AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
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AMS 4025B

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ALUMINUM ALLOY SHEET AND PLATE
1.0Mg - 0.6Si - 0.25Cu (61S-0)

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 parts where strength and moderate formability are required.

3. COMPOSITION:

Magnesium	0.80 - 1.2
Silicon	0.40 - 0.80
Copper	0.15 - 0.40
Chromium	0.15 - 0.35
Iron	0.70 max
Zinc	0.20 max
Manganese	0.15 max
Titanium	0.15 max
Other Impurities, each	0.05 max
Other Impurities, total	0.15 max
Aluminum	remainder

4. CONDITION: Annealed.

5. TECHNICAL REQUIREMENTS:

5.1 Tensile Properties: Material shall conform to the following requirements. 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, max	Elongation % in 2 in., min
0.020 and under	22,000	14
Over 0.020 - 0.128, incl	22,000	16
Over 0.128 - 0.249, incl	22,000	18
Over 0.249 - 0.500, incl	22,000	18

5.2 Bending: Material shall withstand, without cracking, bending at room temperature through an angle of 180 degrees around a diameter equal to the bend factor shown below 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	0
Over 0.020 - 0.128, incl	1
Over 0.128 - 0.249, incl	2
Over 0.249 - 0.500, incl	3

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5.3 Properties After Heat Treatment: Material after proper solution and precipitation heat treatment shall conform to the following requirements.

5.3.1 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		Elongation % in 2 in. min
		psi, min	Extension Under Load, inch in 2 in.	
0.020 and under	42,000	35,000	0.0110	8
Over 0.020 - 0.036, incl	42,000	35,000	0.0110	10
Over 0.036 - 0.064, incl	42,000	35,000	0.0110	10
Over 0.064 - 0.128, incl	42,000	35,000	0.0110	10
Over 0.128 - 0.249, incl	42,000	35,000	0.0110	10
Over 0.249 - 0.500, incl	42,000	35,000	0.0110	10

5.3.2 Bending: Material shall withstand, without cracking, bending at room temperature through an angle of 180 degrees around a diameter equal to the bend factor shown below 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	2
Over 0.020 - 0.036, incl	3
Over 0.036 - 0.064, incl	4
Over 0.064 - 0.128, incl	5
Over 0.128 - 0.249, incl	6
Over 0.249 - 0.500, incl	7

6. QUALITY: Material shall be uniform in quality and condition, clean, sound, smooth, 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 material as received conform to the requirements specified. This report shall include the purchase order number, material specification number, thickness, size, and quantity.