

Highly machinable alloy from Děčín

Overview & application

- High mechanical properties and relatively high corrosion resistance
- Very good machinability and high thermal stability (comparable to 4032)
- No contents of lead, tin and bismuth (ELV, RoHS & REACH compatible)
- Very good weldability and medium fatigue strength
- Applied in heavy duty structures in automotive & transport, industry & defense
- Alloy future lead compliant with Pb ≤ 0.1% (EU regulation under consideration 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	Ni	Zn
Min.	1,2	1,3	0,15	0,20	0,50	0,05	0,20	-
Max.	1,8	1,8	0,50	0,7	0,9	0,25	1,0	0,25
Remarks	Ti max. 0,10				Others: each: 0,05 / total: 0,15			

Typical tempers

T6, T8

Mechanical properties

Product (Temper)	Dimension (mm)	Minimal values			Typical
		Rm (MPa)	Rp 0.2 (MPa)	A (%)	HBW (2.5/62.5)
Extruded bars (T6)	20<D≤125	370	300	10	115
Cold drawn bars (T8)	D≤80	370	350	8	115

Processing properties

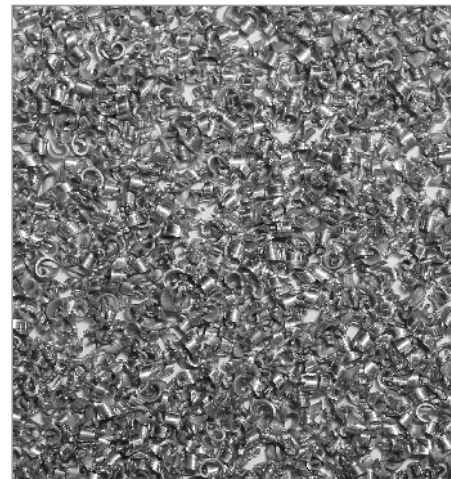
Machinability	★★★★★
Machining index (chips #/100g)	5000
MIG-TIG weldability	★★★★
Resistance fusion weldability	★★★
Soft soldering & brazing	★★

Protective anodising

Protective anodising	★★
Hard anodising	★★

Corrosion

Corrosion resistance @ sea water	★★★
Corrosion resistance @ atmosphere	★★★★
Corrosion depth ISO 11846B (µm)	350



Physical properties

Density	2,74	g/cm ³
Young's modulus of elasticity	77000	MPa
Coeff. of thermal expansion (20-100°C)	23,2	x10 ⁻⁶ /°C
Thermal conductivity at 20°C	173	W/m*K
Specific heat capacity	884	J/kg*K
Electrical conductivity at 20°C	24	MS/m

Legend:

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

