



Standard Specification for Copper Alloy Bullet Jacket Cups ¹

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1. Scope *

1.1 This specification establishes the requirements for bullet jacket preform cups produced of Copper Alloy UNS No. C22000 for processing into bullet jackets of the following types and classes:

- 1.1.1 *Type I*—Caliber 0.30.
- 1.1.2 *Type II*—Caliber 0.45.
- 1.1.3 *Type III*—Caliber 0.50.
- 1.1.4 *Type IV*—As specified in the contract or order.
- 1.1.5 *Class I*—Not annealed.
- 1.1.6 *Class II*—Annealed.

1.2 The values stated in inch-pound units are the standard, except for grain size, which is given in SI units. Values in parentheses are for information only.

2. Referenced Documents

2.1 ASTM Standards:

- B 601 Classification for Temper Designations for Copper and Copper Alloys—Wrought and Cast²
- B 846 Terminology for Copper and Copper Alloys²
- E 3 Guide for Preparation of Metallographic Specimens³
- E 29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications⁴
- E 112 Test Methods for Determining Average Grain Size³
- E 255 Practice for Sampling Copper and Copper Alloys for Determination of Chemical Composition⁵
- E 478 Test Methods for Chemical Analysis of Copper Alloys⁵

3. Terminology

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

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *blank (blanking), n*—a piece of metal removed from sheet or strip, intended for subsequent fabrication such as cupping and drawing.

3.2.2 *cup (cupping), n*—a shallow cylindrical shell closed at one end, normally intended for further fabrication, formed from a blank.

4. Ordering Information

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

- 4.1.1 ASTM designation and year of issue.
- 4.1.2 Type and class (Section 1),
- 4.1.3 Grain size (Section 7),
- 4.1.4 Dimensions and tolerances (see 8.1),
- 4.1.5 Drawing number to which order applies (see 8.1), and
- 4.1.6 Work test requirements if required (Section 11).
- 4.1.7 In addition, when material is purchased for agencies of the U.S. Government (see Supplementary Requirements section).

5. Material and Manufacture

5.1 Material:

5.1.1 The material of manufacture shall be annealed plate, sheet, strip, or disks of wrought Alloy UNS No. C22000 processed to produce even-topped cups.

5.2 Manufacture:

5.2.1 The material shall be blanked and cupped to meet the cup dimensions specified, and subsequently annealed, if required. The annealed cups shall be cleaned to provide a surface suitable for subsequent redrawing into bullet jackets.

6. Chemical Composition

6.1 The product shall conform to the chemical requirements prescribed in Table 1.

6.2 Composition limits may be established and analysis required for unnamed elements by agreement between manufacturer and purchaser.

6.3 Either copper or zinc may be taken as the difference between the sum of all elements analyzed and 100 %. Copper, when determined by difference, must conform to the requirements of Table 1. When all elements in Table 1 are analyzed, the sum shall be 99.8 % min.

7. Grain Size of Annealed Tempers

7.1 Unless there is a prior agreement between the purchaser and supplier the grain size of class II cups shall be produced to have average grain size corresponding to the limits of the OS025 or OS040 tempers as specified in Table 2.

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.

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² *Annual Book of ASTM Standards*, Vol 02.01.

³ *Annual Book of ASTM Standards*, Vol 03.01.

⁴ *Annual Book of ASTM Standards*, Vol 14.02.

⁵ *Annual Book of ASTM Standards*, Vol 03.05.