



# 33 Vinyl Electrical Tape

## Data Sheet



LISTED  
539H  
Insulation Tape

### 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 splices rated up to 600 volts
- Protective jacketing for high voltage cable splices and repairs
- Harnessing of wires and cables
- For indoor or outdoor applications
- For above or below grade applications

### Typical Data/Physical Properties

<b>Temperature Rating</b> UL 510	80°C (176°F)
<b>Flammability</b> UL 510 ASTM D1000	Pass 4 sec.
<b>Dielectric Strength*</b> Standard Condition High Humidity	>1000 V/mil >90% of Standard
<b>Insulation Resistance*</b>	>10 <sup>6</sup> Megohms
<b>Thickness*</b>	7 mils
<b>Elongation*</b>	200%
<b>Breaking Strength*</b>	17 lbs./in.
<b>Adhesion*</b> To Steel To Backing	24 oz/in. 22 oz/in.
<b>Flagging*</b>	<0.1 in.
<b>Telescoping</b> 24 hr. @ 50°C (120°F)	<0.1 in.

\*Per ASTM D1000

**Note:** *These are typical properties 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 to approximately 5/8 of its original width. On pigtail splices, 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 "uphill", taping from a smaller diameter surface to a larger diameter surface. Apply the tape with no tension on the last wrap to prevent flagging.

## 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 70°F (21°C) and 40-50% relative humidity. Good stock rotation is recommended.

## Availability

3M 33 vinyl electrical tape is available from your local 3M authorized electrical distributor in the following standard roll sizes:

3/4" x 36 yd.  
1 1/2" x 44 ft.

Other lengths and widths are available by special order.

## Specification:

### Product:

The tape is based on polyvinyl chloride (PVC) and/or its copolymers and has a rubber based, pressure-sensitive adhesive. The tape shall be 7.0 mils 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 32°F (0°C) through 100°F (38°C) 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 splicing compounds. The tape will remain stable and will not telescope more than 0.1 inches when maintained at temperatures below 120°F (50°C).

## Engineering/Architectural Specifications:

Primary electrical insulation (branch wiring in wet or dry locations): All splices 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 splices and repairs shall be overwrapped with at least two half-lapped layers of 3M 33 Vinyl Electrical Tape.

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### Important Notice

Before using this product, you must evaluate it and determine if it is suitable for your intended application. You assume all risks and liability associated with such use.

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## Electrical Products Division

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