



Standard Practice for Heat Treatment of Aluminum-Alloy Castings from All Processes¹

This standard is issued under the fixed designation B917/B917M; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope*

1.1 This practice covers, when specified by material specification or purchase order, the heat treatment of aluminum alloy castings from all casting processes.

1.1.1 The heat treatment of aluminum alloy castings used in specific aerospace applications is covered in AMS 2771² and specific AMS² material specifications.

1.1.2 The heat treatment of wrought aluminum alloys is covered in Practice B918/B918M.

1.2 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.

1.2.1 *SI Units*—The SI units are shown in brackets or in separate tables.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 The following documents of the issue in effect on the date of material purchase form a part of this specification to the extent referenced herein:

2.2 *ASTM Standards*:³

¹ This practice is under the jurisdiction of ASTM Committee B07 on Light Metals and Alloys and is the direct responsibility of Subcommittee B07.01 on Aluminum Alloy Ingots and Castings.

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² Available from Society of Automotive Engineers (SAE), 400 Commonwealth Dr., Warrendale, PA 15096-0001, <http://www.sae.org>.

³ For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

B26/B26M Specification for Aluminum-Alloy Sand Castings

B108/B108M Specification for Aluminum-Alloy Permanent Mold Castings

B275 Practice for Codification of Certain Zinc, Tin and Lead Die Castings

B557 Test Methods for Tension Testing Wrought and Cast Aluminum- and Magnesium-Alloy Products

B557M Test Methods for Tension Testing Wrought and Cast Aluminum- and Magnesium-Alloy Products (Metric)

B618/B618M Specification for Aluminum-Alloy Investment Castings

B686/B686M Specification for Aluminum Alloy Castings, High-Strength

B881 Terminology Relating to Aluminum- and Magnesium-Alloy Products

B918/B918M Practice for Heat Treatment of Wrought Aluminum Alloys

B955/B955M Specification for Aluminum-Alloy Centrifugal Castings

B969 Specification for Aluminum-Alloy Castings Produced by the Squeeze Casting, Thixocast and Rheocast Semi-Solid Casting Processes

G110 Practice for Evaluating Intergranular Corrosion Resistance of Heat Treatable Aluminum Alloys by Immersion in Sodium Chloride + Hydrogen Peroxide Solution

2.3 *ANSI Standard*:

H35.1 Alloy and Temper Designation Systems for Aluminum⁴

2.4 *SAE Standard*:

AMS 2771 Heat Treatment of Aluminum Alloy Castings

3. Terminology

3.1 *Definitions*:

3.1.1 Refer to Terminology B881 for terminology relating to the heat treatment of castings.

⁴ Available from Aluminum Association, Inc., 1525 Wilson Blvd., Suite 600, Arlington, VA 22209, <http://www.aluminum.org>.

*A Summary of Changes section appears at the end of this standard