LUXFER
MEL TECHNOLOGIES

DATASHEET • 1081+

AZ80A Extruded Magnesium Alloy

Product overview

AZ80A is a high-performance, low-density wrought magnesium base alloy composed of aluminium, zinc, and manganese. With a density approximately 30% less than similar aluminium alloys, AZ80A offers significant weight savings for designers. It is specifically engineered for use as CNC machining bar stock, available in various shapes including round, square, rectangular, and custom solid configurations.

Key applications

AZ80A is ideal for high-performance applications where weight reduction is critical. Common uses include:

- Man-portable optics
- Munitions
- Motorsport
- Aerospace
- Space
- General structural applications

Specifications of supply

- **Standard:** ASTM B107-13
- **Werkstoff:** 3.5812.08

Non-destructive testing

- Tensile Testing
- Chemical Testing
- **Ultrasonic Testing:** AMS STD 2154E, Class A and AA
- Dye Penetrant Testing

Material properties

Physical properties

- **Specific Gravity:** 1.8 g/cm^3
- **Coefficient of Thermal Expansion:** 26 x 10^-6 K^-1
- **Thermal Conductivity:** 78 W/m·K
- **Specific Heat:** 1050 J/kg·K
- **Electrical Resistivity:** 145 nΩ·m
- **Modulus of Elasticity**: 44 GPa
- **Poisson's Ratio:** 0.326
- **Melting Range:** 540 – 640 ˚C
- **Damping Index:** 0.09
- **Brinell Hardness:** 70-90

Material properties:

	UTS MPa	UTS ksi	Yield MPa	Yield ksi	Elongation %
Elektron 43-T5	340	49	225	33	12
Elektron 675-T5a	350	51	230	33	5
ZK60A-T5	310	45	250	36	4
AZ80A-T5	310	45	205	30	2
AZ61A-F	275	40	150	22	7
AZ31B-F	220	32	140	20	7

Other properties

Forging

AZ80 is a high-strength alloy that responds well to forging. Refer to the Luxfer MEL Technologies information sheet available on the website for detailed forging information.

Machining

AZ80 machines faster than any other metal, making it highly efficient for CNC machining.

Corrosion resistance

- **Corrosion Rate:** < 30 mpy

Surface treatment

AZ80 can undergo various surface treatments, including anodising with treatments such as:

- Keronite®
- Tagnite®
- MagOxid®

Additionally, hexavalent chromium-free conversion coatings are available, such as:

- Alodine® 160/161
- Surtec® 650
- Metalast® TCP-HF
- Oxsilan® MG 0611
- Gardobond® X4729
- MagPass®

Like all magnesium alloys, AZ80 can be painted or coated using conventional methods.

For further details and specific application advice, please refer to the full technical datasheet or contact our technical support team.

Discover more at

www.luxfermeltechnologies.com

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† The information contained within is meant as a guideline only

Certificate No. FM12677

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