

Technical data sheet



Product: 33+

Manufacturer: 3M DEUTSCHLAND GMBH

Product group: ELEKTRO

Article group: KLEBEBAND

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SCOTCH SUPER 33+ VINYL ELECTRICAL TAPE

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Scotch® Super 33+™ Vinyl Electrical Tape

Data Sheet

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Product Description Scotch® Super 33+™ Vinyl Electrical Tape is a black, professional grade, nominal 7-mil (0.178 mm) thick electrical insulating tape composed of an elastic vinyl (PVC) film backing coated on one side with a non-corrosive, rubber-based pressure-sensitive adhesive.

- Commonly used in these types of applications:
 - **UL510:** As primary insulation on applications up to 600V at max temperature of 80°C (176°F) and min temperature of -10°C (14°F) on joints and splices in wires and cables in accordance with NFPA 70, National Electrical Code
 - **CSA C22.2 No.197:** As primary insulation on applications up to 1000V at max temperature of 105°C (221°F) and min temperature of -18°C (0°F) on joints and splices in wires and cables in accordance with Canadian Electrical Code, Part 1
 - **IEC 60454-3-1:** Classification Type 7, Designation IEC 60454-3-1-7/F-PVCP/90 for thermal index of 90°C (194°F) and min temperature rating of -18°C (0°F)
 - Industrial, Commercial and Residential environments
 - Where Flame Retardant and Sunlight, Cold Resistance rating is required – UL510
 - Cable jacket repair (up to 600V (UL) / 1000V (CSA) as Primary Insulation) and as mechanical protection when overwrapping rubber splicing, and mastic tapes used on LV/MV/HV joints and splices
 - Critical indoor and outdoor operations as determined by end-user where use of a general use vinyl electrical tape is not recommended
 - Where compatibility with most solid dielectric cable insulations, rubber and synthetic splicing compounds is required
 - Where reducing moisture ingress is needed, best results achieved when used as an overwrap in combination with a rubber splicing or mastic tape product
 - For harnessing and bundling of wires and cable where minimum bulk is required
- Country of Origin: USA

Properties

Physical Properties	Value Imperial (Metric)	Mechanical Properties	Value Imperial (Metric)
Color – Visual	Black	Thickness³	7 mils +/- 0.7 (0.178 +/- 0.018 mm)
Adhesive	Rubber-based	Adhesion to Steel³ - Minimum 73°F (23°C) 0°F (-18°C)	20 oz/in (2.2 N/cm) 30 oz/in (3.3 N/cm)
Backing	Vinyl (PVC)	Adhesion to Backing³ - Minimum 73°F (23°C) 0°F (-18°C)	18 oz/in (2.0 N/cm) 30 oz/in (3.3 N/cm)
Flame Retardant Sunlight, Cold Resistant – UL510	Pass	Tensile Strength^{3,4} – Minimum	2062 psi / 14.4 lb/in (25.3 N/cm)
Temperature Rating UL510 ¹ CSA - C22.2 No. 197 ² IEC 60454-3-1 - Type 7	14°F to 176°F (-10°C to 80°C) 0°F to 221°F (-18°C to 105°C) 0°F to 194°F (-18°C to 90°C)	Elongation³ - Minimum 73°F (23°C) 0°F (-18°C)	225% 125%
Electrical Properties	Value Imperial (Metric)		
Voltage Rating - Maximum UL510 ¹ / CSA C22.2 No. 197 ²	600V / 1000V		
Dielectric Strength³ - Minimum Standard Condition High Humidity Condition	1000 V/mil (39.4 kV/mm) 90% of std.		
Insulation Resistance³ - Minimum (High Humidity)	1x10 ¹² ohms		

Notes:

1. In accordance with NFPA 70, National Electrical Code
2. In accordance with Canadian Electrical Code, Part 1
3. ASTM D1000 Test Method - properties measured at room temperature 73°F (23°C) unless otherwise stated
4. Tensile Strength “lb/in (N/cm)” values for reference only, based on nominal tape thickness of 7 mils

Scotch® Super 33+™ Vinyl Electrical Tape

Agency Approvals & Self Certifications

- UL Listed: UL 510 Standard “Insulating Tape”, Category OANZ, File No. E129200
- CSA Listed: CSA-C22.2 No.197 “PVC Insulating Tape”, File No. 048769, Class 9052-02
- VDE Mark Certificate no. 130462; Type 7: IEC 60454-3-1-7/F-PVCP/90
- Test report RPT-794187 available to UL510 Standard testing

- For Regulatory information including RoHS, REACH, please visit www.3M.com/regs
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Installation Techniques

Scotch® Super 33+™ Vinyl Electrical 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 width to approximately 5/8 of 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 help prevent flagging.**

Shelf Life & Storage

This product has a 5-year shelf life (from date of manufacture) when stored in humidity-controlled storage (50°F/10°C to 80°F/27°C and <75% relative humidity).

Availability

Scotch® Super 33+™ Vinyl Electrical Tape is available from 3M authorized distributors

Also available from www.3M.com/electrical or call 1.800.245.3573.

Scotch® Super 33+™ Vinyl Electrical Tape

TECHNICAL STATEMENT

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