



Standard Specification for Rope-Lay-Stranded Copper Conductors Having Bunch- Stranded Members, for Electrical Conductors¹

This standard is issued under the fixed designation B 172; 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 bare rope-lay-stranded conductors having bunch-stranded members made from round copper wires, either uncoated or coated with tin, lead, or lead-alloy for use as electrical conductors (Explanatory Notes 1 and 2).

1.2 Coated wires shall include only those wires with finished diameters and densities substantially equal to the respective diameters and densities of uncoated wires.

1.3 The values stated in inch-pound or SI units are to be regarded separately as standard. Each system shall be used independently of the other. Combining values from the two systems may result in nonconformance with the specification. For conductor sizes designated by AWG or kcmil, the requirements in SI units have been numerically converted from corresponding values, stated or derived, in inch-pound units. For conductor sizes designated by SI units only, the requirements are stated or derived in SI units.

1.3.1 For density, resistivity, and temperature, the values stated in SI units are to be regarded as standard.

2. Referenced Documents

2.1 The following documents of the issue in effect at the time of reference form a part of this specification to the extent referenced herein:

2.2 ASTM Standards:

B 3 Specification for Soft or Annealed Copper Wire²

B 33 Specification for Tinned Soft or Annealed Copper Wire for Electrical Purposes²

B 173 Specification for Rope-Lay-Stranded Copper Conductors Having Concentric-Stranded Members, for Electrical Conductors²

B 189 Specification for Lead-Coated and Lead-Alloy-Coated Soft Copper Wire for Electrical Purposes²

B 263 Test Method for Determination of Cross-Sectional Area of Stranded Conductors²

B 354 Terminology Relating to Uninsulated Metallic Electrical Conductors²

2.3 *American National Standard:*

ANSI C42.35 Definitions of Electrical Terms³

3. Classification

3.1 For the purpose of this specification rope-lay-stranded conductors having bunch-stranded members are classified as follows:

3.1.1 *Class I*—Conductors consisting of wires 0.0201-in. (0.511-mm) diameter (No. 24 AWG) to produce rope-lay-stranded conductors up to 2 000 000 cmil (1013 mm²) in total cross-sectional area. (Typical use is for special apparatus conductor.)

3.1.2 *Class K*—Conductors consisting of wires 0.0100-in. (0.254-mm) diameter (No. 30 AWG) to produce rope-lay-stranded conductors up to 1 000 000 cmil (507 mm²) in total cross-sectional area. (Typical use is for special portable cord and conductors.)

3.1.3 *Class M*—Conductors consisting of wires 0.0063-in. (0.160-mm) diameter (No. 34 AWG) to produce rope-lay-stranded conductors up to 1 000 000 cmil (507 mm²) in total cross-sectional area. (Typical use is for welding conductors.)

4. Ordering Information

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

4.1.1 Quantity of each size and class,

4.1.2 Conductor size: circular-mil area or AWG (see 7.1),

4.1.3 Class (Section 4 and Table 1),

4.1.4 Whether coated or uncoated; if coated, designate type of coating (see 11.1),

4.1.5 Details of special-purpose lays, if required (see 6.2, 6.3, and Explanatory Note 3),

4.1.6 Package size (see 15.1),

4.1.7 Special package marking, if required (Section 14),

¹ This specification 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.

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² *Annual Book of ASTM Standards*, Vol 02.03.

³ Available from American National Standards Institute, 11 West 42nd Street, 13th Floor, New York, NY 10036.