



AEROSPACE MATERIAL SPECIFICATION

AMS4291™**REV. K**

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Superseding AMS4291J

Aluminum Alloy, Die Castings
8.5Si - 3.5Cu (A380.0-F)
As Cast

(Composition similar to UNS A13800)

RATIONALE

AMS4291K has been declared "STABILIZED" by AMS Committee D Nonferrous Alloys. This document will no longer be updated and may no longer represent standard industry practice. This document contains mature technology that is not expected to change and thus no further revisions are anticipated.

NOTE: Previously, this document was revised. The last technical update of this document occurred in January 2017. Users of this document should refer to the cognizant engineering organization for disposition of any issues with reports/certifications to the specification, including exceptions listed on the certification. In many cases, the purchaser may represent a sub-tier supplier and not the cognizant engineering organization.

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Full document details: SAE AMS4291K

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Documents



Standard, visit Sharing Hub

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 of intricate shape, but not having thin sections, but usage is not limited to such applications. This alloy has good casting characteristics by cold-chamber die casting and fair resistance to corrosion.

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

AMS2694	In-Process Welding of Castings
AMS2804	Identification Castings
ARP1917	Clarification of 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 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 of Aluminum and Aluminum 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

2.3 ANSI Accredited 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
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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 and 8.2).

Table 1 - Composition

Element	Min	Max
Silicon	7.5	9.5
Iron	--	1.3
Copper	3.0	4.0
Manganese	--	0.50
Magnesium	--	0.10
Nickel	--	0.50
Zinc	--	3.0
Tin	--	0.35
Other Elements, total	--	0.50
Aluminum	remainder	

3.1.1 Test results may be rounded in accordance with the "rounding off" method of ASTM E29.

3.2 Condition

As cast (F temper) as defined in ANSI H35.1/H35.1M.