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## Standard Specification for Ozone-Resistant Thermoplastic Elastomer Insulation For Wire and Cable, 90°C–90°C Operation<sup>1</sup>

This standard is issued under the fixed designation D4246; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

### 1. Scope—Scope\*

1.1 This specification covers an ozone-resistant insulating compound for electrical wire and cables 14 AWG and larger. This compound consists substantially of a thermoplastic elastomer.

1.2 This type of insulation is considered suitable for continuous operation at conductor temperatures not exceeding 90°C–90°C in dry locations. Operating voltages are not to exceed 2000 V. The minimum installation temperature is ~~–40°C~~ –40°C.

1.3 Whenever two sets of values are presented, in different units, the values in the first set are the standard, while those in parentheses are for information only.

1.4 In many instances the insulation material cannot be tested unless it has been formed around a conductor or cable. Therefore, tests are done on insulated wire or cable in this specification solely to determine the relevant property of the insulation material and not to test the conductor or completed cable.

### 2. Referenced Documents

2.1 *ASTM Standards*:<sup>2</sup>

[D470 Test Methods for Crosslinked Insulations and Jackets for Wire and Cable](#)

[D1711 Terminology Relating to Electrical Insulation](#)

[D2633 Test Methods for Thermoplastic Insulations and Jackets for Wire and Cable](#)

### 3. Terminology

3.1 ~~Definitions:~~ Definitions—For definitions of terms used in this specification refer to Terminology [D1711](#).

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *aging (act of), n*—the exposure of materials to air at ~~±21°C~~ 121°C for 168 h.

### 4. Physical Properties

4.1 Requirements for physical properties are listed in [Table 1](#).

4.2 *Thickness of Insulation*—Table 1(a), (Conductor Sizes, Insulation Thicknesses, and AC Test Voltages for Rubber Insulations) of Test Methods [D470](#) lists the minimum average thickness for the insulation. The required minimum thickness is 90 % of the specified average thickness.

### 5. Electrical Requirements

5.1 *Order of Testing*—Perform the ac voltage, insulation resistance, and dc voltage tests in that order when any of these tests are specified. The sequence of other testing is not specified.

5.2 *AC Voltage Test*—Unless otherwise specified, omit this test if the dc voltage test described in [5.4](#) is to be performed. Test each insulated conductor for 5 min at the ac voltage given in Table 1(a) (Conductor Sizes, Insulation Thicknesses, and AC Test Voltages, for Rubber Insulations) of Methods [D470](#), under the columns ~~labeled~~ labeled “Ozone-Resisting Insulations.”

<sup>1</sup> This specification is under the jurisdiction of ASTM Committee [D09](#) on Electrical and Electronic Insulating Materials and is the direct responsibility of Subcommittee [D09.18](#) on Solid Insulations, Non-Metallic Shieldings and Coverings for Electrical and Telecommunication Wires and Cables.

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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard’s Document Summary page on the ASTM website.

\*A Summary of Changes section appears at the end of this standard