



Magnesium Elektron

SERVICE & INNOVATION IN MAGNESIUM

Elektron 675 Preliminary Data

Datasheet : 102

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Elektron 675 Preliminary Data

ELEKTRON 675 is a high strength wrought alloy for high performance components, including elevated temperature applications. This alloy has excellent corrosion resistance and is easy to machine accurately. It has the highest elevated temperature tensile strength of any magnesium alloy, and has excellent fatigue strength. This alloy can be processed using conventional metallurgical techniques, and can be extruded, forged and hot formed. As with all magnesium alloys, cold working is not usually appropriate.

AVAILABILITY

Elektron 675 is supplied in extruded bar/section & forging billet

Bar sizes:	Up to 90mm
Section Sizes:	Up to 100mm x 30mm
Forging Billet Sizes:	Up to 300mm

Additional sizes may be available, please contact Magnesium Elektron for further details.

HEAT TREATMENT

ELEKTRON 675 is supplied in the T5 heat-treated condition.

QUALITY

Elektron 675 is supplied to AMS 2154 Class AA.

PHYSICAL PROPERTIES

Specific gravity	1.95
Thermal conductivity	$76 \text{ Wm}^{-1}\text{K}^{-1}$
Co-efficient of thermal expansion	$27.4 \times 10^{-6}\text{K}^{-1}$
Brinell hardness	110–118
Stress corrosion cracking ASTM G44 Test	Pass

OTHER PROPERTIES

CORROSION RESISTANCE

ASTM B117 Salt spray test Corrosion rate for base metal	0.13-0.5 mg/cm ² /day 10-40 Mpy
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AMBIENT TEMPERATURE MECHANICAL PROPERTIES

TYPICAL TENSILE PROPERTIES

Longitudinal

0.2% Proof stress 310 MPa

Tensile strength 410 MPa

Elongation 9%

Transverse

Transverse properties are dependant on extrusion ratio.

FATIGUE PROPERTIES

ASTM E466 Axial fatigue: R=0.1 5×10^7 cycles

200 MPa

FRACTURE TOUGHNESS

K_Q 16 MPam^{1/2}

ELEVATED TEMPERATURE MECHANICAL PROPERTIES

TYPICAL TENSILE PROPERTIES

FIG. 1 Effect of temperature on tensile strength

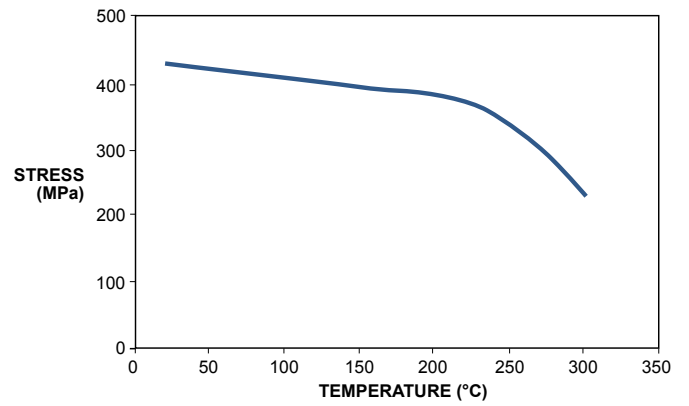
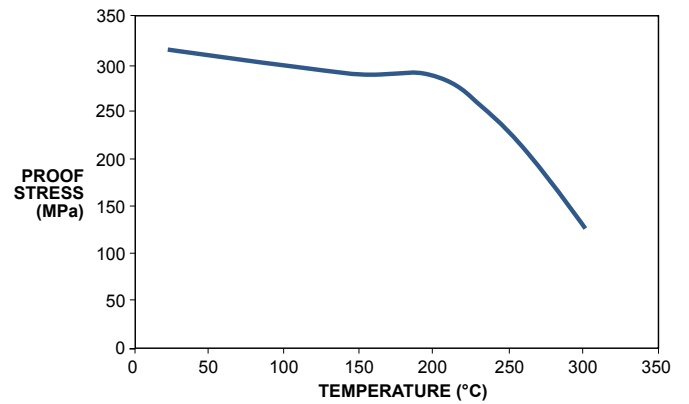


FIG. 2 Effect of temperature on 0.2% proof stress





Certificate No. FM12677

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