



AEROSPACE MATERIAL SPECIFICATION	AMS4056™	REV. J
	Issued 1960-01 Reaffirmed 2010-10 Revised 2023-09	
Superseding AMS4056H		
Aluminum Alloy, Sheet and Plate 4.4Mg - 0.70Mn - 0.15Cr (5083-O) Annealed (Composition similar to UNS A95083)		

RATIONALE

AMS4056J is the result of a Five-Year Review and update of this specification with changes to update wording to prohibit unauthorized exceptions (see 3.6, 3.3.1.1, 4.4.1, 5.1.1, and 8.3), relocate Definitions (see 2.4), update Applicable Documents (see Section 2), and allow the use of the immediate prior revision of this specification (see 8.4).

1. SCOPE

1.1 Form

This specification covers an aluminum alloy in the form of sheet and plate 0.051 to 8.000 inches (1.30 to 203.20 mm), inclusive, in thickness (see 8.5).

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 issue of the following documents in effect on the date of the purchase order forms a part of this specification to the extent specified herein. The supplier may work to a subsequent revision of a document unless a specific document issue is specified. When the referenced document has been cancelled and no superseding document has been specified, the last published issue of that document shall apply.

2.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

AMS2355 Quality Assurance, Sampling and Testing, Aluminum Alloys and Magnesium Alloy, Wrought Products (Except Forging Stock), and Rolled, Forged, or Flash Welded Rings

AS7766 Terms Used in Aerospace Metals Specifications

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For more information on this standard, visit
<https://www.sae.org/standards/content/AMS4056J>

2.2 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.

ASTM B660 Packaging/Packing of Aluminum and Magnesium Products

ASTM B666/B666M Identification Marking of Aluminum and Magnesium Products

2.3 ANSI Accredited Publications

Copies of these documents are available online at <https://webstore.ansi.org/>.

ANSI H35.2 Dimensional Tolerances for Aluminum Mill Products

ANSI H35.2M Dimensional Tolerances for Aluminum Mill Products (Metric)

2.4 Definitions

Terms used in AMS are defined in AS7766.

3. TECHNICAL REQUIREMENTS

3.1 Composition

Shall conform to the percentages by weight shown in Table 1, determined in accordance with AMS2355.

Table 1 - Composition

Element	Min	Max
Silicon	--	0.40
Iron	--	0.40
Copper	--	0.10
Manganese	0.40	1.0
Magnesium	4.0	4.9
Chromium	0.05	0.25
Zinc	--	0.25
Titanium	--	0.15
Other Elements, each	--	0.05
Other Elements, total	--	0.15
Aluminum	remainder	

3.2 Condition

Annealed with mill finish.

3.3 Properties

The product shall conform to the following requirements, determined on the mill produced size in accordance with AMS2355:

3.3.1 Tensile Properties

Shall be as shown in Table 2.

3.3.1.1 Mechanical property requirements for product outside of the range covered by Table 2 shall be agreed upon between the purchaser and producer and reported as in 4.4.1 (see 8.5).

Table 2A - Tensile properties, inch/pound units

Nominal Thickness Inches	Tensile Strength ksi, Min	Tensile Strength ksi, Max	Yield Strength at 0.2% Offset ksi, Min	Yield Strength at 0.2% Offset ksi, Max	Elongation in 2 inches or 4D %, Min
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 MPa, Min	Tensile Strength MPa, Max	Yield Strength at 0.2% Offset MPa, Min	Yield Strength at 0.2% Offset MPa, Max	Elongation in 50.8 mm or 4D %, Min
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 the 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 ANSI H35.2 or ANSI H35.2M.

3.6 Exceptions

Any exceptions shall be authorized by the purchaser and reported as in 4.4.1.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for Inspection

The producer of the product shall supply all samples for the producer's tests and shall be responsible for the performance of all required tests. The purchaser reserves the right to sample and to perform any confirmatory testing deemed necessary to ensure that the product conforms to the specified requirements.

4.2 Classification of Tests

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

4.3 Sampling and Testing

Shall be in accordance with AMS2355.

4.4 Reports

The producer of the product shall furnish with each shipment a report stating that the product conforms to the chemical composition and tolerances, and showing the numerical results of tests on each inspection lot to determine conformance to the other acceptance test requirements. This report shall include the purchase order number, inspection lot number(s), AMS4056J, size, and quantity. The report shall also identify the producer, product form, and the mill produced size.

4.4.1 When material produced to this specification is beyond the sizes allowed in the scope or tables, or other exceptions are taken to the technical requirements listed in Section 3, the report shall contain a statement "This material is certified as AMS4056J(EXC) because of the following exceptions:" and the specific exceptions shall be listed (see 5.1.1).

4.5 Resampling and Retesting

Shall be in accordance with AMS2355.

5. PREPARATION FOR DELIVERY

5.1 Identification

Shall be in accordance with ASTM B666/B666M.

5.1.1 When technical exceptions are taken (see 4.4.1), the material shall be identified with AMS4056(EXC).

5.2 Protective Treatment

Product shall be protected from damage during storage and shipment by a method determined by the producer unless specified by the purchaser. Examples of typical protective methods include, but are not limited to, interleaving with paper or oiling of the surfaces.

5.3 Packaging

The product shall be prepared for shipment in accordance with ASTM B660 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.

6. ACKNOWLEDGMENT

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

7. REJECTION

Product not conforming to this specification, or to modifications authorized by the purchaser, will be subject to rejection.