3M™ Temflex™ Vinyl Electrical Tape 165

Data Sheet **June 2022**

Product Description

3M™ Temflex™ Vinyl Electrical Tape 165 is a multi-purpose, general use grade, nominal 6-mil (0.152 mm) thick electrical insulating tape composed of an elastic vinyl (PVC) film backing and coated on one side with a non-corrosive, solvent free pressure-sensitive adhesive. Available in 10 colors and manufactured in a 100% solvent-free process.

- 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 90°C (194°F) and min temperature of -7°C (19°F) on joints and splices in wires and cables in accordance with Canadian Electrical Code, Part 1
  - ***IEC 60454-3-1:*** Classification Type 5, Designation IEC 60454-3-1-5/F-PVCP/90 for thermal index of 90°C (194°F) and min temperature rating of 0°C (32°F)
  - Industrial, commercial and residential environments
  - Where it is required to have a more sustainable, vinyl electrical tape with no VOCs (volatile organic compounds) and 100% solvent-free manufacturing process with lower emissions
  - Where Flame Retardant and Cold Resistance rating is required – UL510
  - Marking of safety areas and equipment and phase coding
  - 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
  - Indoor and weather protected outdoor operations as determined by end-user where use of a professional grade vinyl electrical tape is not 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
  - Wire pulling and fishing
- Country of Origin: Poland

Properties

Physical Properties	***Value Imperial (Metric)***
Color – Visual	Black, Blue, Brown, Gray, Green, Orange, Red, Purple, White, Yellow
Adhesive	Rubber-based
Backing	Vinyl (PVC)
Flame Retardant, Cold Resistant UL510	Pass
Temperature Rating UL510[1] CSA - C22.2 No. 197[2] IEC 60454-3-1 - Type 5	14°F to 176°F (-10°C to 80°C) 19°F to 194°F (-7°C to 90°C) 32°F to 194°F (0°C to 90°C)
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

Mechanical Properties	***Value Imperial (Metric)***
Thickness[3]	6 mils +/- 0.6 (0.152 +/- 0.015 mm)
Adhesion to Steel[3] - Minimum	18 oz/in (2.0 N/cm)
Adhesion to Backing[3] - Minimum	18 oz/in (2.0 N/cm)
Tensile Strength[3,4] – Minimum	2200 psi / 13.2 lb/in (23.1 N/cm)
Elongation[3] - Minimum	200%

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 6 mils

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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 5: IEC 60454-3-1-5/F-PVCP/90 • 3M Test report RPT-706639 available to UL510 and IEC 60454 Standards testing • For Regulatory information including RoHS, REACH, please visit www.3M.com/regs
Installation Techniques	3M™ Temflex™ Vinyl Electrical Tape 165 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	3M™ Temflex™ Vinyl Electrical Tape 165 is available from 3M authorized distributors. Also available from www.3M.com/electrical or call 1.800.245.3573.

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TECHNICAL STATEMENT

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