



# 33 Vinyl Electrical Tape

## Data Sheet

### Product Description

3M™ 33 Electrical Tape is a quality, general-purpose vinyl insulating tape. It has excellent resistance to; abrasion, moisture, alkalis, acid, copper corrosion and varying weather conditions (including sunlight). It is a polyvinyl chloride (PVC) tape that has a high dielectric strength, is flame-retardant and conformable, and provides excellent mechanical protection with minimum bulk. It is a UL Listed “Insulating Tape”.

- ❖ UL Listed; UL 510 Standard “Insulating Tape” (product category OANZ), File E129200
- ❖ Polyvinyl chloride (PVC) backing
- ❖ Pressure-sensitive rubber based adhesive
- ❖ Inhibits corrosion of electrical conductor
- ❖ Compatible with solid dielectric cable insulation

### Applications

- ❖ Primary electrical insulation for all wire and cable joints rated up to 600V
- ❖ Protective jacketing for high voltage cable joints and repairs
- ❖ Harnessing of wire and cables
- ❖ For indoor and outdoor applications
- ❖ For above or below grade applications

### Typical Data/Physical Properties

#### Temperature Rating

UL510 80°C (176°F)

#### Flammability (Maximum)

UL510 Pass

ASTM D1000 4 sec.

#### Dielectric Strength

ASTM D1000

Standard Condition >5.6kV/mm

High Humidity 0% of Standard

#### Insulation Resistance

ASTM D1000 >10<sup>6</sup> Megohms

#### Thickness

ASTM D1000 0.178mm

#### Elongation

ASTM D1000 200%

### Breaking Strength

ASTM D1000

22°C (72°F) 30N/10mm

### Adhesion

ASTM D1000

To Steel 8.33N/mm

To Backing 7.63N/mm

### Flagging

ASTM D1000

<2.5mm

### Telescoping

24 Hours @ 50°C (120°F) <2.5mm

Note: These are typical values and should not be used for specification purposes.

### Installation Techniques

The tape shall be applied in half-lapped layers with sufficient tension to conform and produce a uniform covering. In most applications, this tension will reduce the tape's width. On pigtail joints, the tape should be wrapped beyond the end of the wires and then folded back, leaving a protective cushion to resist cut-through. Always wrap the tape up-hill, taping from a smaller diameter surface to a larger diameter surface. Apply the tape with no tension on the last wrap to prevent flagging.

### Specifications

The tape is based on polyvinyl chloride (PVC) and/or its copolymers and has a rubber-based, pressure-sensitive adhesive. The tape shall be 0.178mm thick, and be UL Listed and marked per UL Standard 510 as “Flame Retardant and Weather Resistant”. The tape must be applicable at temperatures ranging from 0°C (32°F) through 38° (100°F) without loss of physical properties. The tape shall be classified for use in both indoor and outdoor environments. The tape shall be compatible with synthetic cable insulations, jackets and jointing compounds.

The tape will remain stable and will not telescope more than 2.5mm when maintained at temperatures below 50°C (120°F).

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#### Engineering/Architectural Specification

Primary electrical insulation (branch wiring in wet or dry locations). All joints for 600 volt wire and rated 80°C (176°F) and below shall be insulated with a minimum of two half-lapped layers of 3M 33 Vinyl Electrical Tape. All connectors having irregular surfaces shall be padded with Scotchfil™ Electrical Insulation Putty or Scotch 130C Rubber Splicing Tape prior to insulating with 3M 33 Vinyl Electrical Tape.

Mechanical protection (outer jacketing). All rubber and thermoplastic insulating high voltage power cable tape joints and repairs shall be overwrapped with at least two half-lapped layers of 3M 33 Vinyl Electrical Tape.

#### Shelf Life

3M 33 vinyl electrical tape has a 5-year shelf life (from date of manufacture) when stored under the following recommended storage conditions. Store behind present stock in a clean dry place at a temperature of 21°C (70°F) and 40-50% relative humidity. Good stock rotation is recommended.

#### Availability

3M 33 Vinyl Electrical Tape is available from your local 3M authorised distributor in the following standard roll sizes:

12mm x 33M  
19mm x 33M  
25mm x 33M  
38mm x 33M  
50mm x 33M

Other lengths and widths are available by special request.

#### Important Notice

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