

Recommended cutting data

ISO	Material	Tensile strength (N/mm ²)	Cutting speed V _c (m/min)			
			coated		uncoated	
			AP2240	AP5820+	AN1015	
P	Unalloyed steel and cast steel	< 0.15 % C/hardened and tempered	350	130–250	120–200	–
		0.15–0.45 % C/hardened and tempered	650	110–190	80–150	–
		> 0.45 % C/hardened and tempered	1000	70–170	60–140	–
	Low alloyed steel and cast steel	annealed	600	120–200	80–170	–
		hardened and tempered	900	110–180	60–130	–
			1200	70–150	60–120	–
	High alloyed steel	annealed	700	90–170	80–140	–
	High alloyed tool steel and cast steel	hardened	1100	70–160	50–120	–
	Stainless steel	ferritic, annealed	700	120–200	60–170	–
Cast steel	martensitic, hardened and tempered	1000	60–100	50–100	–	
M	Stainless steel	ferritic/martensitic, annealed	450–600	100–170	60–170	–
		martensitic/austenitic, heat treated	600–900	60–90	50–90	–
K	Cast iron	pearlitic/ferritic	500–700	100–200	–	120–160
		pearlitic/martensitic	700–850	90–180	–	100–150
			800–1100	80–150	–	90–140
	Cast iron with nodular graphite	ferritic	550	100–160	–	130–170
		pearlitic	800	70–140	–	90–130
	Malleable cast iron	ferritic	450	100–200	–	140–200
		pearlitic	750	80–150	–	120–160
N	Aluminium alloys long chipping	not heat treatable	200	–	–	300–500
		heat treatable, heat treated	350	–	–	200–300
	Casted aluminium alloys	≤ 12 % Si, heat treated	250	–	–	100–500
		≤ 12 % Si, heat treatable, heat treated	300	–	–	100–300
		≤ 12 % Si, not heat treatable	450	–	–	100–200
	Copper and copper alloys (Brass/Bronze)	Lead alloys, Pb > 1 %	400	–	–	250–500
		Brass, Bronze	300	–	–	200–500
		Aluminium bronze	500	–	–	150–300
		Copper and elektrolyte copper	200	–	–	150–300
	Non-ferrous materials	Duroplastic	–	–	–	80–180
Re-inforced plastics		–	–	–	60–150	
Hard rubber		–	–	–	100–200	
S	High temperature resistant alloys	Fe-alloyed, annealed	700	–	30–55	30–45
		Fe-alloyed, heat treated	950	–	30–50	20–35
		Ni- or Co-alloyed, annealed	800	–	25–35	15–25
		Ni- or Co-alloyed, casting	1100	–	15–25	10–20
		Ni- or Co-alloyed, heat treated	1200	–	15–25	10–20
	Titanium alloys	Pure titan	500–700	–	50–120	60–120
Alpha- and Beta-alloys	heat treated	700–1000	–	35–60	30–50	
H	Hardened steel	hardened	55 HRC	–	–	–
			60 HRC	–	–	–
	Hard cast iron	casting	41 HRC	–	–	–
Hardened cast iron	hardened	55 HRC	–	–	–	

The recommended cutting data are only approximate values.
It may be necessary to adjust them to each individual machining application.