



Standard Specification for Poly(Vinyl Chloride) Insulation for Wire and Cable, 60°C Operation¹

This standard is issued under the fixed designation D 2219; 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 a thermoplastic insulation of poly(vinyl chloride) or the copolymer of vinyl chloride and vinyl acetate.

1.2 This insulation is recommended for use at conductor temperatures not in excess of 60°C in wet or dry locations at a maximum voltage rating of 600 V for power and control circuits.

1.3 Whenever two sets of values are presented, in different units, the values in the first set are 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:

- D 1711 Terminology Relating to Electrical Insulation²
- D 2633 Methods of Testing Thermoplastic Insulations and

¹ 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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² Annual Book of ASTM Standards, Vol 10.01.

Jackets for Wire and Cable³

3. Terminology

3.1 Definitions:

3.1.1 For definitions of terms used in this specification, refer to Terminology D 1711.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *aging (act of), n*—exposure of materials to air or oil at a temperature and a time as specified in Table 1.

4. Physical Properties

4.1 The insulation shall conform to the requirements for physical properties prescribed in Table 1.

5. Electrical Requirements

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

5.2 *AC Voltage Test*—Test the insulated conductor at the ac withstand voltage as specified in Table 2. This test may be omitted if the dc withstand voltage test described in 5.4 is performed.

5.3 Insulation Resistance:

5.3.1 Insulated conductors in sizes AWG 26 (0.13 mm²) and larger shall have an insulation resistance of at least that corresponding to a constant of 500 M Ω -1000 ft at 60°F (15.6°C).

³ Annual Book of ASTM Standards, Vol 10.02.