

Material group	Hardness		SFM	Feed Rate - IPR						
	HRC	BHN		0,0197 in. 0.5 mm	0,0315 in. 0.8 mm	0,0394 in. 1.0 mm	0,0591 in. 1.5 mm	0,0787 in. 2.0 mm	0,0984 in. 2.5 mm	0,1181 in. 3.0 mm
Common structural steels	-	≤ 150	345			0.0013	0.0020	0.0028	0.0037	0.0047
	≤ 32	≤ 301	330			0.0013	0.0020	0.0028	0.0037	0.0047
Free-cutting steels	≤ 25	≤ 255	345			0.0017	0.0026	0.0036	0.0047	0.0059
	≤ 32	≤ 301	295			0.0017	0.0026	0.0036	0.0047	0.0059
Unalloyed heat-treatable steels	≤ 20	≤ 220	310			0.0013	0.0020	0.0028	0.0037	0.0047
	≤ 25	≤ 255	310			0.0013	0.0020	0.0028	0.0037	0.0047
	≤ 32	≤ 301	295			0.0013	0.0020	0.0028	0.0037	0.0047
Alloyed heat-treatable steels	≤ 32	≤ 301	295			0.0013	0.0020	0.0028	0.0037	0.0047
	≤ 43	≤ 402	230			0.0013	0.0020	0.0028	0.0037	0.0047
Unalloyed case hardened steels	≤ 25	≤ 255	330			0.0009	0.0014	0.0020	0.0028	0.0035
Alloyed case hardened steels	≤ 32	≤ 301	280			0.0013	0.0020	0.0028	0.0037	0.0047
	≤ 43	≤ 402	230			0.0013	0.0020	0.0028	0.0037	0.0047
Nitriding steels	≤ 32	≤ 301	230			0.0009	0.0014	0.0020	0.0028	0.0035
	≤ 43	≤ 402	195			0.0009	0.0014	0.0020	0.0028	0.0035
Tool steels	≤ 25	≤ 255	165			0.0013	0.0020	0.0028	0.0037	0.0047
	≤ 43	≤ 402	165			0.0013	0.0020	0.0028	0.0037	0.0047
High speed steels	≤ 43	≤ 402	165			0.0009	0.0014	0.0020	0.0028	0.0035
Spring steels	≤ 38	≤ 354	165			0.0009	0.0014	0.0020	0.0028	0.0035
Hardened steels	≤ 48	≤ 460								
	≤ 66	-								
Stainless steels, sulphured	≤ 28	≤ 273	230			0.0009	0.0014	0.0020	0.0028	0.0035
austenitic	≤ 36	≤ 337	195			0.0005	0.0008	0.0013	0.0018	0.0024
martensitic	≤ 46	≤ 435	230			0.0009	0.0014	0.0020	0.0028	0.0035
Cast iron	≤ 23	≤ 242	490			0.0016	0.0035	0.0047	0.0059	0.0071
	≤ 38	≤ 354	460			0.0016	0.0035	0.0047	0.0059	0.0071
Spheroidal graphite iron and malleable cast iron	≤ 23	≤ 242	460			0.0016	0.0035	0.0047	0.0059	0.0071
	≤ 38	≤ 354	425			0.0016	0.0035	0.0047	0.0059	0.0071
Chilled cast iron	≤ 38	≤ 354								
New cast materials GGV	≤ 20	≤ 220	115			0.0005	0.0008	0.0013	0.0018	0.0024
	≤ 32	≤ 301								
New cast materials ADI	≤ 32	≤ 301								
	≤ 43	≤ 402								
Special alloys	≤ 54	≤ 549								
Ti and Ti-alloys	≤ 25	≤ 255	80			0.0005	0.0008	0.0013	0.0018	0.0024
	≤ 43	≤ 402	115			0.0005	0.0008	0.0013	0.0018	0.0024
Aluminium and Al-alloys	-	≤ 120	230			0.0047	0.0071	0.0094	0.0118	0.0142
Al wrought alloys	-	≤ 200	230			0.0047	0.0071	0.0094	0.0118	0.0142
Al cast alloys ≤ 10 % Si	-	≤ 180	445			0.0017	0.0026	0.0036	0.0047	0.0059
≤ 24 % Si	-	≤ 180	445			0.0017	0.0026	0.0036	0.0047	0.0059
Magnesium alloys	-	≤ 120								
Copper, low-alloyed	-	≤ 150								
Brass, short-chipping	-	≤ 180								
long-chipping	-	≤ 180								
Bronze, short-chipping	-	≤ 180								
	≤ 25	≤ 255								
Bronze, long-chipping	≤ 25	≤ 255								
	≤ 32	≤ 301								
Duroplastics										
