



AEROSPACE MATERIAL SPECIFICATION

AMS4485™**REV. B**Issued 2012-12
Revised 2024-12

Superseding AMS4485A

Magnesium Alloy, Extrusions
4.0Y - 2.25Nd - 0.5Zr (WE43C - T5)
Precipitation Heat Treated
(Composition similar to UNS M18434)

RATIONALE

AMS4485B results from a Five-Year Review and update of this specification with changes to update general agreement wording to prohibit unauthorized exceptions (see 3.4.2, 3.7, 5.1.1, and 8.4), relocate Definitions (see 2.3), update Applicable Documents (see Section 2) and Corrosion Resistance (see 3.4.1 and 3.4.3.1), 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 extruded bars, rods, wire, tubing, and profiles from 0.039 to 4.75 inches (1.0 to 120.7 mm), inclusive, in nominal thickness (see 8.5).

1.2 Application

These extrusions have been used typically for parts requiring a combination of light weight, high yield strength up to 480 °F (250 °C), relatively high corrosion resistance, and good flammability resistance for magnesium alloys, 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.

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Full document details: SAE AMS4485B

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Documents

Standard, visit 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 +1 724-776-4970 (outside USA), www.sae.org.

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

AMS2750 Pyrometry

AS7766 Terms Used in Aerospace Metals Specifications

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 B117 Operating Salt Spray (Fog) Apparatus

ASTM B557/B557M Tension Testing Wrought and Cast Aluminum- and Magnesium-Alloy Products

ASTM B660 Packaging/Packing of Aluminum and Magnesium Products

ASTM B666/B666M Identification Marking of Aluminum and Magnesium Products

ASTM B954 Analysis of Magnesium and Magnesium Alloys by Atomic Emission Spectrometry

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 by spectrochemical methods in accordance with ASTM B954 or by other analytical methods acceptable to the purchaser.

Table 1 - Composition

Element	Min	Max
Yttrium	3.7	4.3
Neodymium	2.0	2.5
Zinc	--	0.06
Zirconium	0.2	1.0
Samarium (3.1.1)	--	0.04
Ytterbium	--	0.02
Gadolinium + Erbium + Dysprosium (3.1.1)	0.3	1.0
Other Rare Earths	--	1.0
Manganese	--	0.03
Copper	--	0.02
Iron	--	0.005
Nickel	--	0.0020
Other Elements, each (3.1.2)	--	0.01
Magnesium	remainder	