

3M Data Sheet

Scotch™ 22

Heavy Duty Vinyl Electrical Tape

1. Product Description

Scotch™ 22 Electrical Tape is a premium grade, 0.25 mm thick vinyl insulating tape. It is designed to perform continuously in ambient temperatures up to 80°C.

The tape is conformable for cold weather applications down to -10°C. It has excellent resistance to abrasion, moisture, alkalies, 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. Scotch™ 22 tape is an Underwriters' Laboratories Listed and Canadian Standards Association Certified "Insulating Tape".

- UL Listed; UL 510 Standard "Insulating Tape" (product category OANZ2), 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 electric cable insulations
- Inhibits corrosion of electrical conductors
- For indoor and outdoor applications
- Increased mechanical strength
- Extra physical protection against abrasion

2. Applications

- Primary electrical insulation for all wire and cable splices rated up to 600 volts and 80°C
- Primary electrical insulation for 600 volts 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

3. Typical Properties*

Temperature Rating¹	80°C
CSA²	80°C
Color	Black
Thickness³	0.25 mm

Backing Strength³	35 N/10 mm
Ultimate Elongation³	200%
Adhesion to Steel³	2.19 N/10mm
Adhesion to Backing³	2.19 N/10mm
UL 510 Flame Retardant⁴	Yes
UL 510 Weather Retardant⁴	Yes
Electric Strength remaining⁵	80%
Telescoping 24 h at 50°C	<2.54 mm
Electric Strength⁶	45 kV/mm
Insulation Resistance⁷	10 ¹² Ω cm

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

¹ IEC 60216

² C22.2 No. 197-M1983

³ IEC 60454-2

⁴ UL-recognized for flame retardancy per UL 510, Product Category OANZ2, File 129200

⁵ ASTM D-1000

⁶ IEC 60243

⁷ IEC 60426

4. Specifications

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 0.25 mm 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 -10°C through 38°C without loss of physical properties. The tape shall be compatible with synthetic cable insulation, jackets and splicing compounds. The tape will remain stable and will not telescope more than 2.54 mm when maintained at temperatures below 50°C.

5. Engineering/Architectural

Specification

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

All splices for 600 volts wire rated 80°C and below shall be insulated with a minimum of two half lapped layers of Scotch™ 22 Vinyl Electrical Tape. All connectors having irregular surfaces shall be padded with Scotchfil™ Electrical Insulation Putty or insulating with Scotch™ 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.

6. 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 splice, 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.

7. Shelf Life

Scotch™ 22 Vinyl Electrical has a 5 years shelf life (from the date of manufacture) when stored under the following conditions. Store behind present stock in a clean dry place at a temperature of 21°C and 40-50% relative humidity. Good stock rotation is also recommended.

8. Availability

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

19 mm x 33 m

Other lengths and widths are available by special request

IMPORTANT NOTICE

All statements, technical information and recommendations related to the Seller's products are based on information believed to be reliable, but the accuracy or completeness thereof is not guaranteed. Before utilizing the product, the user should determine the suitability of the product for its intended use. The user assumes all risks and liability whatsoever in connection with such use.

Any statements or recommendations of the Seller which are not contained in the Seller's current publications shall have no force or effect unless contained in an agreement signed by an authorized office of the Seller.

The statements contained herein are made in lieu of all warranties, expressed or implied, including but not limited to the implied warranties of merchantability and fitness for a particular purpose which warranties are hereby expressly disclaimed.

SELLER SHALL NOT BE LIABLE TO THE USER OR ANY OTHER PERSON UNDER ANY LEGAL THEORY; INCLUDING BUT NOT LIMITED TO NEGLIGENCE OR STRICT LIABILITY; FOR ANY INJURY OR FOR ANY DIRECT; INDIRECT; INCIDENTAL OR CONSEQUENTIAL DAMAGES SUSTAINED OR INCURRED BY REASON OF THE USE OF ANY OF THE SELLER'S PRODUCTS.



Electro Product Division
Carl-Schurz-Straße 1
D-41453 Neuss
Germany
Tel: +49 2131 – 14 0
Fax: +49 2131 – 14 3897

3M 2003
Issue: 1