

# Material Technical Information

SPECIFICATION FOR COMMON MATERIALS AND RECOMMENDED DIE CLEARANCE

DESCRIPTION	HARDNESS	SHEAR STRENGTH		MATERIAL MULTIPLIER	RECOMMENDED DIE CLEARANCE IN % OF THICKNESS
		PSI	N / mm <sup>2</sup>		
<b>Steels</b>					
Low Carbon HR Sheet	Rb 70	50,000	345	1.00	20%
Low Carbon C.R. Sheet	Rb	40,000	276	.80	25%
ASTM A-36	BHN 119-159	58-80,000		1.20	20-25%
45-50 Carbon HR Sheet	BHN 200	80,000	552	1.60	25%
Spring Steel 1074, 1095					
Hardened to Spring Temper	Rc 45-50	200,000	1.380	4.0	30%
COR-TEN Steel	BHN 120	55,000	379	1.1	20%
<b>Aluminum Base Alloy(s) And Tempers(s)</b>					
1100-0	BHN 23	9,000	62	.18	15%
1100-H14	BHN 32	11,000	76	.22	18%
2024-0	BHN 47	18,000	124	.36	18%
2024-T3	BHN 120	41,000	283	.82	20%
3003-0	BHN 28	11,000	76	.76	15%
3003-H14, H16	BHN 40-47	15,000	103	.30	18%
3105-H25	BHN 47	16,000	110	.32	18%
5005-H34	BHN 41	14,000	97	.28	18%
5052-0	BHN 47	18,000	124	.36	18%
5052-H32	BHN 60	20,000	138	.40	20%
6061-0	BHN 30	12,000	83	.24	15%
6061-T6	BHN 95	30,000	207	.60	20%
7075-0	BHN 60	22,000	152	.44	20%
7075-T6	BHN 150	48,000	331	.96	20%
<b>Copper Base Alloys &amp; Tempers</b>					
110 Electrolytic Copper					
- .050 mm GS	Rb 40	22,000	152	.44	15%
- 1/2 Hard	Rb 40	26,000	179	.52	20%
- Hard	Rb 50	28,000	193	.56	25%
220 Comm Bronze 90%					
- 1/2 Hard	Rb 55	35,000	241	.70	15%
230 Red Brass 85%					
- 1/4 Hard	Rb 55	35,000	241	.70	15%
260 Cartridge Brass					
- .035 nn Gs	Rb 68	34,000	234	.68	15%
- 1/2 Hard	Rb 70	40,000	276	.80	18%
- Spring	Rb 91	48,000	331	.96	20%
342 A High Lead - 1/2 Hard	Rb 70	40,000	276	.80	18%
675 Manganese Bronze	Rb 65	42,000	290	.84	18%
<b>Stainless Steel</b>					
202 Annealed	Rb 95	90,000	620	1.8	} .024-.048" (0.5-1.5mm) .060-.120" (1.5-3.0mm) over .120" (3.0mm)
302,303, 304 Annealed	Rb 85	75,000	517	1.5	
310 Annealed	Rb 90	90,000	620	1.8	
316,321,430 Annealed	Rb 90	75,000	517	1.5	
410 Annealed	Rb 85	75,000	517	1.5	
<b>Other</b>					
Titanium - Unalloyed	Rb 23-29	50,000	345	1.20	25%