

# Section 10

## Useful Information

### HARDNESS RANGES OF SCREWS, BOLTS & NUTS

Ref: Manufacturers Catalog

HV	HB	HRB	HRC	Rm N/mm <sup>2</sup>	SCREW GRADE					NUT GRADE					NUT GRADE				
					4.6	5.6	8.8	10.9	12.9	5	6	8	10	12	14 H	17 H	22 H	45 H	
80	76			255															
85	80.7	41		270															
90	85.5	48		285															
95	90.2	52		305															
100	95	56.2		320															
105	99.8			335															
110	105	62.3		350															
115	109			370															
120	114	66.7		385															
125	119			400															
130	124	71.2		415															
135	128			430															
140	133	75		450															
145	138			465															
150	143	78.7		480															
155	147			495															
160	152	81.7		510															
165	156			530															
170	162	85		545															
175	166			560															
180	171	87.1		575															
185	176			595															
190	181	89.5		610															
195	185			625															
200	190	91.5		640															
205	195	92.5		660															
210	199	93.5		675															
215	204	94		690															
220	209	95		705															
225	214	96		720															
230	219	96.7		740															
235	223			755															
240	228	98.1	20.3	770															
245	233		21.3	785															
250	238	99.5	22.2	800															
255	242		23.1	820															
260	247	(101)	24	835															
265	252		24.8	850															
270	257	(102)	25.6	865															
275	261		26.4	880															
280	266	(104)	27.1	900															
285	271		27.8	915															
290	276	(105)	28.5	930															
295	280		29.2	950															
300	285		29.8	965															
310	295		31	995															
320	304		32.2	1030															
330	314		33.3	1060															
340	232		34.4	1095															
350	333		35.5	1125															
360	342		36.6	1155															
370	352		37.7	1190															
380	361		38.8	1220															
390	371		39.8	1255															
400	380		40.8	1290															
410	390		41.8	1320															
420	399		42.7	1350															
430	409		43.6	1385															
440	418		44.5	1420															
450	428		45.3	1455															
460	437		46.1	1485															
470	447		46.9	1520															
480	(456)		47.7	1555															
490	(466)		48.4	1595															
500	(475)		49.1	1630															
DIN 50150					ISO 898-1					ISO 898-2					DIN 267-24 ISO 898-5				

Limitation according to DIN 50150

Hardness ranges differ according to dimension ranges in minimum/maximum values