



Standard Specification for Silver Coated Copper and Copper Alloy Stranded Conductors for Electronic Space Application¹

This standard is issued under the fixed designation B961; 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 uninsulated silver-coated soft or annealed copper and copper alloy stranded conductors for use in electronic space application.

1.2 The values stated in either SI units or inch-pound units are to be regarded separately as standard. 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.

1.3 *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.* This precautionary caveat pertains only to Section 9.

2. Referenced Documents

2.1 ASTM Standards:²

NOTE 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.

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

B298 Specification for Silver-Coated Soft or Annealed Copper Wire

B286 Specification for Copper Conductors for Use in Hookup Wire for Electronic Equipment

B624 Specification for High-Strength, High-Conductivity

¹ This specification is under the jurisdiction of ASTM Committee B01 on Electrical Conductors and is the direct responsibility of Subcommittee B01.02 on Methods of Test and Sampling Procedure.

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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.

Copper-Alloy Wire for Electronic Application
E3 Guide for Preparation of Metallographic Specimens

2.2 *European Space Agency (ESA):*³
ESA/SCC 3901 Generic Specification No. 3901

2.3 *European Cooperation for Space Standardization (ECSS):*³

ECSS-Q-70-20A Determination of the Susceptibility of Silver Plated Copper wire and Cable to “Red Plague” Corrosion

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 Customer specification requirements including conductor size, designation, and construction.

3.1.3 Whether silver-coated copper or silver-coated copper-alloy.

3.1.4 Package size (Section 12).

3.1.5 Special package marking if required (Section 11), and

3.1.6 Place of inspection (Section 10).

4. Coating of Wires

4.1 *Coating Thickness*—The silver coating of wires composing stranded conductors shall be uniform such that no area around the strand circumference is covered by less than 80 micro-inches of silver. Uniform silver coating shall be verified by micro-sectioning as outlined in section 9.1.

4.1.1 Single points caused by eccentric strands or minute scratches shall not be less than 60 micro-inches minimum or exceed 3 points in number around the micro-sectioned strand circumference.

4.2 The silver coating of wires composing stranded conductors (before and after stranding) shall conform to the polysulfide test in accordance with Specification B298.

4.3 The average silver coating thickness of wires composing stranded conductors shall be verified by electronic determination (Method A) in accordance with Specification B298.

³ ESA Publications Division, ESTEC, P.O. Box 299, 2200 AG Noordwijk, The Netherlands (ESA/SCC 3901 download available from www.escies.org).