

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	130	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
	≤ 32	≤ 301	100	0.0015	0.0040	0.0065	0.0080	0.0100	0.0100				
Free-cutting steels	≤ 25	≤ 255	130	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
	≤ 32	≤ 301	100	0.0015	0.0040	0.0065	0.0080	0.0100	0.0100				
Unalloyed heat-treatable steels	≤ 20	≤ 220	130	0.0015	0.0040	0.0065	0.0080	0.0100	0.0100				
	≤ 25	≤ 255	100	0.0015	0.0040	0.0065	0.0080	0.0100	0.0100				
	≤ 32	≤ 301	50	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080				
Alloyed heat-treatable steels	≤ 32	≤ 301	65	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080				
	≤ 43	≤ 402											
Unalloyed case hardened steels	≤ 25	≤ 255	130	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
Alloyed case hardened steels	≤ 32	≤ 301	55	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080				
	≤ 43	≤ 402											
Nitriding steels	≤ 32	≤ 301	45	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080				
	≤ 43	≤ 402											
Tool steels	≤ 25	≤ 255	65	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080				
	≤ 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	130	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
	≤ 38	≤ 354	100	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
Spheroidal graphite iron and malleable cast iron	≤ 23	≤ 242	115	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
	≤ 38	≤ 354	80	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
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											
Al wrought alloys	-	≤ 200											
Al cast alloys ≤ 10 % Si	-	≤ 180	260	0.0020	0.0065	0.0100	0.0125	0.0160	0.0160				
≤ 24 % Si	-	≤ 180	225	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
Magnesium alloys	-	≤ 120											
Copper, low-alloyed	-	≤ 150	130	0.0015	0.0040	0.0065	0.0080	0.0100	0.0100				
Brass, short-chipping	-	≤ 180											
long-chipping	-	≤ 180	160	0.0015	0.0040	0.0065	0.0080	0.0100	0.0100				
Bronze, short-chipping	-	≤ 180											
	≤ 25	≤ 255											
Bronze, long-chipping	≤ 25	≤ 255	100	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080				
	≤ 32	≤ 301	80	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080				
Duroplastics			65	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080				
Thermoplastics													
Reinforced plastics - Kevlar													
Reinforced plastics - GFK / CFK													

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Common structural steels	-	≤ 150	145	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125	0.0140	0.0160	0.0200	
	≤ 32	≤ 301	115	0.0015	0.0040	0.0065	0.0080	0.0100	0.0100	0.0110	0.0125	0.0160	
Free-cutting steels	≤ 25	≤ 255	145	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125	0.0140	0.0160	0.0200	
	≤ 32	≤ 301	115	0.0015	0.0040	0.0065	0.0080	0.0100	0.0100	0.0110	0.0125	0.0160	
Unalloyed heat-treatable steels	≤ 20	≤ 220	145	0.0015	0.0040	0.0065	0.0080	0.0100	0.0100	0.0110	0.0125	0.0160	
	≤ 25	≤ 255	100	0.0015	0.0040	0.0065	0.0080	0.0100	0.0100	0.0110	0.0125	0.0160	
	≤ 32	≤ 301	55	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080	0.0090	0.0100	0.0125	
Alloyed heat-treatable steels	≤ 32	≤ 301	70	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080	0.0090	0.0100	0.0125	
	≤ 43	≤ 402											
Unalloyed case hardened steels	≤ 25	≤ 255	145	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125	0.0140	0.0160	0.0200	
Alloyed case hardened steels	≤ 32	≤ 301	65	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080	0.0090	0.0100	0.0125	
	≤ 43	≤ 402											
Nitriding steels	≤ 32	≤ 301	55	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080	0.0090	0.0100	0.0125	
	≤ 43	≤ 402											
Tool steels	≤ 25	≤ 255	70	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080	0.0090	0.0100	0.0125	
	≤ 43	≤ 402											
High speed steels	≤ 43	≤ 402											
Spring steels	≤ 38	≤ 354											
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Stainless steels, sulphured	≤ 28	≤ 273											
austenitic	≤ 36	≤ 337											
martensitic	≤ 46	≤ 435											
Cast iron	≤ 23	≤ 242	145	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125	0.0140	0.0160	0.0200	
	≤ 38	≤ 354	115	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125	0.0140	0.0160	0.0200	
Spheroidal graphite iron and malleable cast iron	≤ 23	≤ 242	130	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125	0.0140	0.0160	0.0200	
	≤ 38	≤ 354	90	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125	0.0140	0.0160	0.0200	
Chilled cast iron	≤ 38	≤ 354											
New cast materials GGV	≤ 20	≤ 220											
	≤ 32	≤ 301											
New cast materials ADI	≤ 32	≤ 301											
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Al wrought alloys	-	≤ 200											
Al cast alloys ≤ 10 % Si	-	≤ 180	295	0.0020	0.0065	0.0100	0.0125	0.0160	0.0160	0.0180	0.0200	0.0245	
≤ 24 % Si	-	≤ 180	260	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125	0.0140	0.0160	0.0200	
Magnesium alloys	-	≤ 120											
Copper, low-alloyed	-	≤ 150	145	0.0015	0.0040	0.0065	0.0080	0.0100	0.0100	0.0110	0.0125	0.0160	
Brass, short-chipping	-	≤ 180											
long-chipping	-	≤ 180	180	0.0015	0.0040	0.0065	0.0080	0.0100	0.0100	0.0110	0.0125	0.0160	
Bronze, short-chipping	-	≤ 180	145	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080	0.0090	0.0100	0.0125	
	≤ 25	≤ 255	130	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080	0.0090	0.0100	0.0125	
Bronze, long-chipping	≤ 25	≤ 255	110	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080	0.0090	0.0100	0.0125	
	≤ 32	≤ 301	90	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080	0.0090	0.0100	0.0125	
Duroplastics			70	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080	0.0090	0.0100	0.0125	
Thermoplastics			115	0.0015	0.0040	0.0065	0.0080	0.0100	0.0100	0.0110	0.0125	0.0160	
Reinforced plastics - Kevlar													
Reinforced plastics - GFK / CFK													