

AERONAUTICAL MATERIAL SPECIFICATIONS

AMS 4389

SOCIETY OF AUTOMOTIVE ENGINEERS, Inc. 485 Lexington Ave., New York 17, N.Y.

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Revised

MAGNESIUM ALLOY EXTRUSIONS
3Th - 1.5Mn (HM31A-T5)
Precipitation Heat Treated

1. ACKNOWLEDGMENT: A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.
2. FORM: Bars, rods, and shapes.
3. APPLICATION: Primarily for components requiring weldability and good strength-to-weight ratio up to 600 F.
4. COMPOSITION:

Thorium	2.5 - 3.5
Manganese	1.2 min
Other Impurities, each	0.10 max
Other Impurities, total	0.30 max
Magnesium	remainder

5. CONDITION: Precipitation heat treated.
- 5.1 Unless otherwise specified, extrusions shall be supplied with an as-extruded surface finish; light polishing to remove minor surface imperfections is permissible provided such imperfections can be removed within the dimensional tolerances.

6. TECHNICAL REQUIREMENTS:

6.1 Tensile Properties:

Tensile Strength psi, min	Yield Strength at 0.2% Offset or at Extension Indicated (E = 6,500,000)		Elongation % in 2 in. min
	psi, min	in. in 2 in.	
	37,000	26,000	0.0120

Bars, Rods, and Solid Shapes

Cross Sectional Area

Under 4 sq in.

37,000

26,000

0.0120

4

- 6.1.1 When a dispute occurs between purchaser and vendor over the yield strength value, yield strength determined by the offset method shall apply.
- 6.1.2 If sizes other than those shown are ordered, tensile property requirements shall be as agreed upon by purchaser and vendor.
7. QUALITY: Material shall be uniform in quality and condition, clean, sound, smooth, and free from segregation and foreign materials and from internal and external imperfections detrimental to fabrication or to performance of parts.