Designation: B806 – 14 (Reapproved 2022)

Standard Specification for Copper Alloy Permanent Mold Castings for General Applications[1]

This standard is issued under the fixed designation B806; 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 specification establishes requirements for copper alloy[2] permanent mold castings for general applications. Nominal compositions of the alloys under this specification are shown in Table 1.

1.2 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.3 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

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

2.2 *ASTM Standards:*[3]

B208 Practice for Preparing Tension Test Specimens for Copper Alloy Sand, Permanent Mold, Centrifugal, and Continuous Castings

B824 Specification for General Requirements for Copper Alloy Castings

E527 Practice for Numbering Metals and Alloys in the Unified Numbering System (UNS)

3. Ordering Information

3.1 Orders for casting under this specification shall include the following information:

3.1.1 Quantity of castings required,

3.1.2 Copper Alloy UNS number (Table 2) and temper (as-cast, heat-treated, and so forth), (4.2),

3.1.3 Specification number, title, and year of issue.

3.1.4 Pattern or drawing number, and condition (cast, machined, and so forth),

3.1.5 Pressure test requirements, if specified in the purchase order (Specification B824),

3.1.6 Soundness requirements, if specified in the purchase order (Specification B824),

3.1.7 Repair of castings (Section 7),

3.1.8 Certification, if specified in the purchase order (Specification B824),

3.1.9 Foundry test report, if specified in the purchase order (Specification B824),

3.1.10 Witness inspection, if specified in the purchase order (Specification B824),

3.1.11 Product marking, if specified in the purchase order (Specification B824), and

3.1.12 Castings for Seawater Service (Section 4).

3.2 When material is purchased for agencies of the U.S. government, the Supplementary Requirements of Specification B824 may be specified.

4. Materials and Manufacture

4.1 For better corrosion resistance in sea water applications, castings in Copper Alloy UNS No. C95800 shall be given a temper anneal heat treatment at 1250 °F ± 50 °F (675 °C ± 10 °C) for 6 h minimum. Cooling shall be the fastest means possible that will not cause excess distortion or cracking. Propeller castings shall be exempt from this requirement.

5. Chemical Composition

5.1 The castings shall conform to the chemical requirements specified in Table 2.

[1] This specification is under the jurisdiction of ASTM Committee B05 on Copper and Copper Alloys and is the direct responsibility of Subcommittee B05.05 on Castings and Ingots for Remelting.

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[2] The UNS system for copper and copper alloys (see Practice E527) is a simple expansion of the former standard designation system accomplished by the addition of a prefix "C" and a suffix "00." The suffix can be used to accommodate composition variations of the base alloy.

[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.

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