

Recommended Cutting Data

Turning – CERMET / PCD / CBN / HSS

ISO	Material		Tensile strength [N/mm²]	Cutting speed Vc [m/min]											
				AP6510	AC90C	AP6010	ACE6	T15	AH7510	AH7516	AH7520	AB8020	HSS-TiN	HSS-TiAlN	
P	Unalloyed steel and cast steel	ca. 0,15% C	350	100 - 500	160 - 460	100 - 450	100 - 400	100 - 400	-	-	-	-	70 - 100	80 - 110	
		ca. 0,45% C	650	80 - 500	90 - 430	80 - 450	80 - 370	80 - 370	-	-	-	-	65 - 90	70 - 100	
		ca. 0,75% C	1000	50 - 350	60 - 400	50 - 350	50 - 350	60 - 280	-	-	-	-	35 - 55	30 - 60	
	Low alloyed steel and cast steel		600	80 - 500	90 - 350	80 - 450	80 - 300	80 - 300	-	-	-	-	30 - 80	35 - 90	
			900	70 - 500	80 - 300	70 - 450	70 - 270	70 - 300	-	-	-	-	30 - 80	35 - 90	
			1200	50 - 350	60 - 300	50 - 350	50 - 250	80 - 220	-	-	-	-	30 - 60	35 - 70	
	High alloyed steel, high alloyed tool steel and cast steel	annealed	700	60 - 320	90 - 230	60 - 250	80 - 200	60 - 200	-	-	-	-	30 - 60	35 - 70	
		hardened and tempered	1100	50 - 180	60 - 180	50 - 180	50 - 160	60 - 200	-	-	-	-	-	-	
	Stainless steel and cast steel	ferritic / martensitic, annealed	700	80 - 350	90 - 290	80 - 300	80 - 250	70 - 270	-	-	-	-	20 - 35	20 - 40	
		martensitic, hardened and tempered	1000	80 - 400	-	80 - 350	80 - 250	70 - 250	-	-	-	-	-	-	
M	Stainless steel and cast steel	austenitic and austenitic/ferritic	450 - 600	80 - 380	-	80 - 300	80 - 240	80 - 240	-	-	-	-	20 - 35	20 - 40	
		chilled	600 - 900	60 - 350	-	60 - 300	80 - 240	80 - 200	-	-	-	-	-	-	
K	Cast iron	pearlitic, ferritic	500 - 700	100 - 500	-	100 - 300	80 - 300	-	700 - 2000	-	-	-	-	-	
		pearlitic, martensitic	700 - 850	100 - 380	-	100 - 300	80 - 260	-	500 - 900	-	-	-	-	-	
			800 - 1100	100 - 350	-	100 - 300	80 - 240	-	-	-	-	-	-	-	
	Cast iron with nodular graphite	ferritic	550	80 - 350	80 - 300	100 - 300	80 - 300	80 - 300	-	-	-	-	-	-	
		pearlitic	800	80 - 350	80 - 250	100 - 300	80 - 250	80 - 250	-	-	-	-	-	-	
	Malleable cast iron	ferritic	450	80 - 350	80 - 350	100 - 300	80 - 350	80 - 350	-	-	-	-	-	-	
		pearlitic	750	80 - 350	60 - 250	100 - 300	60 - 250	60 - 250	-	-	-	-	-	-	
	N	Aluminum alloys, long chipping	not heat treatable	200	-	-	-	-	-	-	-	-	400 - 2500	400 - 900	400 - 900
heat treatable, heat treated			350	-	-	-	-	-	-	-	-	-	300 - 2500	140 - 240	150 - 250
Casted aluminum alloys		≤ 12% Si, hardened	250	-	-	-	-	-	-	-	-	-	400 - 2000	140 - 240	150 - 250
		≤ 12% Si, heat treatable, heat treated	300	-	-	-	-	-	-	-	-	-	400 - 2000	140 - 240	150 - 250
		≤ 12% Si, not heat treatable	450	-	-	-	-	-	-	-	-	-	400 - 1800	60 - 130	70 - 140
Copper and copper alloys (brass / bronze)		Lead alloys, Pb > 1%	400	-	-	-	-	-	-	-	-	-	300 - 1800	90 - 110	100 - 120
		Brass, bronze	300	-	-	-	-	-	-	-	-	-	400 - 1600	-	-
		Aluminum bronze	500	-	-	-	-	-	-	-	-	-	300 - 1800	-	-
		Copper and electrolyte copper	200	-	-	-	-	-	-	-	-	-	300 - 1800	110 - 180	120 - 200
Non-ferrous materials		Duroplastics		-	-	-	-	-	-	-	-	-	80 - 140	90 - 150	
		Reinforced plastics		-	-	-	-	-	-	-	-	-	200 - 900	-	-
		Hard rubber		-	-	-	-	-	-	-	-	-	-	-	-
S	High temperature resistant alloys	Fe-alloyed annealed	700	-	-	-	-	-	300 - 500	-	-	-	10 - 20	10 - 25	
		Fe-alloyed hardened	950	-	-	-	-	-	250 - 350	-	-	-	10 - 20	10 - 25	
		Ni- oder Co- based annealed	800	-	-	-	-	-	280 - 400	-	-	-	10 - 20	10 - 25	
		Ni- oder Co- based casting	1100	-	-	-	-	-	200 - 300	-	-	-	-	-	
		Ni- oder Co- based hardened	1200	-	-	-	-	-	200 - 300	-	-	-	-	-	
	Titanium alloys, high strength	Pure titanium	500 - 700	-	-	-	-	-	-	-	-	100 - 400	15 - 30	15 - 35	
	Alpha- and beta-alloys, hardened		700 - 1000	-	-	-	-	-	-	-	-	100 - 350	15 - 30	15 - 35	
H	Hardened steel	hardened and tempered	1000 - 1350	-	-	-	-	-	120 - 250	80 - 180	-	-	-		
		hardened and tempered	1350 - 1700	-	-	-	-	-	-	-	50 - 150	-	-	-	
	Hard cast iron	casting	1350	-	-	-	-	-	60 - 150	-	-	-	-	-	
	Hardened cast iron	hardened and tempered	1900	-	-	-	-	-	50 - 150	-	-	-	-	-	

The datas cutting speeds given are approximate values.
It is necessary to adjust them to the individual machining operation.

More grades on the following pages. 