

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	0.0100	0.0160	0.0160	0.0200	0.0250			
	≤ 38	≤ 354	520		0.0060	0.0100	0.0160	0.0160	0.0200	0.0250			
Spheroidal graphite iron and malleable cast iron	≤ 23	≤ 242	520		0.0060	0.0100	0.0160	0.0160	0.0200	0.0250			
	≤ 38	≤ 354	425		0.0050	0.0080	0.0125	0.0125	0.0160	0.0200			
Chilled cast iron	≤ 38	≤ 354											
New cast materials GGV	≤ 20	≤ 220	425	0.0010	0.0050	0.0080	0.0125	0.0125	0.0155	0.0195	0.0250	0.0250	0.0315
	≤ 32	≤ 301	330	0.0010	0.0050	0.0080	0.0125	0.0125	0.0155	0.0195	0.0250	0.0250	0.0315
New cast materials ADI	≤ 32	≤ 301	260	0.0010	0.0050	0.0080	0.0125	0.0125	0.0155	0.0195	0.0250	0.0250	0.0315
	≤ 43	≤ 402	195	0.0010	0.0050	0.0080	0.0125	0.0125	0.0155	0.0195	0.0250	0.0250	0.0315
Special alloys	≤ 54	≤ 549											
Ti and Ti-alloys	≤ 25	≤ 255	425		0.0050	0.0080	0.0120	0.0125	0.0160	0.0200			
	≤ 43	≤ 402	325		0.0050	0.0080	0.0120	0.0125	0.0160	0.0200			
Aluminium and Al-alloys	-	≤ 120	260		0.0050	0.0080	0.0120	0.0125	0.0160	0.0200			
Al wrought alloys	-	≤ 200	195		0.0050	0.0080	0.0120	0.0125	0.0160	0.0200			
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													
Reinforced plastics - GFK / CFK													

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Common structural steels	-	≤ 150	360	0.0040	0.0060	0.0100	0.0140	0.0160	0.0200				
	≤ 32	≤ 301	360	0.0040	0.0060	0.0100	0.0140	0.0160	0.0200				
Free-cutting steels	≤ 25	≤ 255	395	0.0040	0.0060	0.0100	0.0140	0.0160	0.0200				
	≤ 32	≤ 301	395	0.0040	0.0060	0.0100	0.0140	0.0160	0.0200				
Unalloyed heat-treatable steels	≤ 20	≤ 220	360	0.0030	0.0040	0.0060	0.0090	0.0100	0.0120				
	≤ 25	≤ 255	360	0.0040	0.0060	0.0100	0.0140	0.0160	0.0200				
	≤ 32	≤ 301	330	0.0030	0.0050	0.0080	0.0110	0.0120	0.0160				
Alloyed heat-treatable steels	≤ 32	≤ 301	360	0.0030	0.0050	0.0080	0.0110	0.0120	0.0160				
	≤ 43	≤ 402	360	0.0030	0.0040	0.0060	0.0090	0.0100	0.0120				
Unalloyed case hardened steels	≤ 25	≤ 255	360	0.0040	0.0060	0.0100	0.0140	0.0160	0.0200				
Alloyed case hardened steels	≤ 32	≤ 301	360	0.0030	0.0050	0.0080	0.0110	0.0120	0.0160				
	≤ 43	≤ 402	360	0.0030	0.0040	0.0060	0.0090	0.0100	0.0120				
Nitriding steels	≤ 32	≤ 301	330	0.0020	0.0030	0.0050	0.0070	0.0080	0.0100				
	≤ 43	≤ 402	260	0.0020	0.0030	0.0050	0.0070	0.0080	0.0100				
Tool steels	≤ 25	≤ 255	330	0.0030	0.0040	0.0060	0.0090	0.0100	0.0120				
	≤ 43	≤ 402	260	0.0020	0.0030	0.0050	0.0070	0.0080	0.0100				
High speed steels	≤ 43	≤ 402	165	0.0020	0.0030	0.0050	0.0070	0.0080	0.0100				
Spring steels	≤ 38	≤ 354	165	0.0020	0.0030	0.0050	0.0070	0.0080	0.0100				
Hardened steels	≤ 48	≤ 460	165	0.0020	0.0020	0.0040	0.0060	0.0060	0.0080				
	≤ 66	-	165	0.0010	0.0020	0.0040	0.0060	0.0060	0.0080				
Stainless steels, sulphured	≤ 28	≤ 273	330	0.0020	0.0030	0.0050	0.0070	0.0080	0.0100				
austenitic	≤ 36	≤ 337	230	0.0010	0.0020	0.0020	0.0040	0.0040	0.0050				
martensitic	≤ 46	≤ 435	330	0.0020	0.0030	0.0050	0.0070	0.0080	0.0100				
Cast iron	≤ 23	≤ 242	460	0.0040	0.0060	0.0100	0.0140	0.0160	0.0200				
	≤ 38	≤ 354	330	0.0040	0.0060	0.0100	0.0140	0.0160	0.0200				
Spheroidal graphite iron and malleable cast iron	≤ 23	≤ 242	460	0.0040	0.0060	0.0100	0.0140	0.0160	0.0200				
	≤ 38	≤ 354	330	0.0040	0.0060	0.0100	0.0140	0.0160	0.0200				
Chilled cast iron	≤ 38	≤ 354											
New cast materials GGV	≤ 20	≤ 220	330	0.0005	0.0040	0.0065	0.0100	0.0100	0.0125				
	≤ 32	≤ 301	330	0.0005	0.0040	0.0065	0.0100	0.0100	0.0125				
New cast materials ADI	≤ 32	≤ 301	295	0.0010	0.0065	0.0100	0.0155	0.0155	0.0195				
	≤ 43	≤ 402											
Special alloys	≤ 54	≤ 549	100	0.0040	0.0020	0.0020	0.0040	0.0040	0.0050				
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	≤ 43	≤ 402											
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Copper, low-alloyed	-	≤ 150	395		0.0010	0.0020	0.0030	0.0030	0.0040				
Brass, short-chipping	-	≤ 180	395	0.0040	0.0060	0.0100	0.0140	0.0160	0.0200				
long-chipping	-	≤ 180											
Bronze, short-chipping	-	≤ 180											
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