



Standard Specification for Bunch-Stranded Copper Conductors for Electrical Conductors¹

This standard is issued under the fixed designation B 174; 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 bunch-stranded conductors made from round copper wires, either uncoated or coated with tin, lead, or lead-alloy for use as electrical conductors (Explanatory Note 1 and Explanatory Note 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.

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 172 Specification for Rope-Lay-Stranded Copper Conductors Having Bunch-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 bunch-stranded conductors are classified as shown in Table 1.

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 3 and Table 2),

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

4.1.5 Maximum length of lay (see 6.3),

4.1.6 Whether separator is required (see 7.2),

4.1.7 Package size (see section 15.1),

4.1.8 Special package marking, if required (Section 14), and

4.1.9 Place of inspection (Section 13).

5. Joints

5.1 Necessary joints in wires shall be made in accordance with accepted commercial practice.

5.2 Joints shall be so constructed and so disposed throughout the conductor that the diameter or configuration of the completed conductor is not substantially affected, and so that the flexibility of the completed conductor is not adversely affected.

6. Lay

6.1 Conductors of the same size and description furnished on one order shall have the same lay.

6.2 The direction of lay shall be at the option of the manufacturer unless otherwise specified.

6.3 Unless otherwise specified by the purchaser, the length of lay of bare or coated bunch-stranded conductors shall conform to the requirements of Column B of Table 2.

6.4 When specified, for constructions other than those listed in Footnote A of Table 2, the length of lay shall conform to the requirements of Column A of Table 2.

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.

Current edition approved Oct. 10, 2002. Published December 2002. Originally approved in 1941. Last previous edition approved in 1995 as B 174 – 95.

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

³ Available from American National Standards Institute, 25 West 43rd Street, New York, NY 10036.