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INTERNATIONAL
400 Commonwealth Drive, Warrendale, PA 15096-0001

AEROSPACE MATERIAL SPECIFICATION

SAE AMS 4279A

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Submitted for recognition as an American National Standard

Aluminum Alloy, Alclad Sheet
4.4Cu - 1.5Mg - 0.60Mn (2024; -T4 Flat Sheet)
Solution Heat Treated, High Formability

UNS A82024

1. SCOPE:

1.1 Form:

This specification covers an aluminum alloy in the form of sheet, clad on both sides with a different alloy.

1.2 Application:

This sheet has been used typically for formed structural parts of good strength, but usage is not limited to such applications.

1.2.1 Certain design and processing procedures may cause this sheet to become susceptible to stress-corrosion cracking; ARP823 recommends practices to minimize such conditions.

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 publications shall be the issue in effect on the date of the purchase order.

QUESTIONS REGARDING THIS DOCUMENT: (724) 772-7154 FAX: (724) 776-0243
TO PLACE A DOCUMENT ORDER: (724) 776-4970 FAX: (724) 776-0790
SAE WEB ADDRESS: http://www.sae.org

2.1 SAE Publications:

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

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
AMS 2772 Heat Treatment of Aluminum Alloy Raw Materials

ARP823 Minimizing Stress-Corrosion Cracking in Wrought Heat-Treatable Aluminum Alloy Products

2.2 ASTM Publications:

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

ASTM B 666/B 666M Identification Marking of Aluminum Products

2.3 ANSI Publications:

Available from ANSI, 11 West 42nd Street, New York, NY 10036-8002.

ANSI H 35.2 Dimensional Tolerances for Aluminum Mill Products
ANSI H 35.2M Dimensional Tolerances for Aluminum Mill Products (Metric)

3. TECHNICAL REQUIREMENTS:

3.1 Composition:

Shall conform to the percentages by weight shown in Table 1 and Table 2, determined in accordance with AMS 2355 or MAM 2355.

TABLE 1 - Composition, Core (2024)

Element	min	max
Copper	3.8	4.9
Magnesium	1.2	1.8
Manganese	0.30	0.9
Iron	--	0.50
Silicon	--	0.50
Zinc	--	0.25
Titanium	--	0.15
Chromium	--	0.10
Other Impurities, each	--	0.05
Other Impurities, total	--	0.15
Aluminum	remainder	

TABLE 2 - Composition, Cladding (1230)

Element	min	max
Iron + Silicon	--	0.7
Copper	--	0.10
Zinc	--	0.10
Manganese	--	0.05
Magnesium	--	0.05
Vanadium	--	0.05
Titanium	--	0.03
Other Impurities, each	--	0.03
Aluminum by difference	99.3	--

3.2 Condition:

Solution heat treated in accordance with AMS 2772.

3.3 Properties:

This sheet shall conform to the following requirements determined in accordance with AMS 2355 or MAM 2355:

3.3.1 Tensile Properties: Shall be as shown in Table 3.

TABLE 3A - Minimum Tensile Properties, Inch/Pound Units

Nominal Thickness Inch	Tensile Strength ksi	Yield Strength at 0.2% Offset ksi	Elongation in 2 Inches or 4D %
Over 0.020 to 0.062, incl	58	36	15
Over 0.062 to 0.128, incl	61	38	15

TABLE 3B - Minimum Tensile Properties, SI Units

Nominal Thickness Millimeters	Tensile Strength MPa	Yield Strength at 0.2% Offset MPa	Elongation in 50.8 mm or 4D %
Over 0.51 to 1.57, incl	400	248	15
Over 1.57 to 3.25, incl	421	262	15

3.3.2 Bending: Sheet shall withstand, without cracking, bending at room temperature through an angle of 180 degrees around a diameter equal to the bend factor shown in Table 4 times the nominal thickness of the product with axis of bend parallel to the direction of rolling.

TABLE 4 - Bending Parameters

Nominal Thickness Inch	Nominal Thickness Millimeters	Bend Factor
Over 0.020 to 0.051, incl	Over 0.51 to 1.30, incl	2
Over 0.051 to 0.128, incl	Over 1.30 to 3.25, incl	3

3.3.3 Cladding Thickness: After rolling, the average cladding thickness shall be as shown in Table 5.

TABLE 5 - Average Cladding Thickness

Nominal Thickness Inch	Nominal Thickness Millimeters	Average Cladding Thickness Per Side % of Thickness minimum
Over 0.020 to 0.062, incl	Over 0.51 to 1.57, incl	4.0
Over 0.062 to 0.128, incl	Over 1.57 to 3.25, incl	2.0

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 product.

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 the 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), bending parameters (3.3.2), and tolerances (3.5) are acceptance tests and, except for composition, shall be performed on each inspection lot.

4.2.2 Periodic Tests: Cladding thickness (3.3.3) is a periodic test and shall be performed at a frequency selected by the vendor unless frequency of testing is specified by purchaser.