AEROSPACE
MATERIAL SPECIFICATIONS

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

AMS 4023C

Issued 10-1-51
Revised 6-30-64

ALUMINUM ALLOY SHEET AND PLATE, ALCLAD
1.0Mg - 0.60Si - 0.25Cu - 0.25Cr (Alclad 6061-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 alclad aluminum alloy parts.

3. COMPOSITION:

Core (6061)	min	max
Magnesium	0.8	1.2
Silicon	0.40	0.8
Copper	0.15	0.40
Chromium	0.15	0.35
Iron	--	0.7
Zinc	--	0.25
Manganese	--	0.15
Titanium	--	0.15
Other Impurities, each	--	0.05
Other Impurities, total	--	0.15
Aluminum	remainder	

Cladding (7072)	min	max
Zinc	0.8	1.3
Silicon + Iron	--	0.7
Magnesium	--	0.10
Copper	--	0.10
Manganese	--	0.10
Other Impurities, each	--	0.05
Other Impurities, total	--	0.15
Aluminum	remainder	

4. CONDITION: Solution and precipitation heat treated.

5. TECHNICAL REQUIREMENTS: When ASTM methods are specified for determining ø conformance to the following requirements, tests shall be conducted in accordance with the issue of the ASTM method listed in the latest issue of AMS 2350.

5.1 Cladding Thickness: After rolling, the average cladding thickness shall be not less than 4% per side of the total composite thickness. Routine measurements are not required.

5.2 Tensile Properties: Test specimens shall conform to ASTM E8 and shall be taken across the direction of rolling from widths 9 in. and over and parallel to the direction of rolling from widths less than 9 inches. Sheet type specimens shall be used for material less than 0.5 in. thick and 0.75 in. and over in width. Round specimens shall be ø used for material 0.5 in. and over in thickness and 0.75 in. and over in width. Material under 0.75 in. wide and under 0.5 in. thick may be tested in either full section or by use of round specimens; for such sizes, elongation requirements apply only when round specimens are used.

Nominal Thickness Inches	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. or 4D, min
0.010 to 0.020, incl	38,000	32,000	0.0105	8
Over 0.020 to 0.499, incl	38,000	32,000	0.0105	10
Ø Over 0.499 to 1.000, incl	42,000	35,000	0.0111	9
Over 1.000 to 2.000, incl	42,000	35,000	0.0111	8
Over 2.000 to 4.000, incl	42,000	35,000	0.0111	6
Over 4.000 to 5.000, incl	40,000	35,000	0.0111	6

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

5.2.2 Ø Tensile properties of plate over 5.000 in. in thickness shall be as agreed upon by purchaser and vendor.

5.3 Ø Bending: Material shall be capable of 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
0.010 to 0.036, incl	3
Over 0.036 to 0.064, incl	4
Over 0.064 to 0.128, incl	5
Over 0.128 to 0.249, incl	6
Over 0.249 to 0.499, incl	10

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. Ø TOLERANCES: Unless otherwise specified, tolerances shall conform to all applicable requirements of the latest issue of AMS 2202. Flatness tolerances for plate over 3.000 in. thick shall be as agreed upon by purchaser and vendor.

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.