



Standard Specification for Copper-Zinc-Lead (Red Brass or Hardware Bronze) Rod, Bar, and Shapes¹

This standard is issued under the fixed designation B 140/B 140M; 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 specification establishes the requirements for copper-zinc-lead (leaded red brass or hardware bronze) rod, bar, and shapes of UNS Alloy Nos. C31400, C31600, and C32000 available for screw machine applications.

1.2 The values stated in inch-pound units or SI units are to be regarded separately as standard. Within the text, 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 ASTM Standards:

B 249/B 249M Specification for General Requirements for Wrought Copper and Copper-Alloy Rod, Bar, Shapes and Forgings²

B 601 Classification for Temper Designations for Copper and Copper Alloys—Wrought and Cast²

B 846 Terminology for Copper and Copper Alloys²

E 8 Test Methods for Tension Testing of Metallic Materials³

E 8M Test Methods for Tension Testing of Metallic Materials [Metric]³

E 62 Test Methods for Chemical Analysis of Copper and Copper Alloys (Photometric Methods)⁴

E 478 Test Methods for Chemical Analysis of Copper Alloys⁴

3. Terminology

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

4. Ordering Information

4.1 Contracts or purchase orders for product to this speci-

fication should include the following information:

4.1.1 ASTM designation and year of issue,

4.1.2 Copper Alloy UNS No. designation (Section 1),

4.1.3 Temper designation (Section 7),

4.1.4 Quantity; total weight or length, or number of pieces of each temper, form, or alloy.

4.1.5 Dimensions—diameter, distance between parallel faces,

4.1.6 How furnished; specific lengths with or without ends, and

4.1.7 When product is purchased for agencies of the U.S. government. (B 249/B 249M).

4.2 The following options are available to this specification and should be specified in the contract or purchase order when required:

4.2.1 Heat identification or traceability details,

4.2.2 Certification (Specification B 249/B 249M), and

4.2.3 Mill Test Reports (Specification B 249/B 249M).

5. Material and Manufacture

5.1 Material:

5.1.1 The starting material shall be cast billets, logs, or rods of Copper Alloy UNS Nos. C31400, C31600, or C32000 and shall be of such soundness and structure as to enable them to process into the desired product.

5.2 Manufacture:

5.2.1 The product shall be manufactured by such hot working, cold working, straightening, and annealing processing needed to produce a uniform wrought structure and obtain the properties specified in the purchase order or contract.

6. Chemical Composition

6.1 The material composition shall conform to the requirements of Table 1 for the Copper Alloy UNS No. specified in the ordering information.

6.1.1 These compositional limits do not preclude the presence of other elements. When required, limits may be established and analysis required for unnamed elements by agreement between the supplier and the purchaser.

6.2 For copper alloys in which zinc is specified as the remainder, either copper or zinc may be taken as the difference between the sum of all elements analyzed and 100 %. When

¹ This specification is under the jurisdiction of ASTM Committee B05 on Copper and Copper Alloys and is the direct responsibility of Subcommittee B05.02 on Rod, Bar, Wire, Shapes, and Forgings.

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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 03.05.