



WMH EXTRUSIONS IN ALUMINIUM

ALUMINIUM LITHIUM ALLOY 2099

The Aluminium Lithium Alloy 2099 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 2099 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 other demanding applications.



APPLICATIONS

Alloy 2099 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 part designs.

SPECIFICATIONS

Compared to 2024:

Corrosion resistance	+75 %
Fatigue 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		2.4	1.6	0.4	0.1	0.1	0.05				0.25
Max	BAL	3.0	2.0	1.0	0.5	0.5	0.12	0.10	0.07	0.05	0.6

MECHANICAL PROPERTIES

Material	Round Bar Dia (,"")	Longitudinal Direction		Elong. A5 in %	Traverse Direction		Elong A5 in %
		Rm in MPa	Rp 0.2 Mpa		Rm in MPa	Rp 0.2 MPa	
2196-T83	ø 125 mm	627	608	7.1	501	436	2.7

ADVANTAGES

- 2099 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 temperatures and a lower density make this alloy the perfect candidate for applications in motorsport, aerospace and high tech engineering

AVAILABILITY

2099 is currently available in round bar (diameter 60-180mm) form to AMS standards, from our warehouse in Essen, Germany.