



Standard Specification for Compact Round Concentric-Lay-Stranded Aluminum 1350 Conductors¹

This standard is issued under the fixed designation B 400; 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 1350-H19 (extra hard), 1350-H16 or -H26 ([n]hard), 1350-H14 or -H24 (½ hard) and 1350-H142 or -H242 (½ hard) bare compact-round concentric-lay-stranded conductors made from round or shaped wires for use as uninsulated electrical conductors or in covered or insulated electrical conductors. These conductors shall be composed of a central core surrounded by one or more roller or die compacted layers of helically applied wires (Explanatory Note 1 and Note 2).

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

NOTE 1—Prior to 1975, aluminum 1350 was designated as EC aluminum.

NOTE 2—The aluminum and temper designations conform to ANSI Standard H35.1. Aluminum 1350 corresponds to Unified Numbering System A91350 in accordance with Practice E 527.

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:

B 230 Specification for Aluminum 1350-H19 Wire for Electrical Purposes²

B 231 Specification for Concentric-Lay-Stranded Aluminum 1350 Conductors²

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

B 354 Terminology Relating to Uninsulated Metallic Electrical Conductors²

B 609 Specification for Aluminum 1350 Round Wire, Annealed and Intermediate Tempers, for Electrical Purposes²

E 29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications³

E 527 Practice for Numbering Metals and Alloys (UNS)⁴

2.3 Other Documents:

ANSI H35.1 Alloy and Temper Designation Systems for Aluminum⁵

NBS *Handbook 100-Copper Wire Tables, of the National Bureau of Standards*⁶

3. Classification

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

3.1.1 *Class AA*—For bare conductors usually used in overhead lines.

3.1.2 *Class A*—For conductors to be covered with weather-resistant materials, and for bare conductors where greater flexibility than is afforded by Class AA is required. Conductors indicated for further fabrication into tree wire or to be insulated and laid helically with or around aluminum or ACSR messengers, shall be regarded as Class A conductors with respect to direction of lay only (see 6.3).

3.1.3 *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.

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 (Section 3),

4.1.4 Temper (Section 13),

4.1.5 Lay direction if nonstandard (see 6.3 and 6.4), reversed or unidirectional (see 6.4) or special (see 6.5),

4.1.6 Special tension test, if required (see 17.2),

4.1.7 Place of inspection (Section 18), and

4.1.8 Packaging and Package Marking (Section 19).

4.2 In addition, supplementary requirements shall apply only when specified by the purchaser in the inquiry, contract, or purchase order for direct procurement by agencies of the U.S.

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

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

³ *Annual Book of ASTM Standards*, Vol 14.02.

⁴ *Annual Book of ASTM Standards*, Vol 01.01.

⁵ Available from the American National Standards Institute, 11 West 42nd Street, 13th Floor, New York, NY 10036.

⁶ Available from the National Technical Information Service, 5285 Port Royal Rd., Springfield, VA 22161.