AERONAUTICAL MATERIAL SPECIFICATIONS

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

AMS 4022B

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ALUMINUM ALLOY SHEET AND PLATE, ALCLAD
1Mg - 0.6Si - 0.25Cu - 0.25Cr (Alc 6061-T4)

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 low strength structural parts which may be subsequently precipitation heat treated and which are required to exhibit maximum corrosion resistance and to approximate the color and appearance of other clad aluminum alloy parts.

3. COMPOSITION:

Ø Core		Cladding	
Magnesium	0.8 - 1.2	Zinc	0.8 - 1.3
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	0.25 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 heat treated.

5. TECHNICAL REQUIREMENTS:

5.1 Ø 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 E8-54T 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 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
0.010 to 0.020, incl	27,000	14,000	0.0068	14
Over 0.020 to 0.249, incl	27,000	14,000	0.0068	16
Over 0.249 to 0.499, incl	27,000	14,000	0.0068	18

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

5.3 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.

Ø Nominal Thickness Inch	Bend Factor
0.249 and under	3
Over 0.249 to 0.499, incl	5

5.4 Properties After Precipitation Heat Treatment: Material after proper precipitation heat treatment shall conform to the following requirements.

5.4.1 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 sheet 3/4 in. and over in width.

Ø 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 to 0.499, incl	38,000	32,000	0.0105	10

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

5.4.2 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.

Ø Nominal Thickness Inch	Bend Factor
0.036 and under	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.

TOLERANCES: Unless otherwise specified, tolerances shall conform to the latest issue of AMS 2202 as applicable. Thickness tolerances shall conform to Table II.