



Standard Specification for Concentric-Lay-Stranded Aluminum Conductors, Aluminum- Clad Steel Reinforced (ACSR/AW)¹

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1. Scope

1.1 This specification covers concentric-lay-stranded conductors made from round aluminum 1350-H19 (extra hard) aluminum wires and round aluminum-clad steel core wires for use as overhead electrical conductors (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 units are regarded as standard and the SI units may be approximate.

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

B 354 Terminology Relating to Uninsulated Metallic Electrical Conductors²

B 502 Specification for Aluminum-Clad Steel Core Wire for Aluminum Conductors, Aluminum-Clad Steel Reinforced²

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

2.3 ANSI Standards:⁴

ANSI C 42.100 Dictionary of Electrical and Electronics Terms

ANSI H 35.1 American National Standard Alloy and Temper Designation Systems for Aluminum

2.4 Other Standard:

NBS Handbook 100—Copper Wire Tables of the National

Bureau of Standards⁵

3. Terminology

3.1 Description of Terms Specific to This Standard

3.1.1 ACSR covered by this specification has one type of steel core wire which is designated by the following abbreviation (Explanatory Note 2):

3.1.1.1 ACSR/AW—ACSR using aluminum-clad steel wire (Explanatory Note 2).

4. Classification

4.1 For the purpose of this specification, conductors are classified as follows (Explanatory Note 1 and Note 2):

4.1.1 Class AA—For bare conductors usually used in overhead lines. These conductors are used as follows:

4.1.1.1 Conductors used for regular overhead line construction and

4.1.1.2 Conductors having a high ratio of mechanical strength to current-carrying capacity used for overhead ground wires and for extra-long span construction.

4.1.2 Class A—For conductors to be covered with weather-resistant (weatherproof) materials.

5. Ordering Information

5.1 Orders for material under this specification shall include the following information:

5.1.1 Quantity of each size, stranding, and class,

5.1.2 Conductor size: circular mil area or AWG of aluminum wires (Section 9 and Table 1),

5.1.3 Number of wires, aluminum and aluminum-clad steel (Table 1),

5.1.4 Direction of lay of outer layer of aluminum wires if other than right-hand (see 8.2),

5.1.5 Special tests, if required (see 15.3 and 15.5),

5.1.6 Package size (see 17.1 and Explanatory Note 5),

5.1.7 Special package marking, if required (Section 17),

5.1.8 Lagging, if required (see 17.3), and

5.1.9 Place of inspection (Section 16).

6. Requirement for Wires

6.1 Before stranding, the aluminum wires used shall meet

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² Annual Book of ASTM Standards, Vol 02.03.

³ Annual Book of ASTM Standards, Vol 14.02.

⁴ Available from the American National Standards Institute, 11 West 42nd St., 13th Floor, New York, NY 10036.

⁵ Available from the National Technical Information Service, 5285 Port Royal Rd., Springfield, VA 22161.