

**AEROSPACE  
MATERIAL  
SPECIFICATION**

Submitted for recognition as an American National Standard

SAE AMS 4058D

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

Superseding AMS 4058C

ALUMINUM ALLOY SHEET  
4.4Mg - 0.70Mn - 0.15Cr (5083-373)

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".

SAE Technical Board Rules provide that: "This report is published by SAE to advance the state of technical and engineering sciences. The use of this report is entirely voluntary, and its applicability and suitability for any particular use, including any patent infringement arising therefrom, is the sole responsibility of the user."

AMS documents are protected under United States and international copyright laws. Reproduction of these documents by any means is strictly prohibited without the written consent of the publisher.



# AEROSPACE MATERIAL

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

## SPECIFICATION

### AMS 4058D

Superseding AMS 4058C

Issued 1-15-60

Revised 7-15-77

ALUMINUM ALLOY SHEET  
4.4Mg - 0.70Mn - 0.15Cr (5083-H343)

UNS A95083

#### 1. SCOPE:

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

1.2 Application: Primarily for parts requiring little 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:

SAE Technical Board rules provide that: "All technical reports, including standards approved and practices recommended, are advisory only. Their use by anyone engaged in industry or trade is entirely voluntary. There is no agreement to adhere to any SAE standard or recommended practice, and no commitment to conform to or be guided by any technical report. In formulating and approving technical reports, the Board and its committees will not investigate or consider patents which may apply to the subject matter. Prospective users of the report are responsible for protecting themselves against liability for infringement of patents."

- 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 |      |

- 3.2 Condition: Strain-hardened half 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<br>Inch | Tensile Strength<br>psi |     | Yield Strength<br>at 0.2% Offset<br>psi |     | Elongation<br>in 2 in.<br>%, min |
|---------------------------|-------------------------|-----|-----------------------------------------|-----|----------------------------------|
|                           | min                     | max | min                                     | max |                                  |
| 0.051 to 0.125, incl      | 50,000 - 59,000         |     | 39,000 - 49,000                         |     | 6                                |
| Over 0.125 to 0.249, incl | 50,000 - 59,000         |     | 39,000 - 49,000                         |     | 8                                |

TABLE I (SI)

| Nominal Thickness<br>Millimetres | Tensile Strength<br>MPa |     | Yield Strength<br>at 0.2% Offset<br>MPa |     | Elongation<br>in 50.8 mm<br>%, min |
|----------------------------------|-------------------------|-----|-----------------------------------------|-----|------------------------------------|
|                                  | min                     | max | min                                     | max |                                    |
| 1.30 to 3.18, incl               | 345                     | 407 | 269                                     | 338 | 6                                  |
| Over 3.18 to 6.32, incl          | 345                     | 407 | 269                                     | 338 | 8                                  |

- 3.3.1.1 Tensile property requirements for sheet less than 0.051 in. (1.30 mm) in nominal thickness shall 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 free from foreign materials and from internal and external imperfections detrimental to usage of the sheet.

- 3.5 Tolerances: Unless otherwise specified, tolerances 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 required 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 specification 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 conformance 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 purchased 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.

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 4058 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 4058 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 4058 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.