



Standard Specification for Copper-Silicon Alloy Wire for General Applications¹

This standard is issued under the fixed designation B 99/B 99M; 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 round, rectangular, and square wire for general applications other than for electrical transmission cable. The alloys involved are UNS Nos. C65100 and C65500.

1.2 *Units*—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 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 nonconformance with the standard.

2. Referenced Documents

2.1 ASTM Standards:

B 250 Specification for General Requirements for Wrought Copper-Alloy Wire²

B 250M Specification for General Requirements for Wrought Copper-Alloy Wire [Metric]²

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

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 112 Test Methods for Determining the Average Grain Size³

E 478 Test Methods for Chemical Analysis of Copper Alloys⁵

3. General Requirements

3.1 The following sections of Specification B 250 or B 250M constitute a part of this specification.

- 3.1.1 Terminology,
- 3.1.2 Materials and Manufacture,
- 3.1.3 Workmanship, Finish, and Appearance,
- 3.1.4 Sampling,
- 3.1.5 Number of Tests and Retests,
- 3.1.6 Specimen Preparation,
- 3.1.7 Test Methods,
- 3.1.8 Significance of Numerical Limits,
- 3.1.9 Inspection,
- 3.1.10 Rejection and Rehearing,
- 3.1.11 Certification,
- 3.1.12 Mill Test Report,
- 3.1.13 Packaging and Package Marking, and
- 3.1.14 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 that appear in Specification B 250 or B 250M.

4. Ordering Information

4.1 Include the following information in orders for product:

- 4.1.1 ASTM designation and year of issue,
- 4.1.2 Copper Alloy UNS No.,
- 4.1.3 Temper,
- 4.1.4 Dimensions (diameter, distance between parallel surfaces, width, and thickness),
- 4.1.5 How furnished (coil, reel, and so forth),
- 4.1.6 Total weight of each size, and
- 4.1.7 When product is purchased for agencies of the U.S. government.

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,
- 4.2.3 Mill test reports, and
- 4.2.4 Special packaging and package markings.

5. Chemical Composition

5.1 The material shall conform to the chemical compositional requirements in Table 1 for the Copper Alloy UNS No.

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.

⁵ *Annual Book of ASTM Standards*, Vol 03.06.