

THE CARBIDE END MILL STORE

Carbide End Mill Speeds and Feeds, General Purpose, AlTiN Coated

SMM = SFM X .3048		Speeds SFM	Feeds - IPT (inches/tooth) and MMPT (mm/tooth)								
Material Group	Examples		1/8" 3mm	3/16" 5mm	1/4" 6mm	5/16" 8mm	3/8" 10mm	1/2" 12mm	5/8" 16	3/4" 20m	1" 25mm
Steels P	Mild - 1018 (.2-.3 Carbon)	500	.0006"	.0011"	.0017"	.002"	.0025"	.0028"	.0032"	.0033"	.0041"
	Mild - 4140 (.4-.5 Carbon)	350	.016mm	.028mm	.043mm	.051mm	.064mm	.071mm	.081mm	.084mm	.104mm
	Tool Steels A2/D2/H13/P20	280	.0004"	.0009"	.0013"	.0016"	.0019"	.0021"	.0026"	.0028"	.0028"
	Forgings	180	.010mm	.023mm	.033mm	.041mm	.048mm	.053mm	.066mm	.071mm	.071mm
Cast Irons K	Soft	600									
	Medium	400	.0006"	.0011"	.0017"	.002"	.0025"	.0028"	.0032"	.0033"	.0041"
	Hard Chilled	350	.016mm	.028mm	.043mm	.051mm	.064mm	.071mm	.081mm	.084mm	.104mm
	Malleable	300									
Stainless Steels M	Free Machining	350	.0006"	.0011"	.0017"	.002"	.0025"	.0028"	.0032"	.0033"	.0041"
	Ferritic	280	.016mm	.028mm	.043mm	.051mm	.064mm	.071mm	.081mm	.084mm	.104mm
	Austenitic 304/316	250	.0004"	.0009"	.0013"	.0016"	.0019"	.0021"	.0026"	.0028"	.0028"
	Martensitic	210	.010mm	.023mm	.033mm	.041mm	.048mm	.053mm	.066mm	.071mm	.071mm
	PH 17-4 PH	160									
Special Alloys S	Titanium 6AL-V4	240	.0003"	.0005"	.0007"	.001"	.0012"	.0014"	.0017"	.0019"	.0025"
	Co-Based Alloys Stellite	140									
	Ni-Based Alloys Inconel 625/718	140	.0004"	.001"	.0012"	.0015"	.0017"	.002"	.0025"	.003"	.003"
	Fe-Based Alloys Incoloy 800-802	160									
Hardened Steels H	35-45Rc	270	.0004"	.001"	.0012"	.0015"	.0017"	.002"	.0025"	.003"	.003"
	45-55Rc	200	.010mm	.025mm	.030mm	.038mm	.043mm	.051mm	.064mm	.076mm	.076mm
	55-65Rc	70									
Non- Ferrous N	Al/Al Alloys	650									
	Brass/Bronze	550	.0011"	.0017"	.0022"	.0027"	.0032"	.0042"	.0065"	.0085"	.0092"
	Mg/Mg Alloys	950	.028mm	.043mm	.056mm	.068mm	.081mm	.107mm	.165mm	.216mm	.234mm
	Plastics/Bakelite	1000									
Speeds - Inch			Speeds - Metric								
SFM = surface feet per minute			SMM = surface meters per minute								
RPM = SFM X 3.82 / Tool Diameter			RPM = SMM X 318.057 / Tool Diameter								

Radial Depth of Cut in Percentage of Diameter	50%	30%	20%	15%	10%	5%	1%
CLF = chip load factor	1.0	1.1	1.2	1.4	1.8	2.3	5.0
Feeds - Inch				Feeds - Metric			
IPM = inches per minute		IPT = inches / tooth		MMPM = mm per minute		MMPT = mm / tooth	
IPM = RPM X number of teeth X CLF X IPT				MMPM = RPM X number of teeth X CLF X MMPT			

Safety Notice

Always wear the appropriate personal protective equipment such as safety glasses and protective clothing when using solid carbide cutting tools. Machines should be fully guarded. Technical data provided should be considered advisory only as variations may be necessary depending on the particular application.