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

AMS 4156C

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ALUMINUM ALLOY EXTRUSIONS
0.65Mg - 0.4Si (6063-T6)

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

Ø 2. FORM: Bars, rods, shapes, and tubing.

3. APPLICATION: Primarily for hinges, trim strips, window frames, sills, and moldings where good surface finish is required. Also may be used to advantage for hollow, partially enclosed, and intricate shapes for which an alloy having good extruding characteristics is required.

4. COMPOSITION:

Magnesium	0.45 - 0.9
Silicon	0.20 - 0.6
Iron	0.35 max
Chromium	0.10 max
Manganese	0.10 max
Titanium	0.10 max
Copper	0.10 max
Zinc	0.10 max
Other Impurities, each	0.05 max
Other Impurities, total	0.15 max
Aluminum	remainder

5. CONDITION: Solution and precipitation heat treated.

5.1 Unless otherwise specified, extrusions shall be supplied with an as-extruded surface finish; light polishing to remove minor surface imperfections is permissible provided such imperfections can be removed within the dimensional requirements.

6. TECHNICAL REQUIREMENTS:

Ø 6.1 Tensile Properties:

Nominal Diameter or Least Thickness (rods, bars, shapes) or Nominal Wall Thickness (tubing), Inch	Tensile Strength psi, min	Yield Strength at 0.2% Offset or at Extension Indicated (E = 9,900,000) psi, min	Extension Under Load in. in 2 in.	Elongation % in 2 in. or 4D, min
Under 0.125	30,000	25,000	0.0091	8
0.125 to 1.000, incl	30,000	25,000	0.0091	10

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

6.1.2 The tensile property requirements shall be based on the thickness of the portion of the extrusion from which the tensile test specimens are taken.

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

6.1.4 For material of such thickness that a standard specimen cannot be taken, or for material thinner than 0.062 in., the test for elongation is not required.

6.2 Hardness: Material should have hardness not lower than Brinell 60 using 500 kg load and 10 mm ball or 1000 kg load and 9/16 in. ball, or not lower than Brinell 66 using 1000 kg load and 10 mm ball, but shall not be rejected on the basis of hardness if the tensile property requirements are met.

7. 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.

8. TOLERANCES: Unless otherwise specified, tolerances shall conform to all applicable requirements of the latest issue of AMS 2205.

9. REPORTS:

9.1 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, size or section identification number, and quantity.

9.2 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.

ø 10. IDENTIFICATION: Unless otherwise specified, the products shall be identified as follows:

10.1 ø Each straight bar, rod, and tube 0.500 in. and over in diameter or distance between parallel sides and each straight shape with configuration allowing access to a flat surface at least 1/2 in. wide recessed not more than 1 in. below the outline of the shape shall be marked with the alloy number and temper, or AMS 4156, and manufacturer's identification. The characters shall be of such size as to be clearly legible, shall be applied recurring at intervals not greater than 3 ft using a suitable marking fluid, and shall not be obliterated by normal handling.

10.2 ø All straight extrusions other than those of 10.1 shall be bundled, boxed, or secured on lifts and identified by two tags marked with the information of 10.1 and attached, not farther than 2 ft from each end, to the product in each bundle, box, or lift.