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400 Commonwealth Dr., Warrendale, PA 15096

AEROSPACE MATERIAL SPECIFICATION

Submitted for recognition as an American National Standard

SAE AMS 4057D

Issued 1-15-60
Revised 10-1-86

Superseding AMS 4057C

ALUMINUM ALLOY SHEET
4.4Mg - 0.70Mn - 0.15Cr (5083-H323)

UNS A95083

This specification has been declared "NONCURRENT" by the Aerospace Materials Division, SAE, as of April 11, 1986. It is recommended that this specification not be specified for new designs.

This cover sheet should be attached to the "D" revision of the subject specification.

This specification is under the jurisdiction of AMS Committee "D".

REAFFIRMED

Printed in U.S.A.

10-91, 5/95

Society of Automotive Engineers, Inc.
400 COMMONWEALTH DRIVE, WARRENDALE, PA. 15096

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ALUMINUM ALLOY SHEET
4.4Mg - 0.70Mn - 0.15Cr (5083-H323)

1. SCOPE:

1.1 Form: This specification covers an aluminum alloy in the form of sheet.

1.2 Application: Primarily for parts requiring moderate forming and where good welding characteristics and good resistance to exfoliation-corrosion are important. Excessive cold work or prolonged heating in the temperature range 150° - 300°F (65° - 150°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 Aerospace Material Specifications (AMS) shall apply. The applicable issue of other documents shall be as specified in AMS 2350.

2.1 SAE Publications: Available from Society of Automotive Engineers, Inc., 400 Commonwealth Drive, Warrendale, PA 15096.

2.1.1 Aerospace Material Specifications:

AMS 2202 - Tolerances, Aluminum-Base and Magnesium-Base Alloy Sheet and Plate
AMS 2350 - Standards and Test Methods
AMS 2355 - Quality Assurance Sampling and Testing of Aluminum-Base and Magnesium-Base Alloys, Wrought Products (Except Forgings and Forging Stock) and Flash Welded Rings

2.2 Government Publications: Available from Commanding Officer, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120.

2.2.1 Military Standards:

MIL-STD-649 - Aluminum and Magnesium Products, Preparation for Shipment and Storage

3. TECHNICAL REQUIREMENTS:

3.1 Composition: Shall conform to the following percentages by weight, determined in accordance with AMS 2355.

	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	

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3.2 Condition: Strain-hardened quarter hard and stabilized.

3.3 Properties: Sheet shall conform to the following requirements, determined in accordance with AMS 2355:

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

TABLE I

Nominal Thickness Inch	Tensile Strength psi		Yield Strength at 0.2% Offset psi		Elongation in 2 in. %, min
	min	max	min	max	
0.051 to 0.125, incl	45,000	54,000	34,000	44,000	8
Over 0.125 to 0.249, incl	45,000	54,000	34,000	44,000	10

TABLE I (SI)

Nominal Thickness Millimetres	Tensile Strength MPa		Yield Strength at 0.2% Offset MPa		Elongation in 50.8 mm %, min
	min	max	min	max	
1.30 to 3.18, incl	310	372	234	303	8
Over 3.18 to 6.32, incl	310	372	234	303	10

3.3.1.1 Tensile property requirements for sheet less than 0.051 in. (1.30 mm) in nominal thickness shall ø be as agreed upon by purchaser and vendor.

3.4 Quality: Sheet, as received by the purchaser, shall be uniform in quality and condition, sound, and ø free from foreign materials and from internal and external imperfections detrimental to usage of the sheet.

3.5 Tolerances: Unless otherwise specified, tolerance shall conform to all applicable requirements of AMS 2202.

4. QUALITY ASSURANCE PROVISIONS:

4.1 Responsibility for Inspection: The vendor of sheet shall supply all samples and shall be responsible for performing all required tests. Results of such tests shall be reported to the purchaser as re- ø quired by 4.4. Purchaser reserves the right to perform such confirmatory testing as he deems necessary to ensure that the sheet conforms to the requirements of this specification.

