

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	475		0.0065	0.0100	0.0125	0.0160					
	≤ 32	≤ 301	395		0.0050	0.0080	0.0100	0.0125					
Free-cutting steels	≤ 25	≤ 255	560		0.0080	0.0125	0.0160	0.0200					
	≤ 32	≤ 301	475		0.0080	0.0125	0.0160	0.0200					
Unalloyed heat-treatable steels	≤ 20	≤ 220	425		0.0080	0.0125	0.0160	0.0200					
	≤ 25	≤ 255	410		0.0065	0.0100	0.0125	0.0160					
	≤ 32	≤ 301	395		0.0065	0.0100	0.0125	0.0160					
Alloyed heat-treatable steels	≤ 32	≤ 301	395		0.0065	0.0100	0.0125	0.0160					
	≤ 43	≤ 402	345		0.0065	0.0100	0.0125	0.0160					
Unalloyed case hardened steels	≤ 25	≤ 255	475		0.0080	0.0125	0.0160	0.0200					
Alloyed case hardened steels	≤ 32	≤ 301	395		0.0065	0.0100	0.0125	0.0160					
	≤ 43	≤ 402	280		0.0040	0.0065	0.0080	0.0100					
Nitriding steels	≤ 32	≤ 301	350		0.0065	0.0100	0.0125	0.0160					
	≤ 43	≤ 402	330		0.0040	0.0065	0.0080	0.0100					
Tool steels	≤ 25	≤ 255	240		0.0050	0.0080	0.0100	0.0125					
	≤ 43	≤ 402	180		0.0040	0.0065	0.0080	0.0100					
High speed steels	≤ 43	≤ 402	195		0.0030	0.0050	0.0065	0.0080					
Spring steels	≤ 38	≤ 354	195		0.0025	0.0040	0.0050	0.0065					
Hardened steels	≤ 48	≤ 460	180		0.0025	0.0040	0.0050	0.0065					
	≤ 66	-	115		0.0020	0.0030	0.0040	0.0050					
Stainless steels, sulphured	≤ 28	≤ 273	195		0.0040	0.0065	0.0080	0.0100					
austenitic	≤ 36	≤ 337	180		0.0040	0.0065	0.0080	0.0100					
martensitic	≤ 46	≤ 435	165		0.0040	0.0065	0.0080	0.0100					
Cast iron	≤ 23	≤ 242	690		0.0100	0.0160	0.0200	0.0245					
	≤ 38	≤ 354	525		0.0100	0.0160	0.0200	0.0245					
Spheroidal graphite iron and malleable cast iron	≤ 23	≤ 242	450		0.0100	0.0160	0.0200	0.0245					
	≤ 38	≤ 354	425		0.0080	0.0125	0.0160	0.0200					
Chilled cast iron	≤ 38	≤ 354	130		0.0025	0.0040	0.0050	0.0065					
New cast materials GGV	≤ 20	≤ 220											
	≤ 32	≤ 301											
New cast materials ADI	≤ 32	≤ 301											
	≤ 43	≤ 402											
Special alloys	≤ 54	≤ 549	115		0.0030	0.0050	0.0065	0.0080					
Ti and Ti-alloys	≤ 25	≤ 255	150		0.0030	0.0050	0.0065	0.0080					
	≤ 43	≤ 402	130		0.0025	0.0040	0.0050	0.0065					
Aluminium and Al-alloys	-	≤ 120	1015										
Al wrought alloys	-	≤ 200	1015										
Al cast alloys ≤ 10 % Si	-	≤ 180	855										
≤ 24 % Si	-	≤ 180	720										
Magnesium alloys	-	≤ 120	920										
Copper, low-alloyed	-	≤ 150	410										
Brass, short-chipping	-	≤ 180	1065										
long-chipping	-	≤ 180	720										
Bronze, short-chipping	-	≤ 180	410										
	≤ 25	≤ 255	345										
Bronze, long-chipping	≤ 25	≤ 255	295										
	≤ 32	≤ 301	260										
Duroplastics													
Thermoplastics													
Reinforced plastics - Kevlar													
Reinforced plastics - GFK / CFK													

