LUXFER
GRAPHIC ARTS

TOOLING PLATE

Avflex
GLOBAL TECHNOLOGY – LOCAL SERVICE

AZ31 Benefits

Lightweight

33% lighter than aluminum
75% lighter than steel

Easy machining

40% faster than Al 6061
96% faster than Al 7075

Longer tool life

5 to 10 times longer tool life
when compared to aluminum

Flat, stable and stress free

AZ31 Applications

- Jigs, fixtures
- Optical housings and gimbals
- Vibration test equipment
- Rugged computers and servers
- Sights, scopes and night vision optics
- Handheld electronics
- Pattern plates
- Electrical housings
- Firearm accessories
- Textile machinery
  and many others.

Elektron AZ31 Tooling Plate

ELEKTRON TOOLING PLATE

CHEMICAL COMPOSITION

Aluminum	3% nominal
Zinc	1% nominal
Magnesium	Balance

PHYSICAL PROPERTIES

Specific Gravity	1.78 g/cm^3
Coefficient of thermal expansion	26.8 x 10-6K^{-1}
Specific heat	1040 Jkg^{-1}K^{-1}
Thermal conductivity	76.9 Wm^{-1}K^{-1}
Electrical resistivity	92 nΩm
Modulus of elasticity	44 GPa
Poissons ratio	0.35
Melting range	566° - 632°C

SPECIFIC DAMPING CAPACITY

Cast pure magnesium	100%
Tooling plate	49%
Gray cast iron	10%
Martensitic stainless	8%
Ductile iron	2%
Austenitic stainless	1%
Aluminum 355-T6	0.4%
Titanium	<0.2%

WELDABILITY

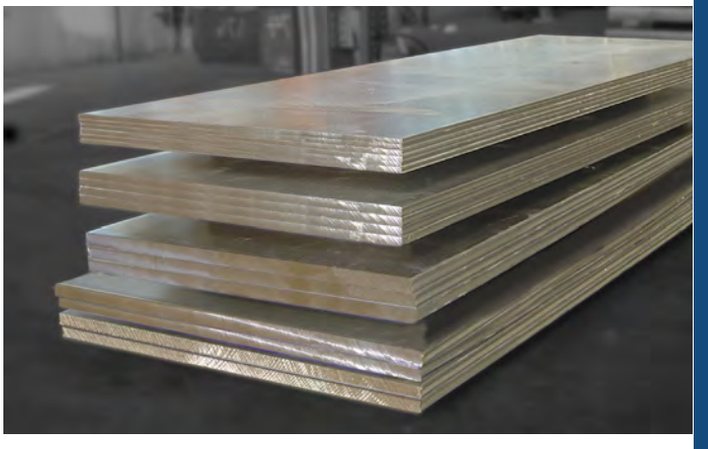
Gas shielded metal arc and most other welding processes can be used successfully to produce welds with 95% of the parent plate strength. Generally weldments will require stress relief for dimensional stability, however, each application should be reviewed individually.

MACHINING

Magnesium machines faster than any other metal on the planet. Machining magnesium is only limited to the speed of the tool which is doing the cutting. Studies have shown that magnesium machines 40% faster than 6000 series aluminum and up to 96% faster than 7000 series aluminum employing the use of high cutting speeds, large feed rates and greater depths of cut. Machining magnesium uses 55% less power than what is required to machine aluminum. Magnesium machines like wood with well broken chips and does not gum up like some aluminum alloys. Extremely fine and smooth surfaces can be achieved and 5 to 10 times longer tool life can be expected.

SURFACE TREATMENT

Tooling Plate can be anodized with PEO treatments such as Keronite®, Tagnite®, MagOxid® among others. Chemical Conversion coating dip treatments such as Alodine® 160/161, Surtec® 650 and 650V, NCP Iridite®, Gardobond® X4707 and 4729, MAGPASS-Coat® among others. Like all magnesium alloys, tooling plate can be painted or coated using conventional techniques following pre-treatment such as paint, powder coat, E-coat among others.



Visit www.magnesium-elektron.com for more information.

Domestically Made/DFARS Compliant

Elektron AZ31 Tooling Plate

1300 859 960 or +61 2 9748 2577
salesav@grogangroup.com
Avflex, 108-110 Carnarvon St, Silverwater NSW 2128