

INCH – METRIC FASTENER TENSILE LOAD CHART

INCH						METRIC								
US Std Thd Size (UNC)	Major Dia in mm	Stress area in mm²	SAE Grade 2 kN	SAE Grade 5 kN	SAE Grade 8 kN	Metric Threads (Coarse)	Stress area in mm²	Metric class 4.6 kN	Metric class 4.8 kN	Metric class 5.8 kN	Metric class 8.8 kN	Metric class 9.8 kN	Metric class 10.9 kN	Metric class 12.9 kN
No. 1 – 64	1.854	1.697	0.870	1.400	1.750	M1.6	1.27	0.51	0.53	0.66	1.05	1.14	1.32	1.55
						M2	2.07	0.83	0.84	1.08	1.72	1.86	2.15	2.53
No. 2 – 56	2.184	2.387	1.220	1.980	2.470									
No. 3 – 48	2.515	3.142	1.600	2.600	3.250	M2.5	3.39	1.36	1.42	1.76	2.81	3.05	3.53	4.14
No. 4 – 40	2.845	3.897	1.990	3.220	4.030									
No. 5 – 40	3.175	5.135	2.620	4.250	5.310	M3	5.03	2.01	2.11	2.62	4.17	4.53	5.23	6.14
No. 6 – 32	3.505	5.865	2.990	4.850	6.070	M3.5	6.78	2.71	2.85	3.53	5.63	6.10	7.05	8.27
No. 8 – 32	4.166	9.032	4.610	7.470	9.340	M4	8.78	3.51	3.69	4.57	7.29	7.90	9.13	10.71
No.10 – 24	4.826	11.290	5.760	9.340	11.680	M5	14.20	5.68	5.96	7.38	11.79	12.78	14.77	17.32
No. 12 - 24	5.486	15.613	7.970	12.920	16.150									
1/4 - 20	6.35	20.52	10.47	16.98	21.22	M6	20.10	8.04	8.44	10.45	16.68	18.09	20.90	24.52
5/16 - 18	7.938	33.806	17.25	27.97	34.96	M8	36.60	14.64	15.37	19.03	30.38	32.94	38.06	44.65
3/8 – 16	9.525	50.000	25.510	41.370	51.710	M10	58.00	23.20	24.36	30.16	48.14	52.20	60.32	70.76
7/16 - 14	11.112	68.581	34.99	56.74	70.93									
1/2 -13	12.70	91.55	46.71	75.75	94.68	M12	84.30	33.72	35.41	43.84	69.97	75.87	87.67	102.85
9/16 -12	14.29	117.42	59.91	97.15	121.44	M14	115.00	46.00	48.30	59.80	95.45	103.50	119.60	140.30
5/8 - 11	15.88	145.81	74.40	120.64	150.80	M16	157.00	62.80	65.94	81.64	130.31	141.30	163.28	191.54
3/4 - 10	19.05	215.48	103.95	178.29	222.86	M18	192.00	76.80	80.64	99.84	159.84	172.80	199.68	234.24
7/8 - 9	22.23	298.06	123.31	246.62	308.27	M20	245.00	98.00	102.90	127.40	203.35	220.50	254.80	298.90
1 - 8	25.400	390.967	161.740	323.490	404.360	M24	353.00	141.20	148.26	183.56	292.99	317.70	367.12	430.66
						M27	459.00	183.60	192.78	238.68	380.97	413.10	477.36	559.98
1 1/8 - 7	28.58	492.26	203.65	356.38	509.12									
						M30	561.00	224.40	235.62	291.72	465.63	504.90	583.44	684.42
1 1/4 - 7	31.750	625.160	258.630	452.600	646.570									
	94.925	745.160	308.000	308.270	770.690									
						M36	817.00	326.80	343.14	424.84	678.11	735.30	849.68	996.74
1 1/2 - 6	38.100	906.450	375.00	656.25	937.50									
						M42	1120.00	448.00	470.40	582.40	929.60	1008.00	1164.80	1366.40
1 3/4 -5	44.450	1225.804	507.12	887.46	1267.79									
						M48	1470.00	588.00	617.40	764.40	1220.10	1323.00	1528.80	1793.40
2 - 4 1/2	50.800	1612.900	667.26	1167.70	1267.15									
2 1/4 - 4 1/2	57.150	2096.770	867.44	1518.02	2168.59	M56	2030.00	812.00	852.60	1055.60	1684.90	1827.00	2111.20	2476.60
2 1/2 - 4	63.500	2580.640	1067.62	1863.33	2669.04	M64	2680.00	1072.00	1125.60	1393.60	2224.40	2412.00	2787.20	3269.60

NOTE: For comparison purposes, INCH vlaues have been converted to METRIC. Tensile for a = Stress area x Tensile strength

Relevant tensile strengths are as follows:

- * 1 kN = 224.81 lbf
- * 1 MPa = 145.04 psi
- * 1 psi = 0.006894 MPa
- * 1 lbf = 0.004448 kN

INCH	Grade 2 - 74000 psi upto 3/4"	Grade 5 - 120000 psi upto 1"	Grade 8 - 150000 psi	
METRIC	class 4.6 - 400MPa	class 4.8 - 420 Mpa	class 5.8 - 520 Mpa	class 8.8 - 830 MPa class 9.8 - 900 Mpa class 10.9 - 1040 Mpa class 12.9 - 1220 MPa