AEROSPACE
MATERIAL SPECIFICATIONS

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AMS 4389C
Superseding AMS 4389B
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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: The product shall conform to the following requirements; tensile properties shall be determined in accordance with the latest issue of AMS 2355.

6.1 Tensile Properties:

| | Tensile Strength psi, min | Yield Strength at 0.2% Offset or at Extension Indicated (E = 6,500,000) psi, min | Extension Under Load in. in 2 in. | Elongation % in 2 in. or 4D, min |
|---|---|---|---|---|
| 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 values, 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.

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