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400 Commonwealth Dr., Warrendale, PA 15096-0001

AEROSPACE MATERIAL SPECIFICATION

Submitted for recognition as an American National Standard

AMS 4064C

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Superseding AMS 4064B

ALUMINUM ALLOY SHEET, CLAD TWO SIDES 1.25Mn - 0.12Cu (No. 12-0 Brazing Sheet) Annealed

UNS A83003

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 SAE publications 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 2202 - Tolerances, Aluminum Alloy and Magnesium Alloy Sheet and Plate
MAM 2202 - Tolerances, Metric, Aluminum Alloy and Magnesium Alloy Sheet and Plate
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

2.2 ASTM Publications: Available from ASTM, 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:

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.

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

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

TABLE I

Nominal Thickness Inch	Tensile Strength psi, maximum	Elongation in 2 inches %, minimum
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, maximum	Elongation in 50.8 mm %, minimum
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 both faces of the core.

3.3.3.1 Cladding Thickness: After rolling, the average cladding thickness shall Ø be as follows:

Total Thickness of Composite Product		Cladding Thickness Per Side % of Total Thickness
Inch	Millimetres	
Up to 0.063, incl	Up to 1.60, incl	8 - 12
Over 0.063 to 0.250, excl	Over 1.60 to 6.35, excl	4 - 8

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 AMS 2202 or MAM 2202.

4. QUALITY ASSURANCE PROVISIONS:

4.1 Responsibility for Inspection: The vendor of sheet shall supply all samples Ø 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 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 or MAM 2355.

4.4 Reports: The vendor of sheet shall furnish with each shipment a report Ø stating that the sheet conforms to the chemical composition and other technical requirements of this specification. This report shall include the purchase order number, lot number, AMS 4064B, size, and quantity.

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

5. PREPARATION FOR DELIVERY:

5.1 Identification: Each sheet shall be marked on one face, in the respective location indicated below, with the brazing sheet number, temper, AMS 4064, manufacturer's identification, and nominal thickness. The characters shall be of such size as to be 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 Inches (152 mm) Wide: Shall be marked in one or more lengthwise rows of characters recurring at intervals not greater than 3 feet (914 mm).

5.1.2 Flat Sheet 6 - 48 Inches (152 - 1219 mm), Incl, Wide and 36 - 200 Inches (914 - 5080 mm), Incl, Long: Shall be marked in lengthwise rows of characters recurring at intervals not greater than 3 feet (914 mm), the rows being spaced approximately 6 inches (152 mm) on centers across the width and staggered. Every third row shall show the manufacturer's identification and nominal thickness. The other rows shall show the brazing sheet number, temper, and AMS 4064.

5.1.3 Coiled Sheet: Shall be marked near both the outside and inside ends of the coil; the markings shall be applied as in 5.1 or shall appear on a durable tag or label attached to the coil and marked with the information of 5.1. When the sheet is wound on cores, the tag or label may be attached to the core.

5.2 Protective Treatment: Flat sheet shall be protected, during shipment and storage, by interleaving with suitable paper sheets. Coiled sheet shall not be interleaved.

5.3 Packaging:

5.3.1 Sheet shall be prepared for shipment in accordance with commercial practice 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. Packaging shall conform to carrier rules and regulations applicable to the mode of transportation.

5.3.2 Ø For direct U.S. Military procurement, packaging shall be in accordance with ASTM B660, Commercial Level, unless Level A is specified in the request for procurement.

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

7. REJECTIONS: Sheet not conforming to this specification, or to modifications authorized by purchaser, will be subject to rejection.