



Series 27M Metric				Vc (m/min)	Diameter (D ₁) (mm)					
	Ae x D ₁	Ap x D ₁	6		8	10	12	16		
CFRP, AFRP (CARBON FIBER, ARAMID FIBER)		1	≤ 1	120	RPM	6361	4771	3817	3181	2385
				(96-164)	Fz	0.040	0.065	0.075	0.100	0.120
					Feed (mm/min)	1018	1240	1145	1272	1145
		≤ 0.5	≤ 1.5	150	RPM	7951	5963	4771	3976	2982
				(120-180)	Fz	0.040	0.065	0.075	0.100	0.120
					Feed (mm/min)	1272	1550	1431	1590	1431
		≤ 0.5	≤ 2	250	RPM	13252	9939	7951	6626	4970
				(200-300)	Fz	0.095	0.145	0.175	0.235	0.280
					Feed (mm/min)	5036	5765	5566	6228	5566
GFRP (FIBERGLASS)		1	≤ 1	100	RPM	5301	3976	3181	2650	1988
				(80-120)	Fz	0.040	0.065	0.075	0.100	0.120
					Feed (mm/min)	848	1034	954	1060	954
		≤ 0.5	≤ 1.5	120	RPM	6361	4771	3817	3181	2385
				(96-164)	Fz	0.040	0.065	0.075	0.100	0.120
					Feed (mm/min)	1018	1240	1145	1272	1145
		≤ 0.5	≤ 2	200	RPM	10602	7951	6361	5301	3976
				(160-240)	Fz	0.095	0.145	0.175	0.235	0.280
					Feed (mm/min)	4029	4612	4453	4983	4453
CARBON, GRAPHITE		1	≤ 1	145	RPM	7686	5765	4612	3843	2882
				(116-174)	Fz	0.050	0.080	0.095	0.125	0.150
					Feed (mm/min)	1537	1845	1752	1922	1729
		≤ 0.5	≤ 1.5	185	RPM	9807	7355	5884	4903	3677
				(148-222)	Fz	0.050	0.080	0.095	0.125	0.150
					Feed (mm/min)	1961	2354	2236	2452	2206
		≤ 0.5	≤ 2	300	RPM	15903	11927	9542	7951	5963
				(240-360)	Fz	0.115	0.185	0.220	0.290	0.350
					Feed (mm/min)	7315	8826	8397	9223	8349
PLASTICS		1	≤ 1	245	RPM	12987	9740	7792	6494	4870
				(196-294)	Fz	0.050	0.080	0.095	0.125	0.150
					Feed (mm/min)	2597	3117	2961	3247	2922
		≤ 0.5	≤ 1.5	305	RPM	16168	12126	9701	8084	6063
				(244-366)	Fz	0.050	0.080	0.095	0.125	0.150
					Feed (mm/min)	3234	3880	3686	4042	3638
		≤ 0.5	≤ 2	505	RPM	26769	20077	16062	13385	10038
				(404-606)	Fz	0.115	0.185	0.220	0.290	0.350
					Feed (mm/min)	12314	14857	14134	15526	14054
MACHINABLE CERAMICS MACHINABLE GLASS		1	≤ 1	10	RPM	530	398	318	265	199
				(8-12)	Fz	0.020	0.035	0.040	0.050	0.060
					Feed (mm/min)	42	56	51	53	48
		≤ 0.5	≤ 1.5	15	RPM	795	596	477	398	298
				(12-18)	Fz	0.020	0.035	0.040	0.050	0.060
					Feed (mm/min)	64	83	76	80	72
		≤ 0.5	≤ 2	25	RPM	1325	994	795	663	497
				(20-30)	Fz	0.045	0.075	0.085	0.115	0.140
					Feed (mm/min)	239	298	270	305	278

$$\text{rpm} = (1000 \times \text{m/min}) / (3.14 \times D_1)$$

$$\text{mm / min} = (\text{mm / flute}) \times 4 \times \text{rpm}$$

HSM (high speed machining)

adjust parameters based on resin type and fiber structure

reduce speed when overheating causes melting or damage to resin

reduce feed if delamination or fraying occur

finish cuts typically required reduced feed and cutting depths
 rates shown are for use without coolant; rates may be increased with coolant
 dust collection is vital when machining dry
 diamond coating will increase tool life in graphite and composite materials
 refer to the SGS Tool Wizard for complete technical information (I)

