

I

N	ALUMINIUM	Hardness	Group
		Alluminio Si < 0.5%	10a
		Alluminio 0.5% < Si < 8%	10b
		Alluminio Si > 8%	10c

II

1	2	3	4
Machining type	Material group p.III	Recommended tools	Cutting Parameters

Rough milling / contour milling  ap: 1.0xØ ae: 0.5xØ	Group Index p.III	Recommended Reference	Recommended Coating	V _c uncoated [m/min]	V _c coated [m/min]	F _z Ø 0.25 [mm]	F _z Ø 0.5 [mm]	F _z Ø 1 [mm]	F _z Ø 2 [mm]	F _z Ø 4 [mm]	F _z Ø 6 [mm]	F _z Ø 8 [mm]	F _z Ø 10 [mm]	F _z Ø 12 [mm]	F _z Ø 16 [mm]	F _z Ø 20 [mm]
	10a	115	Solo	290	350	0.003	0.004	0.008	0.012	0.024	0.031	0.047	0.063	0.079	0.101	0.126
		3200	Solo	320	380	0.002	0.003	0.006	0.01	0.02	0.025	0.03	0.04	0.045	0.055	0.07
	10b	115	Solo	250	300	0.003	0.004	0.008	0.012	0.024	0.031	0.047	0.063	0.079	0.101	0.126
		3200	Solo	280	335	0.002	0.003	0.006	0.01	0.02	0.025	0.03	0.04	0.045	0.055	0.07
	10c	115	Solo	220	265	0.003	0.004	0.008	0.012	0.024	0.031	0.047	0.063	0.079	0.101	0.126
		3200	Solo	220	265	0.002	0.003	0.006	0.01	0.02	0.025	0.03	0.04	0.045	0.055	0.07

Finish milling / contour milling  ap: 1.5xØ ae: 0.1xØ	Group Index p.III	Recommended Reference	Recommended Coating	V_c uncoated[m/min]	V_c coated [m/min]	F_z Ø 0.25 [mm]	F_z Ø 0.5 [mm]	F_z Ø 1 [mm]	F_z Ø 2 [mm]	F_z Ø 4 [mm]	F_z Ø 6 [mm]	F_z Ø 8 [mm]	F_z Ø 10 [mm]	F_z Ø 12 [mm]	F_z Ø 16 [mm]	F_z Ø 20 [mm]
	10a	3200	Solo	320	385	0.002	0.003	0.006	0.010	0.020	0.025	0.030	0.040	0.045	0.055	0.070
		104-0	Solo	250	300	0.003	0.004	0.008	0.012	0.024	0.031	0.047	0.063	0.079	0.101	0.126
	10b	3200	Solo	280	335	0.002	0.003	0.006	0.010	0.020	0.025	0.030	0.040	0.045	0.055	0.070
		104-0	Solo	220	265	0.003	0.004	0.008	0.012	0.024	0.031	0.047	0.063	0.079	0.101	0.126
	10c	3200	Solo	220	265	0.002	0.003	0.006	0.010	0.020	0.025	0.030	0.040	0.045	0.055	0.070
		104-0	Solo	200	240	0.003	0.004	0.008	0.012	0.024	0.031	0.047	0.063	0.079	0.101	0.126

Centering		Group Index p.III	Recommended Reference	Recommended Coating	V _c uncoated [m/min]	V _c coated [m/min]	F [mm]	Pecking
		10a	337	Solo	170	190	Ø/40	-
		10b	337	Solo	150	170	Ø/40	-
		10c	337	Solo	105	125	Ø/40	-

Drilling		Group Index p.III	Recommended Reference	Recommended Coating	V _e uncoated [m/min]	V _e coated [m/min]	F [mm]	Pecking
		10a	340/342/343-6→343-12/352	Solo	175	195	Ø/40	Øx1.7
		10b	340/342/343-6→343-12/352	Solo	150	170	Ø/40	Øx1.8
		10c	340/342/343-6→343-12/352	Solo	100	120	Ø/40	Øx1.9

