Designation: B159/B159M – 05

Standard Specification for Phosphor Bronze Wire[1]

This standard is issued under the fixed designation B159/B159M; 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, square and flat phosphor bronze wire of UNS Alloy Nos. C51000, C52100, and C52400 for general and spring applications.

1.1.1 Rectangular and square wire of the three alloys are generally available in sizes up to a maximum of 0.188 in. [5 mm] thick and 1.250 in. [32 mm] wide.

1.1.2 Round wire from Copper Alloy UNS No. C51000 is generally available in sizes up to 0.500 in. [13 mm] in diameter.

1.2 The values stated in either inch-pound units or in SI units are to be regarded separately as standard. Within the text, the SI units are shown in brackets. The values stated 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.

1.3 Additional requirements for these products are established in Specification B250/B250M, see Section 3.

1.4 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

NOTE 1—It is to be understood that this specification is general. Since the product is used for many applications where the requirements of the operations used are too particular to be specified by any of the ordinary mechanical tests, it is frequently advisable to submit samples or drawings to the manufacturer and secure an adjustment of temper to suit the actual application for which the product is intended.

NOTE 2—Product in rod, bar and shape form is produced to Specification B139/B139M.

2. Referenced Documents

2.1 *ASTM Standards:*[2]

B139/B139M Specification for Phosphor Bronze Rod, Bar, and Shapes

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

B601 Classification for Temper Designations for Copper and Copper Alloys—Wrought and Cast

B846 Terminology for Copper and Copper Alloys

E8 Test Methods for Tension Testing of Metallic Materials

E8M Test Methods for Tension Testing of Metallic Materials [Metric][3]

E62 Test Methods for Chemical Analysis of Copper and Copper Alloys (Photometric Methods)

E290 Test Methods for Bend Testing of Material for Ductility

E478 Test Methods for Chemical Analysis of Copper Alloys

3. General Requirements

3.1 The following sections of Specification B250/B250M are 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,

[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.

Current edition approved Mar. 1, 2005. Published March 2005. Originally approved in 1941. Last previous edition approved in 2001 as B159 – 01. DOI: 10.1520/B0159_B0159M-05.

[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] Withdrawn. 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.**