Designation: B301/B301M – 13

Standard Specification for Free-Cutting Copper Rod, Bar, Wire, and Shapes[1]

This standard is issued under the fixed designation B301/B301M; 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 free-cutting copper rod, bar, wire, and shapes of UNS Alloy Nos. C14500, C14510, C14520, C14700, and C18700, suitable for high-speed screw machine work or for general applications.

1.2 Typically, product made to this specification is furnished as straight lengths. Sizes ½ in. [12 mm] and under may be furnished in coils when requested.

1.3 *Units*—The values stated in either SI units or inch-pound units are to be regarded separately as standard. Within the text, SI units are shown in brackets. 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:*[2]

B193 Test Method for Resistivity of Electrical Conductor Materials

B249/B249M Specification for General Requirements for Wrought Copper and Copper-Alloy Rod, Bar, Shapes and Forgings

B250/B250M Specification for General Requirements for Wrought Copper Alloy Wire

B950 Guide for Editorial Procedures and Form of Product Specifications for Copper and Copper Alloys

E8/E8M Test Methods for Tension Testing of Metallic Materials

E121 Test Methods for Chemical Analysis of Copper-Tellurium Alloys (Withdrawn 2010)[3]

E478 Test Methods for Chemical Analysis of Copper Alloys

3. General Requirements

3.1 The following sections of Specifications B249/B249M or B250/B250M constitute a part of this specification:

3.1.1 Terminology,
3.1.2 Materials and Manufacture,
3.1.3 Dimensions and Permissible Variations,
3.1.4 Workmanship, Finish, and Appearance,
3.1.5 Sampling,
3.1.6 Number of Tests and Retests,
3.1.7 Specimen Preparation,
3.1.8 Test Methods,
3.1.9 Inspection,
3.1.10 Significance of Numerical Limits,
3.1.11 Rejection and Rehearing,
3.1.12 Certification,
3.1.13 Test Reports,
3.1.14 Packaging and Package Marking, and
3.1.15 Supplementary Requirements.

3.2 In addition, when a section with a title identical to that referenced in 3.1 appears in this specification, it contains additional requirements which supplement those appearing in Specifications B249/B249M or B250/B250M.

4. Ordering Information

4.1 Include the following specified choices when placing orders for products under this specification, as applicable:

4.1.1 ASTM designation and year of issue,
4.1.2 Copper UNS No. designation,
4.1.3 Product (rod, bar, wire, or shape),
4.1.4 Cross section (round, hexagonal, square, and so forth),
4.1.5 Temper (Section 6),
4.1.6 Dimensions, diameter or distance between parallel surfaces; width and thickness,
4.1.7 How furnished: straight lengths, coils, or reels,
4.1.8 Length (Section 9.3),
4.1.9 Total length, or number of pieces of each size,

[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] 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] 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**