APPROX. HARDNESS CONVERSION NUMBERS FOR STEEL

Based on Brinell Hardness Numbers

Brinell Indentation Diam. mm	Brinell Hardness No. 10-mm Tungsten Carbide Ball, 3,000-Kg Load	ROCKWELL HARDNESS NO. C-Scale, 150-Kg Load, Brale Penetrator	ROCKWELL HARDNESS NO. B-Scale, 100-Kg Load, 1/16-In. Diam. Ball	ROCKWELL HARDNESS NO. A-Scale, 60-Kg Load, Brale Penetrator	Diamond Pyramid Hardness No. Vickers	Shore Scleroscope Hardness No.	Tensile Strength (Approximate) in 1,000 psi
2.25	745	65.3	—	84.1	840	91	—
2.30	712	—	—	—	—	—	—
2.35	682	61.7	—	82.2	737	84	—
2.40	653	60.0	—	81.2	697	81	—
2.45	627	58.7	—	80.5	667	79	—
2.50	601	57.3	—	79.8	640	77	—
2.55	578	56.0	—	79.1	615	75	—
2.60	555	54.7	—	78.4	591	73	296
2.65	534	53.5	—	77.8	569	71	288
2.70	514	52.1	—	76.9	547	70	274
2.75	495	51.0	—	76.3	526	68	264
2.80	477	49.6	—	75.6	508	66	252
2.85	461	48.5	—	74.9	491	65	242
2.90	444	47.1	—	74.2	472	63	230
2.95	429	45.7	—	73.4	455	61	219
3.00	415	44.5	—	72.8	440	59	212
3.05	401	43.1	—	72.0	425	58	202
3.10	388	41.8	—	71.4	410	56	193
3.15	375	40.4	—	70.6	396	54	184
3.20	363	39.1	—	70.0	383	52	177
3.25	352	37.9	(110.0)	69.3	372	51	171
3.30	341	36.6	(109.0)	68.7	360	50	164
3.35	331	35.5	(108.5)	68.1	350	48	159
3.40	321	34.3	(108.0)	67.5	339	47	154
3.45	311	33.1	(107.5)	66.9	328	46	149
3.50	302	32.1	(107.0)	66.3	319	45	146
3.55	293	30.9	(106.0)	65.7	309	43	141
3.60	285	29.9	(105.5)	65.3	301	—	138
3.65	277	28.8	(104.5)	64.6	292	41	134
3.70	269	27.6	(104.0)	64.1	284	40	130
3.75	262	26.6	(103.0)	63.6	276	39	127
3.80	255	25.4	(102.0)	63.0	269	38	123
3.85	248	24.2	(101.0)	62.5	261	37	120
3.90	241	22.8	100.0	61.8	253	36	116
3.95	235	21.7	99.0	61.4	247	35	114
4.00	229	20.5	98.2	60.8	241	34	111
4.05	223	(18.8)	97.3	—	234	—	—
4.10	217	(17.5)	96.4	—	228	33	105
4.15	212	(16.0)	95.5	—	222	—	102
4.20	207	(15.2)	94.6	—	218	32	100
4.25	201	(13.8)	93.8	—	212	31	98
4.30	197	(12.7)	92.8	—	207	30	95
4.35	192	(11.5)	91.9	—	202	29	93
4.40	187	(10.0)	90.7	—	196	—	90
4.45	183	(9.0)	90.0	—	192	28	89
4.50	179	(8.0)	89.0	—	188	27	87
4.55	174	(6.4)	87.8	—	182	—	85
4.60	170	(5.4)	86.8	—	178	26	83
4.65	167	(4.4)	86.0	—	175	—	81
4.70	163	(3.3)	85.0	—	171	25	79
7.80	156	(0.9)	82.9	—	163	—	76
4.90	149	—	80.8	—	156	23	73
5.00	143	—	78.7	—	150	22	71
5.10	137	—	76.4	—	143	21	67
5.20	131	—	74.0	—	137	—	65

NOTE: The values shown are based in SAE J417 and ASTM E140. Values in ( ) beyond normal range and are for information only.