

### Good machinable alloy from Děčín

#### Overview & application

- Medium mechanical properties, but relatively high corrosion resistance
  - Acceptable machinability due to chemical contents and tailored processing
  - Very good weldability, good anodizing and medium fatigue strength
  - Good cold formability in T4 temper
- 
- 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 <sup>2</sup> )	Profiles (mm <sup>2</sup> )
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	Ti
Min.	0,7	-	-	0,40	0,6	-	-	-
Max.	1,3	0,50	0,10	1,0	1,2	0,25	0,20	0,10
Remarks	Others: each: 0,05 / total: 0,15							

#### Typical tempers

T4, T6

#### 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)	D ≤ 125	160	110	14	70
Extruded bars (T6)	D ≤ 20	295	250	8	95
	20 < D ≤ 125	310	260	8	95
Cold drawn bars (T3)	D ≤ 80	205	110	14	70
Cold drawn bars (T8)	D ≤ 80	310	255	10	95

#### Processing properties

Machinability	▲▲▲
Machining index (chips #/100g)	500
MIG-TIG weldability	▲▲▲▲
Resistance fusion weldability	▲▲▲
Soft soldering & brazing	▲▲▲

#### Protective anodising

Protective anodising	▲▲▲▲
----------------------	------

#### Hard anodising

Hard anodising	▲▲▲
----------------	-----

#### Corrosion

Corrosion resistance @ sea water	▲▲▲
Corrosion resistance @ atmosphere	▲▲▲▲
Corrosion depth ISO 11846B (µm)	200-250

#### Physical properties

Density	2,70	g/cm <sup>3</sup>
Young's modulus of elasticity	70000	MPa
Coeff. of thermal expansion (20-100°C)	23,4	x10 <sup>-6</sup> /°C
Thermal conductivity at 20°C	170-220	W/m*K
Specific heat capacity	896	J/kg*K
Electrical conductivity at 20°C	24-32	MS/m



#### Legend:

- ▲▲▲▲▲ Excellent
- ▲▲▲▲ Good
- ▲▲▲ Acceptable
- ▲▲ Conditional
- ▲ Not recommended

