SOCIETY OF AUTOMOTIVE ENGINEERS, Inc. 485 Lexington Ave., New York, N.Y. 10017

AEROSPACE MATERIAL SPECIFICATIONS

AMS4037G
Superseding AMS 4037F
Issued 6-14-40
Revised 11-1-67

ALUMINUM ALLOY SHEET AND PLATE
4.4Cu - 1.5Mg - 0.60Mn (2024; -T3 Flat Sheet, -T4 Plate)

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 formed structural parts of good strength. Certain design and processing procedures may cause this material to be susceptible to stress corrosion cracking; ARP 823 recommends practices to minimize such conditions.

3. COMPOSITION:

	min	max
Copper	3.8	- 4.9
Magnesium	1.2	- 1.8
Manganese	0.30	- 0.9
Iron	--	0.50
Silicon	--	0.50
Zinc	--	0.25
Chromium	--	0.10
Other Impurities, each	--	0.05
Other Impurities, total	--	0.15
Aluminum	remainder	

4. CONDITION:

4.1 Sheet: Solution heat treated and stretcher leveled.

4.2 Plate: Solution heat treated.

5. TECHNICAL REQUIREMENTS: The product shall conform to the following requirements; tensile properties shall be determined in accordance with the latest issue of AMS 2355.

5.1 Tensile Properties:

Nominal Thickness Inch	Tensile Strength psi, min	Yield Strength at 0.2% Offset or at Extension Indicated (E = 10,500,000) psi, min	Extension Under Load in. in 2 in.	Elongation % in 2 in. or 4D min
0.008 to 0.009, incl	63,000	42,000	0.0120	10
Over 0.009 to 0.020, incl	64,000	42,000	0.0120	12
Over 0.020 to 0.249, incl	64,000	42,000	0.0120	15
Over 0.249 to 0.499, incl	64,000	40,000	0.0116	12
Over 0.499 to 1.000, incl	62,000	41,000	0.0118	8
Over 1.000 to 1.500, incl	62,000	41,000	0.0118	7
Over 1.500 to 2.000, incl	61,000	41,000	0.0118	6
Over 2.000 to 3.000, incl	60,000	41,000	0.0118	4
Over 3.000 to 4.000, incl	56,000	40,000	0.0116	4

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

5.2 Bending: Material shall be capable of withstanding, without cracking, bending at room temperature through an angle of 180 deg around a diameter equal to the bend factor times the nominal thickness of the material, with axis of bend parallel to direction of rolling.

Nominal Thickness Inch	Bend Factor
0.008 to 0.020, incl	4
Over 0.020 to 0.051, incl	5
Over 0.051 to 0.128, incl	6
Over 0.128 to 0.249, incl	8
Over 0.249 to 0.499, incl	10

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 all applicable requirements of the latest issue of AMS 2202.

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 on one face, in the respective location indicated below, with the alloy number and temper, AMS 4037 or applicable Federal or Ø Military specification designation, manufacturer's identification, and nominal thickness in inches. 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.

9.1 Flat Sheet and Plate Under 6 In. Wide: Shall be marked in one or more lengthwise rows of characters Ø recurring at intervals not greater than 3 feet.

9.2 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 lengthwise rows of characters recurring at intervals not greater than 3 ft, the rows Ø being spaced approximately 6 in. on centers across the width and staggered. Every third row shall show the manufacturer's identification and nominal thickness in inches. The other rows shall show the alloy number and temper and AMS 4037 or applicable Federal or Military specification designation.

9.3 Flat Sheet and Plate Over 0.375 In. Thick, or Over 60 In. Wide, or Over 200 In. Long: Shall be marked as in 9.2 above or, at vendor's discretion, shall be marked in one or two rows of characters recurring Ø at intervals not greater than 3 ft and running around the periphery of the piece. If one row is used, it shall show all information of Paragraph 9 above. If two rows are used, one row shall show the alloy number and temper and AMS 4037 or applicable Federal or Military specification designation; the second row shall show the manufacturer's identification and nominal thickness in inches.