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AEROSPACE MATERIAL SPECIFICATIONS

AMS 4389B

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

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MAGNESIUM ALLOY EXTRUSIONS
3.0Th - 1.5Mn (HM31A-T5)
Precipitation Heat Treated

1. **ACKNOWLEDGMENT:** A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.
2. **FORM:** Bars, rods, wire, and shapes
3. **APPLICATION:** Primarily for components requiring weldability and good strength-to-weight ratio up to 600 F (316 C).
4. **COMPOSITION:**

	min	max
Thorium	2.5	3.5
Manganese	1.2	--
Other Impurities, each	--	0.10
Other Impurities, total	--	0.30
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 **Longitudinal Tensile Properties:**

	Tensile Strength psi, min	Yield Strength at 0.2% Offset or at Extension Indicated (E = 6,500,000)		Elongation % in 2 in. or 4D, min
		psi, min	in. in 2 in.	
Bars, Rods, Wire, and Solid Shapes				
Cross Sectional Area Up to 4 sq in., excl	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.
- 6.2 **Compressive Properties:** Except for wire, material having cross sectional area up to 4 sq in., excl, shall be capable of showing compressive yield strength of not less than 19,000 psi. Specimens shall be tested in the longitudinal direction and yield strength shall be measured at 0.2% offset in accordance with the issue of ASTM E9 listed in the latest issue of AMS 2350.