

## Highly machinable alloy from Děčín

AlCu6BiPb

### Overview & application

- High mechanical properties and high fatigue strength
  - Excellent machinability and surface quality (roughness) after machining
  - Not suitable for welding and low corrosion resistance
  - Good anodizing response
- 
- Applied typically in variable high strength machined parts
  - This alloy will stop its use in May 2021 based on existing EU regulation (RoHS)



### 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	Zn	Bi	Pb
Min.	-	-	5,0	-	-	-	0,20	0,20
Max.	0,40	0,7	6,0	-	-	0,30	0,6	0,40
Remarks	Others: each: 0,05 / total: 0,15							

### Typical tempers

T4, T6, T3, T8

### 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	275	125	14	95
	D≤75	310	230	8	110
Extruded bars (T6)	75<D≤125	295	195	6	110
	D≤40	320	270	10	90
Cold drawn bars (T3)	40<D≤80	280	210	10	90
	D≤80	370	270	8	115

### Processing properties

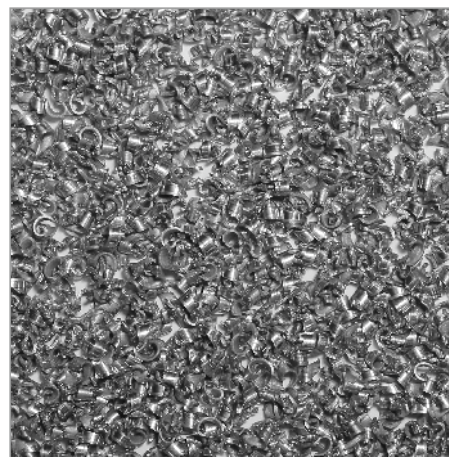
Machinability	★★★★★
Machining index (chips #/100g)	7000
MIG-TIG weldability	★
Resistance fusion weldability	★
Soft soldering & brazing	★

### Protective anodising

Hard anodising	★★★★★
----------------	-------

### Corrosion

Corrosion resistance @ sea water	★★
Corrosion resistance @ atmosphere	★★★
Corrosion depth ISO 11846B (µm)	150-500



### Physical properties

Density	2,81	g/cm <sup>3</sup>
Young's modulus of elasticity	72500	MPa
Coeff. of thermal expansion (20-100°C)	24	x10 <sup>-6</sup> /°C
Thermal conductivity at 20°C	170-220	W/m*K
Specific heat capacity	870	J/kg*K
Electrical conductivity at 20°C	24-32	MS/m

#### Legend:

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

