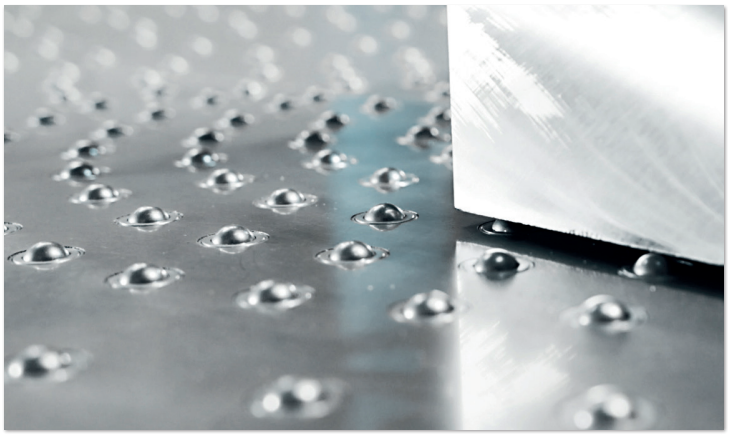
WMH EXTRUSIONS IN ALUMINIUM

ALUMINIUM LITHIUM ALLOY 2196

WMH GROUP GERMANY
ALUMINIUM SOLUTIONS

The Aluminium Lithium Alloy 2196 is a low density, aluminium based alloy to provide high strength and excellent corrosion resistance. This makes it the perfect alloy for applications with high demands to stress resistance, crack resistance and low weight.

The lithium content of 2196 offers better mechanical properties whilst offering a lower weight compared to other aluminium alloys. With a density of 2.63 g/cm³ and improved E-modulus, Tensile Strength and Yield Strength values (compared to 7050) this alloy is the perfect candidate for motorsport, aerospace and high tech applications.



APPLICATIONS

Alloy 2196 in the aerospace sector is particularly suited for inner structure parts such as floor beams and seat tracks. These advantages can also give designers in the motorsport sector the opportunity to improve designs.

SPECIFICATIONS

Compared to 2024:

orrosion resistance	+75 %
Fatique resistance	+18 %
Strength	+45 %
Density	-5 %
Stiffness	+5 %
Weldability	Laser beam welding or Friction stir welding
Machinability	very good

CHEMICAL COMPOSITION

Weight %	Al	Cu	Li	Zn	Mg	Mn	Zr	Ti	Fe	Si	Ag
Min		2.5	1.4		0.25		0.04				0.25
Max	BAL	3.3	2.1	0.3	0.80	0.35	0.18	0.10	0.15	0.12	0.6

MECHANICAL PROPERTIES

Material	Round Bar Dia („“)	Longitudinal Direction Rm in MPa | Rp 0.2 Mpa	Elong. A5 in %	Traverse Direction Rm in MPa | Rp 0.2 MPa	Elong A5 in %
2196-T6511	70 ≤ø<90 mm	620 | 600	5	510 | 480	4

ADVANTAGES

- 2196 offers very good machinability, whilst giving engineers the opportunity to improve aggressively on their design
- high stiffness and modulus
- resistance to crack propagation
- better performance at elevated temperatues and a lower density make this alloy the perfect candidate for applications in motorsport, aerospace and high tech engineering

AVAILABILITY

2196 extrusions are available in plate (1.6-50.8 mm thickness) or bar (diametre 10-200 mm) form to AMS or EN standards, from our warehouse in Essen, Germany

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