

ALUMINUM ALLOY WIRE
5.0Mg - 0.12Mn - 0.12Cr(5056-0)
Annealed

UNS A95056

1. SCOPE:

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

1.2 Application: Primarily for the manufacture of screen for reinforcement of, and to provide electrical conductivity through, rubber gaskets.

2. APPLICABLE DOCUMENTS: The following publications form a part of this specification to the extent specified herein. The latest issue of Aerospace Material Specifications shall apply. The applicable issue of other documents shall be as specified in AMS 2350.

2.1 SAE Publications: Available from SAE, 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 Cold Finished

MAM 2201 - Tolerances, Metric, Aluminum and Aluminum Alloy Bar, Rod, Wire, and Forging Stock, Rolled, Drawn, or Cold Finished

AMS 2350 - Standards and Test Methods

AMS 2355 - Quality Assurance Sampling and Testing of Aluminum Alloys and Magnesium Alloys, Wrought Products (Except Forging Stock) and Flash Welded Rings

MAM 2355 - Quality Assurance Sampling and Testing of Aluminum Alloys and Magnesium Alloys, Wrought Products (Except Forging Stock) and Flash Welded Rings, Metric (SI) Units

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- 2.2 ASTM Publications: Available from American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

ASTM B660 - Packaging/Packing of Aluminum and Magnesium Products

3. TECHNICAL REQUIREMENTS:

- 3.1 Composition: Shall conform to the following percentages by weight, determined in accordance with AMS 2355 or MAM 2355:

	min	max
Magnesium	4.5	5.6
Manganese	0.05	0.20
Chromium	0.05	0.20
Iron	--	0.40
Silicon	--	0.30
Copper	--	0.10
Zinc	--	0.10
Residual Elements, each	--	0.05
Residual Elements, total	--	0.15
Aluminum	remainder	

- 3.2 Conditions: Annealed.

- 3.2.1 When wire is supplied as screen, wire in one direction may be in a condition other than annealed.

- 3.3 Properties: Wire shall conform to the following requirements; tensile properties shall be determined in accordance with AMS 2355 or MAM 2355:

3.3.1 Tensile Properties:

Tensile Strength, maximum	46,000 psi (317 MPa)
Elongation in 2 inches (50.8 mm) or 4D, minimum	
Nominal Diameter	
0.125 to 0.375 inch, excl (3.18 to 9.52 mm, excl)	20%

- 3.3.1.1 Elongation requirements for wire under 0.125 inch (3.18 mm) or over 0.375 inch (9.52 mm) in nominal diameter shall be as agreed upon by purchaser and vendor.

- 3.3.2 Bending: Wire shall withstand, without cracking, bending at room temperature flat on itself.

- 3.4 Quality: Wire, as received by purchaser, shall be uniform in quality and condition, sound, and free from foreign materials and from imperfections detrimental to usage of the wire.

- 3.5 Tolerances: Shall conform to all applicable requirements of AMS 2201 or MAM 2201.

4. QUALITY ASSURANCE PROVISIONS:

- 4.1 Responsibility for Inspection: The vendor of wire shall supply all samples for vendor's tests 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 sample and to perform any confirmatory testing deemed necessary to ensure that the wire 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 and shall be performed on each lot.
- 4.3 Sampling: Shall be in accordance with AMS 2355 or MAM 2355.
- 4.4 Reports:
- 4.4.1 The vendor of wire shall furnish with each shipment a report stating that the wire conforms to the chemical composition and other technical requirements of this specification. This report shall include the purchase order number, lot number, AMS 4182D, size, and quantity.
- 4.4.2 The vendor of finished or semi-finished parts shall furnish with each shipment a report showing the purchase order number, AMS 4182D, contractor or other direct supplier of wire, part number, and quantity. When wire for making parts is produced or purchased by the parts vendor, that vendor shall inspect each lot of wire to determine conformance to the requirements of this specification and shall include in the report either a statement that the wire conforms or copies of laboratory reports showing the results of tests to determine conformance.
- 4.5 Resampling and Retesting: Shall be in accordance with AMS 2355 or MAM 2355.

5. PREPARATION FOR DELIVERY:

- 5.1 Packaging and Identification: Wire shall be identified as follows:
- 5.1.1 Wire, supplied on spools, shall contain 5, 10, 15, or 30 pounds (2.27, 4.54, 6.80, or 13.6 kg), as ordered. Each spool shall be marked on one flange of the spool or on a durable tag attached to each spool and showing the nominal size, alloy number and temper, AMS 4182 or applicable Federal specification designation, and manufacturer's identification.
- 5.1.2 Straight wire shall be bundled, boxed, or secured on lifts and identified by two durable tags marked with the information of 5.1.1 and attached, not farther than 2 feet (610 mm) from each end, to the wire in each bundle, box, or lift.
- 5.1.3 Coiled wire shall be identified with the information 5.1.1, marked on a durable tag attached to each coil or directly on one flange of each spool.