AEROSPACE MATERIAL SPECIFICATION

AMS4063	REV. E

Issued 1968-05
Revised 2008-06
Reaffirmed 2013-12

Superseding AMS4063D

Aluminum Alloy, Clad One Side, Sheet
1.25Mn - 0.12Cu (No. 11-0 Brazing Sheet)
Annealed
(Composition similar to UNS A83003)

RATIONALE

AMS4063E has been reaffirmed to comply with the SAE five-year review policy.

1. SCOPE

1.1 Form

This specification covers an aluminum alloy in the form of clad sheet.

1.2 Application

This sheet has been used typically for brazed assemblies which are not subject to heat treatment after joining, 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 forms 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 cancelled and no superseding document has been specified, the last published issue of that document shall apply.

2.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or 724-776-4970 (outside USA), www.sae.org.

AMS2355 Quality Assurance Sampling and Testing of Aluminum Alloys and Magnesium Alloys, Wrought Products, Except Forging Stock, and Rolled, Forged, or Flash Welded Rings

TO PLACE A DOCUMENT ORDER: **Tel: 877-606-7323 (inside USA and Canada)**
Tel: +1 724-776-4970 (outside USA)
Fax: 724-776-0790
Email: CustomerService@sae.org
SAE WEB ADDRESS: **http://www.sae.org**

SAE values your input. To provide feedback on this Technical Report, please visit
http://www.sae.org/technical/standards/AMS4063E

2.2 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.

ASTM B 660 Packaging/Packing of Aluminum and Magnesium Products
ASTM B 666/666M Identification Marking of Aluminum and Magnesium Products

2.3 ANSI Publications

Available from American National Standards Institute, 25 West 43rd Street, New York, NY 10036, Tel: 212-642-4900, www.ansi.org.

ANSI H35.2 Dimensional Tolerances for Aluminum Mill Products
ANSI H35.2M Dimensional Tolerances for Aluminum Mill Products (Metric)

3. TECHNICAL REQUIREMENTS

3.1 Composition

Shall conform to the percentages by weight shown in Tables 1 and 2, determined in accordance with AMS2355.

TABLE 1 - COMPOSITION, CORE (3003)

Element	min	max
Silicon	--	0.6
Iron	--	0.7
Copper	0.05	0.20
Manganese	1.0	1.5
Zinc	--	0.10
Other Elements, each	--	0.05
Other Elements, total	--	0.15
Aluminum	remainder	

TABLE 2 - COMPOSITION, CLADDING (4343)

Element	min	max
Silicon	6.8	8.2
Iron	--	0.8
Copper	--	0.25
Manganese	--	0.10
Zinc	--	0.20
Other Elements, each	--	0.05
Other Elements, total	--	0.15
Aluminum	remainder	

3.2 Condition

Annealed.

3.3 Properties

Sheet shall conform to the following requirements, determined in accordance with AMS2355 on the mill product size.

3.3.1 Tensile Properties

Shall be as specified in Table 3.

TABLE 3A - TENSILE PROPERTIES, INCH/POUND UNITS

Nominal Thickness Inch	Tensile Strength ksi, max	Elongation in 2 Inches %, min
0.006 to 0.007, incl	20.0	12
Over 0.007 to 0.012, incl	20.0	15
Over 0.012 to 0.031, incl	20.0	18
Over 0.031 to 0.050, incl	20.0	20
Over 0.050 to 0.249, incl	20.0	13

TABLE 3B - TENSILE PROPERTIES, SI UNITS

Nominal Thickness Millimeters	Tensile Strength MPa, max	Elongation in 50.8 mm %, min
0.15 to 0.18, incl	138	12
Over 0.18 to 0.30, incl	138	15
Over 0.30 to 0.79, incl	138	18
Over 0.79 to 1.27, incl	138	20
Over 1.27 to 6.32, incl	138	13

3.3.2 Bending

Sheet shall withstand, without cracking, bending at room temperature flat on itself with axis of bend parallel to the direction of rolling. The clad side may be either the convex or concave side of the sheet for bending tests.

3.3.3 Cladding

Shall be applied to only one face of the core.

3.3.3.1 Cladding Thickness

After rolling, the average cladding thickness shall be as specified in Table 4.

TABLE 4 - MINIMUM AVERAGE CLADDING THICKNESS

Total Thickness of Composite Product Inch	Total Thickness of Composite Product Millimeters	Cladding Thickness % of Total Thickness min Average
Up to 0.063, incl	Up to 1.60, incl	8
Over 0.063 to 0.250, excl	Over 1.60 to 6.35, excl	4

3.4 Quality

Sheet, 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 sheet.

3.5 Tolerances

Shall conform to all applicable requirements of ANSI H35.2 or ANSI H35.2M.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for Inspection

The vendor of sheet 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 sheet conforms to specified requirements.

4.2 Classification of Tests

4.2.1 Acceptance Tests

Composition (3.1), tensile properties (3.3.1), and tolerances (3.5) are acceptance tests and, except for composition, shall be performed on each lot.

4.2.2 Periodic Tests

Bending (3.3.2) and cladding thickness (3.3.3.1) are periodic tests and shall be performed at a frequency selected by the vendor unless frequency of testing is specified by purchaser.

4.3 Sampling and Testing

Shall be in accordance with AMS2355.

4.4 Reports

The vendor of clad sheet shall furnish with each shipment a report stating that the sheet conforms to the composition and showing the results of tests to determine conformance to the other acceptance test requirements and, when performed, to the periodic test requirements. This report shall include the purchase order number, lot number, AMS4063E, 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 AMS2355.

5. PREPARATION FOR DELIVERY

5.1 Identification

Shall be in accordance with ASTM B 666/666M.

5.2 Packaging

5.2.1 Product shall be protected from damage during storage and shipment by a method determined by vendor unless specified by purchaser. Examples of typical protective methods include but are not limited to interleaving with paper or oiling of the surface.

5.2.2 Sheet 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 sheet to ensure carrier acceptance and safe delivery.

6. ACKNOWLEDGMENT

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