



AEROSPACE MATERIAL SPECIFICATION

AMS4382™**REV. D**

Issued 1969-05
Revised 2006-01
Reaffirmed 2018-11

Superseding AMS4382C

Magnesium Alloy, Plate, Extra Flat
3.0Al – 1.0Zn – 0.20Mn (AZ31B-0)
Annealed

(Composition similar to UNS M11311)

RATIONALE

This document has been reaffirmed to comply with the SAE five-year review policy.

1. SCOPE:

1.1 Form:

This specification covers a magnesium alloy in the form of plate.

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.

SAE Technical Standards Board Rules provide that: "This report is published by SAE to advance the state of technical and engineering sciences. The use of this report is entirely voluntary, and its applicability and suitability for any particular use, including any patent infringement arising therefrom, is the sole responsibility of the user."

SAE reviews each technical report at least every five years at which time it may be revised, reaffirmed, stabilized, or cancelled. SAE invites your written comments and suggestions.

Copyright © 2018 SAE International

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of SAE.

TO PLACE A DOCUMENT ORDER: Tel: 877-606-7323 (inside USA and Canada)
Tel: +1 724-776-4970 (outside USA)
Fax: 724-776-0790
Email: CustomerService@sae.org
<http://www.sae.org>

SAE WEB ADDRESS:

Full document details: SAE AMS4382D

SAE values your input. To provide feedback on this Technical Report, please visit <http://standards.sae.org/AMS4382D>

Documents
Document Sharing Hub

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 of Aluminum Alloys and Magnesium Alloys, Wrought Products (Except Forging Stock) and Flash Welded Rings
AMS 2811 Identification, Aluminum and Magnesium Alloy Wrought Products

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

3. TECHNICAL REQUIREMENTS:

3.1 Composition:

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

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 (3.1.1)	--	0.10
Other Elements, total (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 AMS 2355.

- 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 purchaser and vendor.

3.4 Quality:

Plate, 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 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