

3M 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 | Thickness ³ | 7 mils +/- 0.7 (0.178 +/- 0.018 mm) |
| Adhesive | Rubber-based | Adhesion to Steel ³ - 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 Backing ³ - 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) | Elongation ² - 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 Strength ³ - Minimum Standard Condition High Humidity Condition | 1000 V/mil (39.4 kV/mm) 90% of std. | | |
| Insulation Resistance ³ - 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