Thermoplastics										
Reinforced plastics - Kevlar										
Reinforced plastics - GFK / CFK										

Material group	Hardness		SFM	Feed Rate - IPR										
	HRC	BHN		1/16 in. 1.590 mm	1/8 in. 3.170 mm	1/4 in. 6.350 mm	3/8 in. 9.520 mm	1/2 in. 12.700 mm	5/8 in. 15.870 mm	3/4 in. 19.050 mm	1 in. 25.400 mm	1 1/4 in. 31.750 mm	1 1/2 in. 38.100 mm	
Common structural steels	-	≤ 150												
	≤ 32	≤ 301												
Free-cutting steels	≤ 25	≤ 255												
	≤ 32	≤ 301												
Unalloyed heat-treatable steels	≤ 20	≤ 220												
	≤ 25	≤ 255												
	≤ 32	≤ 301												
Alloyed heat-treatable steels	≤ 32	≤ 301												
	≤ 43	≤ 402												
Unalloyed case hardened steels	≤ 25	≤ 255												
Alloyed case hardened steels	≤ 32	≤ 301												
	≤ 43	≤ 402												
Nitriding steels	≤ 32	≤ 301												
	≤ 43	≤ 402												
Tool steels	≤ 25	≤ 255												
	≤ 43	≤ 402												
High speed steels	≤ 43	≤ 402												
Spring steels	≤ 38	≤ 354												
Hardened steels	≤ 48	≤ 460												
	≤ 66	-												
Stainless steels, sulphured	≤ 28	≤ 273												
austenitic	≤ 36	≤ 337												
martensitic	≤ 46	≤ 435												
Cast iron	≤ 23	≤ 242	685		0.0060	0.0125	0.0160	0.0200	0.0250	0.0250				
	≤ 38	≤ 354	520		0.0060	0.0125	0.0160	0.0200	0.0250	0.0250				
Spheroidal graphite iron and malleable cast iron	≤ 23	≤ 242	520		0.0060	0.0125	0.0160	0.0200	0.0250	0.0250				
	≤ 38	≤ 354	425		0.0060	0.0100	0.0160	0.0160	0.0200	0.0250				
Chilled cast iron	≤ 38	≤ 354												
New cast materials GGV	≤ 20	≤ 220	425	0.0010	0.0065	0.0100	0.0155	0.0155	0.0195	0.0250	0.0315	0.0315	0.0395	
	≤ 32	≤ 301	330	0.0010	0.0065	0.0100	0.0155	0.0155	0.0195	0.0250	0.0315	0.0315	0.0395	
New cast materials ADI	≤ 32	≤ 301	260	0.0010	0.0065	0.0100	0.0155	0.0155	0.0195	0.0250	0.0315	0.0315	0.0395	
	≤ 43	≤ 402	195	0.0010	0.0065	0.0100	0.0155	0.0155	0.0195	0.0250	0.0315	0.0315	0.0395	
Special alloys	≤ 54	≤ 549												
Ti and Ti-alloys	≤ 25	≤ 255	425		0.0060	0.0100	0.0150	0.0160	0.0200	0.0250				
	≤ 43	≤ 402	325		0.0060	0.0100	0.0150	0.0160	0.0200	0.0250				
Aluminium and Al-alloys	-	≤ 120	260		0.0060	0.0100	0.0150	0.0160	0.0200	0.0250				
Al wrought alloys	-	≤ 200	195		0.0060	0.0100	0.0150	0.0160	0.0200	0.0250				
Al cast alloys ≤ 10 % Si	-	≤ 180												
≤ 24 % Si	-	≤ 180												
Magnesium alloys	-	≤ 120												
Copper, low-alloyed	-	≤ 150												
Brass, short-chipping	-	≤ 180												
long-chipping	-	≤ 180												
Bronze, short-chipping	-	≤ 180												
	≤ 25	≤ 255												
Bronze, long-chipping	≤ 25	≤ 255												
	≤ 32	≤ 301												
Duroplastics														
Thermoplastics														
Reinforced plastics - Kevlar														
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