

## Conversion Charts

Rockwell "C" scale	Brinell hardness number	approx tensile strength		Rockwell "C" scale	Rockwell "B" scale	Brinell hardness number	approx. tensile strength	
		MPa	KSI				MPa	KSI
60	654	2320	336	34		318	1030	150
59	634	2260	328	33		309	1010	147
58	615	2200	319	32		301	980	142
57	595	2140	310	31		294	960	139
56	577	2080	301	30		285	940	136
55	560	2010	292	29		279	910	132
54	543	1950	283	28		272	890	129
53	524	1890	274	27		265	870	126
52	512	1830	265	26		259	850	123
51	500	1770	257	25		253	830	120
50	488	1720	249	24		247	810	118
49	476	1660	241	23		241	790	115
48	464	1610	233	22	100	235	770	112
47	453	1550	225	21	99	230	760	110
46	442	1510	219	20	98	225	740	107
45	430	1460	212	(19)		220	720	104
44	419	1420	206	(18)	97	215	710	103
43	408	1380	200	(17)		210	700	102
42	398	1340	194	(16)	96	206	690	100
41	387	1300	188	(15)		201	680	99
40	377	1250	181	(14)	95	197	670	97
39	367	1210	176	(13)	94	193	660	96
38	357	1170	170	(12)	93	190	640	93
37	347	1140	165	(11)		186	630	91
36	337	1100	160	(10)	92	183	620	90
35	327	1070	155	(8)	90	179	600	87

Values in ( ) are beyond the normal range and are given for information only.

### SI UNITS & CONVERSION FOR CHARACTERISTICS OF MECHANICAL FASTENERS

Property	Unit	Symbol	Conversion			Approximate Equivalent
			From	To	Multiply By	
Length	meter	m	inch	mm	25.4	25 mm = 1 in. 300 mm = 1 ft. 1 m = 39.37 in.
	centimeter	cm	inch	cm	2.54	
	millimeter	mm	foot	mm	304.8	
mass	kilogram	kg	ounce (Force)	gm	28.35	28 g = 1 oz. 1 kg = 2.2 lb. = 35oz. 1 t = 2206 lbs
	gram	gm	pound (Force)	kg	0.4536	
	tonne (megagram)	t	ton (2240 lb)	kg	984.2	
density	kilogram per cub. meter.	kg/m <sup>3</sup>	pounds per cu. ft.	kg/mm <sup>3</sup>	16.02	16 kg/m <sup>3</sup> = 1 lb/ft <sup>3</sup>
temperature	deg. Celsius	°C	deg. Fahr.	°C	(°F-32) x 5/9	°C = 32°F/100°C = 212°F
area	square meter	m <sup>2</sup>	sq. inch	mm <sup>2</sup>	645.2	645 mm <sup>2</sup> = 1 in. <sup>2</sup> 1 m <sup>2</sup> = 11 ft. <sup>2</sup>
	square millimeter	mm <sup>2</sup>	sq.ft.	m <sup>2</sup>	0.0929	
volume	cubic meter	m <sup>3</sup>	cu. in	mm <sup>3</sup>	16387.	16400 mm <sup>3</sup> = 1 in. <sup>3</sup> 1 m <sup>3</sup> = 35 ft. <sup>3</sup> 1m <sup>3</sup> = 1.3 yd <sup>3</sup>
	cubic centimeter	cm <sup>3</sup>	cu.ft.	m <sup>3</sup>	0.02832	
	cubic millimeter	mm <sup>3</sup>	cu. yd.	m <sup>3</sup>	0.7645	
force	newton	N	ounce (Force)	N	0.278	1 N = 3.6 ozf 4.4N = 1 lbf 1 kN = 225 lbf
	kilonewton	kN	pound (Force)	kN	0.00445	
	meganewton	MN	Kip	MN	0.00445	
stress	megapascal	MPa	pound/in <sup>2</sup> (psi)—	MPa	0.0069	1MPa= 145 psi 7 MPa = 1 ksi
	newtons/mm <sup>2</sup>	N/mm <sup>2</sup>	Kip/in <sup>2</sup> (ksi)	Mpa	6.895	
torque	newton-meters	N-m	inch-ounce	N-m	0.00706	1 N-m = 140 in. oz. 1 N-m = 9 in. lb. 1 N-m = 0.75 ft. lbs. 1.4 N-m = 1 ft. lb.
			inch-pound	N-m	0.113	
			foot-pound	N-m	1.356	

Note: 1 MPa = 1 N/mm<sup>2</sup> 1 KSI = 1,000 lb/in<sup>2</sup> 1 N = 0.1019 Kgf