



Standard Specification for Compact Round Concentric-Lay-Stranded Aluminum Conductors, Steel-Reinforced (ACSR/COMP)¹

This standard is issued under the fixed designation B 401; 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 compact round concentric-lay-stranded conductors made from aluminum 1350-H19 (extra hard) wires and round zinc-coated, aluminum-coated, or aluminum-clad steel core wires usually used in overhead lines. These conductors shall be constructed with one steel core wire surrounded by one or more layers of helically-laid compacted or otherwise shaped aluminum wires (Explanatory Note 1 and Note 2).

1.2 Compact ACSR covered by this specification has five types of steel core wire which are designated by abbreviations as follows (Explanatory Note 2).

1.2.1 *ACSR/GA/COMP*—Compact ACSR using Class A zinc-coated steel wire,

1.2.2 *ACSR/GB/COMP*—Compact ACSR using Class B zinc-coated steel wire,

1.2.3 *ACSR/GC/COMP*—Compact ACSR using Class C zinc-coated steel wire,

1.2.4 *ACSR/AZ/COMP*—Compact ACSR using aluminum-coated (aluminized) steel wire, and

1.2.5 *ACSR/AW/COMP*—Compact ACSR using aluminum-clad steel wire.

1.3 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 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 232 Specification for Concentric-Lay-Stranded Aluminum Conductors, Coated Steel Reinforced (ACSR)²

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

B 341 Specification for Aluminum-Coated (Aluminized) Steel Core Wire for Aluminum Conductors, Steel-Reinforced (ACSR/AZ)³

B 354 Terminology Relating to Uninsulated Metallic Electrical Conductors²

B 498 Specification for Zinc-Coated (Galvanized) Steel Core Wire for Aluminum Conductors, Steel Reinforced (ACSR)²

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

B 802 Specification for Zinc-5 % Aluminum-Mischmetal Alloy-Coated Steel Core Wire for Aluminum Conductors, Steel Reinforced (ACSR)²

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, American National Standard Alloy and Temper Designation Systems For Aluminum⁵

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

3. Ordering Information

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

3.1.1 Quantity of each size and stranding (Table 1),

3.1.2 Conductor size: circular-mil area or AWG (Section 6, and Table 1),

3.1.3 Steel wire coating or aluminum-clad (see 11.3),

3.1.4 Special tension test, if required (see 15.3),

3.1.5 Place of inspection (Section 16), and

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 St., 13th Floor, New York, NY 10018.

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

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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