



AEROSPACE MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
485 LEXINGTON AVENUE, NEW YORK, N. Y. 10017

AMS 4035F

Superseding AMS 4035E

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ALUMINUM ALLOY SHEET AND PLATE
4.4Cu - 1.5Mg - 0.60Mn (2024-0)

- 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 formed structural parts which will be subsequently heat treated. Certain design and processing procedures may cause this material to be susceptible to stress corrosion cracking after heat treatment; ARP 823 recommends practices to minimize such conditions.
- 3. COMPOSITION:**

	min	max
Copper	3.8	4.9
Magnesium	1.2	1.8
Manganese	0.30	0.9
Iron	--	0.50
Silicon	--	0.50
Zinc	--	0.25
Chromium	--	0.10
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 ϕ properties shall be determined in accordance with the latest issue of AMS 2355.

5.1 **Tensile Properties:**

Nominal Thickness Inches	Tensile Strength psi, max	Yield Strength at 0.2% Offset or at Extension Indicated (E = 10,500,000)		Elongation % in 2 in. or 4D, min
		psi, max	Extension Under Load in. in 2 in.	
0.010 to 0.499, incl	32,000	14,000	0.0067	12
Over 0.499 to 1.750, incl	32,000	--	--	12

- 5.1.1 Tensile properties of plate over 1.750 in. in thickness shall be as agreed upon by purchaser and vendor.
- 5.1.2 When a dispute occurs between purchaser and vendor over the yield strength values, yield strength determined by the offset method shall apply.

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5.2 **Bending:** Material shall withstand, 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
	0.010 to 0.032, incl	0
	Over 0.032 to 0.063, incl	1
	Over 0.063 to 0.128, incl	4
	Over 0.128 to 0.499, incl	6

5.3 **Properties After Solution Heat Treatment:** Unless otherwise specified, the material after proper solution heat treatment and aging for not less than 4 days at room temperature shall conform to the following requirements:

5.3.1 **Tensile Properties:**

Nominal Thickness Inches	Tensile Strength psi, min	Yield Strength at 0.2% Offset or at Extension Indicated (E = 10,500,000)		Elongation % in 2 in. or 4D, min
		psi, min	Extension Under Load in. in 2 in.	
0.010 to 0.020, incl	62,000	38,000	0.0112	12
Over 0.020 to 0.249, incl	62,000	38,000	0.0112	15
Over 0.249 to 0.499, incl	62,000	38,000	0.0112	12
Over 0.499 to 1.000, incl	61,000	38,000	0.0112	8
Over 1.000 to 1.500, incl	60,000	38,000	0.0112	7
Over 1.500 to 1.750, incl	60,000	38,000	0.0112	6

5.3.1.1 Tensile properties of plate over 1.750 in. in thickness shall be as agreed upon by purchaser and vendor.

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

5.3.2 **Bending:** Material shall withstand, 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 0.020, incl	4
Over 0.020 to 0.051, incl	5
Over 0.051 to 0.128, incl	6
Over 0.128 to 0.249, incl	8
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. **TOLERANCES:** Unless otherwise specified, tolerances shall conform to all applicable requirements of the latest issue of AMS 2202.