

# AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.  
29 West 39th Street  
New York City

## AMS4045

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Revised

### ALUMINUM ALLOY SHEET AND PLATE 5.6Zn - 2.5Mg - 1.6Cu - 0.25Cr (75S-T6)

1. **ACKNOWLEDGMENT:** A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.

2. **APPLICATION:** Primarily for structural parts, which will be painted or otherwise protected from corrosion.

3. **COMPOSITION:**

Zinc	5.10 - 6.10
Magnesium	2.10 - 2.90
Copper	1.20 - 2.00
Chromium	0.18 - 0.40
Iron	0.70 max
Silicon	0.50 max
Manganese	0.30 max
Titanium	0.20 max
Other Impurities, each	0.05 max
Other Impurities, total	0.15 max
Aluminum	remainder

4. **CONDITION:** Solution and precipitation heat treated.

5. **TECHNICAL REQUIREMENTS:**

5.1 **Tensile Properties:** Sheet and plate shall conform to the following requirements. Test specimens shall conform to ASTM E8 except from sheet less than 3/4 inch wide, and shall be cut across the direction of rolling except from sheet less than 9 inches wide. Elongation requirements apply only to sheet 3/4 inch and over in width.

Nominal Thickness Inches	Tensile Strength psi, min	Yield Strength at 0.2% offset or at extension indicated		Elongation % in 2 in., min
		psi, min	inch in 2 in., min	
0.039 and under	76,000	65,000	0.0166	7
Over 0.039-0.500, incl	77,000	66,000	0.0168	8
Over 0.500-1.000, incl	77,000	66,000	0.0168	6
Over 1.000-2.000, incl	77,000	66,000	0.0168	4
Over 2.000-2.500, incl	73,000	62,000	0.0159	3
Over 2.500-3.000, incl	70,000	60,000	0.0156	3

5.1.1 Tensile properties of plate thicker than 3.000 in. shall be as agreed upon by purchaser and vendor.

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- 5.2 Bending: Sheet and plate 0.500 inch and under in thickness shall withstand, without cracking, bending at room temperature through an angle of 180 degrees around a diameter equal to the bend factor shown below times the nominal thickness of the sheet or plate, with axis of bend parallel to direction of rolling.

<u>Nominal Thickness inches</u>	<u>Bend Factor</u>
0.020 and under	7
Over 0.020-0.063, incl	8
Over 0.063-0.091, incl	9
Over 0.091-0.125, incl	10
Over 0.125-0.249, incl	11
Over 0.249-0.500, incl	14

6. QUALITY: Material shall be uniform in quality and condition, clean, sound, smooth, and free from foreign materials and from internal and external defects 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 notarized report stating that the product meets all the 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 notarized 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 certification that the material conforms, or shall include copies of laboratory reports showing the results of tests to determine conformance.
9. IDENTIFICATION:
- 9.1 Unless otherwise specified, each sheet and plate shall be marked with the manufacturer's identification, and, in addition, the alloy name or number and temper, or AMS 4045, 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.