes	1/4" to 3/4"	-	100,000	125,000	-	320 max.	-
					7/8" to 1"		80,000	115,000			
					1-1/8" to 1-1/4"		65,000	105,000			
					1-3/8" to 1-1/2"		50,000	100,000			

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B8T	A194 & A320	Bolts & Studs for elevated temp. applications	AISI 321 Strain Hardened	Yes	1/4" to 3/4"	-	100,000	125,000	-	320 max.	-
					7/8" to 1"		80,000	115,000			
					1-1/8" to 1-1/4"		65,000	105,000			
					1-3/8" to 1-1/2"		50,000	100,000			
1	A194	Hot forged or cold formed nuts for high pressure and/or high temp. applications	Carbon Steel	Yes	1/4" and larger	-	-	-	130,000	121 min.	-
2	A194	Hot forged or cold formed nuts for high pressure and/or high temp. applications	Carbon Steel	Yes	1/4" and larger	-	-	-	150,000	163/352	-
2H	A194	Hot forged or cold formed nuts for high pressure and/or high temp. applications	Carbon Steel, Heat Treated	Yes	1/4" and larger	-	-	-	175,000	248/352	C24/38
3	A194	Hot forged or cold formed nuts for high pressure and/or high temp. applications	AISI 501	Yes	1/4" and larger	-	-	-	175,000	248/352	C24/38
4	A194	Hot forged or cold formed nuts for high pressure and/or high temp. applications	Alloy Steel	Yes	1/4" and larger	-	-	-	175,000	248/352	C24/38

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6	A194	Hot forged or cold formed nuts for high pressure and/or high temp. applications	AISI 416	Yes	1/4" and larger	-	-	-	175,000	248/352	C24/38
8	A194	Hot forged or cold formed nuts for high pressure and/or high temp. applications	AISI 304	Yes	1/4" and larger	-	-	-	-	149 min.	-
8C	A194	Hot forged or cold formed nuts for high pressure and/or high temp. applications	AISI 347	Yes	1/4" and larger	-	-	-	-	149 min.	-
8T	A194	Hot forged or cold formed nuts for high pressure and/or high temp. applications	AISI 321	Yes	1/4" and larger	-	-	-	-	149 min.	-
8F	A194	Hot forged or cold formed nuts for high pressure and/or high temp. applications	AISI 303	Yes	1/4" and larger	-	-	-	-	149 min.	-
1B	A194	Machined-from-bar nuts for high pressure and/or high temp. applications	Carbon Steel	Yes	1/4" and larger	-	-	-	130,000	121 min.	-
2B	A194	Machined-from-bar nuts for high pressure and/or high temp. applications	Carbon Steel	Yes	1/4" and larger	-	-	-	150,000	163/352	-



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2HB	A194	Machined-from-bar nuts for high pressure and/or high temp. applications	Carbon Steel, Heat Treated	Yes	1/4" and larger	-	-	-	175,000	248/352	C24/38
3B	A194	Machined-from-bar nuts for high pressure and/or high temp. applications	AISI 501	Yes	1/4" and larger	-	-	-	175,000	248/352	C24/38
4B	A194	Machined-from-bar nuts for high pressure and/or high temp. applications	Alloy Steel	Yes	1/4" and larger	-	-	-	175,000	248/352	C24/38