

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	425		0.0065	0.0100	0.0125	0.0160	0.0160					
	≤ 32	≤ 301	360		0.0050	0.0080	0.0100	0.0125	0.0125					
Free-cutting steels	≤ 25	≤ 255	475		0.0080	0.0125	0.0160	0.0200	0.0200					
	≤ 32	≤ 301	360		0.0065	0.0100	0.0125	0.0160	0.0160					
Unalloyed heat-treatable steels	≤ 20	≤ 220	395		0.0065	0.0100	0.0125	0.0160	0.0160					
	≤ 25	≤ 255	360		0.0065	0.0100	0.0125	0.0160	0.0160					
	≤ 32	≤ 301	345		0.0065	0.0100	0.0125	0.0160	0.0160					
Alloyed heat-treatable steels	≤ 32	≤ 301	345		0.0065	0.0100	0.0125	0.0160	0.0160					
	≤ 43	≤ 402	330		0.0050	0.0080	0.0100	0.0125	0.0125					
Unalloyed case hardened steels	≤ 25	≤ 255	425		0.0080	0.0125	0.0160	0.0200	0.0200					
Alloyed case hardened steels	≤ 32	≤ 301	395		0.0065	0.0100	0.0125	0.0160	0.0160					
	≤ 43	≤ 402	280		0.0040	0.0065	0.0080	0.0100	0.0100					
Nitriding steels	≤ 32	≤ 301	330		0.0050	0.0080	0.0100	0.0125	0.0125					
	≤ 43	≤ 402	295		0.0040	0.0065	0.0080	0.0100	0.0100					
Tool steels	≤ 25	≤ 255	215		0.0050	0.0080	0.0100	0.0125	0.0125					
	≤ 43	≤ 402	180		0.0040	0.0065	0.0080	0.0100	0.0100					
High speed steels	≤ 43	≤ 402	150		0.0030	0.0050	0.0065	0.0080	0.0080					
Spring steels	≤ 38	≤ 354	150		0.0025	0.0040	0.0050	0.0065	0.0065					
Hardened steels	≤ 48	≤ 460	150		0.0025	0.0040	0.0050	0.0065	0.0065					
	≤ 66	-	80		0.0020	0.0030	0.0040	0.0050	0.0050					
Stainless steels, sulphured	≤ 28	≤ 273	180		0.0030	0.0050	0.0065	0.0080	0.0080					
austenitic	≤ 36	≤ 337	150		0.0030	0.0050	0.0065	0.0080	0.0080					
martensitic	≤ 46	≤ 435	150		0.0025	0.0040	0.0050	0.0065	0.0065					
Cast iron	≤ 23	≤ 242	690		0.0080	0.0125	0.0160	0.0200	0.0200					
	≤ 38	≤ 354	510		0.0080	0.0125	0.0160	0.0200	0.0200					
Spheroidal graphite iron and malleable cast iron	≤ 23	≤ 242	510		0.0065	0.0100	0.0125	0.0160	0.0160					
	≤ 38	≤ 354	410		0.0065	0.0100	0.0125	0.0160	0.0160					
Chilled cast iron	≤ 38	≤ 354	115		0.0025	0.0040	0.0050	0.0065	0.0065					
New cast materials GGV	≤ 20	≤ 220												
	≤ 32	≤ 301												
New cast materials ADI	≤ 32	≤ 301												
	≤ 43	≤ 402												
Special alloys	≤ 54	≤ 549	80		0.0030	0.0050	0.0065	0.0080	0.0080					
Ti and Ti-alloys	≤ 25	≤ 255	130		0.0030	0.0050	0.0065	0.0080	0.0080					
	≤ 43	≤ 402	115		0.0025	0.0040	0.0050	0.0065	0.0065					
Aluminium and Al-alloys	-	≤ 120	855		0.0100	0.0160	0.0200	0.0245	0.0245					
Al wrought alloys	-	≤ 200	855		0.0100	0.0160	0.0200	0.0245	0.0245					
Al cast alloys ≤ 10 % Si	-	≤ 180	720		0.0080	0.0125	0.0160	0.0200	0.0200					
≤ 24 % Si	-	≤ 180	590		0.0080	0.0125	0.0160	0.0200	0.0200					
Magnesium alloys	-	≤ 120	855		0.0080	0.0125	0.0160	0.0200	0.0200					
Copper, low-alloyed	-	≤ 150	360		0.0065	0.0065	0.0100	0.0125	0.0125					
Brass, short-chipping	-	≤ 180	885		0.0080	0.0125	0.0160	0.0200	0.0200					
long-chipping	-	≤ 180	590		0.0065	0.0100	0.0125	0.0160	0.0160					
Bronze, short-chipping	-	≤ 180	360		0.0065	0.0065	0.0100	0.0125	0.0125					
	≤ 25	≤ 255	330		0.0050	0.0050	0.0080	0.0100	0.0100					
Bronze, long-chipping	≤ 25	≤ 255	240		0.0050	0.0050	0.0080	0.0100	0.0100					
	≤ 32	≤ 301	215		0.0050	0.0050	0.0080	0.0100	0.0100					
Duroplastics														
Thermoplastics														
Reinforced plastics - Kevlar														
Reinforced plastics - GFK / CFK														

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Common structural steels	-	≤ 150	425		0.0065	0.0100	0.0125	0.0160	0.0160					
	≤ 32	≤ 301	360		0.0050	0.0080	0.0100	0.0125	0.0125					
Free-cutting steels	≤ 25	≤ 255	475		0.0080	0.0125	0.0160	0.0200	0.0200					
	≤ 32	≤ 301	360		0.0065	0.0100	0.0125	0.0160	0.0160					
Unalloyed heat-treatable steels	≤ 20	≤ 220	395		0.0065	0.0100	0.0125	0.0160	0.0160					
	≤ 25	≤ 255	360		0.0065	0.0100	0.0125	0.0160	0.0160					
	≤ 32	≤ 301	345		0.0065	0.0100	0.0125	0.0160	0.0160					
Alloyed heat-treatable steels	≤ 32	≤ 301	345		0.0065	0.0100	0.0125	0.0160	0.0160					
	≤ 43	≤ 402	330		0.0050	0.0080	0.0100	0.0125	0.0125					
Unalloyed case hardened steels	≤ 25	≤ 255	425		0.0080	0.0125	0.0160	0.0200	0.0200					
Alloyed case hardened steels	≤ 32	≤ 301	395		0.0065	0.0100	0.0125	0.0160	0.0160					
	≤ 43	≤ 402	280		0.0040	0.0065	0.0080	0.0100	0.0100					
Nitriding steels	≤ 32	≤ 301	320		0.0050	0.0080	0.0100	0.0125	0.0125					
	≤ 43	≤ 402	280		0.0040	0.0065	0.0080	0.0100	0.0100					
Tool steels	≤ 25	≤ 255	195		0.0050	0.0080	0.0100	0.0125	0.0125					
	≤ 43	≤ 402	145		0.0040	0.0065	0.0080	0.0100	0.0100					
High speed steels	≤ 43	≤ 402	150		0.0030	0.0050	0.0065	0.0080	0.0080					
Spring steels	≤ 38	≤ 354	150		0.0025	0.0040	0.0050	0.0065	0.0065					
Hardened steels	≤ 48	≤ 460	150		0.0025	0.0040	0.0050	0.0065	0.0065					
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	≤ 25	≤ 255	330		0.0050	0.0080	0.0080	0.0100	0.0125					
Bronze, long-chipping	≤ 25	≤ 255	240		0.0050	0.0080	0.0080	0.0100	0.0125					
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