



Highly machinable alloy from Děčín

Overview & application

- 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
- Applied typically in variable high strength machined parts
- This alloy will stop its production & use after 2025 based on existing EU regulation (CLP, RoHS)



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	Pb
Min.	-	-	3,3	0,50	0,40	-	-	0,8
Max.	0,8	0,8	4,6	1,0	1,8	0,10	0,8	1,0
Remarks	Ni, Sn, Bi, Ti max. 0,20			Others: each: 0,10 / total: 0,30				

Typical tempers

T4 (T4510, T4511), T3 (T351)

Mechanical properties

Product (Temper)	Dimension (mm)	Minimal values (EN)			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

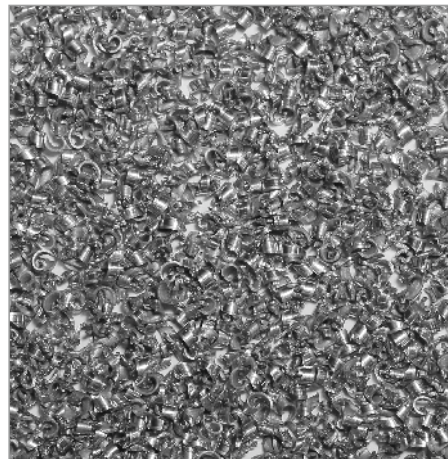
Machinability	★★★★★
Machining index (chips #/100g)	5000
MIG-TIG weldability	★
Resistance fusion weldability	★
Soft soldering & brazing	★

Protective anodising

Hard anodising	★★★
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Corrosion

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



Physical properties

Density	2,82	g/cm ³
Young's modulus of elasticity	72500	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	875	J/kg*K
Electrical conductivity at 20°C	18-22	MS/m

Legend:

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

