

Material group	Hardness		SFM	Feed Rate - IPR									
	HRC	BHN		.0039 in. .10 mm	.0063 in. .16 mm	.0098 in. .25 mm	.0118 in. .30 mm	.0197 in. .50 mm	.0248 in. .63 mm	.0315 in. .8 mm	.0394 in. 1.0 mm	.0591 in. 1.5 mm	.0787 in. 2.0 mm
Common structural steels	-	≤ 150	90	0.0003	0.0004	0.0004	0.0006	0.0007	0.0010	0.0012	0.0020	0.0024	0.0031
Free-cutting steels	≤ 25	≤ 255	75	0.0003	0.0004	0.0004	0.0006	0.0007	0.0010	0.0012	0.0020	0.0024	0.0031
Unalloyed heat-treatable steels	≤ 20	≤ 220	85	0.0002	0.0003	0.0004	0.0004	0.0006	0.0008	0.0009	0.0016	0.0020	0.0028
Alloyed heat-treatable steels	≤ 32	≤ 301	60	0.0002	0.0002	0.0003	0.0004	0.0004	0.0006	0.0008	0.0014	0.0018	0.0024
Unalloyed case hardened steels	≤ 25	≤ 255	75	0.0003	0.0004	0.0004	0.0006	0.0007	0.0010	0.0012	0.0020	0.0024	0.0031
Alloyed case hardened steels	≤ 32	≤ 301	60	0.0002	0.0002	0.0003	0.0004	0.0004	0.0006	0.0008	0.0014	0.0018	0.0024
Nitriding steels	≤ 32	≤ 301	60	0.0002	0.0002	0.0003	0.0004	0.0004	0.0006	0.0008	0.0014	0.0018	0.0024
Tool steels	≤ 25	≤ 255	65	0.0002	0.0002	0.0003	0.0004	0.0004	0.0006	0.0008	0.0014	0.0018	0.0024
High speed steels	≤ 43	≤ 402	60	0.0001	0.0002	0.0002	0.0003	0.0003	0.0005	0.0006	0.0011	0.0016	0.0021
Spring steels	≤ 38	≤ 354	35	0.0001	0.0001	0.0002	0.0002	0.0003	0.0004	0.0005	0.0009	0.0014	0.0018
Hardened steels	≤ 48	≤ 460											
Stainless steels, sulphured austenitic	≤ 28	≤ 273	65	0.0002	0.0002	0.0003	0.0004	0.0004	0.0006	0.0008	0.0014	0.0018	0.0024
Stainless steels, sulphured martensitic	≤ 36	≤ 337	50	0.0001	0.0002	0.0002	0.0003	0.0003	0.0005	0.0006	0.0011	0.0016	0.0021
Cast iron	≤ 23	≤ 242	110	0.0003	0.0004	0.0004	0.0006	0.0007	0.0010	0.0012	0.0020	0.0024	0.0031
Spheroidal graphite iron and malleable cast iron	≤ 23	≤ 242	75	0.0003	0.0004	0.0004	0.0006	0.0007	0.0010	0.0012	0.0020	0.0024	0.0031
Chilled cast iron	≤ 38	≤ 354	90	0.0003	0.0004	0.0004	0.0006	0.0007	0.0010	0.0012	0.0020	0.0024	0.0031
New cast materials GGV	≤ 20	≤ 220											
New cast materials ADI	≤ 32	≤ 301											
Special alloys	≤ 54	≤ 549											
Ti and Ti-alloys	≤ 25	≤ 255											
Aluminium and Al-alloys	-	≤ 120											
Al wrought alloys	-	≤ 200											
Al cast alloys ≤ 10 % Si	-	≤ 180											
Al cast alloys ≤ 24 % Si	-	≤ 180											
Magnesium alloys	-	≤ 120	260	0.0003	0.0004	0.0004	0.0006	0.0007	0.0010	0.0012	0.0020	0.0024	0.0031
Copper, low-alloyed	-	≤ 150	175	0.0002	0.0003	0.0004	0.0004	0.0006	0.0008	0.0009	0.0016	0.0020	0.0028
Brass, short-chipping	-	≤ 180											
Brass, long-chipping	-	≤ 180	90	0.0002	0.0003	0.0004	0.0004	0.0006	0.0008	0.0009	0.0016	0.0020	0.0028
Bronze, short-chipping	-	≤ 180	90	0.0002	0.0002	0.0003	0.0004	0.0004	0.0006	0.0008	0.0014	0.0018	0.0024
Bronze, long-chipping	≤ 25	≤ 255	75	0.0002	0.0002	0.0003	0.0004	0.0004	0.0006	0.0008	0.0014	0.0018	0.0024
