



Designation: D 1352 – 9702

An American National Standard

Standard Specification for Ozone-Resisting Butyl Rubber Insulation for Wire and Cable¹

This standard is issued under the fixed designation D 1352; 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 an ozone-resisting crosslinked rubber insulating compound for electrical wires and cables. The polymer consists substantially of butyl rubber.

1.2 This type of insulation is considered suitable for use at not more than 15 000 V between phases at an insulation level of 133 % or 28 000 V between phases at an insulation level of 100 %. The conductor temperature shall not exceed 85°C for an operating voltage of 15 000 V or less, and shall not exceed 80°C for an operating voltage above 15 000 V.

1.3 ~~Whenever two sets of values stated are presented, in inch-pound units different units, the values in the first set are the standard, except while those in cases where SI units are more appropriate. The values 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 document solely to determine the relevant property of the insulation material and not to test the insulated conductor or completed cable.

2. Referenced Documents

2.1 ASTM Standards:

D 470 Test Methods for Crosslinked Insulations and Jackets for Wire and Cable²

D 1711 Terminology Relating to Electrical Insulation²

2.2 ICEA Standard:

T-24-380 Guide for Partial-Discharge Procedure³

3. Terminology

3.1 ~~Definitions: For definitions of terms used in this specification, refer to This Standard.~~ Terminology D 1711.

3.1.1 *aging, (act of) n*—exposure of materials to air at 100°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) number 1A~~ (Conductor Sizes, Insulation Thicknesses and AC Test Voltages for Rubber Insulations) of Test Methods D 470 lists the average thickness for the insulation. The required minimum thickness is at least 90 % of that given in ~~Table 1(a) number 1A~~ (Conductor Sizes, Insulation Thicknesses and AC Test Voltages for Rubber Insulations) of Test Methods D 470.

5. Ozone Resistance

5.1 The insulation shall show ~~no injury~~ visible cracking after exposure for 3 h to an ozone concentration of not less than 0.025 nor more than 0.030 % by volume, when tested in accordance with Test Methods D 470.

6. Accelerated Water Absorption

6.1 The insulated conductor's insulation shall meet the requirements given in Table 2. Conduct the Electrical Method tests in accordance with Test Methods D 470 at 60 Hz with a water temperature of $75 \pm 1^\circ\text{C}$.

¹ This specification is under the jurisdiction of ASTM Committee D-9 D09 on Electrical and Electronic Insulating Materials and is the direct responsibility of Subcommittee D09.18 on Solid Insulations, Nonmetallic Shieldings, and Coverings for Electrical and Telecommunications Wires and Cables.

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² Annual Book of ASTM Standards, Vol 10.01.

³ Available from the Insulated Cable Engineers Assoc., P.O. Box 440, South Yarmouth, MA 02664.