Society of Automotive Engineers, Inc.
TWO PENNSYLVANIA PLAZA, NEW YORK, N.Y. 10000

AEROSPACE MATERIAL SPECIFICATION

AMS 4025E
Superseding AMS 4025D
Issued 12-1-42
Revised 11-1-68

ALUMINUM ALLOY SHEET AND PLATE
1.0Mg - 0.6Si - 0.30Cu - 0.25Cr (6061-0)

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 moderate formability and response to heat treatment are required.

3. COMPOSITION:

	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	

4. CONDITION: Annealed.

5. TECHNICAL REQUIREMENTS: The product shall conform to the following requirements; tensile properties shall be determined in accordance with the latest issue of AMS 2355.

5.1 Properties as Annealed:

5.1.1 Tensile Properties:

Nominal Thickness Inches	Tensile Strength psi, max	Elongation % in 2 in. or 4D, min
0.006 to 0.007, incl	22,000	10
Over 0.007 to 0.009, incl	22,000	12
Over 0.009 to 0.020, incl	22,000	14
Over 0.020 to 0.128, incl	22,000	16
Over 0.128 to 1.000, incl	22,000	18
Over 1.000 to 3.000, incl	22,000	16

5.1.1.1 Tensile properties of plate over 3.000 in. in thickness shall be as agreed upon by purchaser and vendor.

5.1.2 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.

Nominal Thickness Inch	Bend Factor
0.006 to 0.020, incl	0
Over 0.020 to 0.128, incl	1
Over 0.128 to 0.249, incl	2
Over 0.249 to 0.499, incl	3

5.2 Properties After Solution and Precipitation Heat Treatment: Material after proper solution and precipitation heat treatment shall be capable of meeting the following requirements:

5.2.1 Tensile Properties:

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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
0.006 to 0.007, incl	42,000	35,000	0.0111	4
Over 0.007 to 0.009, incl	42,000	35,000	0.0111	6
Over 0.009 to 0.020, incl	42,000	35,000	0.0111	8
Over 0.020 to 0.499, incl	42,000	35,000	0.0111	10
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 3.000, incl	42,000	35,000	0.0111	6

5.2.1.1 Tensile properties of plate over 3.000 in. in thickness shall be as agreed upon by purchaser and vendor.

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

5.2.2 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.

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Nominal Thickness Inch	Bend Factor
0.006 to 0.020, incl	2
Over 0.020 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	7

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. TOLERANCES: Unless otherwise specified, tolerances shall conform to all applicable requirements of the latest issue of AMS 2202.