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Common structural steels	-	≤ 150	460		0.0050	0.0080	0.0100	0.0125					
	≤ 32	≤ 301	395		0.0040	0.0065	0.0080	0.0100					
Free-cutting steels	≤ 25	≤ 255	550		0.0065	0.0100	0.0125	0.0160					
	≤ 32	≤ 301	480		0.0065	0.0100	0.0125	0.0160					
Unalloyed heat-treatable steels	≤ 20	≤ 220	415		0.0065	0.0100	0.0125	0.0160					
	≤ 25	≤ 255	400		0.0050	0.0080	0.0100	0.0125					
	≤ 32	≤ 301	395		0.0050	0.0080	0.0100	0.0125					
Alloyed heat-treatable steels	≤ 32	≤ 301	395		0.0050	0.0080	0.0100	0.0125					
	≤ 43	≤ 402	335		0.0050	0.0080	0.0100	0.0125					
Unalloyed case hardened steels	≤ 25	≤ 255	465		0.0065	0.0100	0.0125	0.0160					
Alloyed case hardened steels	≤ 32	≤ 301	395		0.0050	0.0080	0.0100	0.0125					
	≤ 43	≤ 402	270		0.0030	0.0050	0.0065	0.0080					
Nitriding steels	≤ 32	≤ 301	340		0.0050	0.0080	0.0100	0.0125					
	≤ 43	≤ 402	325		0.0040	0.0065	0.0080	0.0100					
Tool steels	≤ 25	≤ 255	230		0.0040	0.0065	0.0080	0.0100					
	≤ 43	≤ 402	175		0.0030	0.0050	0.0065	0.0080					
High speed steels	≤ 43	≤ 402	195		0.0025	0.0040	0.0050	0.0065					
Spring steels	≤ 38	≤ 354	195		0.0020	0.0030	0.0040	0.0050					
Hardened steels	≤ 48	≤ 460	175		0.0020	0.0030	0.0040	0.0050					
	≤ 66	-	110		0.0020	0.0030	0.0040	0.0050					
Stainless steels, sulphured	≤ 28	≤ 273	195		0.0030	0.0050	0.0065	0.0080					
austenitic	≤ 36	≤ 337	175		0.0030	0.0050	0.0065	0.0080					
martensitic	≤ 46	≤ 435	155		0.0030	0.0050	0.0065	0.0080					
Cast iron	≤ 23	≤ 242	640		0.0080	0.0125	0.0160	0.0200					
	≤ 38	≤ 354	525		0.0080	0.0125	0.0160	0.0200					
Spheroidal graphite iron and malleable cast iron	≤ 23	≤ 242	435		0.0080	0.0125	0.0160	0.0200					
	≤ 38	≤ 354	415		0.0065	0.0100	0.0125	0.0160					
Chilled cast iron	≤ 38	≤ 354	130		0.0020	0.0030	0.0040	0.0050					
New cast materials GGV	≤ 20	≤ 220											
	≤ 32	≤ 301											
New cast materials ADI	≤ 32	≤ 301											
	≤ 43	≤ 402											
Special alloys	≤ 54	≤ 549	110		0.0025	0.0040	0.0050	0.0065					
Ti and Ti-alloys	≤ 25	≤ 255	140		0.0020	0.0030	0.0040	0.0050					
	≤ 43	≤ 402	130		0.0020	0.0030	0.0040	0.0050					
Aluminium and Al-alloys	-	≤ 120	1000										
Al wrought alloys	-	≤ 200	1000										
Al cast alloys ≤ 10 % Si	-	≤ 180	845										
≤ 24 % Si	-	≤ 180	710										
Magnesium alloys	-	≤ 120	900										
Copper, low-alloyed	-	≤ 150	400										
Brass, short-chipping	-	≤ 180	1050										
long-chipping	-	≤ 180	710										
Bronze, short-chipping	-	≤ 180	410										
	≤ 25	≤ 255	345										
Bronze, long-chipping	≤ 25	≤ 255	285										
	≤ 32	≤ 301	250										
Duroplastics													
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Reinforced plastics - Kevlar													
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