



Standard Specification for Seamless and Welded Copper–Nickel Tubes for Water Desalting Plants¹

This standard is issued under the fixed designation B 552; 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 requirements for seamless and welded copper-nickel tubes from 0.625 to 1.25 in. (15.9 to 31.8 mm) in diameter for use in heat exchangers in water desalting plants. The following alloys are involved: Copper Alloy UNS Nos. C70600, C71500, C71640, and C72200.

1.2 The values stated in inch-pound units are the standard. Values given in parentheses are provided for information only.

1.3 The following safety hazard caveat pertains only to the test methods of Section 16 described in 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 its use.*

2. Referenced Documents

2.1 ASTM Standards:²

- B 111 Specification for Copper and Copper-Alloy Seamless Condenser Tubes and Ferrule Stock
- B 153 Test Method for Expansion (Pin Test) of Copper and Copper-Alloy Pipe and Tubing
- B 543 Specification for Welded Copper and Copper-Alloy Heat Exchanger Tube
- B 601 Classification for Temper Designations for Copper and Copper Alloys—Wrought and Cast
- B 846 Terminology for Copper and Copper Alloys
- E 8 Test Methods for Tension Testing of Metallic Materials
- E 62 Test Methods for Chemical Analysis of Copper and Copper Alloys (Photometric Methods)
- E 76 Test Methods for Chemical Analysis of Nickel-Copper Alloys³

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 May 1, 2004. Published May 2004. Originally approved in 1971. Last previous edition approved in 1998 as B 552 – 98^{ε1}.

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.

³ Withdrawn.

E 118 Test Methods for Chemical Analysis of Copper-Chromium Alloys

E 243 Practice for Electromagnetic (Eddy-Current) Examination of Copper and Copper-Alloy Tubes

E 255 Practice for Sampling Copper and Copper Alloys for Determination of Chemical Composition

E 478 Test Methods for Chemical Analysis of Copper Alloys

3. Terminology

3.1 For definitions of terms related to copper and copper alloys, refer to Terminology B 846.

4. Classification

4.1 Tubes furnished to this specification are classified into two types, as follows:

- 4.1.1 Seamless tube and
- 4.1.2 Welded tube.

5. Ordering Information

5.1 Orders for products under this specification shall include the following information:

- 5.1.1 ASTM designation and year of issue,
- 5.1.2 Copper Alloy UNS number designation,
- 5.1.3 Whether seamless or welded (Section 4),
- 5.1.4 Temper (Section 8),
- 5.1.5 Dimensions: diameter and wall thickness (whether minimum or nominal), and length (Section 12),
- 5.1.6 Total number of pieces of each size, and
- 5.1.7 How furnished, whether in straight lengths or coils.

5.2 The following options are available and, when required, are to be specified at the time of placing of the order:

- 5.2.1 Whether further finish processing of welded tube is needed (6.2.2.1),
- 5.2.2 Hydrostatic test (11.2),
- 5.2.3 Pneumatic test (11.3),
- 5.2.4 Certification (Section 20), and
- 5.2.5 Mill test report (Section 21).

6. Materials and Manufacture

6.1 Material:

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