SAE Aerospace
An SAE International Group

AEROSPACE MATERIAL SPECIFICATION

SAE AMS 4182F

Issued SEP 1948
Revised MAY 2001
Reaffirmed OCT 2006

Superseding AMS 4182E

Aluminum Alloy, Wire
5.0Mg - 0.12Mn - 0.12Cr(5056-0)
Annealed

(Composition similar to UNS A95056)

RATIONALE

This document has been reaffirmed to comply with the SAE 5-year Review policy.

1. SCOPE:

1.1 Form:

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

1.2 Application:

This wire has been used typically for the manufacture of screen for reinforcement of, and to provide electrical conductivity through, rubber gaskets, but usage is not limited to such applications.

2. APPLICABLE DOCUMENTS:

The issue of the following documents in effect on the date of the purchase order form a part of this specification to the extent specified herein. The supplier may work to a subsequent revision of a document unless a specific document issue is specified. When the referenced document has been canceled and no superseding document has been specified, the last published issue of that document shall apply.

2.1 SAE Publications:

Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

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

TO PLACE A DOCUMENT ORDER: **Tel: 877-606-7323 (inside USA and Canada)**
Tel: 724-776-4970 (outside USA)
Fax: 724-776-0790
Email: CustomerService@sae.org
SAE WEB ADDRESS: **http://www.sae.org**

2.1 (Continued):

AMS 2355 Quality Assurance Sampling and Testing, Aluminum Alloys and Magnesium Alloys, Wrought Products, Except Forging Stock, and Rolled, Forged, or Flash Welded Rings

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

2.2 ASTM Publications:

Available from ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

ASTM B 660 Packaging/Packing of Aluminum and Magnesium Products

3. TECHNICAL REQUIREMENTS:

3.1 Composition:

Shall conform to the percentages by weight shown in Table 1, determined in accordance with AMS 2355 or MAM 2355.

TABLE 1 - Composition

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

3.2 Condition:

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 on the mill produced size.

3.3.1 Tensile Properties: Shall be as shown in Table 2.

TABLE 2 - Tensile Properties

Property	Value
Tensile Strength, max	46.0 ksi (317 MPa)
Elongation in 2 Inches (50.8 mm) or 4D, min	
Nominal Diameter	
0.125 to 0.375 inch, excl (3.18 to 9.52 mm, excl)	20%

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 the performance of all required tests. Purchaser reserves the right to sample and to perform any confirmatory testing deemed necessary to ensure that the wire conforms to the specified requirements.

4.2 Classification of Tests:

All technical requirements are acceptance tests and shall be performed on each lot.

4.3 Sampling and Testing:

Shall be in accordance with AMS 2355 or MAM 2355.

4.4 Reports:

The vendor of wire shall furnish with each shipment a report stating that the wire conforms to the chemical composition and tolerances, and showing the numerical results of tests on each inspection lot to determine conformance to the other acceptance tests requirements. This report shall include the purchase order number, inspection lot number, AMS 4182F, size, and quantity. The report shall also identify the producer, the product form, and the size of the mill product.

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 legibly marked, on one flange of the spool or on a durable tag attached to each spool, with not less than the nominal size, alloy number and temper, lot number, AMS 4182F, and manufacturer's identification.

5.1.2 Straight wire shall be bundled, boxed, or secured on lifts and identified by two durable tags legibly 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 of 5.1.1, legibly marked on a durable tag attached to each coil or directly on one flange of each spool.

5.1.4 Wire shall be prepared for shipment in accordance with ASTM B 660 and in compliance with applicable rules and regulations pertaining to the handling, packaging, and transportation of the wire to ensure carrier acceptance and safe delivery.

6. ACKNOWLEDGMENT:

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

7. REJECTIONS:

Wire not conforming to this specification, or to modifications authorized by purchaser, will be subject to rejection.