



Standard Specification for Aluminum-Alloy 6201-T81 Wire for Electrical Purposes¹

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1. Scope

1.1 This specification covers aluminum-alloy 6201-T81 (hard: solution heat-treated, cold worked, and artificially aged) round wire for electrical purposes.

NOTE 1—The alloy and temper designations conform to ANSI H35.1 and H35.1M. Aluminum-alloy 6201 corresponds to unified numbering system alloy A96201 in accordance with Practice E 527.

1.2 The values stated in inch-pound or SI units are to be regarded separately as standard. The values in each system are not exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in nonconformance with the specification.

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

2. Referenced Documents

2.1 The following documents of this issue in effect on date of material purchase form a part of this specification to the extent referenced herein.

2.2 ASTM Standards:

B 193 Test Method for Resistivity of Electrical Conductor Materials²

B 557 Test Methods of Tension Testing Wrought and Cast Aluminum- and Magnesium-Alloy Products³

B 557M Test Methods of Tension Testing Wrought and Cast Aluminum- and Magnesium-Alloy Products [Metric]³

B 830 Specification for Uniform Test Methods and Frequency²

E 527 Practice for Numbering Metals and Alloys (UNS)⁴

2.3 ANSI Standard:

ANSI H35.1 American National Standard for Alloy and Temper Designation Systems for Aluminum⁵

ANSI H35.1M American National Standard Alloy and Temper Designation Systems for Aluminum [Metric]⁵

2.4 NIST Standard:

NBS Handbook 100—Copper Wire Tables⁶

3. Terminology

3.1 Definitions of Terms Specific to This Standard:

3.1.1 *lot*—A group of production units, up to 30 000 lb [15 metric tons] of mass, of one type and size of wire, which was produced during the same time period, under similar production conditions, and is presented for acceptance at the same time (Explanatory Notes 1 and 2).

3.1.2 *production unit*—A coil, reel, spool, or other package of wire that represents a single usable length.

3.1.3 *sample*—The production unit or units from which a test specimen or specimens has been removed, and which is considered to have properties representative of the lot.

3.1.4 *specimen*—A length of wire removed for test purposes.

4. Ordering Information

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

4.1.1 Quantity of each size,

4.1.2 Wire size: diameter in inches or in millimetres (see 11.1),

4.1.3 Special tension test, if required (see 7.2 and 7.3),

4.1.4 Frequency of bending test (see 8.2),

4.1.5 Special jointing procedures, if permitted (see 12.2),

4.1.6 Place of inspection (see 15.2),

4.1.7 Package size and type (see 16.1), and

4.1.8 Special package marking, if required (see 16.4).

5. Material and Manufacture

5.1 The aluminum alloy used shall be of such quality that wire produced from it can comply with the requirements as to chemical composition, tensile and elongation properties, bending properties, and electrical resistivity prescribed in this specification.

6. Chemical Composition

6.1 The wire shall be made from aluminum alloy 6201 as designated in ANSI H35.1 and H35.1M. The material shall conform to the chemical composition prescribed in Table 1.

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 *Annual Book of ASTM Standards*, Vol 02.03.

³ *Annual Book of ASTM Standards*, Vol 02.02.

⁴ *Annual Book of ASTM Standards*, Vol 01.01.

⁵ Available from American National Standards Institute, 25 W. 43rd St., 4th Floor, New York, NY 10036.

⁶ Available from the National Institute of Standards and Technology (NIST), 100 Bureau Dr., Stop 3460, Gaithersburg, MD 20899-3460.