



Designation: B 171/B 171M – 99^{€1}

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

This standard is issued under the fixed designation B 171/B 171M; 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 (€) indicates an editorial change since the last revision or reapproval.

€¹ NOTE—Tables 1 and 3 were editorially corrected in January 2001.

1. Scope *

1.1 This specification² establishes the requirements for copper-alloy 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 The values stated in either inch-pound units or SI units are to be regarded separately as standard. Within the text, the SI units are shown in brackets. The values in each system are not exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in nonconformance with the specification.

2. Referenced Documents

2.1 The following documents in the current issue of the *Annual Book of ASTM Standards* form a part of this specification to the extent referenced herein:

2.2 ASTM Standards:

B 248 Specification for General Requirements for Wrought Copper and Copper-Alloy Plate, Sheet, Strip and Rolled Bar³

B 248M Specification for General Requirements for Wrought Copper and Copper-Alloy Plate, Sheet, Strip and

Rolled Bar [Metric]³

B 601 Practice for Temper Designations for Copper and Copper Alloys-Wrought and Cast³

B 846 Terminology For Copper and Copper Alloys³

E 8 Test Methods for Tension Testing of Metallic Materials⁴

E 8M Test Methods for Tension Testing of Metallic Materials [Metric]⁴

E 29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specification⁵

E 54 Test Methods for Chemical Analysis of Special Brasses and Bronzes⁶

E 62 Test Methods for Chemical Analysis of Copper and Copper Alloys (Photometric Method)⁶

E 255 Practice for Sampling Copper and Copper Alloys for Determination of Chemical Composition⁶

E 478 Test Methods for Chemical Analysis of Copper Alloys⁷

E 527 Practice for Numbering Metals and Alloys (UNS)⁸

3. Terminology

3.1 *Definitions*—For definitions of terms used in this specification, refer to Terminology B 846.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *plate, n*—a wrought flat product over 0.188-in. [5.00-mm] thick and over 12-in. [300-mm] wide, in lengths.

3.2.2 *sheet, n*—a rolled flat product up to and including 0.188 in. [5.00-mm] thick and over 24-in. [600-mm] wide, in flat lengths or coils (rolls).

4. Ordering Information

4.1 Orders for product under this specification shall include the following information:

4.1.1 ASTM Specification B 171/B 171M, 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

¹ This specification is under the jurisdiction of ASTM Committee B05 on Copper and Copper Alloys and is the direct responsibility of Subcommittee B5.01 on Plate, Sheet and Strip.

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

³ *Annual Book of ASTM Standards*, Vol 02.01.

⁴ *Annual Book of ASTM Standards*, Vol 03.01.

⁵ *Annual Book of ASTM Standards*, Vol 14.02.

⁶ *Annual Book of ASTM Standards*, Vol 03.05.

⁷ *Annual Book of ASTM Standards*, Vol 03.06.

⁸ *Annual Book of ASTM Standards*, Vol 01.01.

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