



Standard Specification for 19 Wire Combination Unilay-Stranded Aluminum Conductors for Subsequent Insulation¹

This standard is issued under the fixed designation B786/B786M; 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.

^{ε1} NOTE—Designation was corrected editorially in October 2013.

1. Scope

1.1 This specification covers bare combination unilay-stranded conductors made from round wires of aluminum 1350 and 8000 series of aluminum alloys, for insulated conductors for electrical purposes. Aluminum 1350 wires in tempers -H19 (extra hard), -H16 or -H26 (¾ hard), -H14 or -H24 (½ hard), and -H142 or -H242 (½ hard) and 8000 series aluminum alloys wires in tempers “0” and H1X or H2X are permitted. These conductors shall be constructed with a central core wire surrounded by two layers of helically laid wires, resulting in an outer diameter equal to the compressed-stranded equivalent conductors.

NOTE 1—For the purpose of this specification, combination unilay conductor is defined as follows: a central core wire surrounded by a layer of six helically laid wires of the same diameter as the core wire with a helically laid outer layer containing six smaller wires alternated between six wires of the same diameter as the wires in the layer underneath. Both layers have a common length and direction of lay (see Fig. 1).

1.1.1 For the purpose of this specification, normal conductor classification (Class AA, A, B, C) is not applicable, as these conductors are intended for subsequent insulation. The descriptive term combination unilay-stranded shall be used in place of conductor classification (Note 2 and Note 3).

NOTE 2—Prior to 1975, aluminum 1350 was designated as EC aluminum.

NOTE 3—The aluminum and temper designations conform to ANSI Standard H35.1. Aluminum 1350 corresponds to Unified Numbering System A91350 in accordance with Practice E527. Unified Numbering System alloy designations for 8000 Series aluminum alloys in accordance with Practice E527 are listed in Table number 1 of Specification B800.

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.

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

B230/B230M Specification for Aluminum 1350–H19 Wire for Electrical Purposes

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

B609/B609M Specification for Aluminum 1350 Round Wire, Annealed and Intermediate Tempers, for Electrical Purposes

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

B801 Specification for Concentric-Lay-Stranded Conductors of 8000 Series Aluminum Alloy for Subsequent Covering or Insulation

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

E527 Practice for Numbering Metals and Alloys in the Unified Numbering System (UNS)

2.3 ANSI Standard:

ANSI H35.1/H35.1(M) Alloy and Temper Designation Systems for Aluminum³

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.

Current edition approved April 1, 2013. Published April 2013. Originally approved in 1988. Last previous edition approved in 2008 as B786–08. DOI: 10.1520/B0786_B0786M-08R13E01.

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.

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