AERONAUTICAL
MATERIAL SPECIFICATIONS

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

AMS 4024

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Revised

ALUMINUM ALLOY PLATE
4.3Zn - 3.3Mg - 0.6Cu - 0.2Mn - 0.17Cr (7079-T651)
Stress-Relief Stretched

1. ACKNOWLEDGMENT: A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.

2. APPLICATION: Primarily for structural machined parts subject to warpage during machining due to residual stresses.

3. COMPOSITION:

Zinc	3.8 - 4.8
Magnesium	2.9 - 3.7
Copper	0.40 - 0.8
Manganese	0.10 - 0.30
Chromium	0.10 - 0.25
Iron	0.40 max
Silicon	0.30 max
Titanium	0.10 max
Other impurities, each	0.05 max
Other impurities, total	0.15 max
Aluminum	remainder

4. CONDITION: Solution heat treated, stress relieved by stretching, and precipitation heat treated.

4.1 Material shall be stretched in the solution heat treated condition to produce a nominal permanent set of 2%, but not less than 1-1/2% nor more than 3%.

4.2 Material shall receive no further straightening operations after stretching.

5. TECHNICAL REQUIREMENTS:

5.1 Tensile Properties: Test specimens shall conform to ASTM E8-57T except from material less than 3/4 in. wide, and shall be cut in the long transverse direction except from material less than 9 in. wide. Elongation requirements apply only to material 3/4 in. and over in width. Test specimens cut in either the longitudinal or short transverse directions shall be capable of meeting the requirements specified below.

Nominal Thickness Inch	Direction	Tensile Strength psi, min	Yield Strength at 0.2% Offset or at Extension Indicated (E = 10,300,000) psi, min	Extension Under Load, in. See Note 1	Elongation % in 2 in. or 4D min
0.250 to 1.000, incl	Long Trans.	74,000	65,000	0.0166	8
Over 1.000 to 1.500, incl	Long Trans.	73,000	64,000	0.0164	8
Over 1.500 to 2.000, incl	Long Trans.	73,000	64,000	0.0164	7
Over 2.000 to 2.500, incl	Long Trans.	73,000	63,000	0.0162	6
Over 2.500 to 3.000, incl	Long Trans.	70,000	62,000	0.0160	6
Over 3.000 to 4.000, incl	Longitudinal	70,000	60,000	0.0156	6
	Long Trans.	70,000	60,000	0.0156	5
	Short Trans.	64,000	55,000	0.0073	2
Over 4.000 to 4.500, incl	Longitudinal	68,000	58,000	0.0153	6
	Long Trans.	68,000	58,000	0.0153	5
	Short Trans.	62,000	54,000	0.0072	2
Over 4.500 to 5.000, incl	Longitudinal	68,000	58,000	0.0153	5
	Long Trans.	68,000	58,000	0.0153	5
	Short Trans.	61,000	53,000	0.0071	2
Over 5.000 to 5.500, incl	Longitudinal	67,000	58,000	0.0153	4
	Long Trans.	67,000	58,000	0.0153	4
	Short Trans.	60,000	53,000	0.0071	2
Over 5.500 to 6.000, incl	Longitudinal	66,000	57,000	0.0151	4
	Long Trans.	66,000	57,000	0.0151	4
	Short Trans.	59,000	52,000	0.0070	2

Note 1. Longitudinal and long trans., in 2 in.; Short trans., in 1 inch.

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

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 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 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.

8.2 Unless otherwise specified, the vendor of finished or semi-finished parts shall furnish with each shipment three copies of a report showing the purchase order number, material specification number, contractor or other direct supplier of material, part number, and quantity. When material for making parts is produced or purchased by the parts vendor, that vendor shall inspect each lot of material to determine conformance to the requirements of this specification, and shall include in the report a statement that the material conforms, or shall include copies of laboratory reports showing the results of tests to determine conformance