

Recommended Cutting Data

Turning – Carbide

coated

ISO	Material		Tensile strength [N/mm²]	Cutting speed Vc [m/min]										
				AM5110	AM5120	AM5120+	AM5130	AM5220	AP2025	AP2030	AP2035	AP2110	AP2120	AP2135
P	Unalloyed steel and cast steel	ca. 0,15% C	350	220-350	220-320	180-280	170-240	180-280	190-240	190-240	180-230	300-400	250-350	180-270
		ca. 0,45% C	650	180-310	180-290	160-250	160-220	160-250	170-200	170-200	170-190	260-350	210-300	170-230
		ca. 0,75% C	1000	150-270	150-250	120-220	140-200	120-220	130-160	130-160	130-150	240-300	180-230	160-210
	Low alloyed steel and cast steel		600	180-300	180-260	-	170-220	160-250	170-200	170-200	170-190	220-300	180-270	160-220
			900	170-270	150-220	-	170-200	140-230	100-160	100-160	90-150	180-260	160-220	140-180
			1200	150-240	80-190	-	150-200	120-200	80-140	80-140	70-130	120-220	100-200	100-160
	High alloyed steel, high alloyed tool steel and cast steel	annealed	700	80-180	80-150	-	80-150	70-150	130-170	130-170	120-200	150-220	130-200	130-180
		hardened and tempered	1100	40-140	40-130	-	40-120	35-120	80-130	80-130	50-100	70-150	70-140	70-120
	Stainless steel and cast steel	ferritic / martensitic, annealed	700	40-180	40-150	50-160	40-160	50-160	130-180	130-180	140-180	-	-	-
		martensitic, hardened and tempered	1000	40-160	40-140	40-140	40-160	40-140	110-160	110-160	110-160	-	-	-
M	Stainless steel and cast steel	austenitic and austenitic/ferritic	450-600	80-180	80-160	70-150	80-150	70-150	100-170	100-170	110-190	-	-	-
		chilled	600-900	40-140	40-130	35-120	40-120	35-120	-	-	80-150	-	-	-
K	Cast iron	pearlitic, ferritic	500-700	180-350	180-300	180-300	180-240	180-300	130-200	130-200	-	160-230	-	-
		pearlitic, martensitic	700-850	160-300	160-280	160-280	160-220	160-280	120-180	120-180	-	150-200	-	-
			800-1100	120-270	120-240	120-240	120-200	120-240	-	-	-	-	-	-
	Cast iron with nodular graphite	ferritic	550	140-230	140-230	-	140-200	140-230	120-170	120-170	-	160-210	-	-
		pearlitic	800	120-170	120-170	-	110-160	120-170	120-190	120-190	-	130-170	-	-
	Malleable cast iron	ferritic	450	150-210	150-210	-	130-190	150-210	150-230	150-230	-	150-210	-	-
pearlitic		750	150-210	150-210	-	130-190	150-210	120-170	120-170	-	150-210	-	-	
N	Aluminum alloys, long chipping	not heat treatable	200	-	-	-	-	-	-	-	-	-	-	-
		heat treatable, heat treated	350	-	-	-	-	-	-	-	-	-	-	-
	Casted aluminum alloys	≤ 12% Si, hardened	250	-	-	-	-	-	-	-	-	-	-	-
		≤ 12% Si, heat treatable, heat treated	300	-	-	-	-	-	-	-	-	-	-	-
		≤ 12% Si, not heat treatable	450	-	-	-	-	-	-	-	-	-	-	-
	Copper and copper alloys (brass / bronze)	Lead alloys, Pb > 1%	400	200-650	200-500	150-500	200-500	-	-	-	-	-	-	-
		Brass, bronze	300	200-650	200-500	150-500	200-500	-	-	-	-	-	-	-
		Aluminum bronze	500	160-350	160-300	120-400	150-220	-	-	-	-	-	-	-
		Copper and electrolyte copper	200	120-220	120-200	120-250	120-220	-	-	-	-	-	-	-
	Non-ferrous materials	Duroplastics		160-600	160-600	-	140-500	-	-	-	-	-	-	-
		Reinforced plastics		100-300	100-300	100-300	100-300	-	-	-	-	-	-	-
		Hard rubber		-	-	-	-	-	-	-	-	-	-	-
S	High temperature resistant alloys	Fe-alloyed annealed	700	20-70	20-60	20-60	20-50	20-60	20-40	-	20-40	-	-	-
		Fe-alloyed hardened	950	20-70	20-60	20-60	20-50	20-60	15-35	-	15-35	-	-	-
		Ni- oder Co- based annealed	800	15-60	15-50	15-50	15-40	15-50	10-30	-	8-25	-	-	-
		Ni- oder Co- based casting	1100	15-50	15-40	15-40	15-40	15-40	5-18	-	4-15	-	-	-
		Ni- oder Co- based hardened	1200	15-50	15-40	15-40	15-40	15-40	5-18	-	4-15	-	-	-
	Titanium alloys, high strength	Pure titanium	500-700	100-210	90-180	-	80-170	-	80-130	-	80-130	-	-	-
	Alpha- and beta-alloys, hardened		700-1000	40-90	40-80	-	40-70	-	20-40	-	15-35	-	-	-
H	Hardened steel	hardened and tempered	1000-1350	30-55	30-50	-	30-45	-	-	-	-	-	-	
		hardened and tempered	1350-1700	15-25	10-25	-	15-25	-	-	-	-	-	-	-
	Hard cast iron	casting	1350	40-80	40-70	-	40-65	-	-	-	-	-	-	-
	Hardened cast iron	hardened and tempered	1900	15-30	10-25	-	15-25	-	-	-	-	-	-	-

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.

