



# Scotch™

## Super 33+ Vinyl Electrical Tape

### Data Sheet

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#### Product Description:

Scotch™ Super 33+ Vinyl Electrical Tape is a premium grade, 7 mil thick, all-weather vinyl-insulating tape. It is designed to perform continuously in ambient temperatures up to 105°C (220°F). The tape is conformable for cold weather application down to -18°C (0°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. Super 33+ 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 Insulating Tape," File LR 48769
- Polyvinyl chloride (PVC) backing.
- Pressure-sensitive rubber based adhesive.
- Compatible with solid dielectric cable insulations.
- Compatible with rubber and synthetic splicing compounds, as well as epoxy and polyurethane resins.
- Inhibits corrosion of electrical conductors.
- For indoor or outdoor applications.

#### Applications:

- Primary electrical insulation for all wire and cable splices rated up to 600 volts and 105°C (220°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  
Handling                      -18°C (0°F)  
Continuous  
Operation                      105°C (220°F)

**Color**                      Black

**Thickness**  
ASTM D1000                  7 mils

**Adhesion to Steel**  
ASTM D1000  
22°C (72°F)                  28 oz./in.  
-18°C (0°F)                  60 oz./in.

**Adhesion to Backing**  
ASTM D1000  
22°C (72°F)                  25 oz./in.  
-18°C (0°F)                  60 oz./in.

**Breaking Strength**  
ASTM D1000  
22°C (72°F)                  15lbs./in.

#### Ultimate Elongation

ASTM D1000  
22°C (72°F)                  250%  
-18°C (0°F)                  100%

#### Flammability (Maximum)

UL 510                      1 sec.  
ASTM D1000                  4 sec.

#### Accelerated Aging

ASTM D1000                  80%

#### Flagging

ASTM D1000                  <0.1 inch

#### Telescoping

24 Hours @ 50°C          <0.1 inch  
(120°F).

#### Electrical Properties:

##### Voltage Rating

UL 510                      600V

##### Dielectric Strength

ASTM D1000  
Standard Condition          1150  
V/mil  
High Humidity                  90% of std.

##### Insulation Resistance

ASTM D1000                  >1 x10<sup>6</sup>  
megohms  
(High Humidity Method)

**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 7 mils thick, and be UL Listed and marked per UL Standard 510 as "Flame Retardant, Cold and Weather Resistant." The tape must be applicable at temperatures ranging from 0°F through 100°F (-18°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 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 Specification:

Primary electrical insulation (branch wiring in wet or dry locations): All splices for 600 volt wire rated 105°C (220°F) and below shall be insulated with a minimum of two half-lapped layers of Scotch Super 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 Scotch Super 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 Scotch Super 33+ Vinyl Electrical Tape

## Installation 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 Super 33+ Vinyl Electrical Tape complies with the requirements of UL 510 for storage. When maintained under normal storage conditions the tape will remain stable and has a five year shelf-life.

## Availability:

Scotch Super 33+ Vinyl Electrical Tape is available from your local 3M authorized distributor in the following standard roll sizes:

3/4 in. x 66 ft.

3/4 in. x 44 ft.

3/4 in. x 20 ft.

Other lengths and widths are available by special request.

Scotch and Scotchfil are trademarks of 3M.

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