

AEROSPACE MATERIAL SPECIFICATION

SAE

AMS 4056F

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Superseding AMS 4056E

Submitted for recognition as an American National Standard

ALUMINUM ALLOY, SHEET AND PLATE
4.4Mg - 0.70Mn - 0.15Cr (5083-0)
Annealed

UNS A95083

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, moderate strength, and good resistance to corrosion are important, but usage is not limited to such applications. Excessive cold work or prolonged heating in the temperature range 150 to 300 °F (66 to 149 °C) may cause susceptibility to stress corrosion.

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.

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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, Aluminum Alloys and Magnesium Alloys, Wrought Products, Except Forging Stock, and Rolled, Forged, or Flash Welded Rings
MAM 2355	Quality Assurance Sampling and Testing, Aluminum Alloys and Magnesium Alloys, Wrought Products, Except Forging Stock, and Rolled, Forged, or 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	4.0	4.9
Manganese	0.40	1.0
Chromium	0.05	0.25
Iron	--	0.40
Silicon	--	0.40
Zinc	--	0.25
Titanium	--	0.15
Copper	--	0.10
Other Impurities, each	--	0.05
Other Impurities, total	--	0.15
Aluminum	remainder	

3.2 Condition:

Annealed with mill finish.

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 shown in Table 2.

TABLE 2A - Tensile Properties, Inch/Pound Units

Nominal Thickness Inches	Tensile Strength	Tensile Strength	Yield Strength	Yield Strength	Elongation in 2 inches or 4D %, min
	ksi min	ksi max	at 0.2% Offset ksi min	at 0.2% Offset ksi max	
0.051 to 1.500, incl	40.0	51.0	18.0	29.0	16
Over 1.500 to 3.000, incl	39.0	51.0	17.0	29.0	16
Over 3.000 to 4.000, incl	38.0	--	16.0	--	16
Over 4.000 to 5.000, incl	38.0	--	16.0	--	14
Over 5.000 to 7.000, incl	37.0	--	15.0	--	14
Over 7.000 to 8.000, incl	36.0	--	14.0	--	12

TABLE 2B - Tensile Properties, SI Units

Nominal Thickness Millimeters	Tensile Strength	Tensile Strength	Yield Strength	Yield Strength	Elongation in 50.8 mm or 4D %, min
	MPa min	MPa max	at 0.2% Offset MPa min	at 0.2% Offset MPa max	
1.30 to 38.10, incl	276	352	124	200	16
Over 38.10 to 76.20, incl	269	345	117	200	16
Over 76.20 to 101.60, incl	262	--	110	--	16
Over 101.60 to 127.00, incl	262	--	110	--	14
Over 127.00 to 177.80, incl	255	--	103	--	14
Over 177.80 to 203.20, incl	248	--	97	--	12

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:

(R)

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

4.3 Sampling and Testing:

(R)

Shall be in accordance with AMS 2355 or MAM 2355.

4.4 Reports:

The vendor of the product shall furnish with each shipment a report stating that the product conforms to the chemical composition and showing the results of tests on each lot to determine conformance to the tensile property requirements. This report shall include the purchase order number, lot number, AMS 4056F, size, and quantity.

4.5 Resampling and Retesting:

Shall be in accordance with AMS 2355 or MAM 2355.

5. PREPARATION FOR DELIVERY:

5.1 Identification:

(R)

Shall be in accordance with AMS 2811.

5.2 Packaging:

5.2.1 Flat sheet, plate, and circles 12 inches (305 mm) or over in nominal diameter shall be protected, during shipment and storage, by interleaving with paper sheets. Circles under 12 inches (305 mm) in nominal diameter shall be protected as agreed upon by purchaser and vendor.

5.2.2 The product shall be prepared for shipment in accordance with commercial practice and in compliance with applicable rules and regulations pertaining to the handling, packaging, and transportation of the product to ensure carrier acceptance and safe delivery.

5.2.3 For direct U.S. Military procurement, packaging shall be in accordance with ASTM B 660, Level C, unless Level A is specified in the request for procurement.

6. ACKNOWLEDGMENT:

A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.