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

AEROSPACE MATERIAL SPECIFICATION

AMS 4063A
Superseding AMS 4063
Issued 5-1-68
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ALUMINUM ALLOY SHEET, CLAD ONE SIDE
1.25Mn - 0.12Cu (No. 11-0 Brazing Sheet)

1. SCOPE:

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

1.2 Application: Primarily for brazed assemblies which are not subject to heat treatment after joining.

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 2202 - Tolerances, Aluminum-Base and Magnesium-Base Alloy Sheet and Plate
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:

Core (3003)	min	max	Cladding (4343)	min	max
Manganese	1.0	1.5	Silicon	6.8	8.2
Copper	0.05	0.20	Iron	--	0.8
Iron	--	0.7	Copper	--	0.25
Silicon	--	0.6	Zinc	--	0.20
Zinc	--	0.10	Manganese	--	0.10
Other Impurities, each	--	0.05	Other Impurities, each	--	0.05
Other Impurities, total	--	0.15	Other Impurities, total	--	0.15
Aluminum	remainder		Aluminum	remainder	

3.2 Condition: Annealed.

Printed in U.S.A.

3.3 Properties: Sheet shall conform to the following requirements, determined in accordance with AMS 2355:

3.3.1 Tensile Properties: Shall be as specified in Table I.

TABLE I

Nominal Thickness Inch	Tensile Strength psi, max	Elongation in 2 in. %, min
0.006 to 0.007, incl	20,000	12
Over 0.007 to 0.012, incl	20,000	15
Over 0.012 to 0.031, incl	20,000	18
Over 0.031 to 0.050, incl	20,000	20
Over 0.050 to 0.249, incl	20,000	23

TABLE I (SI)

Nominal Thickness Millimetres	Tensile Strength MPa, max	Elongation in 50 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	23

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.

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 follows:

Total Thickness of Composite Product		Cladding Thickness % of Total Thickness
Inch	(Millimetres)	min avg
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 internal and external imperfections detrimental to usage of the sheet.

3.5 Tolerances: Unless otherwise specified, tolerances shall conform to all applicable requirements of AMS 2202.

4. QUALITY ASSURANCE PROVISIONS:

4.1 Responsibility for Inspection: The vendor of sheet shall supply all samples 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 perform such confirmatory testing as he deems necessary to ensure that the sheet conforms to the requirements of this specification.

4.2 Classification of Tests:

4.2.1 Acceptance Tests: Tests to determine conformance to requirements for composition (3.1), tensile properties (3.3.1) and tolerances (3.5) are classified as acceptance tests and shall be performed on each lot.

4.2.2 Periodic Tests: Tests to determine conformance to requirements for bending (3.3.2) and cladding thickness (3.3.3.1) are classified as periodic tests and shall be performed at a frequency selected by the vendor unless frequency of testing is specified by purchaser.

4.3 Sampling: Shall be in accordance with AMS 2355.

4.4 Reports:

4.4.1 The vendor of sheet shall furnish with each shipment three copies of a report stating that the sheet 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 sheet, part number, and quantity. When sheet for making parts is produced or purchased by the parts vendor, that vendor shall inspect each lot of sheet to determine conformance to the requirements of this specification, and shall include in the report a statement that the sheet conforms, or shall include copies of laboratory reports showing the results of tests to determine conformance.

4.5 Resampling and Retesting: Shall be in accordance with AMS 2355.

5. PREPARATION FOR DELIVERY:

5.1 Identification: Each sheet shall be marked on the clad face, in the respective location indicated below, with the brazing sheet number and temper, AMS 4063, manufacturer's identification, and nominal thickness. 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 sheet or its performance.

5.1.1 Flat Sheet Under 6 In. (152 mm) Wide: Shall be marked in one or more lengthwise rows of characters recurring at intervals not greater than 3 ft (914 mm).