This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.

Designation: B520 – 12 (Reapproved 2017)

Standard Specification for Tin-Coated, Copper-Clad Steel Wire for Electronic Application[1]

This standard is issued under the fixed designation B520; 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 U.S. Department of Defense.

1. Scope

1.1 This specification covers tin-coated copper-clad steel wire for electronic application.

1.2 Four classes of tin-coated copper-clad steel wire are covered as follows:

1.2.1 *Class T30HS*—Nominal 30 % conductivity, hard-drawn,

1.2.2 *Class T30A*—Nominal 30 % conductivity, annealed,

1.2.3 *Class T40HS*—Nominal 40 % conductivity, hard-drawn, and

1.2.4 *Class T40A*—Nominal 40 % conductivity, annealed.

1.3 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.3.1 *Exception*—The SI values for resistivity and volume are to be regarded as standard.

1.4 The following safety hazards caveat pertains only to the test method portion, Section 6, of this specification: *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.* (**Warning—**Consideration should be given to toxicity and flammability when selecting solvent cleaners.)

1.5 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 The following documents of the issue in effect on date of material purchase form a part of this specification to the extent referenced herein:

2.2 *ASTM Standards:*[2]

B193 Test Method for Resistivity of Electrical Conductor Materials

B258 Specification for Nominal Diameters and Cross-Sectional Areas of AWG Sizes of Solid Round Wires Used as Electrical Conductors

B452 Specification for Copper-Clad Steel Wire for Electronic Application

2.3 *National Institute of Standards and Technology:*[3]

NBS Handbook 100 *Copper Wire Tables*

3. Ordering Information

3.1 Orders for material under this specification shall include the following information:

3.1.1 Quantity of each size.

3.1.2 Wire size (see 5.3 and Table 1),

3.1.3 Class of wire (see 1.2),

3.1.4 Package size and shipping (see 7.1.7 and Section 9), packaging inspection if required (see 9.3.3),

3.1.5 Special package marking, if required, and

3.1.6 Place of inspection (see 9.1).

4. Material

4.1 The basis material shall consist of copper-clad steel wire conforming to the product description, quality and specification requirements of Specification B452.

4.2 The tin-coated wire shall consist of the basis wire coated with tin. The tin used for coating shall be commercially pure (Note 1). For purposes of this specification, the tin shall be considered“ commercially pure” if the total of other elements,

[1] This specification is under the jurisdiction of ASTM Committee B01 on Electrical Conductors and is the direct responsibility of Subcommittee B01.06 on Bi-Metallic Conductors.

Current edition approved April 1, 2017. Published April 2017. Originally approved in 1970. Last previous edition approved in 2012 as B520 – 12. DOI: 10.1520/B0520-12R17.

[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] Available from National Institute of Standards and Technology (NIST), 100 Bureau Dr., Stop 1070, Gaithersburg, MD 20899-1070, http://www.nist.gov.

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