



Standard Specification for Unused Polypropylene Rope with Special Electrical Properties¹

This standard is issued under the fixed designation F 1701; 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 the requirements, sizes, construction, tests, and procedures for unused polypropylene ropes for use by electrical utilities and related industries on energized lines operating at voltages higher than 1 kV.

1.2 This specification covers the minimum electrical, mechanical, and physical properties guaranteed by the manufacturer and the detailed procedures by which such properties are to be determined. The purchaser has the option to perform or have performed any of these tests in order to verify the guarantee. Claims for failure to meet the specification are subject to verification by the manufacturer.

1.3 The rope to which this specification applies is designed to be used in a clean and dry condition, on or near energized lines.

1.4 A margin of safety shall be allowed between the maximum voltage and working distances on which it is used and the test voltage and lengths at which it is tested.

1.5 It is common practice for the user of this type of equipment to prepare complete instructions and regulations to govern in detail the correct and safe use of such equipment.

1.6 The use and maintenance of this equipment is beyond the scope of this specification.

1.7 The values stated in SI units are to be regarded as the standard.

1.8 The following safety hazards caveat pertains only to the test method portion, Section 13, of this specification: *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 ASTM Standards:

D 1125 Test Methods for Electrical Conductivity and Resistivity of Water²

D 4268 Test Methods for Testing Fiber Ropes³

¹ This specification is under the jurisdiction of ASTM Committee F18 on Electrical Protective Equipment for Workers and is the direct responsibility of Subcommittee F18.35 on Tools and Equipment.

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² Annual Book of ASTM Standards, Vol 11.01.

³ Annual Book of ASTM Standards, Vol 07.02.

E 4 Practices for Force Verification of Testing Machines⁴

E 380 Practice for Use of the International System of Units (SI) (the Modernized Metric System)⁵

F 711 Specification for Fiberglass-Reinforced Plastic (FRP) Rod and Tube Used in Live Line Tools⁶

2.2 IEEE Standards:

IEEE Std 4 Standard Techniques for High Voltage Testing⁷

IEEE Paper Field and Test Experience With Insulating Rope at BPA (July 1991)⁷

2.3 ISO Standard:

ISO 2307 Ropes—Determination of Certain Physical and Mechanical Properties⁸

2.4 Other Standard:

Cordage Institute CIA-3 Standard test methods fibre rope including standard terminations for hollow braided rope and double braided rope (June 1980)⁹

3. Terminology

3.1 *General*—The terms used in this specification are common to and well known by the industries that will be using them.

4. Ordering Information

4.1 Orders for rope under this specification should include the following information:

4.2 Manufacturer's designation of the rope.

4.3 *Length of Coil or Reel*:

4.3.1 *Lengths*—Unless otherwise specified, rope shall be furnished in lengths described for size in Table 1. Each package shall be continuous throughout without splices or knots. Ends shall be taped, heat sealed, or served to prevent ravelling.

4.3.2 *Special Lengths*—Lengths other than listed in Table 1 to be negotiated with the vendor.

4.3.3 Rope should be shipped in reels.

4.4 *Weight*—The weight per 100 ft of rope shall be as specified in Table 1. Rope weight more than 5 % in excess for

⁴ Annual Book of ASTM Standards, Vol 03.01.

⁵ Annual Book of ASTM Standards, Vol 14.02.

⁶ Annual Book of ASTM Standards, Vol 10.03.

⁷ Available from the Institute of Electrical and Electronics Engineers, Inc., 345 E. 47th St., New York, NY 10017.

⁸ Available from the American National Standards Institute, 11 West 42nd St., 13th Floor, New York, NY 10036.

⁹ Available from Cordage Institute.