3M Data Sheet

Scotch ™ 130C

Linerless Rubber Splicing Tape

1. Product Description

Scotch™ 130C Electrical Tape is a highly conformable, linerless Ethylene Propylene Rubber (EPR), high-voltage insulating tape formulated to provide excellent thermal dissipation of splice heat. The tape is designed for use in splicing und terminating wires and cables. Rated up to 90°C continuous operating temperatures and short term 130°C overload service. The tape will meet industry specifications for flame retardance and has excellent physical and electrical properties which provide immediate moisture seals and void-free build-ups. This product can be used for low- and high-voltage (through 69 kV) applications.

Tape Features:

- Linerless, self-bonding primary insulating tape rated through 69 kV
- High thermal conductivity
- Ethylene propylene base
- Flame retardant
- Excellent physical and electrical properties
- Designed to insulate splices and terminate cables whose overload temperatures can reach 130°C
- Physical and electrical properties unaffected by degree of stretch
- Physical and electrical properties unaffected by solvents normally used when splicing high-voltage cables
- Compatible with common solid dielectric cable insulation
- Uniform tape unwind from roll
- Small roll size (OD)
- Five year shelf life
- Stable over wide applications temperature range
- Weather resistant

2. Applications

- Primary insulation for splicing all types of solid electric insulated cables through 69 kV
- Primary insulation for building stress cones on all types of solid electric insulated cables up to 35 kV
- Jacketing (secondary insulation) on high-voltage splices and terminations
- Replace semi-conducting layer beneath metallic shield of similar cables in case of damage (screening)
- Moisture-sealing electrical connections
- Bus bar insulation
- End-sealing high-voltage cables
- Motor leads
- Jacket repairs

3. Typical Properties*

Color	Black
Thickness[1]	0.762 mm
Tensile Strength[1]	1.72 MPa
Ultimate Elongation[1]	1000%
Operating Temperature[2]	90°C
Emergency Overload[2]	130°C
Thermal Resistivity 3M Transient	300°C cm/watt
Ozone Resistance[2]	Passes
Heat Resistance[2]	Passes
UV Resistance[2]	Passes
Flame Resistance[3]	Passes

Electric Strength[4]

Original	29.5 MV/m
24 hrs in H_2O	29.5 MV/m
96 hrs at 23°C 96% RH	28.7 MV/m

Volume Resistivity[5]

Original	$>10^{15}$ Ωcm
96 hrs at 23°C 96% RH	$>10^{14}$ Ωcm

Insulation Resistance[6] $>10^6$ MΩ

Electric Constant[7]

1200 volts at 60 Hz	
23°C	3.5
90°C	3.6

Dissipation Factor[7]

1200 volts at 60 Hz	
23°C	0.70%
90°C	3.00%

*There are typical properties and should not be used for specification purposes.

[1] IEC 60454-2
[2] ASTM D-4388
[3] IEEE Std 27-1974 ANSI C37.20C 74
[4] IEC 60243
[5] IEC 60093
[6] IEC 60426
[7] VDE 0303-4

4. Specification

Product
The high-voltage corona resistant tape must be supplied without a liner and based on ethylene propylene rubber and be capable of emergency operating cable temperature of 130°C. The tape must be capable of being applied in either stretched or unstretched conditions without resulting in loss in either physical or electrical properties. The tape must be compatible with all synthetic cable insulations and have a shelf life of five years. The tape must be flame retardant.

Engineering/Architectural Specifications
Splicing and terminating solid electric cables shall be done in accordance with drawing engineered by the splice material manufacturer such as the 2047 Series available from the 3M Company. All splices and terminations shall be insulated using Scotch™ 130C Electrical Tape.

5. Installation Techniques

This tape should be applied like any rubber tape: that is, the side of the tape wrapped *inside* the roll should be applied *outside* on the splice. (Tacky side up.) This will help prevent the roll from getting progressively further away from the work area.

To eliminate voids in critical areas, highly elongate Scotch™ 130C Tape. Stretch tape in these critical areas just short of the breaking point; doing so will not alter its physical or electrical properties. In less critical areas, less elongation may be used. Normally Scotch™ 130C Tape is stretched ¾ of its original width in these critical areas. Always attempt to half lap to produce a uniform buildup. When using Scotch™ 130C Tape for splicing cables above 15 kV, always highly elongate the tape throughout the entire splice. Techniques for proper usage of Scotch™ 130C Tape are contained in standard and special prints available through the “3M System for Splicing and Terminating” program. These are available through the local 3M Electrical Products Division representative.

6. Maintenance

Under normal storage conditions, Scotch™ 130C Electrical Tape has a 5 years shelf life. The tape is not impaired by freezing nor by overheated storage up to the point of flow which prevents removal from the package.

7. Availability

Scotch™ 130C Electrical Tape is available in 19 mm by 9.1 m, and 50.8 mm by 9.1 m rolls from your electrical distributor. Other lengths and widths available by request.

Complete Product und Use Specifications are available through the 3M Electrical Products Division.

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