Duroplastics	≤ 25	≤ 255	50	0.0002	0.0002	0.0003	0.0004	0.0004	0.0006	0.0008	0.0014	0.0018	0.0024
Thermoplastics	≤ 32	≤ 301	45	0.0002	0.0002	0.0003	0.0004	0.0004	0.0006	0.0008	0.0014	0.0018	0.0024
Reinforced plastics - Kevlar			65	0.0002	0.0002	0.0003	0.0004	0.0004	0.0006	0.0008	0.0014	0.0018	0.0024
Reinforced plastics - GFK / CFK			75	0.0002	0.0002	0.0003	0.0004	0.0004	0.0006	0.0008	0.0014	0.0018	0.0024

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				
Free-cutting steels	≤ 32	≤ 301	100	0.0015	0.0040	0.0065	0.0080	0.0100	0.0100				
Unalloyed heat-treatable steels	≤ 25	≤ 255	130	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
Alloyed heat-treatable steels	≤ 32	≤ 301	100	0.0015	0.0040	0.0065	0.0080	0.0100	0.0100				
Unalloyed case hardened steels	≤ 20	≤ 220	130	0.0015	0.0040	0.0065	0.0080	0.0100	0.0100				
Alloyed case hardened steels	≤ 25	≤ 255	100	0.0015	0.0040	0.0065	0.0080	0.0100	0.0100				
Nitriding steels	≤ 32	≤ 301	50	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080				
Tool steels	≤ 32	≤ 301	45	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080				
High speed steels	≤ 43	≤ 402	65	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080				
Spring steels	≤ 38	≤ 354											
Hardened steels	≤ 48	≤ 460											
Stainless steels, sulphured austenitic	≤ 28	≤ 273											
Stainless steels, sulphured martensitic	≤ 36	≤ 337											
Cast iron	≤ 23	≤ 242	130	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
Spheroidal graphite iron and malleable cast iron	≤ 38	≤ 354	100	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
Chilled cast iron	≤ 23	≤ 242	115	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
New cast materials GGV	≤ 38	≤ 354	80	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
New cast materials ADI	≤ 20	≤ 220											
Special alloys	≤ 32	≤ 301											
Ti and Ti-alloys	≤ 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				
Al cast alloys ≤ 24 % Si	-	≤ 180	225	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
Magnesium alloys	-	≤ 120	325	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
Copper, low-alloyed	-	≤ 150	130	0.0015	0.0040	0.0065	0.0080	0.0100	0.0100				
Brass, short-chipping	-	≤ 180											
Brass, long-chipping	-	≤ 180	160	0.0015	0.0040	0.0065	0.0080	0.0100	0.0100				
Bronze, short-chipping	-	≤ 180	130	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080				
Bronze, long-chipping	≤ 25	≤ 255	115	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080				
Duroplastics	≤ 25	≤ 255	100	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080				
Thermoplastics	≤ 32	≤ 301	80	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080				
Reinforced plastics - Kevlar			65	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080				
Reinforced plastics - GFK / CFK			100	0.0015	0.0040	0.0065	0.0080	0.0100	0.0100				