AERONAUTICAL MATERIAL SPECIFICATIONS

SOCIETY OF AUTOMOTIVE ENGINEERS, Inc. 485 Lexington Ave., New York 17, N.Y.

AMS 4057 A

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ALUMINUM ALLOY SHEET
4.5Mg - 0.65 Mn - 0.15Cr (5083-H32)

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

2. APPLICATION: Primarily for parts requiring moderate forming, and where welding and good resistance to corrosion are important. Excessive cold work or prolonged heating in the temperature range of 150 - 300 F may cause susceptibility to stress corrosion.

3. COMPOSITION:

Magnesium	4.0 - 4.9
Manganese	0.30 - 1.0
Chromium	0.05 - 0.25
Iron	0.40 max
Silicon	0.40 max
Zinc	0.25 max
Titanium	0.15 max
Copper	0.10 max
Other Impurities, each	0.05 max
Other Impurities, total	0.15 max
Aluminum	remainder

4. CONDITION: Quarter-hard and, unless otherwise specified, mill finish.

5. TECHNICAL REQUIREMENTS:

5.1 Tensile Properties: Test specimens shall conform to ASTM E8-57T except from sheet less than 3/4 in. wide and shall be cut parallel to the direction of rolling. Elongation requirements apply only to sheet 3/4 in. and over in width.

Nominal Thickness Inch	Tensile Strength psi	Yield Strength at 0.2% Offset or at Extension Indicated (E = 10,200,000)		Elongation % in 2 in. min
		psi, min	Extension Under Load in. in 2 in.	
0.051 to 0.125, incl	45,000 - 54,000	34,000	0.0107	8
Over 0.125 to 0.249, incl	45,000 - 54,000	34,000	0.0107	10

5.1.1 When a dispute occurs between purchaser and vendor over the yield strength value, yield strength determined by the offset method shall apply.

5.1.2 If sizes other than those shown are ordered, tensile property requirements shall be as agreed upon by purchaser and vendor.

6. QUALITY: Material shall be uniform in quality and condition, clean, sound, and free from foreign materials and from internal and external imperfections detrimental to fabrication or to performance of parts.

7. TOLERANCES: Unless otherwise specified, tolerances shall conform to the latest issue of AMS 2202 as applicable.

8. REPORTS:

8.1 Unless otherwise specified, the vendor of the product shall furnish with each shipment three copies of a report stating that the product conforms to the chemical composition and technical requirements of this specification. This report shall include the purchase order number, material specification number, thickness, size, and quantity.

8.2 Unless otherwise specified, 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, contractor or other direct supplier of material, part number, and quantity. When material for making parts is produced or purchased by the parts vendor, that vendor shall inspect each lot of material to determine conformance to the requirements of this specification, and shall include in the report a statement that the material conforms, or shall include copies of laboratory reports showing the results of tests to determine conformance.

9. IDENTIFICATION: Unless otherwise specified, each sheet and plate shall be marked
Ø on one face, in the respective location indicated below. Symbols shall be applied using a suitable marking fluid and shall not be obliterated by normal handling.

9.1 Flat Sheet and Plate 0.375 In. and Under Thick, 6 - 60 In., Incl, Wide, and 36 - 200 In., Incl, Long: Shall be marked in rows of symbols not less than 3/8 in. in height and recurring at intervals not greater than 3 feet. Rows shall run par-
Ø allel to the direction of rolling of the piece and shall be spaced approximately 6 in. on centers across the width. Every third row shall show the manufacturer's identification and nominal thickness in inches. The other rows shall show the alloy number and temper, or AMS 4057, and shall be staggered.

9.2 Flat Sheet and Plate Over 0.375 In. Thick, or Over 60 In. Wide, or Over 200 In. Long: Shall be marked as in 9.1 above or, at vendor's discretion, shall be marked in one or two rows of symbols not less than 3/8 in. in height and running around the perimeter of the piece. If one row is used, it shall show the alloy
Ø number and temper, or AMS 4057, manufacturer's identification, and nominal thickness in inches. If two rows are used, one row shall show the alloy number and temper, or AMS 4057; the second row shall show the manufacturer's identification and nominal thickness in inches.

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

9.3 Coiled Sheet: Shall be marked near the outside end of the coil with the alloy
Ø number and temper, or AMS 4057, manufacturer's identification, and nominal thickness in inches.