



Designation: B870 – 21

Standard Specification for Copper-Beryllium Alloy Forgings and Extrusions (UNS Nos. C17500, C17510, and C17540)¹

This standard is issued under the fixed designation B870; 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.

1. Scope*

1.1 This specification establishes the requirements for copper-beryllium alloy forgings and extrusions. The following alloys are specified:

Copper Alloy UNS No.	Nominal Composition, %		
	Beryllium	Cobalt	Nickel
C17500	0.50	2.6	...
C17510	0.40	...	1.8
C17540	0.50	1.5	1.5

1.2 *Units*—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 The following safety hazard caveat pertains to Sections 10 and 11 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, health, and environmental 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

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

[B441 Specification for Copper-Cobalt-Beryllium, Copper-](#)

[Nickel-Beryllium, and Copper-Nickel-Lead-Beryllium Rod and Bar \(UNS Nos. C17500, C17510, and C17465\)](#)

[B601 Classification for Temper Designations for Copper and Copper Alloys—Wrought and Cast](#)

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

[B950 Guide for Editorial Procedures and Form of Product Specifications for Copper and Copper Alloys](#)

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

[E18 Test Methods for Rockwell Hardness of Metallic Materials](#)

[E1004 Test Method for Determining Electrical Conductivity Using the Electromagnetic \(Eddy Current\) Method](#)

3. General Requirements

3.1 The following sections of Specification [B249/B249M](#) form a part of this specification:

3.1.1 Terminology,

3.1.2 Material and Manufacture,

3.1.3 Sampling,

3.1.4 Number of Tests and Retests,

3.1.5 Specimen Preparation,

3.1.6 Significance of Numerical Limits,

3.1.7 Inspection,

3.1.8 Rejection and Rehearing,

3.1.9 Certification,

3.1.10 Test Reports, and

3.1.11 Packaging and Package Marking.

3.2 In addition, when a section with a title identical to that referenced in 3.1, above, appears in this specification, it contains additional requirements that supplement those appearing in Specification [B249/B249M](#).

4. Terminology

4.1 For definitions of terms related to copper and copper alloys, see Terminology [B846](#).

4.2 *Definitions of Terms Specific to This Standard:*

4.2.1 *forging, n*—a metal part worked to a predetermined shape by one or more such processes as hammering, upsetting, pressing, rolling, and so forth.

NOTE 1—Forged and extruded shapes in the context of this specification are generally construed to be large-section products that are round, oval,

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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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