AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
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New York City

AMS 4045A

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ALUMINUM ALLOY SHEET AND PLATE
5.6Zn - 2.5Mg - 1.6Cu - 0.25Cr (75S-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	0.5 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 except from sheet less than 3/4 in. wide, and shall be cut across the direction of rolling except from sheet less than 9 in. wide. Elongation requirements apply only to sheet 3/4 in. and over in width.

Nominal Thickness Inch	Tensile Strength psi, min	Yield Strength at 0.2% Offset or at Extension Indicated (E = 10,300,000) psi, min	Extension Under Load in. in 2 in.	Elongation % in 2 in., min
0.044 and under	76,000	65,000	0.0166	7
Over 0.044 - 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	0.0160	3
Over 2.500 - 3.000, incl	70,000	60,000	0.0157	3

5.1.1 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 withstand, without cracking, bending at room temperature through an angle of 180 degrees 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 - 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, 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 report stating that the chemical composition and tensile properties of the product conform to the requirements specified. 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.

9.1 Flat Sheet and Plate: The alloy name or number and temper, or AMS 4045, shall be marked in rows of recurring characters from one edge to the opposite edge with rows spaced such that no piece larger than 8 in. square could be cut from the sheet without bearing the alloy identification. The manufacturer's identification and thickness shall be marked in rows not more than 20 in. apart.