Sawing		Group Index p.III	Recommended Reference	Recommended Coating	V _c uncoated [m/min]	V _c coated [m/min]	F _z [mm]
		10a	223	Solo	330	360	ø/10000
		10b	223	Solo	310	330	ø/10000
		10c	223	Solo	300	320	ø/10000

 Engraving		Group Index p.III	Recommended Reference	Recommended Coating	n [rpm]	F _z ↓ [mm]	F _z → [mm]
		10a	119-2	Solo	30'000	0.006	0.012
		10b	119-2	Solo	30'000	0.006	0.012
		10c	119-2	Solo	30'000	0.006	0.012

III

N Index - Aluminium

N° Wsn	DIN	AFNOR	Gr.
2.1504	NiAlBz		10b
3.0205	Al99		10a
3.0205	Al99.0	1200 (A4)	10a
3.0255	Al99.5	1050 (A5)	10a
3.0257	EA199.0		10a
3.0275	Al99.7		10a
3.0285	Al99.8		10a
3.0305	Al99.9		10a
3.0505	AlMn0.5Mg0.5		10a
3.0506	AlMn0.6		10a
3.0515	AlMn1		10a
3.0517	AlMnCu		10a
3.0524	AlMn1Mg0.5	3003 (A – M1)	10a
3.0526	AlMn1Mg1	3004 (A – M1G)	10a
3.0615	AlMgSiPb		10a
3.1255	AlCuSiMn	2014 (A – U45G)	10b
3.1305	AlCu2.5Mg0.5	2117 (A – U2G)	10b
3.1325	AlCuMg1		10a
3.1355	AlCuMg2	2017A (A – U4G)	10b
3.1355	AlCuMg2	2024 (A – U4G1)	10b
3.1645	AlCuMgPb		10a
3.1655	AlCuBiPb	2011 (A – U5PbB)	10b
3.2131	AlSi5Cu1	A – S7GY	10b
3.2134	G – AlSi5Cu1Mg		10b
3.2151	AlSi6Cu4	A – S5U3	10b
3.2245	SAlSi5	A – S5	10a
3.2307	Al99.85MgSi		10a
3.2315	AlMgSi1	A – SGM0.7 (anticor. 110)	10a
3.2371	AlSi7Mg		10b
3.2381	AlSi10Mg	A – S10G	10c
3.2525	SAlSi12	A – S12	10c
3.2581	G – AlSi12		10c
3.2581	AlSi12	A – S12Y4	10c
3.2583	G – AlSi12(Cu)		10c
3.3206	AlMgSi0.5	A – G5	10b
3.3210	AlMgSi0.7		10b
3.3292	GD – AlMg9		10a
3.3307	Al99.85Mg0.5		10a
3.3308	Al99.5Mg0.5		10a
3.3315	AlMg1		10a
3.3316	AlMg1.5		10a
3.3317	Al99.85Mg1		10a
3.3326	AlMg1.8		10a
3.3345	AlMg4.5		10a
3.3523	AlMg2.5		10a
3.3525	AlMg2Mn0.3	5052 (A – G3)	10a
3.3535	AlMg3	A – G3C	10a
3.3543	G – AlMg3(Cu)		10a
3.3547	AlMg4.5Mn	A – G4.5MC	10a
3.3555	AlMg5		10a
3.3561	G – AlMg5		10a
4.4365	AlZn6MgCu1.5	7075 (A – Z5GU)	10b

Formulas

$$\mathbf{F} = \mathbf{F}_z \cdot \mathbf{Z}$$

$$V_c = \frac{\pi \cdot d_1 \cdot n}{1000}$$

$$\mathbf{V}_F = \mathbf{F}_z \cdot \mathbf{Z} \cdot \mathbf{n}$$

$$n = \frac{V_c \cdot 1000}{\pi \cdot d_1}$$

$$f_z = \frac{V_f}{Z \cdot n}$$

Caption

F [mm]: Feed per rotation

F_z [mm]: Feed per tooth

Z : Number of teeth

V_f [mm/min]: Feed speed

n : Spindle speed