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Hardness Conversion Chart

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APPROXIMATE HARDNESS CONVERSION NUMBERS FOR STEEL *

Brinell Indentation Diameter mm	Brinell Hardness Number		Rockwell Hardness Number		Tensile Strength (approximate) 1000 psi
	Standard Ball	Tungsten-Carbide Ball	B Scale	C Scale	
2.45	—	627	—	58.7	347
2.50	—	601	—	57.3	328
2.55	—	578	—	56.0	313
2.60	—	555	—	54.7	298
2.65	—	534	—	53.5	288
2.70	—	514	—	52.1	274
2.75	—	495	—	51.0	264
2.80	—	477	—	49.6	252
2.85	—	461	—	48.5	242
2.90	—	444	—	47.1	230
2.95	429	429	—	45.7	219
3.00	415	415	—	44.5	212
3.05	401	401	—	43.1	202
3.10	388	388	—	41.8	193
3.15	375	375	—	40.4	184
3.20	363	363	—	39.1	177
3.25	352	352	—	37.9	171
3.30	341	341	—	36.6	164
3.35	331	331	—	35.5	159
3.40	321	321	—	34.3	153
3.45	311	311	—	33.1	149
3.50	302	302	—	32.1	146
3.55	293	293	—	30.9	141

3.60	285	285	—	29.9	138
3.65	277	277	—	28.8	134
3.70	269	269	—	27.6	130
3.75	262	262	—	26.6	127
3.80	255	255	—	25.4	124
3.85	248	248	—	24.2	120
3.90	241	241	100.0	22.8	116
3.95	235	235	99.0	21.7	114
4.00	229	229	98.2	20.5	111
4.05	223	223	97.3	—	104
4.10	217	217	96.4	—	103
4.15	212	212	95.5	—	100
4.20	207	207	94.6	—	99
4.25	201	201	93.8	—	97
4.30	197	197	92.8	—	94
4.35	192	192	91.9	—	92
4.40	187	187	90.7	—	90
4.45	183	183	90.0	—	89
4.50	179	179	89.0	—	88
4.55	174	174	87.8	—	86
4.60	170	170	86.8	—	84
4.65	167	167	86.0	—	83
4.70	163	163	85.0	—	82
4.80	156	156	82.9	—	80
4.90	149	149	80.8	—	73
5.00	143	143	78.7	—	71
5.10	137	137	76.4	—	67
5.20	131	131	74.0	—	65
5.30	126	126	72.0	—	63
5.40	121	121	69.0	—	60
5.50	116	116	67.6	—	58
5.60	111	111	65.7	—	56

This table, which is based on ASTM A370-68, Table III, lists the approximate relationship of hardness values to corresponding approximate tensile strength values of steels. Some compositions and processing histories may deviate from these relationships. The data in this table do not represent hardness-to-tensile strength conversions for austenitic, ferritic, and martensitic stainless steel. If more precise conversions are required, they should be developed for each specific composition and heat treatment. Related Rockwell superficial hardness numbers, if of interest, may be found in ASTM A370-68.

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