Technical Datasheet

Alu4S®-04

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BRIEF DESCRIPTION

Alu4S®-04 high strength aluminium extrusions are developed for applications with high static or dynamic loading.
Typical application applications include heavy duty moving components for cutting, stamping machines, alpine ski and climbing equipment, sprockets and special automotive parts.

PROCESSING METHODS

Weldability

- TIG/MIG not possible
- by resistance good

Anodizing

- technical good
- decorative moderate

Machinability excellent

Corrosion behaviour

- moderate in inland atmosphere
- critical in marine atmosphere

AVAILABILITY

The Alu4S®-04 extrusions are available in temper T6 (quenched – stretched - artificially aged) F (as extruded) and in temper T0 (heat annealed) in the following dimensions :

Diameter	Max. length
Roundbar	
max. Ø35mm	5800 mm
Flat bar max.	10*70mm

CHEMICAL COMPOSITION (weight %)

Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti
max. 0.35	max. 0.4	1.8 2.06	max. 0.2	2.8 3.4	0.18 0.35	7.0 8.0	max. 0.2

Remainder = Al

PHYSICAL PROPERTIES (nominal values)

Density	2,84 g/cm^3
Elastic Modulus	71000 MPa
Lin. thermal expansion coefficient (20°C-100°C)	23.4 10^{-6} K^{-1}
Thermal conductivity (Temper T6)	150 W/mK
Electrical conductivity (Temper T6)	29 MS/m

MECHANICAL STRENGTH

Guaranteed tensile properties

Diameter	Temper	Rm [MPa]	Rp0.2 [MPa]	A50 [%]
11 mm	0	<270	<170	>12
11 mm	T6	>675	>650	9

Typical tensile properties

Diameter (over ... to)	Temper	Rm [MPa]	Rp0.2 [MPa]	A50 [%]
11 mm	T0	250	150	14
11 mm	T6	730	710	7

HEAT TREATMENT T0 -> T6

The T0 temper has optimal formability properties and may be used for difficult bended and deep drawn products. After the product is formed the T6 temper can be reached by a 4-step heat treatment. Info on the specific heat treatment is available upon request.