

006 Approximate Rockwell Hardness Conversion Number for Austenitic Stainless Steel Sheet

Rockwell Hardness Number		Rockwell Superficial Hardness Number		
Scale DIAMOND	A Scale DIAMOND	15N Scale N DIAMOND	30 N Scale N DIAMOND	45N Scale N DIAMOND
150 kgf (HRC)	60 kgf (HRA)	15 kgf (HR15N)	30 kgf (HR30N)	45 kgf (HR45N)
48	74.4	84.1	66.2	52.1
47	73.9	83.6	65.3	50.9
46	73.4	83.1	64.5	49.8
45	72.9	82.6	63.6	48.7
44	72.4	82.1	62.7	47.5
43	71.9	81.6	61.8	46.4
42	71.4	81.0	61.0	45.2
41	70.9	80.5	60.1	44.1
40	70.4	80.0	59.2	43.0
39	69.9	79.5	58.4	41.8
38	69.3	79.0	57.5	40.7
37	68.8	78.5	56.6	39.6
36	68.3	78.0	55.7	38.4
35	67.8	77.5	54.9	37.3
34	67.3	77.0	54.0	36.1
33	66.8	76.5	53.1	35.0
32	66.3	75.9	52.3	33.9
31	65.8	75.4	51.4	32.7
30	65.3	74.9	50.5	31.6
29	64.8	74.4	49.6	30.4
28	64.3	73.9	48.8	29.3
27	63.8	73.4	47.9	28.2
26	63.3	72.9	47.0	27.0
25	62.8	72.4	46.2	25.9
24	62.3	71.9	45.3	24.6
23	61.8	71.3	44.4	23.6
22	61.3	70.8	43.5	22.5
21	60.8	70.3	42.7	21.3
20	60.3	69.8	41.8	20.2

The austenitic stainless steel sheet included in the original testing was as follows:
Types 201, 202, 301, 302, 304, 304L, 305, 316, 316L, 321 and 347.

References:
Hardness Testing ASM International Metals, Park OH 1987
ASTM Designation E140-12b

Rockwell Hardness Number		Rockwell Superficial Hardness Number			
B Scale 1/16"	A Scale	F Scale	15T Scale	30T Scale	45T Scale
Ball	Diamond	1/16"Ball	1/16"Ball	1/16"Ball	Ball 1/16"
100 kgf	60 kgf	60 kgf	15 kgf	30 kgf	45 kgf
(HRB)	(HRA)	(HRF)	(HR 15T)	(HR30T)	(HR45T)
100	61.5	(113.9)	91.5	80.4	70.2
99	60.9	(113.2)	91.2	79.7	69.2
98	60.3	(112.5)	90.8	79.0	68.2
97	59.7	(111.8)	90.4	78.3	67.2
96	59.1	(111.1)	90.1	77.7	66.1
95	58.5	(110.5)	89.7	77.0	65.1
94	58.0	(109.8)	89.3	76.3	64.1
93	57.4	(109.1)	88.9	75.6	63.1
92	56.8	(108.4)	88.6	74.9	62.1
91	56.2	(107.8)	88.2	74.2	61.1
90	55.6	(107.1)	87.8	73.5	60.1
89	55.0	(106.4)	87.5	72.8	59.0
88	54.5	(105.7)	87.1	72.1	58.0
87	53.9	(105.0)	86.7	71.4	57.0
86	53.3	(104.4)	86.4	70.7	56.0
85	52.7	(103.7)	86.0	70.0	55.0
84	52.1	(103.0)	85.6	69.3	54.0
83	51.5	(102.3)	85.2	68.6	52.9
82	50.9	(101.7)	84.9	67.9	51.9
81	50.4	(101.0)	84.5	67.2	50.9
80	49.8	(100.3)	84.1	66.5	49.9
79	49.2	99.6	83.8	65.8	48.9
78	48.6	99.0	83.4	65.1	47.9
77	48.0	98.3	83.0	64.4	46.8
76	47.4	97.6	82.6	63.7	45.8
75	46.9	96.9	82.3	63.0	44.8
74	46.3	96.2	81.9	62.4	43.8
73	45.7	95.6	81.5	61.7	42.8
72	45.1	94.9	81.2	61.0	41.8
71	44.5	94.2	80.8	60.3	40.7
70	43.9	93.5	80.4	59.6	39.7
69	43.3	92.8	80.1	58.9	38.7
68	42.8	92.2	79.7	58.2	37.7
67	42.2	91.5	79.3	57.5	36.7
66	41.6	90.8	78.9	56.8	35.7
65	41.0	90.1	78.6	56.1	34.7
64	40.4	89.5	78.2	55.4	33.6
63	39.8	88.8	77.9	54.7	32.6
62	39.3	88.1	77.5	54.0	31.6
61	38.7	87.4	77.1	53.3	30.6
60	38.1	86.8	76.7	52.6	29.6
Standard Deviation	1.44	2.75	2.29	1.67	1.57

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