

# Scotch®

## 22 Heavy Duty Vinyl Electrical Tape

### Data Sheet



LISTED  
539H  
Insulation Tape



LR48769

### Product Description

Scotch® 22 Electrical Tape is a premium grade, 10 mil thick, vinyl insulating tape. It is designed to perform continuously in ambient temperatures up to 80°C (176°F). The tape is conformable for cold weather applications down to -10°C (15°F). It has excellent resistance to abrasion, moisture, alkalis, acids, corrosion and varying weather conditions (including ultraviolet exposure). The combination of elastic backing and aggressive adhesive provides moisture tight electrical and mechanical protection with minimum bulk. 22 tape is an Underwriters' Laboratories Listed and Canadian Standards Association Certified "Insulating Tape".

- UL Listed; UL 510 Standard "Insulating Tape" (product category OANZ), file E129200
- CSA Certification; Standard C22.2 No. 197-M1983 "PVC Insulation Tape", File LR 48769
- Polyvinyl chloride (PVC) backing
- Pressure sensitive rubber based adhesive
- Compatible with solid dielectric cable insulations
- Inhibits corrosion of electrical conductors
- For indoor or outdoor applications
- Increased mechanical strength
- Extra physical protection against abrasion

### Applications

- Primary electrical insulation for all wire and cable splices rated up to 600 volts and 80°C (176°F)
- Primary electrical insulation for 600 volt bus applications, and protective jacketing for low and high voltage bus

- Protective jacketing for high voltage cable splices and repairs.
- Harnessing of wires and cables

### Typical Data/Physical Properties

#### Temperature Rating:

UL 510 80°C (176°F)

#### CSA

C22.2 No 197-M1983 80°C (176°F)

#### Color

Black

#### Thickness

ASTM D-1000 10 mils

#### Adhesion to Steel

ASTM D-1000  
22°C (72°F) 20 oz/in

#### Adhesion to Backing

ASTM D-1000  
22°C (72°F) 20 oz/in

#### Breaking Strength

ASTM D-1000  
22°C (72°F) 20 lbs./in

#### Ultimate Elongation

ASTM D-1000 200%

#### Flammability

UL 510 1 sec.  
ASTM D-1000 4 sec.

#### Accelerated Aging

ASTM D-1000 80%

#### Telescoping

24 hrs @ 50°C (120°F) <0.1 inch

## Electrical Properties

### Voltage Rating

UL 510 600V

### Dielectric Breakdown

ASTM D-1000  
Standard Condition 12,000V  
High Humidity 90% of Standard

### Insulation Resistance

ASTM D-1000 >1 x 10<sup>6</sup> megohms

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

## 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 10 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 15°F through 100°F (-10°C through 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 insulation, 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 Specification

#### Primary electrical insulation (branch wiring in wet or dry locations):

All splices for 600 volt wire rated 80°C (176°F) and below shall be insulated with a minimum of two half lapped layers of Scotch® 22 Vinyl Electrical Tape.

"Scotch" and "Scotchfil" are trademarks of 3M.

#### 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.

**Warranty; Limited Remedy; Limited Liability.** This product will be free from defects in material and manufacture as of the date of purchase. **3M MAKES NO OTHER WARRANTIES INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** If this product is defective within the warranty period stated above, your exclusive remedy shall be, at 3M's option, to replace or repair the 3M product or refund the purchase price of the 3M product. **Except where prohibited by law, 3M will not be liable for any loss or damage arising from this 3M product, whether direct, indirect, special, incidental or consequential regardless of the legal theory asserted.**



### Electrical Products Division

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All connectors having irregular surfaces shall be padded with Scotchfil™ Electrical Insulation Putty or Scotch® 130C Rubber Splicing Tape prior to insulating with 22 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 Scotch® 22 vinyl electrical tape.

## Insulation Techniques

The tape shall be applied in half lapped layers with sufficient tension to produce a uniform wind (for most applications, this tension will reduce the tape's width to approximately 5/8 of its original width). On pigtail splices, the tape shall be wrapped beyond the end of the wires and then folded back, leaving a protective cushion to resist cut through. Wrap 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.

### Shelf Life

Scotch 22 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

Scotch 22 Vinyl Electrical Tape is available from your local 3M authorized distributor in the following standard roll size:

3/4 in. x 36 yd.

Other lengths and widths are available by special request.