



Magnesium Elektron

SERVICE & INNOVATION IN MAGNESIUM

Elektron 675 Preliminary Data

Datasheet : 102

Magnesium Elektron UK,
P.O. Box 23, Rake Lane, Swinton, Manchester, M27 8DD, England.
Tel: 0161 911 1000 Fax: 0161 911 1010
Web: www.magnesium-elektron.com VAT No: GB 668 2142 26

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Registered Office: The Victoria, 150-182 Harbour City, Salford Quays, Salford, M50 3SP
A Luxfer Group Company

Elektron 675 Preliminary Data

ELEKTRON 675 is a high strength wrought alloy for 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.

AVAILABILITY

Elektron 675 is supplied in pre-extruded bar or section.

Bar sizes: Up to 90mm
Section Sizes: Initially up to 100mm x 30mm

Additional sizes of bar and section 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/cm²/day
10-40 Mpy



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_{IQ} 16 MPa $m^{1/2}$

ELEVATED TEMPERATURE MECHANICAL PROPERTIES

TYPICAL TENSILE PROPERTIES

FIG. 1 Effect of temperature on tensile strength

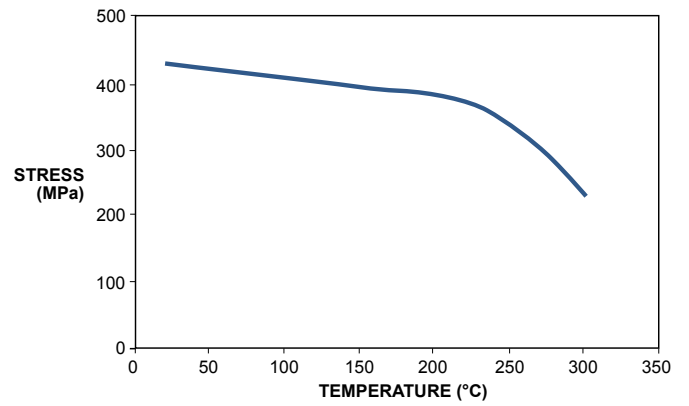
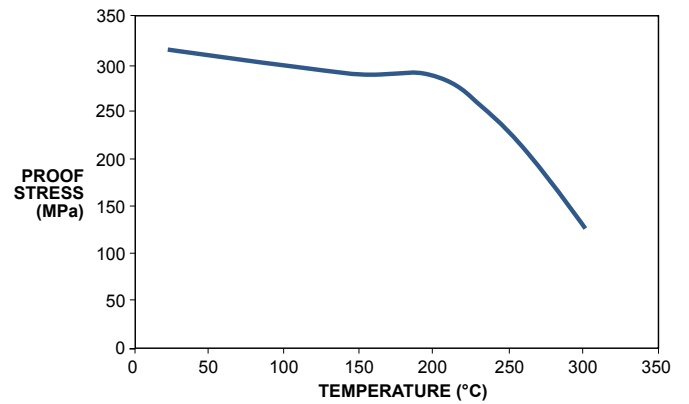


FIG. 2 Effect of temperature on 0.2% proof stress





Certificate No. FM12677

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