4.2 Classification of Tests: Tests to determine conformance to all technical requirements of this speci- ø fication are classified as acceptance tests.

4.3 Sampling: Shall be in accordance with AMS 2355.

4.4 Reports:

4.4.1 The vendor of sheet shall furnish with each shipment three copies of a report stating that the sheet conforms to the chemical composition and showing the results of tests on each lot to determine con- ø formance to the tensile property requirements of this specification. This report shall include the purchase order number, material specification number and its revision letter, size, and quantity.

4.4.2 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 and its revision letter, contractor or other direct supplier of sheet, part number, and quantity. When sheet for making parts is produced or puchased by the parts vendor, that vendor shall inspect each lot of sheet to determine conformance to the requirements of this specification, and shall include in the report a statement that the sheet conforms, or shall include copies of laboratory reports showing the results of tests to determine conformance.

Ø 4.5 Resampling and Retesting: Shall be in accordance with AMS 2355.

5. PREPARATION FOR DELIVERY:

5.1 Identification: Each sheet shall be marked on one face, in the respective location indicated below, with the alloy number and temper, AMS 4057 or applicable Federal or Military specification designation, manufacturer's identification, and nominal thickness. The characters shall be of such size as to be clearly legible, shall be applied using a suitable marking fluid, and shall be sufficiently stable to withstand normal handling. The markings shall have no deleterious effect on the sheet or its performance.

5.1.1 Flat Sheet Under 6 In. (152 mm) Wide: Shall be marked in one or more lengthwise rows of characters recurring at intervals not greater than 3 ft (914 mm).

5.1.2 Flat Sheet 6 - 60 In. (152 - 1524 mm), Incl, Wide and 36 - 200 In. (914 - 5080 mm), Incl, Long: Shall be marked in lengthwise rows of characters recurring at intervals not greater than 3 ft (914 mm), the rows being spaced approximately 6 in. (152 mm) on centers across the width and staggered. Every third row shall show the manufacturer's identification and nominal thickness. The other rows shall show the alloy number and temper and AMS 4057 or applicable Federal or Military specification designation.

5.1.3 Flat Sheet Over 60 In. (1524 mm) Wide or Over 200 In. (5080 mm) Long: Shall be marked as in 5.1.2 above or, at vendor's discretion, shall be marked in one or two rows of characters recurring at intervals not greater than 3 ft (914 mm) and running around the periphery of the piece. If one row is used, it shall show all information of 5.1. If two rows are used, one row shall show the alloy number and temper and AMS 4057 or applicable Federal or Military specification designation; the second row shall show the manufacturer's identification and nominal thickness.

5.1.3.1 If peripheral marking is applied to the full piece as produced but partial sheets are supplied, an arrow shall also be applied near one corner indicating the direction of rolling.

5.1.4 Coiled Sheet: Shall be marked near both the outside and inside ends of the coil; the markings shall be applied as in 5.1 or shall appear on a durable tag or label attached to the coil and marked with the Ø information of 5.1. When the inside end of the coil is inaccessible, as when the sheet is wound on cores, the tag or label may be attached to the core.

5.1.5 Circles: Shall be marked with the information of 5.1 if the circle is 24 in. (610 mm) or more in nominal diameter. Circles less than 24 in. (610 mm) in nominal diameter shall be identified as agreed upon by purchaser and vendor.

5.2 Protective Treatment: Flat sheet and circles 12 in. (305 mm) and over in nominal diameter shall be protected, during shipment and storage, by interleaving with suitable paper sheets. Circles less than 12 in. (305 mm) in nominal diameter shall be protected as agreed upon by purchaser and vendor.

5.3 Packaging:

5.3.1 Sheet shall be prepared for shipment in accordance with commercial practice to ensure carrier Ø acceptance and safe transportation to the point of delivery. Packaging shall conform to carrier rules and regulations applicable to the mode of transportation.