

**AEROSPACE
MATERIAL
SPECIFICATION**

SAE AMS 4279

REV. B

Issued	1998-03
Revised	2006-06
Reaffirmed	2011-11
Superseding AMS 4279A	

Aluminum Alloy, Alclad Sheet
4.4Cu - 1.5Mg - 0.60Mn (2024-T4 Flat Sheet)
Solution Heat Treated, High Formability
(Composition similar to UNS A82024)

RATIONALE

This document 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 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 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.

- | | |
|----------|--|
| AMS 2355 | Quality Assurance Sampling and Testing, Aluminum Alloys and Magnesium Alloys, Wrought Products, Except Forging Stock, and Rolled, Forged or Flash Welded Rings |
| AMS 2772 | Heat Treatment of Aluminum Alloy Raw Materials |
| ARP823 | Minimizing Stress-Corrosion Cracking in Wrought Heat-Treatable Aluminum Alloy Products |

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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/B 666M	Identification Marking of Aluminum Products
ASTM E 290	Standard Test Methods for Bend Testing of Material for Ductility

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 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.

TABLE 1 - COMPOSITION, CORE (2024)

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

TABLE 2 - COMPOSITION, CLADDING (1230)

Element	min	max
Iron + Silicon	--	0.7
Copper	--	0.10
Manganese	--	0.05
Magnesium	--	0.05
Zinc	--	0.10
Titanium	--	0.03
Vanadium	--	0.05
Other Elements, 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:

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

Specimens nominally 0.750 inch (19.06 mm) in width, shall withstand without cracking when examined using at least 10X magnification, bending in accordance with ASTM E290 through a minimum 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.

4.3 Sampling and Testing

Shall be in accordance with AMS 2355.

4.4 Reports

The vendor of sheet shall furnish with each shipment a report stating that the sheet conforms to the composition and tolerances and showing the numerical results of tests on each inspection lot to determine conformance to the other acceptance test requirements. This report shall include the purchase order number, inspection lot number, AMS 4279B, size, and quantity. The report shall also include the producer, the product form, and the size of the mill product.

4.5 Resampling and Retesting

Shall be in accordance with AMS 2355.

5. PREPARATION FOR DELIVERY

5.1 Identification

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

5.2 Packaging

5.2.1 Sheet shall be protected, during shipment and storage, by interleaving with paper sheets.

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 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.