



Standard Specification for Concentric-Lay-Stranded Conductors of 8000 Series Aluminum Alloy for Subsequent Covering or Insulation¹

This standard is issued under the fixed designation B801; 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 aluminum alloys in the 8000 series cited in **B800** in tempers “0” and H1X or H2X bare compact-round, compressed and conventional concentric-lay-stranded conductors made from round or shaped wires used as covered or insulated electrical conductors. These conductors shall be composed of a central core surrounded by one or more compacted, compressed or conventional layers of helically applied wires (Explanatory **Note 1** and **Note 2**).

1.2 The SI values for resistivity are regarded as standard. For all other properties, the inch-pound units are regarded as standard and the SI units may be approximate.

1.3 Sealed conductors that are intended to prevent longitudinal water propagation are also permitted within the guidelines of this specification.

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

B263 Test Method for Determination of Cross-Sectional Area of Stranded Conductors

B354 Terminology Relating to Uninsulated Metallic Electrical Conductors

B800 Specification for 8000 Series Aluminum Alloy Wire for Electrical Purposes—Annealed and Intermediate Tempers

E29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications

¹ This specification is under the jurisdiction of ASTM Committee B01 on Electrical Conductors and is the direct responsibility of Subcommittee B01.07 on Conductors of Light Metals.

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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.

2.3 *ANSI Standard*:³

ANSI H35.1 Alloy and Temper Designation Systems for Aluminum

2.4 *National Bureau of Standards*:⁴

NBS Handbook 100—Copper Wire Tables

3. Classification

3.1 For the purpose of this specification, conductors are classified as follows:

3.1.1 *Class A*—For conductors to be covered with weather/resistant materials.

3.1.2 *Class B*—For conductors to be insulated with various materials such as rubber, paper, varnished cloth, etc., and for the conductors indicated under Class A where greater flexibility is required.

3.1.3 *Class C and D*—For conductors where greater flexibility is required than is provided by Class B 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 (**Table 1**).

4.1.2 Conductor size; circular-mil area or Awg (Section 7),

4.1.3 Class (See 3.1),

4.1.4 Temper (Section 12),

4.1.5 Lay direction if nonstandard (See 6.3 and 6.4), reversed or unidirectional (See 6.3) or special (See 6.4),

4.1.6 Special tension test, if required (See 8.2),

4.1.7 Packaging (Section 19),

4.1.8 Special package marking (Section 19), and

4.1.9 Place of inspection (Section 18).

5. Joints

5.1 Joints may be made in any of the wires of any stranding by electric-butt welding, cold-pressure welding, or electric-butt, cold-upset welding.

³ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.

⁴ Available from National Technical Information Service (NTIS), 5285 Port Royal Rd., Springfield, VA 22161, <http://www.ntis.gov>.