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INTERNATIONAL
400 Commonwealth Drive, Warrendale, PA 15096-0001

AEROSPACE MATERIAL SPECIFICATION

SAE AMS 4017J

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An American National Standard

Superseding AMS 4017H

ALUMINUM ALLOY SHEET AND PLATE
2.5Mg - 0.25Cr (5052-H34)
Strain-Hardened, Half-Hard, and Stabilized

UNS A95052

1. SCOPE:

1.1 Form:

This specification covers an aluminum alloy in the form of sheet and plate.

1.2 Application:

These products have been used typically for parts requiring moderate forming and where good welding characteristics and resistance to corrosion are important, but usage is not limited to such applications.

2. APPLICABLE DOCUMENTS:

The following publications form a part of this specification to the extent specified herein. The latest issue of SAE publications shall apply. The applicable issue of other publications shall be the issue in effect on the date of the purchase order.

2.1 SAE Publications:

Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

AMS 2202 Tolerances, Aluminum Alloy and Magnesium Alloy Sheet and Plate
MAM 2202 Tolerances, Metric, Aluminum Alloy and Magnesium Alloy Sheet and Plate
AMS 2355 Quality Assurance Sampling and Testing of Aluminum Alloys and Magnesium Alloys, Wrought Products (Except Forging Stock) and Flash Welded Rings
MAM 2355 Quality Assurance Sampling and Testing of Aluminum Alloys and Magnesium Alloys, Wrought Products (Except Forging Stock) and Flash Welded Rings, Metric (SI) Units
AMS 2811 Identification, Aluminum and Magnesium Alloy Wrought Products

2.2 ASTM Publications:

Available from ASTM, 1916 Race Street, Philadelphia, PA 19103-1187.

ASTM B 660 Packaging/Packing of Aluminum and Magnesium Products

3. TECHNICAL REQUIREMENTS:

3.1 Composition:

Shall conform to the percentages by weight shown in Table 1, determined in accordance with AMS 2355 or MAM 2355.

TABLE 1 - Composition

Element	min	max
Magnesium	2.2	2.8
Chromium	0.15	0.35
Iron	--	0.40
Silicon	--	0.25
Zinc	--	0.10
Manganese	--	0.10
Copper	--	0.10
Other Impurities, each	--	0.05
Other Impurities, total	--	0.15
Aluminum	remainder	

3.2 Condition:

Strain hardened, half-hard, and stabilized.

3.3 Properties:

The product shall conform to the following requirements, determined in accordance with AMS 2355 or MAM 2355:

3.3.1 Tensile Properties: Shall be as specified in Table 2 and 3.3.1.1.

TABLE 2A - Tensile Properties, Inch/Pound Units

Nominal Thickness Inch	Tensile Strength ksi	Yield Strength at 0.2% Offset ksi, min	Elongation in 2 Inches or 4D %, min
0.009 to 0.019, incl	34.0 - 41.0	26.0	3
Over 0.019 to 0.050, incl	34.0 - 41.0	26.0	4
Over 0.050 to 0.113, incl	34.0 - 41.0	26.0	6
Over 0.113 to 0.249, incl	34.0 - 41.0	26.0	7
Over 0.249 to 1.000, incl	34.0 - 41.0	26.0	10

TABLE 2B - Tensile Properties, SI Units

Nominal Thickness Millimeters	Tensile Strength MPa	Yield Strength at 0.2% Offset MPa, min	Elongation in 50.8 mm or 4D %, min
0.23 to 0.48, incl	234 - 283	179	3
Over 0.48 to 1.27, incl	234 - 283	179	4
Over 1.27 to 2.87, incl	234 - 283	179	6
Over 2.87 to 6.32, incl	234 - 283	179	7
Over 6.32 to 25.40, incl	234 - 283	179	10

3.3.1.1 Tensile property requirements for product under 0.009 inch (0.23 mm) or over 1.000 inch (25.40 mm) in nominal thickness shall be as agreed upon by purchaser and vendor.

3.3.2 Bending: Product 0.249 inch (6.32 mm) and under in nominal thickness shall withstand, without cracking, bending at room temperature through an angle of 180 degrees around a diameter equal to the bend factor shown in Table 3 times the nominal thickness of the product with axis of bend parallel to the direction of rolling.

TABLE 3 - Bending Requirements

Nominal Thickness Inch	Nominal Thickness Millimeters	Bend Factor
Up to 0.019, incl	Up to 0.48, incl	1
Over 0.019 to 0.050, incl	Over 0.48 to 1.27, incl	2
Over 0.050 to 0.113, incl	Over 1.27 to 2.87, incl	3
Over 0.113 to 0.249, incl	Over 2.87 to 6.32, incl	4

3.3.2.1 Bending requirements for plate over 0.249 inch (6.32 mm) in nominal thickness shall be as agreed upon by purchaser and vendor.

3.4 Quality:

The product, as received by purchaser, shall be uniform in quality and condition, sound, and free from foreign materials and from imperfections detrimental to usage of the product.

3.5 Tolerances:

Shall conform to all applicable requirements of AMS 2202 or MAM 2202.

4. QUALITY ASSURANCE PROVISIONS:

4.1 Responsibility for Inspection:
(R)

The vendor of the product shall supply all samples for vendor's tests and shall be responsible for performing all required tests. Purchaser reserves the right to sample and to perform any confirmatory testing deemed necessary to ensure that the product conforms to the requirements of this specification.

4.2 Classification of Tests:

4.2.1 Acceptance Tests: Tests for composition (3.1), tensile properties (3.3.1), and tolerances (3.5) are acceptance tests and shall be performed on each lot.

4.2.2 Periodic Tests: Tests for bending (3.3.2) are periodic tests and shall be performed at a frequency selected by the vendor unless frequency of testing is specified by purchaser.

4.3 Sampling and Testing:
(R)

Shall be in accordance with AMS 2355 or MAM 2355.