

End Mill Speeds & Feeds

Speed: May be varied to suit conditions and type of operation in order to achieve best results.

Feed: Must consider material and depth of cut, tool diameter, number of flutes, and length. Tool material — HSS, Cobalt, and Carbide.

MATERIALS	SURFACE SPEED - SURFACE FEET/ MINUTE (SFM)		END MILL DIAMETER - INCHES PER TOOTH (IPT)		
	HSS/ Cobalt	Carbide	Up to 1/16"	1/16" - 1/8"	1/8" - 1/4"
Aluminum & Aluminum Alloys	200 - 600	600 - 1300	.0004 - .0008	.0008 - .0015	.0020 - .0060
Brass/ Bronze	100 - 200	400 - 700	.0003 - .0008	.0004 - .0012	.0010 - .0030
Cast Iron (Soft Grey)	100 - 130	200 - 500	.0004 - .001	.0008 - .002	.0015 - .0045
Cast Iron (Grey)	60 - 90	100 - 400	.0003 - .0008	.0006 - .0015	.0010 - .0040
Cast Iron (Ductile)	55 - 85	80 - 300	.0003 - .0008	.0006 - .0015	.0010 - .0030
Cast Iron (Malleable)	100 - 200	250 - 500	.0002 - .0004	.0004 - .0012	.0010 - .0030
Copper	60 - 80	200 - 500	.0002 - .0004	.0004 - .0010	.0008 - .002
Fiber	-	125 - 200	.0005 - .001	.0008 - .0015	.001 - .002
Graphite	-	125 - 200	.0005 - .001	.0008 - .0015	.001 - .002
Magnesium	125 - 250	400 - 700	.0004 - .0008	.0006 - .0015	.0015 - .0035
Nickel	15 - 20	60 - 120	.0002 - .0004	.0004 - .0010	.0008 - .0015
Plastic	150 - 450	300 - 900	.0003 - .001	.0008 - .002	.002 - .004
Plastic Glass Filled	75 - 250	150 - 600	.0005 - .001	.0008 - .0015	.001 - .002
Rubber	150 - 250	-	.0003 - .001	.0008 - .002	.002 - .003
Stainless Steel (< 25 Rc)	60 - 80	250 - 500	.0003 - .001	.0008 - .002	.002 - .003
Stainless Steel (300 Series)	30 - 60	200 - 400	.0003 - .001	.0008 - .002	.002 - .003
Stainless Steel (400 Series)	20 - 40	150 - 300	.0005 - .001	.0008 - .0015	.001 - .0025
Stainless Steel (PH)	30 - 60	50 - 200	.0005 - .001	.0008 - .0015	.001 - .0025
Steel Low Carbon	75 - 100	150 - 250	.0004 - .0008	.0006 - .0015	.0010 - .0040
Steel Med. Carbon	55 - 85	80 - 150	.0005 - .0015	.0010 - .0030	.002 - .005
Titanium	40 - 60	90 - 130	.0003 - .0006	.0004 - .0008	.0008 - .0015
Tool Steel	40 - 60	100 - 300	.0003 - .0008	.0004 - .0012	.001 - .003
Wood	80 - 100	100 - 400	.0005 - .001	.001 - .002	.002 - .003
Zinc	150 - 175	300 - 350	.0003 - .001	.0008 - .002	.002 - .003