

# 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	15% (.024-.048")
302,303, 304 Annealed	Rb 85	75,000	517	1.5	
310 Annealed	Rb 90	90,000	620	1.8	20% (.060-.120")
316,321,430 Annealed	Rb 90	75,000	517	1.5	
410 Annealed	Rb 85	75,000	517	1.5	30% (over .120" (3.0mm))
<b>Other</b>					
Titanium - Unalloyed	Rb 23-29	50,000	345	1.20	25%