



Standard Specification for Aluminum Rectangular and Square Wire for Electrical Purposes¹

This standard is issued under the fixed designation B324; 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 aluminum 1350-O, annealed, 1350-H12 or -H22 ($\frac{1}{4}$ hard), 1350-H14 or -H24 ($\frac{1}{2}$ hard), 1350-H16 or -H26 ($\frac{3}{4}$ hard), and 1350-H19 (extra hard) wire, rectangular or square in shape with rounded corners for use as electrical conductors in insulated magnet wire.

1.2 The values stated in inch-pound or SI units are to be regarded separately as standard. Each system shall be used independently of the other. Combining the values from the two systems may result in non-conformance with the specification. For conductor sizes designated by AWG or kcmil sizes, the requirements in SI units are numerically converted from the corresponding requirements in inch-pound units. For conductor sizes designated by AWG or kcmil, the requirements in SI units have been numerically converted from corresponding values stated or derived in inch-pound units. For conductor sizes designated by SI units only, the requirements are stated or derived in SI units.

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

NOTE 1—The aluminum and temper designations conform to ANSI H35.1. Aluminum 1350 corresponds to Unified Numbering System A91350 in accordance with Practice E527.

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

B193 Test Method for Resistivity of Electrical Conductor Materials

B233 Specification for Aluminum 1350 Drawing Stock for Electrical Purposes

B279 Test Method for Stiffness of Bare Soft Square and Rectangular Copper and Aluminum Wire for Magnet Wire Fabrication

B557 Test Methods for Tension Testing Wrought and Cast Aluminum- and Magnesium-Alloy Products

B830 Specification for Uniform Test Methods and Frequency

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:

H35.1/H35.1(M) Standard for Alloy and Temper Designation Systems for Aluminum³

2.4 American National Standards:

NBS Handbook 100 —Copper Wire Tables⁴

NBS Handbook 109 —Aluminum Wire Tables⁴

3. Description of Terms Specific to This Standard

3.1 *lot*—an inspection lot shall consist of an identifiable quantity of wire subjected to inspection at one time. Each lot shall consist of units of wire of the same size and temper, manufactured under essentially the same conditions at essentially the same time. The amount in any case shall not exceed 30 000 lb (14 000 kg).

3.2 *sample*—a quantity of production units (coils, reels, spools) selected at random from the lot for the purpose of determining conformance of the lot to the requirements of this specification.

3.3 *sample size*—the number of production units selected.

3.4 *specimen*—a length of wire removed for test purposes from any individual production unit of the sample.

4. Ordering Information

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

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>.

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.