AEROSPACE MATERIAL SPECIFICATION

AMS4290™ REV. M

Issued 1939-12
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Superseding AMS4290L

Aluminum Alloy, Die Castings 9.5Si - 0.50Mg (360.0-F) As Cast

(Composition similar to UNS A03600)

RATIONALE

AMS4290M revises Condition (3.2), Radiographic Standards (Table 2), Method and Frequency of Inspection (3.5.2), and is a Five-Year Review and update of this specification.

1. SCOPE

1.1 Form

This specification covers an aluminum alloy in the form of die castings.

1.2 Application

These castings have been used typically for components requiring moderate strength at room temperature, but usage is not limited to such applications.

2. REFERENCES

2.1 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.

2.1.1 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.

AMS2175 Castings, Classification and Inspection of

AMS2694 In-Process Welding of Castings

AMS2804 Identification Castings

ARP1917 Clarification of Terms Used in Aerospace Metals Specifications

TO PLACE A DOCUMENT ORDER: Tel: 877-606-7323 (inside USA and Canada)
Tel: +1 724-776-4970 (outside USA)
Fax: 724-776-0790
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SAE WEB ADDRESS: http://www.sae.org

SAE values your input. To provide feedback on this Technical Report, please visit
http://standards.sae.org/AMS4290M

2.1.2 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 E29	Using Significant Digits in Test Data to Determine Conformance with Specifications
ASTM E34	Chemical Analysis of Aluminum and Aluminum-Base Alloys
ASTM E505	Reference Radiographs for Inspection of Aluminum and Magnesium Die Castings
ASTM E607	Atomic Emission Spectrometric Analysis of Aluminum Alloys by the Point-to-Plane Technique, Nitrogen Atmosphere
ASTM E716	Sampling Aluminum and its Alloys for Spectrochemical Analysis
ASTM E1251	Analysis of Aluminum and Aluminum Alloys by Atomic Emission Spectrometry
ASTM E1417/E1417M	Liquid Penetrant Testing
ASTM E1742/E1742M	Radiographic Examination

2.1.3 ANSI Publications

Copies of these documents are available online at http://webstore.ansi.org/.

ANSI H35.1/H35.1M	Standard Alloy and Temper Designation System for Aluminum

3. TECHNICAL REQUIREMENTS

3.1 Composition

Shall conform to the percentages by weight shown in Table 1, determined by wet chemical methods in accordance with ASTM E34, by spectrochemical methods in accordance with ASTM E607 or ASTM E1251, or by other analytical methods acceptable to purchaser (see 3.4).

Table 1 - Composition

Element	Min	Max
Silicon (3.1.1)	9.0	10.0
Magnesium (3.1.1)	0.40	0.6
Iron	--	2.0
Copper	--	0.6
Nickel	--	0.50
Zinc	--	0.50
Manganese	--	0.35
Tin	--	0.15
Other Elements, total	--	0.25
Aluminum	remainder	

3.1.1 When low-pressure die casting is permitted by purchaser, silicon may be 11.0 to 13.0% in which case magnesium shall be not higher than 0.10% (413.0 Alloy).

3.1.2 Test results may be rounded in accordance with the “rounding off” method of ASTM E29.