



# Hex Bolts

Minimum Stress Under Proof Load  
Minimum Tensile Stress

## HEX BOLTS - MINIMUM STRESS UNDER PROOF LOAD (lbf/in<sup>2</sup>)

Nominal Size	TPI	Stress Area in <sup>2</sup>	Grade 2	Grade 5	Grade 8
1/4"UNC	20	0.0318	55,000	85,000	120,000
5/16"UNC	18	0.0524	55,000	85,000	120,000
3/8"UNC	16	0.0775	55,000	85,000	120,000
7/16"UNC	14	0.1063	55,000	85,000	120,000
1/2"UNC	13	0.1419	55,000	85,000	120,000
9/16"UNC	12	0.1820	55,000	85,000	120,000
5/8"UNC	11	0.2260	55,000	85,000	120,000
3/4"UNC	10	0.3340	55,000	85,000	120,000
7/8"UNC	9	0.4620	33,000	85,000	120,000
1"UNC	8	0.6060	33,000	85,000	120,000
1-1/8"UNC	7	0.7630	33,000	74,000	120,000
1-1/4"UNC	7	0.9690	33,000	74,000	120,000
1-3/8"UNC	6	1.1550	33,000	74,000	120,000
1-1/2"UNC	6	1.4050	33,000	74,000	120,000
1-3/4"UNC*	5	1.9000	33,000	74,000	120,000
2"UNC*	4.5	2.5000	33,000	74,000	120,000
2-1/4"UNC*	4.5	3.2500	33,000	74,000	120,000

## HEX BOLTS - MINIMUM TENSILE STRESS (lbf/in<sup>2</sup>)

Nominal Size	TPI	Stress Area in <sup>2</sup>	Grade 2	Grade 5	Grade 8
1/4"UNC	20	0.0318	74,000	120,000	150,000
5/16"UNC	18	0.0524	74,000	120,000	150,000
3/8"UNC	16	0.0775	74,000	120,000	150,000
7/16"UNC	14	0.1063	74,000	120,000	150,000
1/2"UNC	13	0.1419	74,000	120,000	150,000
9/16"UNC	12	0.1820	74,000	120,000	150,000
5/8"UNC	11	0.2260	74,000	120,000	150,000
3/4"UNC	10	0.3340	74,000	120,000	150,000
7/8"UNC	9	0.4620	60,000	120,000	150,000
1"UNC	8	0.6060	60,000	120,000	150,000
1-1/8"UNC	7	0.7630	60,000	105,000	150,000
1-1/4"UNC	7	0.9690	60,000	105,000	150,000
1-3/8"UNC	6	1.1550	60,000	105,000	150,000
1-1/2"UNC	6	1.4050	60,000	105,000	150,000
1-3/4"UNC*	5	1.9000	60,000	105,000	150,000
2"UNC*	4.5	2.5000	60,000	105,000	150,000
2-1/4"UNC*	4.5	3.2500	60,000	105,000	150,000

\* Extrapolated



# Hex Bolts

Minimum Proof Load

Minimum Ultimate Tensile Load

## HEX BOLTS - MINIMUM PROOF LOAD (lbf)

Nominal Size	TPI	Stress Area in <sup>2</sup>	Grade 2	Grade 5	Grade 8
1/4"UNC	20	0.0318	1,749	2,703	3,816
5/16"UNC	18	0.0524	2,882	4,454	6,288
3/8"UNC	16	0.0775	4,263	6,588	9,300
7/16"UNC	14	0.1063	5,847	9,036	12,756
1/2"UNC	13	0.1419	7,805	12,062	17,028
9/16"UNC	12	0.1820	10,010	15,470	21,840
5/8"UNC	11	0.2260	12,430	19,210	27,120
3/4"UNC	10	0.3340	18,370	28,390	40,080
7/8"UNC	9	0.4620	15,246	39,270	55,440
1"UNC	8	0.6060	19,998	51,510	72,720
1-1/8"UNC	7	0.7630	25,179	56,462	91,560
1-1/4"UNC	7	0.9690	31,977	71,706	116,280
1-3/8"UNC	6	1.1550	38,115	85,470	138,600
1-1/2"UNC	6	1.4050	46,365	103,970	168,600
1-3/4"UNC*	5	1.9000	62,700	140,600	228,000
2"UNC*	4.5	2.5000	82,500	185,000	300,000
2-1/4"UNC*	4.5	3.2500	107,250	240,500	390,000

## HEX BOLTS - MINIMUM ULTIMATE TENSILE LOAD (lbf)

Nominal Size	TPI	Stress Area in <sup>2</sup>	Grade 2	Grade 5	Grade 8
1/4"UNC	20	0.0318	2,353	3,816	4,770
5/16"UNC	18	0.0524	3,878	6,288	7,860
3/8"UNC	16	0.0775	5,735	9,300	11,625
7/16"UNC	14	0.1063	7,866	12,756	15,945
1/2"UNC	13	0.1419	10,501	17,028	21,285
9/16"UNC	12	0.1820	13,468	21,840	27,300
5/8"UNC	11	0.2260	16,724	27,120	33,900
3/4"UNC	10	0.3340	24,716	40,080	50,100
7/8"UNC	9	0.4620	27,720	55,440	69,300
1"UNC	8	0.6060	36,360	72,720	90,900
1-1/8"UNC	7	0.7630	45,780	80,115	114,450
1-1/4"UNC	7	0.9690	58,140	101,745	145,350
1-3/8"UNC	6	1.1550	69,300	121,275	173,250
1-1/2"UNC	6	1.4050	84,300	147,525	210,750
1-3/4"UNC*	5	1.9000	114,000	199,500	285,000
2"UNC*	4.5	2.5000	150,000	262,500	375,000
2-1/4"UNC*	4.5	3.2500	195,000	341,250	487,500

\* Extrapolated