

**Cartech.com Tech Center**  
**Hardness Conversion Tables –**  
**Non-Austenitic Steels**



Approximate Hardness Conversions for Non-Austenitic Steels

Rockwell		Brinell*		Superficial			Approx. Tensile
C	A	Dia. (mm)	Number	15N	30N	45N	
68	85.6	---	---	93.2	84.4	75.4	---
67	85.0	---	---	92.9	83.6	74.2	---
66	84.5	---	---	92.5	82.8	73.3	---
65	83.9	2.26	739	92.2	81.9	72.0	---
64	83.4	2.28	722	91.8	81.1	71.0	---
63	82.8	2.31	706	91.4	80.1	69.9	---
62	82.3	2.34	688	91.1	79.3	68.8	---
61	81.8	2.37	670	90.7	78.4	67.7	---
60	81.2	2.40	654	90.2	77.5	66.6	---
59	80.7	2.44	634	89.8	76.6	65.5	351
58	80.1	2.47	615	89.3	75.7	64.3	338
57	79.6	2.51	595	88.9	74.8	63.2	325
56	79.0	2.55	577	88.3	73.9	62.0	313
55	78.5	2.59	560	87.9	73.0	60.9	301
54	78.0	2.63	543	87.4	72.0	59.8	292
53	77.4	2.67	525	86.9	71.2	58.6	283
52	76.8	2.71	512	86.4	70.2	57.4	273
51	76.3	2.75	496	85.9	69.4	56.1	264
50	75.9	2.79	482	85.5	68.5	55.0	255
49	75.2	2.83	468	85.0	67.6	53.8	246
48	74.7	2.87	455	84.5	66.7	52.5	238
47	74.1	2.91	442	83.9	65.8	51.4	229
46	73.6	2.94	432	83.5	64.8	50.3	221
45	73.1	2.98	421	83.0	64.0	49.0	215
44	72.5	3.02	409	82.5	63.1	47.8	208
43	72.0	3.05	400	82.0	62.2	46.7	201
42	71.5	3.09	390	81.5	61.3	45.5	194
41	70.9	3.13	381	80.9	60.4	44.3	188
40	70.4	3.17	371	80.4	59.5	43.1	182
39	69.9	3.21	362	79.9	58.6	41.9	177
38	69.4	3.24	353	79.4	57.7	40.8	171
37	68.9	3.29	344	78.8	56.8	39.6	166
36	68.4	3.32	336	78.3	55.9	38.4	161
35	67.9	3.37	327	77.7	55.0	37.2	156
34	67.4	3.41	319	77.2	54.2	36.1	152
33	66.8	3.45	311	76.6	53.3	34.9	149
32	66.3	3.49	304	76.1	52.1	33.7	146
31	65.8	3.55	294	75.6	51.3	32.5	141
30	65.3	3.59	286	75.0	50.4	31.3	138
29	64.6	3.64	279	74.5	49.5	30.1	135
28	64.3	3.69	271	73.9	48.6	28.9	131
27	63.8	3.73	264	73.3	47.7	27.8	128
26	63.3	3.78	258	72.8	46.8	26.7	125
25	62.8	3.81	253	72.2	45.9	25.5	123
24	62.4	3.86	247	71.6	45.0	24.3	119
23	62.0	3.89	243	71.0	44.0	23.1	117
22	61.5	3.93	237	70.5	43.2	22.0	115
21	61.0	3.98	231	69.9	42.3	20.7	112
20	60.5	4.02	226	69.4	41.5	19.6	110

\*3000 kfg load, 10 mm ball. A tungsten carbide ball must be used above HB 450.  
 Brinell testing is not recommended above HB 630.

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Hardness Conversion Tables –  
Non-Austenitic Steels (continued)**

Approximate Hardness Conversions for Non-Austenitic Steels

Rockwell		Brinell*		Superficial			Approx. Tensile
B	A	Dia. (mm)	Number	15T	30T	45T	
100	61.5	3.91	240	93.1	83.1	72.9	116
99	60.9	3.96	234	92.8	82.5	71.9	114
98	60.2	4.01	228	92.5	81.8	70.9	109
97	59.5	4.06	222	92.1	81.1	69.9	104
96	58.9	4.11	216	91.8	80.4	68.9	102
95	58.3	4.17	210	91.5	79.8	67.9	100
94	57.6	4.21	205	91.2	79.1	66.9	98
93	57.0	4.26	200	90.8	78.4	65.9	94
92	56.4	4.32	195	90.5	77.8	64.8	92
91	55.8	4.37	190	90.2	77.1	63.8	90
90	55.2	4.43	185	89.9	76.4	62.8	89
89	54.6	4.48	180	89.5	75.8	61.8	88
88	54.0	4.53	176	89.2	75.1	60.8	86
87	53.4	4.58	172	88.9	74.4	59.8	84
86	52.8	4.62	169	88.6	73.8	58.8	83
85	52.3	4.67	165	88.2	73.1	57.8	82
84	51.7	4.71	162	87.9	72.4	56.8	81
83	51.1	4.75	159	87.6	71.8	55.8	80
82	50.6	4.79	156	87.3	71.1	54.8	77
81	50.0	4.84	153	86.9	70.4	53.8	73
80	49.5	4.88	150	86.6	69.7	52.8	72
79	48.9	4.93	147	86.3	69.1	51.8	70
78	48.4	4.98	144	86.0	68.4	50.8	69
77	47.9	5.03	141	85.6	67.7	49.8	68
76	47.3	5.06	139	85.3	67.1	48.8	67
75	46.8	5.09	137	85.0	66.4	47.8	66
74	46.3	5.13	135	84.7	65.7	46.8	65
73	45.8	5.18	132	84.3	65.1	45.8	64
72	45.3	5.22	130	84.0	64.4	44.8	63
71	44.8	5.27	127	83.7	63.7	43.8	62
70	44.3	5.31	125	83.4	63.1	42.8	61
69	43.8	5.35	123	83.0	62.4	41.8	60
68	43.3	5.39	121	82.7	61.7	40.8	59
67	42.8	5.43	119	82.4	61.0	39.8	58
66	42.3	5.48	117	82.1	60.4	38.7	57
65	41.8	5.50	116	81.8	59.7	37.7	56
64	41.4	5.54	114	81.4	59.0	36.7	---
63	40.9	5.59	112	81.1	58.4	35.7	---
62	40.4	5.63	110	80.8	57.7	34.7	---
61	40.0	5.68	108	80.5	57.0	33.7	---
60	39.5	5.70	107	80.1	56.4	32.7	---
59	39.0	5.73	106	79.8	55.7	31.7	---
58	38.6	5.78	104	79.5	55.0	30.7	---
57	38.1	5.80	103	79.2	54.4	29.7	---
56	37.7	5.85	101	78.8	53.7	28.7	---
55	37.2	5.88	100	78.5	53.0	27.7	---

\*3000 kgf load, 10 mm ball