



# Tensile Strength

Size	ASTM A307, Gr. A (Hex Bolts/Thd Rod)		SAE J429, Gr. 2 <sup>1</sup> (Cap Screws)		SAE J429, Gr. 5 (Cap Screws)		SAE J429, Gr. 8 (Cap Screws)	
	PSI	Pounds	PSI	Pounds	PSI	Pounds	PSI	Pounds
<b>NC Threads</b>								
1/4-20	60,000	1900	74,000	2350	120,000	3800	150,000	4750
5/16-18	60,000	3100	74,000	3900	120,000	6300	150,000	7850
3/8-16	60,000	4650	74,000	5750	120,000	9300	150,000	11,600
7/16-14	60,000	6350	74,000	7850	120,000	12,800	150,000	15,900
1/2-13	60,000	8500	74,000	10,500	120,000	17,000	150,000	21,300
9/16-12	60,000	11,000	74,000	13,500	120,000	21,800	150,000	27,300
5/8-11	60,000	13,550	74,000	16,700	120,000	27,100	150,000	33,900
3/4-10	60,000	20,050	74,000	24,700	120,000	40,100	150,000	50,100
7/8-9	60,000	27,700	60,000	27,700	120,000	55,400	150,000	69,300
1-8	60,000	36,350	60,000	36,400	120,000	72,700	150,000	90,900
1 1/8-7	60,000	45,800	60,000	45,800	105,000	80,100	150,000	114,400
1 1/4-7	60,000	58,150	60,000	58,100	105,000	101,700	150,000	145,400
1 3/8-6	60,000	69,300	60,000	69,300	105,000	121,300	150,000	173,200
1 1/2-6	60,000	84,300	60,000	84,300	105,000	147,500	150,000	210,800
1 3/4-5	60,000	114,000						
2-4 1/2	60,000	150,000						
<b>NF Threads</b>								
1/4-28			74,000	2700	120,000	4350	150,000	5450
5/16-24			74,000	4300	120,000	6950	150,000	8700
3/8-24			74,000	6500	120,000	10,500	150,000	13,200
7/16-20			74,000	8800	120,000	14,200	150,000	17,800
1/2-20			74,000	11,800	120,000	19,200	150,000	24,000
9/16-18			74,000	15,000	120,000	24,400	150,000	30,400
5/8-18			74,000	18,900	120,000	30,700	150,000	38,400
3/4-16			74,000	27,600	120,000	44,800	150,000	56,000
7/8-14			60,000	30,500	120,000	61,100	150,000	76,400
1-12			60,000	39,800	120,000	79,600	150,000	99,400
1-14			60,000	40,700	120,000	81,500	150,000	101,900
1 1/8-12			60,000	51,400	105,000	89,900	150,000	128,400
1 1/4-12			60,000	64,400	105,000	112,700	150,000	161,000
1 3/8-12			60,000	78,900	105,000	138,100	150,000	197,200
1 1/2-12			60,000	94,900	105,000	166,000	150,000	237,200

**Ultimate Tensile Load:**

Maximum tensile-applied load or force a fastener can support prior to or coincidental with it's fracture.  
Normally expressed in pounds.

Note 1- Grade 2 requirements for sizes 1/4 through 3/4 inches apply only to bolts and screws 6 inches and shorter in length.  
For bolts & screws over 6 inches in length, Grade 1 requirements shall apply (same as ASTM A307, Grade A)



# Tensile Strength

Size	ASTM A325 (Structural Bolts)		ASTM A490 (Structural Bolts)		ASTM A449 (Bolts/Cap Screws)		ASTM A354, Gr. BD (Bolts)		ASTM A193, Gr. B7 (B7 Thd Rod/Bolts)	
	PSI	Pounds	PSI	Pounds	PSI	Pounds	PSI	Pounds	PSI	Pounds
<b>NC Threads</b>										
1/4-20					120,000	3800	150,000	4750	125,000	3975
5/16-18					120,000	6300	150,000	7850	125,000	6550
3/8-16					120,000	9300	150,000	11,650	125,000	9700
7/16-14					120,000	12,750	150,000	15,950	125,000	13,300
1/2-13	120,000	17,050	150,000	21,300	120,000	17,050	150,000	21,300	125,000	17,750
9/16-12					120,000	21,850	150,000	27,300	125,000	22,750
5/8-11	120,000	27,100	150,000	33,900	120,000	27,100	150,000	33,900	125,000	28,250
3/4-10	120,000	40,100	150,000	50,100	120,000	40,100	150,000	50,100	125,000	41,750
7/8-9	120,000	55,450	150,000	69,300	120,000	55,450	150,000	69,300	125,000	57,750
1-8	120,000	72,700	150,000	90,900	120,000	72,700	150,000	90,900	125,000	75,750
1 1/8-7	105,000	80,100	150,000	114,450	105,000	80,100	150,000	114,450	125,000	95,400
1 1/4-7	105,000	101,700	150,000	145,350	105,000	101,700	150,000	145,350	125,000	121,150
1 3/8-6	105,000	121,300	150,000	173,250	105,000	121,300	150,000	173,250	125,000	144,400
1 1/2-6	105,000	147,500	150,000	210,750	105,000	147,500	150,000	210,750	125,000	175,650
1 3/4-5					90,000	171,000	150,000	285,000	125,000	237,500
2-4 1/2					90,000	225,000	150,000	375,000	125,000	312,500
<b>NF Threads</b>										
1/4-28					120,000	4350	150,000	5450	125,000	4550
5/16-24					120,000	6950	150,000	8700	125,000	7250
3/8-24					120,000	10,550	150,000	13,200	125,000	11,000
7/16-20					120,000	14,250	150,000	17,800	125,000	14,850
1/2-20					120,000	19,200	150,000	24,000	125,000	20,000
9/16-18					120,000	24,350	150,000	30,400	125,000	25,400
5/8-18					120,000	30,700	150,000	38,400	125,000	32,000
3/4-16					120,000	44,750	150,000	56,000	125,000	46,650
7/8-14					120,000	61,100	150,000	76,400	125,000	63,650
1-12					120,000	79,550	150,000	99,400	125,000	82,900
1-14							150,000	101,900	125,000	84,900
1 1/8-12					105,000	89,900	150,000	128,400	125,000	107,000
1 1/4-12					105,000	112,650	150,000	161,000	125,000	134,150
1 3/8-12					105,000	138,100	150,000	197,200	125,000	164,400
1 1/2-12					105,000	166,000	150,000	237,200	125,000	197,650

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Maximum tensile-applied load or force a fastener can support prior to or coincidental with it's fracture.  
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