



Constellium

6084

Newly EN registered



Highly machinable alloy from Děčín

Overview & application

- Very good machinability with short chips, excellent surface quality after machining
 - Good weldability and also corrosion resistance
 - Suitable for hard, bright or colour anodizing
 - Environmentally-friendly alternative to alloys 6064A, 6262 and 6012 leaded alloys
 - Bi phases size max. 150 µm
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- Suitable for automotive and electrical industry
 - 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	Bi	Pb
Min.	0,40	-	0,15	-	0,7	0,04	0,20	-
Max.	1,0	0,7	0,50	0,20	1,2	0,20	0,8	0,10
Remarks	Ti max. 0,15% , Zn max. 0,30 %			Others: each: 0,05% / total: 0,15				

Typical tempers

T6, T8, T9

Mechanical properties

Product (Temper)	Dimension (mm)	Minimal values			Typical
		Rm (MPa)	Rp 0.2 (MPa)	A (%)	HBW (2.5/62.5)
Extruded bars (T6)	D≤125	320	270	10	95
Cold drawn bars (T6)	D≤80	320	270	10	95
Cold drawn bars (T8)	D≤80	345	315	8	95
Cold drawn bars (T9)	D≤80	360	330	4	95

Processing properties

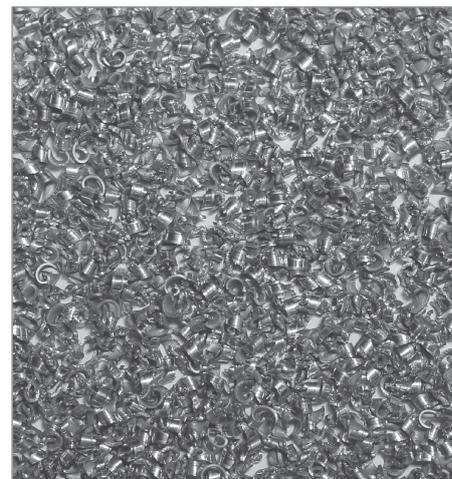
Machinability	★★★★★
Machining index (chips #/100g)	5500
MIG-TIG weldability	★★★
Resistance fusion weldability	★★★
Soft soldering & brazing	★★★

Protective anodising

Protective anodising	★★★★
Hard anodising	★★★★

Corrosion

Corrosion resistance @ sea water	★★★
Corrosion resistance @ atmosphere	★★★★
Corrosion depth ISO 11846B (µm)	350 (T6) - 450 (T8/T9)



Physical properties

Density	2,72	g/cm ³
Young's modulus of elasticity	70000	MPa
Coeff. of thermal expansion (20-100°C)	23,4	x10 ⁻⁶ /°C
Thermal conductivity at 20°C	170	W/m*K
Specific heat capacity	895	J/kg*K
Electrical conductivity at 20°C	24-28	MS/m

Legend:

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

