



Designation: D 3391 - 80

AMERICAN SOCIETY FOR TESTING AND MATERIALS

1916 Race St., Philadelphia, Pa. 19103

Reprinted from the Annual Book of ASTM Standards, Copyright ASTM
If not listed in the current combined index, will appear in the next edition.

Standard Specification for RUBBER INSULATING TAPE FOR HIGH-VOLTAGE APPLICATIONS¹

This standard is issued under the fixed designation D 3391; 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 reappraisal.

1. Scope

1.1 This specification covers high-voltage, ozone-resistant rubber insulating tape designed for splicing electrical wires and cables operating up to 138 000 V phase-to-phase under both wet and dry locations with conductor temperatures up to 90°C (194°F) for continuous operation, to 130°C (266°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 out-of-door use and for applications under an ambient temperature range of -10 to +40°C (14 to 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 Tests 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
- D 618 Conditioning Plastics and Electrical Insulating Materials for Testing⁵
- D 750 Recommended Practice for Rubber Deterioration in Carbon-Arc or Weathering Apparatus³

3. Compound

3.1 The tape shall consist of an unvulcanized or partially vulcanized rubber insulating com-

pound. 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 show no 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 in accordance with Section 21, shall be not less than 250 psi (1.7 mPa).

5.2 The elongation of a 2-in. (50-mm) gage length determined simultaneously with the tensile strength test shall be not less than 700 %.

6. Dielectric Strength

6.1 The dielectric strength of the tape, when tested in accordance with Section 22, shall be not less than 700 V/mil (28 mV/m) of thickness.

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.

Current edition approved Oct. 31, 1980. Published January 1981. Originally published as D 3391 - 75. Last previous edition D 3391 - 75.

² Annual Book of ASTM Standards, Part 39.

³ Annual Book of ASTM Standards, Part 37.

⁴ Annual Book of ASTM Standards, Part 40.

⁵ Annual Book of ASTM Standards, Parts 22, 35, and 39.