Designation: B 108 – 03a

Standard Specification for Aluminum-Alloy Permanent Mold Castings[1]

This standard is issued under the fixed designation B 108; 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 Department of Defense.

1. Scope*

1.1 This specification[2] covers aluminum-alloy permanent mold castings designated as shown in Table 1.

1.2 This specification is not intended for aluminum-alloy permanent mold castings used in aerospace applications.

1.3 Alloy and temper designations are in accordance with ANSI H35.1. The equivalent unified numbering system alloy designations are in accordance with Practice E 527.

1.4 For acceptance criteria for inclusion of new aluminum and aluminum alloys and their properties in this specification, see Annex A1 and Annex A2.

1.5 The values stated in inch-pound units are to be regarded as the standard. The SI values given in parentheses are for information only.

2. Referenced Documents

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

2.2 *ASTM Standards:*

B 179 Specification for Aluminum Alloys in Ingot Form for Castings from all Casting Processes[3]

B 275 Practice for Codification of Certain Nonferrous Metals and Alloys, Cast and Wrought[3]

B 557 Test Methods for Tension Testing Wrought and Cast Aluminum- and Magnesium-Alloy Products[3]

B 660 Practices for Packaging/Packing of Aluminum and Magnesium Products[3]

B 881 Terminology Relating to Aluminum- and Magnesium-Alloy Products[3]

B 917/B 917M Practice for Heat Treatment of Aluminum-Alloy Castings from All Processes[3]

E 29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications[4]

E 34 Test Methods for Chemical Analysis of Aluminum and Aluminum-Base Alloys[5]

E 88 Practice for Sampling Nonferrous Metals and Alloys in Cast Form for Determination of Chemical Composition[5]

E 94 Guide for Radiographic Testing[6]

E 155 Reference Radiographs for Examination of Aluminum and Magnesium Castings[6]

E 165 Test Method for Liquid Penetrant Examination[6]

E 527 Practice for Numbering Metals and Alloys (UNS)[7]

E 607 Test Method for Optical Emission Spectrometric Analysis of Aluminum and Aluminum Alloys by the Point-to-Plane Technique, Nitrogen Atmosphere[8]

E 716 Practices for Sampling Aluminum and Aluminum Alloys for Spectrochemical Analysis[8]

E 1251 Test Method for Optical Emission Spectrometric Analysis of Aluminum and Aluminum Alloys by the Argon Atmosphere, Point-to-Plane, Unipolar Self-Initiating Capacitor Discharge[8]

2.3 *ANSI Standard:*

H35.1 Alloy and Temper Designation Systems for Aluminum[9]

2.4 *Military Standards:*[9]

MIL-STD-129 Marking for Shipment and Storage

MIL-STD-276 Impregnation of Porous Nonferrous Metal Castings

NAVSEA Technical Publication S9074-AR-GIB-010/278[10]

2.5 *AMS Specification:*

AMS 2771 Heat Treatment of Aluminum Alloy Castings[11]

[1] This specification 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.

Current edition approved September 10, 2003. Published September 2003. Originally approved in 1936. Last previous edition approved in 2003 as B 108 – 03.

[2] For ASME Boiler and Pressure Code application see related SB-108.

[3] *Annual Book of ASTM Standards*, Vol 02.02.

[4] *Annual Book of ASTM Standards*, Vol 14.02.

[5] *Annual Book of ASTM Standards*, Vol 03.05.

[6] *Annual Book of ASTM Standards*, Vol 03.03.

[7] *Annual Book of ASTM Standards*, Vol 01.01.

[8] *Annual Book of ASTM Standards*, Vol 03.06.

[9] Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036.

[10] Available from Standardization Documents Order Desk, DODSSP, Bldg. 4, Section D, 700 Robbins Ave., Philadelphia, PA 19111-5094. Attn: NPODS.

[11] Available from Society of Automotive Engineers (SAE), 400 Commonwealth Dr., Warrendale, PA 15096-0001.

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

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