



Standard Specification for Silver-Coated Braid and Ribbon Flat Copper Wire intended for use in Electronic Application¹

This standard is issued under the fixed designation B971; 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.

1. Scope

1.1 This specification covers silver-coated copper braid and ribbon flat wire intended for electronic application (Explanatory **Note 1**).

1.2 Two classes of silver-coated braid and ribbon flat copper wire are covered as follows:

1.2.1 *Class A*—Annealed temper.

1.2.2 *Class H*—Hard-drawn.

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 *Exceptions*—The SI values for density, resistivity, and volume are to be regarded as standard.

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.*

2. Referenced Documents

2.1 *ASTM Standards*:²

B1 Specification for Hard-Drawn Copper Wire

B3 Specification for Soft or Annealed Copper Wire

B49 Specification for Copper Rod Drawing Stock for Electrical Purposes

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

¹ This test method is under the jurisdiction of ASTM Committee B01 on Electrical Conductors and is the direct responsibility of Subcommittee B01.04 on Conductors of Copper and Copper Alloys.

Current edition approved Sept. 1, 2014. Published September 2014. Originally approved in 2010. Last previous edition approved in 2010 as B971 – 10. DOI: 10.1520/B0971-10R14.

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.

2.2 *Other Standards*: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-thickness and width in inches (see 5.4),

3.1.3 Class of wire (see 1.2),

3.1.4 Type of copper, if special (see 4.2),

3.1.5 Package size (see 10.1),

3.1.6 Special packaging marking, if required, and

3.1.7 Place of inspection (see 7.1).

4. Material

4.1 The material shall be silver-coated flat wire (Explanatory **Note 1**) of such quality and purity that the finished product shall meet the properties and characteristics prescribed in this specification.

4.2 *Copper-Base Metal*—The base metal shall be copper of such quality and purity that the finished product shall have properties and characteristics prescribed in this specification.

NOTE 1—Specifications **B1**, **B3**, or **B49** define copper suitable for use.

5. General Requirements (See Section 8)

5.1 *Temper*—The silver-coated flat wire conductor shall be provided in either hard-drawn condition (Class H) or annealed condition (Class A) as agreed upon between the manufacturer and purchaser.

5.2 *Tensile and Elongation (Explanatory Note 2)*:

5.2.1 *Class A*—The silver-coated copper flat wire in the annealed condition shall conform to the elongation requirements prescribed in **Table 1**. See Explanatory **Note 3** for equivalent round diameter calculations based on given thickness and width dimensions for the flat wire. For flat wire whose nominal equivalent round diameter is more than 0.001 in. (0.025 mm) greater than a size listed in **Table 1**, but less than that of the next larger size, the requirements of the next larger size shall apply. No requirements for tensile strength are specified.

³ Available from National Technical Information Service (NTIS), 5285 Port Royal Rd., Springfield, VA 22161, <http://www.ntis.gov>.