



Standard Specification for Copper-Alloy Plate and Sheet for Pressure Vessels, Condensers, and Heat Exchangers¹

This standard is issued under the fixed designation B171/B171M; 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 Department of Defense.

1. Scope*

1.1 This specification² establishes the requirements for copper-alloy plate, sheet, and circles cut from plate and sheet for pressure vessels, condensers, and heat exchangers. The following alloys are covered:

Copper Alloy	Previously Used Designation
C36500	Leaded Muntz Metal
C44300	Admiralty, Arsenical
C44400	Admiralty, Antimonial
C44500	Admiralty, Phosphorized
C46400	Naval Brass, Uninhibited
C46500	Naval Brass, Arsenical
C61300	Aluminum Bronze
C61400	Aluminum Bronze D
C63000	10 % Aluminum-Nickel Bronze
C63200	9 % Aluminum-Nickel Bronze
C70600	90-10 Copper Nickel
C70620	90-10 Copper Nickel -(modified for welding)
C71500	70-30 Copper Nickel
C71520	70-30 Copper Nickel-(modified for welding)
C72200	...

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.

2. Referenced Documents

2.1 ASTM Standards:³

B248 Specification for General Requirements for Wrought Copper and Copper-Alloy Plate, Sheet, Strip, and Rolled Bar

¹ This specification is under the jurisdiction of ASTM Committee B05 on Copper and Copper Alloys and is the direct responsibility of Subcommittee B05.01 on Plate, Sheet, and Strip.

Current edition approved Oct. 15, 2012. Published November 2012. Originally approved in 1942. Last previous edition approved in 2011 as B171/B171M – 11^{ε1}. DOI: 10.1520/B0171_B0171M-12.

² For ASME Boiler and Pressure Vessel Code applications, see related Specification SB-171 in Section II of that Code.

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.

B248M Specification for General Requirements for Wrought Copper and Copper-Alloy Plate, Sheet, Strip, and Rolled Bar (Metric)

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

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

E54 Test Methods for Chemical Analysis of Special Brasses and Bronzes (Withdrawn 2002)⁴

E62 Test Methods for Chemical Analysis of Copper and Copper Alloys (Photometric Methods) (Withdrawn 2010)⁴

E255 Practice for Sampling Copper and Copper Alloys for the Determination of Chemical Composition

E478 Test Methods for Chemical Analysis of Copper Alloys

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

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 Whether inch-pound or SI units are applicable (see 1.2),

4.1.3 Copper Alloy UNS. No. (see Section 6, Table 1),

4.1.4 Whether the alloy ordered will be used in applications requiring it to be welded (see Table 1, footnotes B and C for UNS Nos. C61300 and C72200, respectively, and UNS Nos. C70620 and C71520 in place of UNS Nos. C70600 and C71500),

4.1.5 Whether plate is to be machined (see 9.1.3),

4.1.6 How tolerance is specified (Table 2 Footnote A),

⁴ The last approved version of this historical standard is referenced on www.astm.org.

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