



Standard Specification for Concentric-Lay-Stranded Aluminum Conductors, Composite Reinforced (ACCR)¹

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1. Scope

1.1 This specification covers concentric-lay-stranded conductors made from round aluminum-zirconium alloy wires and an aluminum matrix composite (AMC) core wire(s) for use as overhead electrical conductors (Explanatory **Note 1** and Explanatory **Note 2**).

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 form a part of this specification to the extent referenced herein:

2.2 *ASTM Standards*:²

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

B354 Terminology Relating to Uninsulated Metallic Electrical Conductors

B682 Specification for Metric Sizes of Electrical Conductors

B941 Specification for Heat Resistant Aluminum-Zirconium Alloy Wire for Electrical Purposes

B976 Specification for Fiber Reinforced Aluminum Matrix Composite (AMC) Core Wire for Aluminum Conductors, Composite Reinforced (ACCR)

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

2.3 *NIST Document*:³

NBS Handbook 100—Copper Wire Tables

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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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 National Institute of Standards and Technology (NIST), 100 Bureau Dr., Stop 1070, Gaithersburg, MD 20899-1070, <http://www.nist.gov>.

2.4 *Aluminum Association Documents*:⁴

Publication 50 Code Words for Overhead Aluminum Electrical Conductors

Aluminum Association Guideline A Method of Stress-Strain Testing of Aluminum Conductors and ACSR and a Test Method for Determining the Long Time Creep of Aluminum Conductors in Overhead Lines

3. Terminology

3.1 *Acronyms*:

3.1.1 **ACCR**—aluminum conductor, composite reinforced

3.1.2 **AMC**—aluminum matrix composite

3.1.3 **Al-Zr**—aluminum zirconium

4. Ordering Information

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

4.1.1 Quantity of each size, stranding, and class,

4.1.2 Conductor size, area (Section **8** and **Table 1** and **Table 2**),

4.1.3 Number of wires, aluminum-zirconium alloy and AMC (see **Table 1** and **Table 2**),

4.1.4 Type of AMC core wires (see **5.3**),

4.1.5 Direction of lay of outer layer of aluminum-zirconium alloy wires if other than right-hand (see **7.2**),

4.1.6 Special tension test, if desired (see **14.3**),

4.1.7 Place of inspection (Section **16**),

4.1.8 Package size and type (see **17.1**),

4.1.9 Heavy wood lagging, if required (see **17.3**), and

4.1.10 Special package marking, if required (see **17.4**).

5. Requirement for Wires

5.1 Tests for mechanical and electrical properties of aluminum-zirconium alloy and core wires shall be made before stranding.

5.2 Before stranding, the aluminum-zirconium alloy wire used shall meet the requirements of Specification **B941**.

⁴ Available from Aluminum Association, Inc., 1525 Wilson Blvd., Suite 600, Arlington, VA 22209, <http://www.aluminum.org>.