



Designation: D1051 – 19

Standard Specification for Rubber Insulating Sleeves¹

This standard is issued under the fixed designation D1051; 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 manufacturing and testing of rubber insulating sleeves for protection of workers from electrical shock.

1.2 Two types of sleeves are provided and are designated as Type I, nonresistant to ozone, and Type II, resistant to ozone.

1.3 Five classes of sleeves, differing in electrical characteristics, are provided and are designated as Class 0, Class 1, Class 2, Class 3, and Class 4.

1.4 Two styles of sleeves, differing in configuration, are provided and are designated as Style A, straight taper, and Style B, curved elbow.

1.5 The values stated in SI units are to be regarded as the standard. See [IEEE/ASTM SI 10](#).

1.6 The following safety hazards caveat pertains only to the test methods portion, Sections 16 – 19, 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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.* Specific safety hazards statements are given in [18.2](#).

1.7 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 ASTM Standards:²

¹ This specification is under the jurisdiction of ASTM Committee F18 on Electrical Protective Equipment for Workers and is the direct responsibility of Subcommittee F18.15 on Worker Personal Equipment. This standard replaces ANSI Standard J6.5, which is no longer available.

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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.

[D149 Test Method for Dielectric Breakdown Voltage and Dielectric Strength of Solid Electrical Insulating Materials at Commercial Power Frequencies](#)

[D297 Test Methods for Rubber Products—Chemical Analysis](#)

[D412 Test Methods for Vulcanized Rubber and Thermoplastic Elastomers—Tension](#)

[D570 Test Method for Water Absorption of Plastics](#)

[D573 Test Method for Rubber—Deterioration in an Air Oven](#)

[D624 Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers](#)

[D1415 Test Method for Rubber Property—International Hardness](#)

[D2240 Test Method for Rubber Property—Durometer Hardness](#)

[D2865 Practice for Calibration of Standards and Equipment for Electrical Insulating Materials Testing](#)

[F819 Terminology Relating to Electrical Protective Equipment for Workers](#)

[IEEE/ASTM SI 10 American National Standard for Metric Practice](#)

3. Terminology

3.1 Definitions:

3.1.1 *color splash*—a splash, smear, or streak of contrasting color evident on the inside or outside of the sleeves that was deposited during the dripping operation and is vulcanized into the sleeve as part of the homogeneous compound.

3.1.2 *halogenation treatment*—exposure of the entire sleeve surface area to a halogen for the purpose of reducing surface friction.

3.1.3 *user*—the employer or entity purchasing the equipment to be utilized by workers for their protection; in the absence of such an employer or entity, the individual purchasing and utilizing the protective equipment.

3.1.4 For definitions of other terms, refer to Terminology [F819](#).

4. Significance and Use

4.1 This specification covers the minimum electrical, chemical, and physical properties guaranteed by the manufacturer and the detailed procedures by which such properties are