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Standard Specification for MEDIUM-VOLTAGE RUBBER INSULATING TAPE¹

This standard is issued under the fixed designation D 1373; 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.

1. Scope

1.1 This specification covers medium-voltage, ozone-resistant rubber insulating tape designed for splicing electrical wires and cables operating up to 35 000 V phase-to-phase under both wet and dry locations with conductor temperatures up to 90°C (194°F) for continuous operation, to 110°C (230°F) for emergency overload conditions, and to 250°C (482°F) for short-circuit conditions, and for other insulating purposes. This tape is suitable for wet or dry outdoor use, but must be overwrapped to protect from ultraviolet radiation. This tape may be applied under an ambient temperature range from -10°C (+14°F) to +40°C (104°F).

2. Applicable Documents

2.1 ASTM Standards:

- D 149 Tests for Dielectric Breakdown Voltage and Dielectric Strength of Electrical Insulating Materials at Commercial Power Frequencies²
- D 150 Test for A-C Loss Characteristics and Permittivity (Dielectric Constant) of Solid Electrical Insulating Materials²
- D 257 Tests for D-C Resistance or Conductance of Insulating Materials²
- D 412 Tests for Rubber Properties in Tension³
- D 470 Testing Thermosetting Insulated and Jacketed Wire and Cable⁴

3. Compound

3.1 The tape shall consist of an unvulcanized or partially vulcanized rubber insulating compound. The compound shall be well, evenly, and smoothly processed, cut to the specified widths, and tightly wound in rolls with a separator between layers.

4. Separator

4.1 The separator shall be parchment paper, glazed or plastic sheeting, or any suitable material interposed between adjacent layers. The removable or nonremovable separator shall not interfere with the use of the roll during application. Where a removable separator is used, the separator shall not show any undue tendency to stick to the rubber or to ravel. The outside end of the roll shall be securely fastened.

5. Tensile Strength and Elongation

5.1 The tensile strength of the tape, when tested as specified in Section 20 shall be no less than 1.7 MPa (250 psi).

5.2 The elongation of a 50-mm (2-in.) gage length determined simultaneously with the tensile strength test, shall be not less than 500 %.

6. Dielectric Strength

6.1 The dielectric strength of the tape, when tested as specified in Section 21, shall be no less than 20 kV/mm (500 V/mil) of thickness.

7. Dissipation Factor and Dielectric Constant

7.1 When the tape is tested as in Section 22 and conditioned in accordance with 22.2, the maximum average dissipation factor and dielectric constant shall not exceed 0.035 and 4.5 respectively.

¹ This specification is under the jurisdiction of ASTM Committee D-9 on Electrical Insulating Materials and is the direct responsibility of Subcommittee D09.18 on Elastomeric Insulation on Cables.

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² Annual Book of ASTM Standards, Part 39.

³ Annual Book of ASTM Standards, Parts 37, 38.

⁴ Annual Book of ASTM Standards, Part 40.