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

AEROSPACE MATERIAL SPECIFICATION

AMS 4102D
Superseding AMS 4102C

Issued 7-1-48
Revised 7-1-76

UNS A91100

ALUMINUM ALLOY BARS AND RODS, ROLLED, DRAWN, OR COLD-FINISHED
99.0Al (1100-F)

1. SCOPE:

1.1 Form: This specification covers an aluminum alloy in the form of bars and rods.

1.2 Application: Primarily for parts requiring good formability and weldability in fabrication where strength is unimportant.

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 2201 - Tolerances, Aluminum and Aluminum Alloy Bar, Rod, Wire, and Forging Stock, Rolled or Drawn
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:

ø	min	max
Aluminum (by difference)	99.0	--
Copper	0.05	0.20
Iron + Silicon	--	1.0
Zinc	--	0.10
Manganese	--	0.05
Other Impurities, each	--	0.05
Other Impurities, total	--	0.15

3.2 Condition: Rolled, drawn, or cold-finished, as ordered, in the as-fabricated condition.

Printed in U.S.A.

3.3 Quality: The product, as received by the purchaser, shall be uniform in quality and condition, sound, Ø and free from foreign materials and from internal and external imperfections detrimental to usage of the product.

3.4 Tolerances: Unless otherwise specified, tolerances shall conform to all applicable requirements of AMS 2201.

4. QUALITY ASSURANCE PROVISIONS:

4.1 Responsibility for Inspection: The vendor of the product shall supply all samples and shall be responsi- Ø ble 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 product conforms to the requirements of this specification.

4.2 Classification of Tests: Tests to determine conformance to all technical requirements of this specifi- Ø cation are classified as acceptance tests.

Ø 4.3 Sampling: Shall be in accordance with AMS 2355.

4.4 Reports:

4.4.1 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 other technical 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 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 4.5 Resmpling and Retesting: Shall be in accordance with AMS 2355.

5. PREPARATION FOR DELIVERY:

5.1 Identification: The product shall be identified as follows:

5.1.1 Each straight bar and rod 0.500 in. (12.70 mm) and over in nominal diameter or least width of flat Ø surface shall be marked in a row of characters recurring at intervals not greater than 3 ft (914 mm) with the alloy number and temper, AMS 4102 or applicable Federal or Military specification designation, and manufacturer's identification. 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 product or its performance.

5.1.2 Smaller straight bars and rods shall be bundled, boxed, or secured on lifts and identified by two Ø durable tags marked with the information of 5.1.1 and attached, not farther than 2 ft (610 mm) from each end, to the product in each bundle, box, or lift.

5.1.3 Coiled bars and rods shall be identified with the information of 5.1.1 marked on a durable tag Ø attached to each coil.

5.2 Packaging: