



AEROSPACE MATERIAL SPECIFICATION

AMS4382™**REV. E**

Issued 1969-05
Reaffirmed 2018-11
Revised 2026-03

Superseding AMS4382D

Magnesium Alloy, Plate, Extra Flat,
3.0Al - 1.0Zn - 0.20Mn (AZ31B-0),
Annealed
(Composition similar to UNS M11311)

RATIONALE

AMS4382E results from a Five-Year Review and update of this specification with changes to prohibit unauthorized exceptions (see 3.3.1.1, 3.6, 4.4.1, 5.1.1, and 8.4), update Form (see 1.1), correct values in heading of Table 7B, update Applicable Documents (see Section 2), Identification (see 5.1), and Ordering Information (see 8.5), relocate Definitions (see 2.3), and allow the use of the immediate prior specification revision (see 8.3).

1. SCOPE

1.1 Form

This specification covers a magnesium alloy in the form of plate 0.250 to 6.000 inches (6.35 to 152.40 mm), inclusive, in nominal thickness (see 8.5).

1.2 Application

This product has been used typically for low-density, low-strength parts requiring rigidity and a high degree of flatness, dimensional stability, and weldability, 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 (U.S. and Canada only) or +1 724-776-4970 (outside U.S. and Canada), www.sae.org.

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

AS7766 Terms Used in Aerospace Metals Specifications

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<https://www.sae.org/standards/content/AMS4382E/>

Documents

Standard, visit Sharing Hub

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 B660 Packaging/Packing of Aluminum and Magnesium Products

ASTM B666/B666M Identification Marking of Aluminum and Magnesium Products

2.3 Definitions

Terms used in AMS are defined in AS7766.

3. TECHNICAL REQUIREMENTS

3.1 Composition

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

Table 1 - Composition

Element	Min	Max
Aluminum	2.5	3.5
Zinc	0.7	1.3
Manganese	0.20	1.0
Silicon	--	0.05
Copper	--	0.05
Calcium	--	0.04
Iron	--	0.005
Nickel	--	0.005
Other Elements, each (see 3.1.1)	--	0.10
Other Elements, total (see 3.1.1)	--	0.30
Magnesium	remainder	

3.1.1 Determination not required for routine acceptance.

3.2 Condition

Annealed.

3.3 Properties

Plate shall conform to the following requirements, determined in accordance with AMS2355:

3.3.1 Tensile Properties

Shall be as shown in Table 2 for plate 0.250 to 6.000 inches (6.35 to 152.40 mm), inclusive, in nominal thickness.

Table 2 - Minimum tensile properties

Property	Value
Tensile Strength	30.0 ksi (207 MPa)
Yield Strength at 0.2% Offset	10.0 ksi (69 MPa)
Elongation in 2 Inches (50.8 mm) or 4D	9%

3.3.1.1 Tensile property requirements for plate over 6.000 inches (152.40 mm) in nominal thickness shall be as agreed upon by the purchaser and producer and reported per 4.4.1 (see 8.5).

3.4 Quality

Plate, as received by the purchaser, shall be uniform in quality and condition, sound, and free from foreign materials and from imperfections detrimental to usage of the plate.

3.5 Tolerances

Shall conform to the following requirements as applicable:

3.5.1 Thickness

Thickness variation within a plate shall not exceed ± 0.010 inch (± 0.25 mm). Allowable thickness variation from plate to plate shall be as specified in Table 3.

Table 3A - Thickness tolerances, inch/pound units

Nominal Thickness Inches	Tolerance Inches Plus and Minus
0.250 to 0.750, incl	0.010
Over 0.750 to 1.250, incl	0.017
Over 1.250 to 2.000, incl	0.025
Over 2.000 to 3.000, incl	0.050
Over 3.000 to 3.250, incl	0.065
Over 3.250 to 3.500, incl	0.080
Over 3.500 to 4.000, incl	0.110
Over 4.000 to 5.000, incl	0.125
Over 5.000 to 6.000, incl	0.135

Table 3B - Thickness tolerances, SI units

Nominal Thickness Millimeters	Tolerance Millimeters Plus and Minus
6.35 to 19.05, incl	0.25
Over 19.05 to 31.75, incl	0.43
Over 31.75 to 50.80, incl	0.64
Over 50.80 to 76.20, incl	1.27
Over 76.20 to 82.55, incl	1.65
Over 82.55 to 88.90, incl	2.03
Over 88.90 to 101.60, incl	2.79
Over 101.60 to 127.00, incl	3.18
Over 127.00 to 152.40, incl	3.43

3.5.2 Width and Length

Shall be as specified in Table 4.