



Standard Specification for Copper-Beryllium Welded Heat Exchanger and Condenser Tube (UNS No. C17510)¹

This standard is issued under the fixed designation B944; 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 UNS No. C17510 welded tube in straight lengths.

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, which are provided for information only and are not considered standard.

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 ASTM Standards:²

B153 Test Method for Expansion (Pin Test) of Copper and Copper-Alloy Pipe and Tubing

B194 Specification for Copper-Beryllium Alloy Plate, Sheet, Strip, and Rolled Bar

B601 Classification for Temper Designations for Copper and Copper Alloys—Wrought and Cast

B846 Terminology for Copper and Copper Alloys

E8/E8M Test Methods for Tension Testing of Metallic Materials

E18 Test Methods for Rockwell Hardness of Metallic Materials

E29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications

E243 Practice for Electromagnetic (Eddy Current) Examination of Copper and Copper-Alloy Tubes

E255 Practice for Sampling Copper and Copper Alloys for

the Determination of Chemical Composition
E1004 Test Method for Determining Electrical Conductivity
Using the Electromagnetic (Eddy-Current) Method

3. Terminology

3.1 For definitions of terms related to copper and copper alloys, refer to Terminology **B846**.

4. Ordering Information

4.1 Include the following information when placing orders for product under this specification, as applicable:

4.1.1 ASTM designation and year of issue,

4.1.2 Copper Alloy UNS No. designation,

4.1.3 Temper (Section 7),

4.1.4 Dimensions, diameter, and wall thickness (Section 12). For tube or pipe, specify either OD/wall, ID/wall, or OD/ID,

4.1.5 Minimum wall thickness or average (nominal) wall thickness,

4.1.6 Tube length, specific or random, and

4.1.7 *Quantity*—Total weight or total length or number of pieces of each size.

4.2 The following options are available and should be specified at the time of placing of the order when required:

4.2.1 Hydrostatic test,

4.2.2 Pneumatic test,

4.2.3 Weld bead conditioning, and

4.2.4 Certification.

5. Materials and Manufacture

5.1 *Materials*—The material of manufacture shall be sheet or strip of UNS Alloy No. C17510 of such purity and soundness to be suitable for processing into the products prescribed herein.

5.2 *Manufacture*—The product shall be manufactured from cold rolled strip which is subsequently formed and welded by an automatic welding process without the addition of filler metal.

6. Chemical Composition

6.1 Material shall conform to the chemical composition requirements in **Table 1** for Copper Alloy UNS No. C17510.

¹ This specification is under the jurisdiction of ASTM Committee B05 on Copper and Copper Alloys and is the direct responsibility of Subcommittee B05.04 on Pipe and Tube.

Current edition approved Oct. 1, 2016. Published October 2016. Originally approved in 2006. Last previous edition approved in 2011 as B944 – 11. DOI: 10.1520/B0944-11R16.

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.