Constellium

2028A

Highly machinable alloy from Děčín

Overview & application

- High mechanical properties and fatigue strength, good ductility
- Very good machinability (small chips) and surface after machining etc.
- Not suitable for welding and low corrosion resistance
- Protective anodizing is possible

- Applied in variable high strength machined parts (automotive and electronics)
- This alloy will stop its use in May 2021 based on existing EU regulation (RoHS)

Product range	Round (mm)	Hexagonal (mm)	Shaped (mm²)	Profiles (mm²)
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.	-	-	3,3	0,20	0,50	-	0,50	0,20
Max.	0,8	0,7	4,5	1,0	1,3	0,50	0,7	0,40
Remarks	Cr, Ni max. 0,10 / Ti max. 0,20				Others: each: 0,05 / total: 0,15			

Typical tempers	
	T3 (T351), T4 (T4510, T4511)

Mechanical properties		Minimal values			Typical
Product (Temper)	Dimension (mm)	Rm (MPa)	Rp 0.2 (MPa)	A (%)	HBW (2.5/62.5)
Extruded bars (T4, T4510, T4511)	20≤D≤80	370	250	8	95
	80<D≤125	340	220	8	95
Cold drawn bars (T3, T351)	D≤30	370	240	7	95
	30<D≤80	340	220	6	95

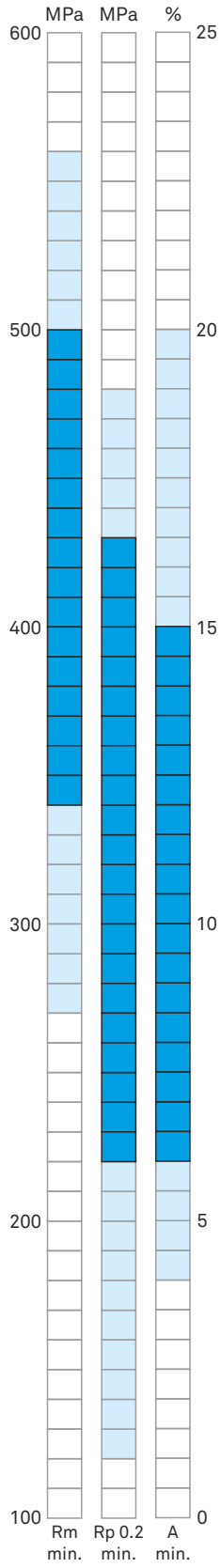
Processing properties	
Machinability	5
Machining index (chips #/100g)	4500
MIG-TIG weldability	1
Resistance fusion weldability	1
Soft soldering & brazing	1

Protective anodising	2
Hard anodising	2

Corrossion	
Corrosion resistance @ sea water	2
Corrosion resistance @ atmosphere	2
Corrosion depth ISO 11846B (µm)	100

Physical properties		
Density	2,79	g/cm³
Young's modulus of elasticity	74300	MPa
Coeff. of thermal expansion (20-100°C)	23	x10⁻⁶ /°C
Thermal conductivity at 20°C	130-200	W/m*K
Specific heat capacity	873	J/kg*K
Electrical conductivity at 20°C	18-22	MS/m

Legend:
- 5 Excellent
- 4 Good
- 3 Acceptable
- 2 Conditional
- 1 Not recommended



Constellium Extrusions Děčín, s.r.o. Ústecká 751/37, Děčín 5, CZ 40502 sales.decin@constellium.com www.constellium.cz