

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											
	≤ 38	≤ 354											
Spheroidal graphite iron and malleable cast iron	≤ 23	≤ 242											
	≤ 38	≤ 354											
Chilled cast iron	≤ 38	≤ 354											
New cast materials GGV	≤ 20	≤ 220											
	≤ 32	≤ 301											
New cast materials ADI	≤ 32	≤ 301											
	≤ 43	≤ 402											
Special alloys	≤ 54	≤ 549											
Ti and Ti-alloys	≤ 25	≤ 255											
	≤ 43	≤ 402											
Aluminium and Al-alloys	-	≤ 120	1150		0.0065	0.0125	0.0155	0.0195	0.0250	0.0250			
Al wrought alloys	-	≤ 200	1150		0.0065	0.0125	0.0155	0.0195	0.0250	0.0250			
Al cast alloys ≤ 10 % Si	-	≤ 180	1050		0.0065	0.0100	0.0155	0.0155	0.0195	0.0250			
≤ 24 % Si	-	≤ 180	920		0.0050	0.0080	0.0125	0.0125	0.0155	0.0195			
Magnesium alloys	-	≤ 120	1050		0.0050	0.0080	0.0125	0.0125	0.0155	0.0195			
Copper, low-alloyed	-	≤ 150	625		0.0050	0.0080	0.0125	0.0125	0.0155	0.0195			
Brass, short-chipping	-	≤ 180	525		0.0040	0.0065	0.0100	0.0100	0.0125	0.0155			
long-chipping	-	≤ 180	525		0.0040	0.0065	0.0100	0.0100	0.0125	0.0155			
Bronze, short-chipping	-	≤ 180	525		0.0040	0.0065	0.0100	0.0100	0.0125	0.0155			
	≤ 25	≤ 255	525		0.0040	0.0065	0.0100	0.0100	0.0125	0.0155			
Bronze, long-chipping	≤ 25	≤ 255	490		0.0040	0.0065	0.0100	0.0100	0.0125	0.0155			
	≤ 32	≤ 301	490		0.0040	0.0065	0.0100	0.0100	0.0125	0.0155			
Duroplastics			330		0.0020	0.0030	0.0050	0.0050	0.0065	0.0080			
Thermoplastics			330		0.0020	0.0030	0.0050	0.0050	0.0065	0.0080			
Reinforced plastics - Kevlar													
Reinforced plastics - GFK / CFK			330		0.0015	0.0025	0.0040	0.0040	0.0050	0.0065			

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Common structural steels	-	≤ 150											
	≤ 32	≤ 301											
Free-cutting steels	≤ 25	≤ 255											
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Alloyed heat-treatable steels	≤ 32	≤ 301											
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Alloyed case hardened steels	≤ 32	≤ 301											
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Nitriding steels	≤ 32	≤ 301											
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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	395		0.0050	0.0080	0.0120	0.0125	0.0160	0.0200			
	≤ 38	≤ 354	330		0.0050	0.0080	0.0120	0.0125	0.0160	0.0200			
Spheroidal graphite iron and malleable cast iron	≤ 23	≤ 242	295		0.0050	0.0080	0.0120	0.0125	0.0160	0.0200			
	≤ 38	≤ 354	260		0.0050	0.0080	0.0120	0.0125	0.0160	0.0200			
Chilled cast iron	≤ 38	≤ 354	130		0.0016	0.0025	0.0035	0.0040	0.0050	0.0060			
New cast materials GGV	≤ 20	≤ 220											
	≤ 32	≤ 301											
New cast materials ADI	≤ 32	≤ 301											
	≤ 43	≤ 402											
Special alloys	≤ 54	≤ 549											
Ti and Ti-alloys	≤ 25	≤ 255											
	≤ 43	≤ 402											
Aluminium and Al-alloys	-	≤ 120	1345		0.0050	0.0080	0.0125	0.0125	0.0160	0.0200			
Al wrought alloys	-	≤ 200	1345		0.0050	0.0080	0.0125	0.0125	0.0160	0.0200			
Al cast alloys ≤ 10 % Si	-	≤ 180	1245		0.0050	0.0080	0.0125	0.0125	0.0160	0.0200			
≤ 24 % Si	-	≤ 180	1080		0.0050	0.0080	0.0125	0.0125	0.0160	0.0200			
Magnesium alloys	-	≤ 120											
Copper, low-alloyed	-	≤ 150											
Brass, short-chipping	-	≤ 180	920		0.0060	0.0125	0.0160	0.0200	0.0250	0.0250			
long-chipping	-	≤ 180											
Bronze, short-chipping	-	≤ 180	360		0.0040	0.0060	0.0100	0.0100	0.0120	0.0160			
	≤ 25	≤ 255	260		0.0030	0.0050	0.0080	0.0080	0.0100	0.0125			
Bronze, long-chipping	≤ 25	≤ 255											
	≤ 32	≤ 301											
Duroplastics													
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Reinforced plastics - Kevlar													
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