



Highly machinable alloy from Děčín

General overview & application

- Substitution for lead alloyed machining alloys 2007 and 2028A
 - High mechanical properties and fatigue strength, good ductility
 - Very good machinability (very good chip breaking)
 - Not suitable for welding and low corrosion resistance, due to high copper content
 - Protective anodizing is possible, but not for decorative purposes
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- Applied typically in variable high strength machined parts
 - Alloy future lead compliant with Pb ≤ 0.1% (EU regulation targeted for later 2020s)



Product range

	Round (mm)	Hexagonal (mm)	Shaped (mm ²)	Profiles (mm ²)
Drawn	6-80	13-80	200-6400	-
Extruded	20-125	15-85	200-14400	500-9900

Chemical composition (Weight %)

	Si	Fe	Cu	Mn	Mg	Cr	Zn	Bi
Min.	-	-	3,3	0,20	0,40	-	-	0,10
Max.	0,8	0,8	4,6	1,0	1,8	0,10	0,8	1,0
Remarks	Pb max. 0,10%, Ni, Ti max. 0,20%		Others: each: 0,05% / total: 0,15%					

Typical tempers

T4 (T4510, T4511), T3 (T351)

Mechanical properties

Product (Temper)	Dimension (mm)	Minimal values			Typical
		Rm (MPa)	Rp 0.2 (MPa)	A (%)	HBW (2.5/62.5)
Extruded bars (T4, T4510, T4511)	D ≤ 80	370	250	8	95
	80 < D ≤ 125	340	220	8	95
Cold drawn bars (T3)	D ≤ 30	370	240	7	95
	30 < D ≤ 80	340	220	6	95
Cold drawn bars (T351)	D ≤ 80	370	240	5	95

Processing properties

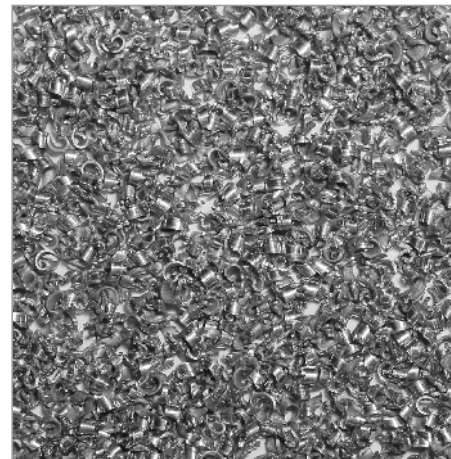
Machinability	★★★★★
Machining index (chips #/100g)	5000
MIG-TIG weldability	★★★
Resistance fusion weldability	★★
Soft soldering & brazing	★

Protective anodising

Hard anodising	★★★
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Corrosion

Corrosion resistance @ sea water	★★
Corrosion resistance @ atmosphere	★★
Corrosion depth ISO 11846B (µm)	100 (T4)



Physical properties

Density	2,80	g/cm ³
Young's modulus of elasticity	76000	MPa
Coeff. of thermal expansion (20-100°C)	23	x10 ⁻⁶ /°C
Thermal conductivity at 20°C	130-160	W/m*K
Specific heat capacity	860	J/kg*K
Electrical conductivity at 20°C	18-22	MS/m

Legend:

- ★★★★★ Excellent
- ★★★★ Good
- ★★★ Acceptable
- ★★ Conditional
- ★ Not recommended

