

# AERONAUTICAL MATERIAL SPECIFICATIONS

**AMS 4376A**

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

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## MAGNESIUM ALLOY PLATE AZ31B-H26

- 1. ACKNOWLEDGMENT:** A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.
- 2. APPLICATION:** Primarily for parts requiring rigidity, moderate strength, and low density. Special care is necessary to prevent corrosion.

**3. COMPOSITION:**

Aluminum	2.5 - 3.5
Zinc	0.7 - 1.3
Manganese	0.20 min
Silicon	0.10 max
∅ Copper	0.05 max
Calcium	0.04 max
Nickel	0.005 max
Iron	0.005 max
Other Impurities, total	0.30 max
Magnesium	remainder

- 4. CONDITION:** Cold rolled and partially annealed (-H26), and, unless otherwise specified, mill finish.

**5. TECHNICAL REQUIREMENTS:**

- 5.1 Tensile Properties:** Material shall conform to the following requirements. Test specimens shall conform to ASTM E8-54T except from plate less than 3/4 in. wide, and shall be cut parallel to the direction of rolling. Elongation requirements apply only to plate 3/4 in. and over in width.

Nominal Thickness Inches	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	Extension Under Load in. in 2 in.	
0.250 to 0.374, incl	39,000	27,000	0.0123	6
Over 0.374 to 0.500, incl	38,000	26,000	0.0120	6
Over 0.500 to 0.750, incl	37,000	25,000	0.0117	6
Over 0.750 to 1.000, incl	37,000	23,000	0.0111	6
Over 1.000 to 1.500, incl	35,000	22,000	0.0108	6
Over 1.500 to 2.000, incl	35,000	21,000	0.0105	6

- 5.1.1** When a dispute occurs between purchaser and vendor over the yield strength value, yield strength determined by the offset method shall apply.

Section 7C of the SAE Technical Board rules provides that: "All technical reports, including standards approved and practices recommended, are advisory only. Their use by anyone engaged in industry or trade is entirely voluntary. There is no obligation to conform to or be guided by any technical report. In formulating and approving technical reports, the Board and its Committees will not investigate or consider patents which may apply to the subject matter. Prospective users of the report are responsible for protecting themselves against infringement of patents."

- 5.2 Compressive Properties: Plate shall be capable of meeting the following requirements. Test specimens shall be tested in the longitudinal direction in a suitable jig.

Nominal Thickness Inches	Yield Strength at 0.2% Offset psi, min
0.250 to 0.374, incl	22,000
Over 0.374 to 0.438, incl	21,000
Over 0.438 to 0.500, incl	18,000
Over 0.500 to 0.750, incl	17,000
Over 0.750 to 1.000, incl	16,000
Over 1.000 to 1.500, incl	15,000
Over 1.500 to 2.000, incl	14,000

6. QUALITY: Material shall be uniform in quality and condition, clean, sound, smooth, and free from foreign materials and from internal and external imperfections detrimental to fabrication or to performance of parts.
7. TOLERANCES: Unless otherwise specified, tolerances shall conform to the latest issue of AMS 2202 as applicable. Thickness tolerances shall conform to Table II.
8. REPORTS:
- 8.1 Unless otherwise specified, the vendor of the product shall furnish with each shipment three copies of a report stating that the product conforms to the chemical composition and technical requirements of this specification. This report shall include the purchase order number, material specification number, thickness, size, and quantity.
- 8.2 Unless otherwise specified, the vendor of finished or semi-finished parts shall furnish with each shipment three copies of a report showing the purchase order number, material specification number, contractor or other direct supplier of material, part number, and quantity. When material for making parts is produced or purchased by the parts vendor, that vendor shall inspect each lot of material to determine conformance to the requirements of this specification, and shall include in the report a statement that the material conforms, or shall include copies of laboratory reports showing the results of tests to determine conformance.
9. IDENTIFICATION: Unless otherwise specified, each plate shall be marked at each end and at the center with the manufacturer's identification and, in addition, the alloy number and temper, or AMS 4376, and nominal thickness in inches. The characters shall be not less than 3/8 in. in height, shall be applied using a suitable marking fluid, and shall not be obliterated by normal handling or heat treatment.
10. PROTECTIVE TREATMENT: Unless otherwise specified, material shall be oiled with a light corrosion-inhibiting oil prior to shipment.
11. REJECTIONS: Material not conforming to this specification or to authorized modifications will be subject to rejection.