



Designation: B283/B283M – 17

Standard Specification for Copper and Copper-Alloy Die Forgings (Hot-Pressed)¹

This standard is issued under the fixed designation B283/B283M; 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 the requirements for copper and copper alloy die forgings produced by the hot pressing method. The following copper and copper alloys are included:

Copper or Copper Alloy	Name
UNS No.	
C11000	copper
C14500	copper-tellurium
C14700	copper-sulfur
C27450	plumbing brass
C27451	plumbing brass
C27453	copper zinc alloy
C28500	copper-zinc brass
C35330	lead brass
C36500	lead Muntz metal
C37000	free-cutting Muntz metal
C37700	forging brass
C46400	naval brass
C46750	tin brass
C48200	medium lead naval brass
C48500	lead naval brass
C48600	naval brass
C49250	copper-zinc-bismuth alloy
C49255	copper-zinc-bismuth-nickel alloy
C49260	copper-zinc-bismuth alloy
C49265	copper-zinc-tin-bismuth, low lead
C49300	copper-zinc-tin-bismuth alloy
C49340	copper-zinc-tin-bismuth alloy
C49345	copper-zinc-tin-bismuth, low lead
C49350	copper-zinc-tin-bismuth alloy
C49355	bismuth brass
C61900	aluminum bronze
C62300	aluminum bronze, 9 %
C63000	aluminum-nickel bronze
C63200	aluminum-nickel bronze
C64200	aluminum-silicon bronze
C64210	aluminum-silicon bronze, 6.7 %
C65500	high-silicon bronze (A)
C67500	manganese bronze (A)
C67600	...
C69300	copper-zinc-silicon
C70620	copper-nickel 90-10
C71520	copper-nickel 70-30
C77400	nickel silver, 45-10
C87700	silicon bronze
C87710	silicon bronze

¹ This specification is under the jurisdiction of ASTM Committee B05 on Copper and Copper Alloys and is the direct responsibility of Subcommittee B05.02 on Rod, Bar, Wire, Shapes and Forgings.

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1.2 *Units*—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.

NOTE 1—Nominal composition and relative forgeability ratings are given in [Appendix X1](#). Copper-nickel alloys C70620 and C71520 are intended for welded applications with seawater exposure.

NOTE 2—Guidelines for design and development of forgings are included in [Appendix X2](#).

NOTE 3—Wrought product intended for hot forging is described in Specification [B124/B124M](#).

1.3 The following safety caveat pertains only to Section 10 of this specification. *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.*

1.4 *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 ASTM Standards:²

[B124/B124M](#) Specification for Copper and Copper Alloy Forging Rod, Bar, and Shapes

[B249/B249M](#) Specification for General Requirements for Wrought Copper and Copper-Alloy Rod, Bar, Shapes and Forgings

[B846](#) Terminology for Copper and Copper Alloys

[E8/E8M](#) Test Methods for Tension Testing of Metallic Materials

[E62](#) Test Methods for Chemical Analysis of Copper and

² 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