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

AMS 4024A

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ALUMINUM ALLOY SHEET AND PLATE

4.3Zn - 3.3Mg - 0.60Cu - 0.20Mn - 0.17Cr (7079; -T6 Sheet, -T651 Plate)

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 requiring high strength. Plate is also suitable for structural machined parts where warpage during machining due to residual
Ø stresses must be kept to a minimum. Certain design and processing procedures may cause this material to be susceptible to stress corrosion cracking; ARP 823 recommends practices to minimize such conditions.

3. COMPOSITION:

	min	max
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
Silicon	--	0.30
Titanium	--	0.10
Other Impurities, each	--	0.05
Other Impurities, total	--	0.15
Aluminum	remainder	

4. CONDITION:

Ø 4.1 Sheet: Solution and precipitation heat treated.

4.2 Plate: Solution heat treated, stretched to produce a nominal permanent set of 2%, but not less than 1-1/2% nor more than 3%, and precipitation heat treated.

4.2.1 Plate shall receive no further straightening operations after stretching.

5. TECHNICAL REQUIREMENTS: When ASTM methods are specified for determining
Ø conformance to the following requirements, tests shall be conducted in accordance with the issue of the ASTM method listed in the latest issue of AMS 2350.

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5.1 Tensile Properties: Test specimens shall conform to ASTM E8 and shall be taken across the direction of rolling from widths 9 in. and over and parallel to the direction of rolling from widths less than 9 inch. Sheet type specimens shall be used for material less than 0.5 in. thick and 0.75 in. and over in width. Round specimens shall be used for material 0.5 in. and over in thickness and 0.75 in. and over in width. Material under 0.75 in. wide and under 0.5 in. thick may be tested either in full section or by use of round specimens; for such sizes, elongation requirements apply only when round specimens are used. Test specimens cut in either the longitudinal or short transverse directions shall be capable of meeting the requirements specified below.

Nominal Thickness Inches	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
0.040 to 0.249, incl	Long Trans.	72,000	62,000	0.0160	8
Over 0.249 to 1.000, incl	Long Trans.	73,000	63,000	0.0162	8
Over 1.000 to 1.500, incl	Long Trans.	73,000	63,000	0.0162	8
Over 1.500 to 2.000, incl	Long Trans.	73,000	63,000	0.0162	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.	71,000	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.	65,000	56,000	0.0074	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.	63,000	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.	63,000	54,000	0.0072	2
Over 5.000 to 5.500, incl	Longitudinal	67,000	57,000	0.0151	4
	Long Trans.	67,000	57,000	0.0151	4
	Short Trans.	62,000	53,000	0.0071	2
Over 5.500 to 6.000, incl	Longitudinal	66,000	56,000	0.0149	4
	Long Trans.	66,000	56,000	0.0149	4
	Short Trans.	61,000	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.