Through Coolant and Solid Thread Mills

Material Group			v_c (m/min)	f_z (mm/tooth)	
				Cutter diameter ≤ ø8.0	Cutter diameter > ø8.0
P	11	Magnetic soft steels	100 (80-120)	0.03 (0.02 - 0.04)	0.07 (0.04 - 0.1)
	12	Structural steels, case carburizing steels			
	13	Plain carbon steels			
	14	Alloy steels			
H	15	Alloy steels/Hardened & Tempered steels	80 (60-100)	0.03 (0.02 - 0.04)	0.07 (0.04 - 0.1)
M	21	Free machining stainless steel	60 (40-80)	0.015 (0.01 - 0.02)	0.04 (0.02 - 0.06)
	22	Austenitic stainless steel			
	23	Ferritic, Ferritic+Austenitic,Martensitic			
K	31	Grey cast iron soft	75 (50-100)	0.03 (0.02 - 0.04)	0.07 (0.04 - 0.1)
	32	Grey cast iron hard			
	33	Nodular graphite cast iron <200HB			
	34	Nodular graphite cast iron <300HB			
S	41	Titanium, unalloyed	40 (20-60)	0.015 (0.01 - 0.02)	0.04 (0.02 - 0.06)
	42	Titanium, alloyed <270HB			
	43	Titanium, alloyed <350HB			
	51	Nickel, unalloyed	40 (20-60)	0.015 (0.01 - 0.02)	0.04 (0.02 - 0.06)
	52	Heat resisting alloys <270HB			
	53	Heat resisting alloys <350HB			
N	61	Copper, unalloyed	200 (100-300)	0.05 (0.03 - 0.07)	0.075 (0.05 - 0.1)
	62	Short chipping Brass, Bronze, Copper			
	63	Long chipping Brass, Bronze, Copper			
	64	AMPCO (Cu-Al-Fe alloys)			
	71	Aluminium, Magnesium, unalloyed	200 (100-300)	0.05 (0.03 - 0.07)	0.075 (0.05 - 0.1)
	72	Aluminium, alloyed Si < 0.5%			
	73	Aluminium, alloyed, Si < 10%			
	74	Aluminium, alloyed, Si > 10%			

▶ For programming details see page 130

v_c - cutting speed (m/min)
n - RPM (rev/min)
f_z - feed rate (mm/tooth)
f - feed rate (mm/rev)
z - No. of teeth
f_1 - feed at cutting edge
f_2 - feed at centre line
D - thread major diameter

To calculate RPM from cutting speed: $n = \frac{v_c \times 1000}{\pi \times ø}$

To calculate feed per revolution: $f_1 = n \times f_z \times z$

To calculate feed at tool centre line: $f_2 = \frac{f_1 \times (D - ø)}{D}$

All recommendations are based on ideal machining conditions. Adjustments may need to be made according to your set-up. The recommendations for speeds, feeds and other parameters presented in this chart are nominal recommendations and should be considered only as good starting points.