



UNION CHAIN DIVISION - ENGINEERING INFORMATION - SPROCKETS

Properties of Steels—Strength of Materials

Relation of Hardness to Strength of Steel. Approximate relation of various hardnesses due to influence of size, composition, and heat treatment													
Brinell		Rockwell				Brinell		Rockwell					
Dia. in Mm.	3,000-Kg. Hardness Load Number	C-Scale, Diamond Pyramid		B-Scale, 100-Kg. Load 1/16 In. Dia. Ball	Shore Sclero-Scope Number	Tensile Stgth., 1,000 Lbs. per Sq. In.	Dia. in Mm.	3,000 Kg. Load Hardness Number	C-Scale, Vickers (Firth Diamond)		B-Scale, 100-Kg. Load 1/16 In. Dia. Ball	Shore Sclero-scope Number	Tensile Stgth., 1,000 Lbs. per Sq. In.
		No. 50 Hardness Kg. Load	Diamond Cone						150-Kg. Load	120-Deg. Load			
2.25	*745	1,050	68		100	368	3.85	248	261	24	101	37	122
2.30	*710	780	63		87	350	3.90	241	253	23	100	36	118
2.35	*682	737	62		84	340	3.95	235	247	22	99	35	115
2.40	*653	697	60		81	330	4.00	229	241	21	98	34	111
2.45	*627	667	59		79	323	4.05	223	234	19	97	33	108
2.50	*601	640	57		77	309	4.10	217	228	18	96	33	105
2.55	*578	615	56		75	297	4.15	212	222	16	96	32	102
2.60	*555	591	55	120	73	285	4.20	207	218	15	95	32	100
2.65	*534	569	54	119	71	274	4.25	201	212	14	94	31	98
2.70	*514	547	53	119	70	263	4.30	197	207	13	93	30	95
2.75	495	539	52	117	69	259	4.35	192	202	12	92	29	93
2.80	477	516	50	117	67	247	4.40	187	196	10	91	28	90
2.85	461	495	49	116	65	237	4.45	183	192	9	90	28	89
2.90	444	474	47	115	63	226	4.50	179	188	8	89	27	87
2.95	429	455	46	115	61	217	4.55	174	182	6	88	26	85
3.00	415	440	45	114	59	210	4.60	170	178	5	87	26	83
3.05	401	425	43	113	58	202	4.65	167	175	4	86	25	81
3.10	388	410	42	112	56	195	4.70	163	171	3	85	25	79
3.15	375	396	40	112	54	188	4.80	156	163	1	83	24	76
3.20	363	383	39	110	52	182	4.90	149	156		81	23	73
3.25	352	372	38	110	51	176	5.00	143	150		79	22	71
3.30	341	360	37	109	50	170	5.10	137	143		76	21	67
3.35	331	350	36	109	48	166	5.20	131	137		74	20	65
3.40	321	339	34	108	47	160	5.30	126	132		72	20	63
3.45	311	328	33	108	46	155	5.40	121	127		70	19	60
3.50	302	319	32	107	45	150	5.50	116	122		68	18	58
3.55	293	309	31	106	43	145	5.60	111	117		66	15	56
3.60	285	301	30	106	42	141	5.70	107	107		64		55
3.65	277	292	29	105	41	137	5.80	103	103		61		53
3.70	269	284	28	104	40	133	5.90	99	99		59		51
3.75	262	276	27	103	39	129	6.00	95	95		56		49
3.80	255	269	25	102	38	126							

*Tungsten carbide ball
(ASTM-SAE-ASM Joint Committee)