

Hardness Conversion Table approx. HV – HRC and HRC-HV-HB-HRA-HRB-Rm for carbon / alloy steels. In accordance with Table in ASTM A 370 – 03a

<i>HV</i>	<i>HRC</i>	<i>HV</i>	<i>HRC</i>	<i>HV</i>	<i>HRC</i>	<i>HV</i>	<i>HRC</i>	<i>HV</i>	<i>HRC</i>
2270	85	1950	81	1633	77	1323	73	1004	69
2190	84	1865	80	1556	76	1245	72	940	68
2110	83	1787	79	1478	75	1160	71	920	67,5
2030	82	1710	78	1400	74	1076	70	900	67

HRC	HV	HB	HRA	Rm	HRB	HV	HB	HRA	Rm
Diamond penetrator	Vickers 30	Brinell 3000 Kgf	Diamond penetrator	N/mm ² MPa	Ball 1/16"	Vickers 30	Brinell 3000 Kgf	Diamond penetrator	N/mm ² MPa
68	940	--	85.6	--	100	240	240	61.5	800
67	900	--	85.0	--	99	234	234	60.9	785
66	865	--	84.5	--	98	228	228	60.2	750
65	832	739	83.9	--	97	222	222	59.5	715
64	800	722	83.4	--	96	216	216	58.9	705
63	772	706	82.8	--	95	210	210	58.3	690
62	746	688	82.3	--	94	205	205	57.6	675
61	720	670	81.8	--	93	200	200	57.0	650
60	697	654	81.2	--	92	195	195	56.4	635
59	674	634	80.7	2420	91	190	190	55.8	620
58	653	615	80.1	2330	90	185	185	55.2	615
57	633	595	79.6	2240	89	180	180	54.6	605
56	613	577	79.0	2160	88	176	176	54.0	590
55	595	560	78.5	2070	87	172	172	53.4	580
54	577	543	78.0	2010	86	169	169	52.8	570
53	560	525	77.4	1950	85	165	165	52.3	565
52	544	512	76.8	1880	84	162	162	51.7	560
51	528	496	76.3	1820	83	159	159	51.1	550
50	513	482	75.9	1760	82	156	156	50.6	530
49	498	468	75.2	1700	81	153	153	50.0	505
48	484	455	74.7	1640	80	150	150	49.5	495
47	471	442	74.1	1580	79	147	147	48.9	485
46	458	432	73.6	1520	78	144	144	48.4	475
45	446	421	73.1	1480	77	141	141	47.9	470
44	434	409	72.5	1430	76	139	139	47.3	460
43	423	400	72.0	1390	75	137	137	46.8	455
42	412	390	71.5	1340	74	135	135	46.3	450
41	402	381	70.9	1300	73	132	132	45.8	440
40	392	371	70.4	1250	72	130	130	45.3	435
39	382	362	69.9	1220	71	127	127	44.8	425
38	372	353	69.4	1180	70	125	125	44.3	420
37	363	344	68.9	1140	69	123	123	43.8	415
36	354	336	68.4	1110	68	121	121	43.3	405
35	345	327	67.9	1080	67	119	119	42.8	400
34	336	319	67.4	1050	66	117	117	42.3	395
33	327	311	66.8	1030	65	116	116	41.8	385
32	318	301	66.3	1010	64	114	114	41.4	--
31	310	294	65.8	970	63	112	112	40.9	--
30	302	286	65.3	950	62	110	110	40.4	370
29	294	279	64.6	930	61	108	108	40.0	--
28	286	271	64.3	900	60	107	107	39.5	--
27	279	264	63.8	880	59	106	106	39.0	360
26	272	258	63.3	860	58	104	104	38.6	--
25	266	253	62.8	850	57	103	103	38.1	350
24	260	247	62.4	820	56	101	101	37.7	--
23	254	243	62.0	810	55	100	100	37.2	340
22	248	237	61.5	790	54	--	--	36.8	--
21	243	231	61.0	770	51	--	94	35.5	330
20	238	226	60.5	760	49	--	92	34.6	320

Values shown in bold fall outside the ASTM table but they are still reliable

Values shown in italics are due to passage from table 2 to table 3 of ASTM A 370

Rockwell Hardness	HRC diamond penetrator 120° load 1470 N (150 kgf) duration 30 seconds	Rockwell Hardness	HRA diamond penetrator load 588 N (60 kgf) duration 30 seconds
Vickers Hardness	HV diamond penetrator 136° load 294 N (30 kgf) duration 15 seconds'	Rockwell Hardness	HRB ball 1/16" load 980 N (100 kgf) duration 30 seconds
Brinell Hardness	HB ball 10 mm load 29,400N (3000 kgf) durata 15 seconds	Tensile strength	Rm N/mm ² (Mpa)