

Brinell, Rockwell and Scleroscope Hardness Numbers with Corresponding Tensile Strength

Brinell 10 MM Ball 3,000 Kg.	Rockwell "C" 120 Cone 150 Kg.	Scleroscope Shore Model C	Tensile Strength 1000 Lb. Per Sq. In.
745	68	100	368
712	66	95	352
682	64	91	337
653	62	87	324
627	60	84	311
601	58	81	298
578	57	78	287
555	55	75	276
534	53	72	266
514	52	70	256
495	50	67	247
477	49	65	238
461	47	63	229
444	46	61	220
429	45	59	212
415	44	57	204
401	42	55	196
388	41	54	189
375	40	52	182
362	38	51	176
351	37	49	170
341	36	48	165
331	35	46	160
321	34	45	155
311	33	44	150
302	32	43	146
293	31	42	142
285	30	40	138
277	29	39	134
269	28	38	131
262	26	37	128
255	25	37	125
248	24	36	122
241	23	35	119
235	22	34	116
229	21	33	113
223	20	32	110
	Rockwell "B" 1/16" Ball 100 Kg.		
217	97	31	107
212	96	31	104
207	95	30	101
202	94	30	99
197	93	29	97
192	92	28	95
187	91	28	93
183	90	27	91
179	89	27	89
174	88	26	87

Note: Hardening cannot be accurately checked with a file — stationary or portable hardness testers should be used for conclusive results.

Material

All *Martin* stock sprockets are made of quality steel poured to our specifications.

Bar size sprockets normally include sizes up to 7" or 7½" in diameter type "B", "BS", "QD", "TB" single, double & triple width. And can easily be electrical induction or flame hardened — to Rockwell "C" 40 to 50.

Plate sprockets normally include sizes 7½" in diameter and larger type "B", "BS", "C", "QD", "TB" single, double, & triple width fabricated and type "A" all diameters. This material would have 35 to 40 points of carbon and can be induction or flame hardened to Rockwell "C" 30 to 45. Degree of hardness obtainable and method depends on size of sprocket.

Special quality steel can be used for large quantities or made-to-order sprockets if specified.

Hardening Recommendations

Hardened teeth substantially increases sprocket life and is recommended under conditions listed below:

1. Pinion or driver where the reduction is 4:1 or greater.
2. Slow speed drives (100 FPM or less).
3. Where safety factor is less than standard.
4. Unusual abrasive conditions.

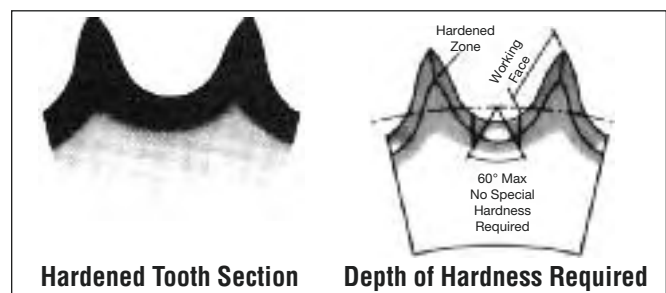
Degree of hardness — this is governed by conditions prevailing each application — for stock sprockets these general suggestions may be used as guide lines:

1. Rockwell "C" 35 to 50 pinion or driver.
2. Rockwell "C" 25 to 40 larger diameter or driver sprockets.

Induction or flame hardening will be used as best suited to the individual application. The diameter and pitch of the sprocket govern the method used.

Caution should be used to avoid "file hardness" (Rockwell C 62 and above) as it is not recommended for sprockets due to brittleness.

Depth of hardening should be limited so as to provide case only on the wear surfaces with a tough resilient core to absorb shock — (see illustration tooth section).



Hardened Tooth Section

Depth of Hardness Required