



Standard Specification for Concentric-Lay-Stranded Aluminum Conductors, Aluminum- Alloy Reinforced (ACAR, 1350/6201)¹

This standard is issued under the fixed designation B524/B524M; 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 concentric-lay-stranded conductors made from round aluminum 1350-H19 (extra hard) wires and round aluminum-alloy 6201-T81 (hard: solution heat treated, cold worked, and then artificially aged) core wires for use as overhead electrical conductors (Explanatory [Note 1](#)).

NOTE 1—The aluminum, alloy, and temper designations conform to ANSI H35.1/ANSI H35.1[M]. Aluminum 1350 and Alloy 6201 correspond to unified numbering system A91350 and A96201, respectively, in accordance with Practice [E527](#).

1.2 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

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

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

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

[B230/B230M](#) Specification for Aluminum 1350–H19 Wire for Electrical Purposes

[B263](#) Test Method for Determination of Cross-Sectional Area of Stranded Conductors

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 Oct. 1, 2016. Published October 2016. Originally approved in 1970. Last previous edition approved in 2011 as B0524/B524M – 99 (2011). DOI: 10.1520/B0524_B0524M-99R16.

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.

[B354](#) Terminology Relating to Uninsulated Metallic Electrical Conductors

[B398/B398M](#) Specification for Aluminum-Alloy 6201-T81 and 6201-T83 Wire for Electrical Purposes

[B682](#) Specification for Metric Sizes of Electrical Conductors

[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](#) American National Standard for Alloy and Temper Designation Systems for Aluminum³

[ANSI H35.1\[M\]](#) American National Standard for Alloy and Temper Designation Systems for Aluminum³

2.4 NIST Document:

[NBS Handbook 100](#)—Copper Wire Tables⁴

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;

3.1.2 Conductor size (see [7.1](#));

3.1.3 Total number of wires, aluminum 1350 and aluminum alloy 6201 ([Table 1](#) or [Table 2](#));

3.1.4 Direction of lay of outer layer of wires if other than right-hand (see [6.2](#));

3.1.5 Special tension test, if required (see [8.2](#));

3.1.6 Place of inspection (see [14.1](#));

3.1.7 Package size and type (see [16.1](#));

3.1.8 Heavy wood lagging, if required (Section [16](#)); and

3.1.9 Special package marking, if required (Section [15](#)).

4. Requirement for Wires

4.1 Before stranding, the 1350-H19 wire used shall meet the requirements of Specification [B230/B230M](#).

4.2 Before stranding, the 6201-T81 wire used shall meet the requirements of Specification [B398/B398M](#).

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

⁴ Available from National Institute of Standards and Technology (NIST), 100 Bureau Dr., Stop 1070, Gaithersburg, MD 20899-1070, <http://www.nist.gov>.