AERONAUTICAL MATERIAL SPECIFICATION

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

AMS 4023A

Issued 10-1-51
Revised 2-15-53

ALUMINUM ALLOY SHEET, ALUMINUM ALLOY CLAD
1Mg - 0.6Si - 0.3Cu - 0.25Cr (Alc 61S-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 formed medium strength structural parts not requiring heat treatment and which are required to exhibit maximum corrosion resistance and to approximate the color and appearance of other clad aluminum alloy parts.

3. COMPOSITION:

Core		Cladding	
Magnesium	0.8 - 1.2	Zinc	0.75 - 1.25
Silicon	0.40 - 0.8	Silicon + Iron	0.7 max
Copper	0.15 - 0.40	Magnesium	0.10 max
Chromium	0.15 - 0.35	Copper	0.10 max
Iron	0.7 max	Manganese	0.10 max
Zinc	0.20 max	Other Impurities, each	0.05 max
Manganese	0.15 max	Other Impurities, total	0.15 max
Titanium	0.15 max	Aluminum	remainder
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 Cladding Thickness:

5.1.1 Prior to Rolling: Aluminum alloy plates which are bonded to the alloy ingot or slab preparatory to rolling to the specified thickness of the composite sheet shall each have a thickness of not less than 4% of the total composite thickness.

5.1.2 Finished Product: After rolling, the cladding thickness shall be not less than 80% of the values specified above. Routine measurements are not required.

5.2 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.

Printed in U. S. A.

Nominal Thickness, Inch	Tensile Strength psi, min	Yield Strength at 0.2% Offset or at Extension Indicated (E = 9,900,000) psi, min	Extension Under Load in. in 2 in.	Elongation % in 2 in., min
0.020 and under	38,000	32,000	0.0105	8
Over 0.020 - 0.249, incl	38,000	32,000	0.0105	10

5.3 Bending: Sheet 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 sheet, with axis of bend parallel to direction of rolling.

Nominal Thickness, Inch	Bend Factor
0.036 and under	3
Over 0.036 - 0.064, incl	4
Over 0.064 - 0.128, incl	5
Over 0.128 - 0.249, incl	6

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.