

AERONAUTICAL MATERIAL SPECIFICATIONS

AMS 4045B

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

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ALUMINUM ALLOY SHEET AND PLATE 5.6Zn - 2.5Mg - 1.6Cu - 0.25Cr (7075-T6)

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 structural parts which will be painted or otherwise protected from corrosion.
3. COMPOSITION:

Zinc	5.1 - 6.1
Magnesium	2.1 - 2.9
Copper	1.2 - 2.0
Chromium	0.18 - 0.40
Iron	0.7 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: Test specimens shall conform to ASTM E8-54T except from material less than 3/4 in. wide, and shall be cut across the direction of rolling except from material less than 9 in. wide. Elongation requirements apply only to material 3/4 in. and over in width.

Ø	Nominal Thickness Inches	Tensile Strength psi, min	Yield Strength at 0.2% Offset or at Extension Indicated (E = 10,300,000)		Elongation % in 2 in. min
			psi, min	Extension Under Load in. in 2 in.	
	0.015 to 0.039, incl	76,000	65,000	0.0166	7
Over	0.039 to 0.500, incl	77,000	66,000	0.0168	8
Over	0.500 to 1.000, incl	77,000	66,000	0.0168	6
Over	1.000 to 2.000, incl	77,000	66,000	0.0168	4
Over	2.000 to 2.500, incl	73,000	62,000	0.0160	3
Over	2.500 to 3.000, incl	70,000	60,000	0.0157	3

- 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, standards, specifications, and practices recommended, are advisory only. Their use by anyone engaged in industry or trade is entirely voluntary. There is no agreement to adhere to any SAE standard or recommended practice, and no commitment 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 liability for infringement of patents."

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

5.2 Bending: Material 0.500 in. and under in thickness shall be capable of \emptyset withstanding, without cracking, bending at room temperature through an angle of 180 deg around a diameter equal to the bend factor times the nominal thickness of the material, with axis of bend parallel to direction of rolling.

Nominal Thickness Inch	Bend Factor
0.020 and under	7
Over 0.020 to 0.063, incl	8
Over 0.063 to 0.091, incl	9
Over 0.091 to 0.125, incl	10
Over 0.125 to 0.249, incl	11
Over 0.249 to 0.500, incl	14

6. QUALITY: Material shall be uniform in quality and condition, clean, sound, 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 sheet and plate shall be marked, in the respective location indicated below, 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.