



Designation: B 786 – 00

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

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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 E 527. Unified Numbering System alloy designations for 8000 Series aluminum alloys in accordance with Practice E 527 are listed in Table 1 of Specification B 800.

1.2 The values stated in inch-pound or SI units are to be regarded separately as standard. The values in each system are not exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in nonconformance with the specification.

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

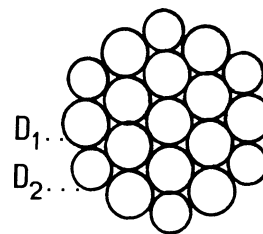


FIG. 1 Cross Section of Conductor

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 193 Test Method for Resistivity of Electrical Conductor Materials²

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

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

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

B 800 Specification for 8000 Series Aluminum Alloy Wire for Electrical Purposes—Annealed and Intermediate Tempers²

B 801 Specification for Concentric-Lay-Stranded Conductors of 8000 Series Aluminum Alloy for Subsequent Covering or Insulation²

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 ANSI Standard:

ANSI H35.1 Alloy and Temper Designation Systems for Aluminum⁵

2.4 NIST Standard:

NBS Handbook 100⁶

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 American National Standards Institute, 11 West 42nd St., 13th Floor, New York, NY 10036.

⁶ Available from the National Institute of Standards and Technology, (NIST), Gaithersburg, MD 20899.

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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