Scotch® Electrical Semi-Conducting Tape 13

Data Sheet **September 2012**

Description

Scotch® Electrical Semi-Conducting Tape 13 is a highly conformable, semi-conducting EPR (Ethylene Propylene Rubber) based high-voltage splicing tape. It is non-vulcanizing and shelf stable, with stable conductivity over a wide temperature range. Its conductivity is not affected, except by low-viscosity oils. The conductivity of cable semi-conducting jackets is not affected by Scotch® Electrical Semi-Conducting Tape 13.

- Semi-conducting (low resistivity)
- Retains conductivity with strength
- Elongates easily to conform to irregular shapes
- Stable at elevated temperatures (130°C / 266°F)
- Compatible with most solid dielectric cable insulations and conductors
- Excellent resistance to cracking or checking from solvents, UV, or moisture
- Compatible with high-voltage splicing and terminating materials
- Usable for indoor or outdoor applications
- Meets requirement of ASTM-D-4388, Type IV

Applications

- To electrically round out high-voltage connectors and to bond to insulating materials to minimize electrical stresses
- Continue semi-conducting strand shielding found in solid dielectric (polyethylene, XLP, EPR, etc.) cables at 5 kV and above
- Provide shielding for cable joints on solid dielectric insulated power cables (shielded or concentric neutral)
- Replace semi-conducting layer beneath metallic shield of similar cables in case of damage (screening)
- Make conductive portion of stress cone of power cable termination on solid dielectric insulated power cables
- Maintain positive connection between concentric neutral semi-conducting jackets of power cables and semi-conducting surfaces of plug-in units
- Establish a more positive contact between concentric neutral wires and pre-molded devices already installed with too much jacket exposed
- Round out bolted connections on insulated bus bars

Agency Approvals & Self Certifications

RoHS 2002/95/EC

RoHS Compliant 2002/95/EC" means that the product or part ("Product") does not contain any of the substances in excess of the maximum concentration values in EU Directive 2002/95/EC, as amended by Commission Decision 2002/618/EC, unless the substance is in an application that is exempt under RoHS. This information represents 3M's knowledge and belief, which may be based in whole or in part on information provided by third party suppliers to 3M.

Scotch® Electrical Semi-Conducting Tape 13

Typical Properties

Not for specifications. Values are typical, not to be considered minimum or maximum. Properties measured at room temperature 73°F (23°C) unless otherwise stated.

Physical Properties	**Typical Value** US units (metric)
Temperature Rating: Normal Emergency Cable	194°F (90°C) 266°F (130°C)
Thickness ASTM D-4325	30 mils
Tensile Strength ASTM D-4325	6 lbs/in
Elongation ASTM D-4325	800%
Fusion ASTM D-4388	pass
Electrical Property	**Typical Value** US units (metric)
Volume Resistivity ASTMD D-4325	10^3 ohm-cm
Field Test Resistance (see Figure 1 below)	10,000 ohms

Field Test

Scotch® Electrical Semi-Conducting Tape 13 can be checked for resistance with an ohmmeter. After elongating the tape 25% of its original width, probe points placed one inch apart on tape should measure 10,000 ohms or less. Figure 1 illustrates the type of results which may be expected in the field.

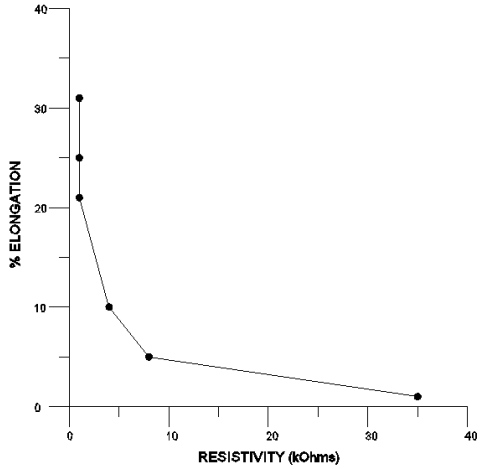


Figure 1

Characteristics and Test Data

Effects of Scotch® Electrical Semi-Conducting Tape 13 on resistivity of semi-conductive cable shield.

The Insulated Conductor Committee (ICC) has set a standard for compatibility of materials placed on shielded cables. When tested according to ICC Guide P1026, products in contact shield shall have a resistance measurement below ten ohm-meters. Scotch® Electrical Semi-Conducting Tape 13 complies with requirements of ICC Guide P1026.

Resistivity of cable semi-conductive shield overwrapped with Scotch® Electrical Semi-Conducting Tape 13 remained the same as, or lower than, that of the exposed shield (control). This test shows Scotch® Electrical Semi-Conducting Tape 13 does not significantly affect semi-conductive cable shields.

Scotch® Electrical Semi-Conducting Tape 13

Engineering/ Architectural Specification:

Jointing (splicing) and terminating shall be done according to engineering print supplied by manufacture of jointing or termination materials for specific cable approved by specifying engineer.

Alternate: Jointing and terminating engineering drawing shall be compatible with specific cable approved by specifying engineer.

Installation Techniques:

Scotch® Electrical Semi-Conducting Tape 13 is usually wrapped in half-lapped layers. Highly elongate tape when overwrapping connectors, terminal lugs, and near edges of cable metallic shield, semi-conducting cable tape and semi-conducting jackets.

Note: Stretching 13 Tape increases its conductance and will not harm it in any way.

Caution: Scotch® Electrical Semi-Conducting Tape 13 is not oil resistant. It should not be used in splicing and terminating cables which contain oil or slippery compounds as part of dielectric such as PILC or VCLC.

Techniques for proper use of this conductive tape are contained in standard and special prints available through 3M Systems for Splicing and Terminating. Ask your local 3M sales representative.

Specifications

Scotch® Electrical Semi-Conducting Tape 13 must be based on ethylene rubber and be capable of operation at the emergency cable temperature of 130°C.
It must be usable without covering, both indoors and outdoors, in a highly stretched
Condition, without splitting or cracking; it must be compatible with all common solvents, adhesives, and high-voltage splicing and terminating insulations and must not adversely affect semi-conductive cable jackets.

Scotch® Electrical Semi-Conducting Tape 13

Shelf Life & Storage	This product has a 5-year shelf life from date of manufacture when stored in a humidity controlled storage (10°C/50°F to 27°C/80°F and <75% relative humidity).
A**vailability**	Scotch® Electrical Semi-Conducting Tape 13 is available from your local 3M authorized distributor in the following standard roll sizes: 3/4 in. x 15 ft. Other lengths and widths are available by special request. Please contact your local distributor; available from 3M.com/electrical [Where to Buy] or call 1.800.676.8381.

Important Notice	All statements, technical information, and recommendations related to 3M's products are based on information believed to be reliable, but the accuracy or completeness is not guaranteed. Before using this product, you must evaluate it and determine if it is suitable for your intended application. You assume all risks and liability associated with such use. Any statements related to the product, which are not contained in 3M's current publications, or any contrary statements contained on your purchase order, shall have no force or effect unless expressly agreed upon, in writing, by an authorized officer of 3M.
Warranty; Limited Remedy; Limited Liability	This product will be free from defects in material and manufacture at the time of purchase. 3M MAKES NO OTHER WARRANTIES INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. If this product is defective within the warranty period stated above, your exclusive remedy shall be, at 3M's option, to replace or repair the 3M product or refund the purchase price of the 3M product. Except where prohibited by law, 3M will not be liable for any indirect, special, incidental or consequential loss or damage arising from this 3M product, regardless of the legal theory asserted.

3M and Scotch are trademarks of 3M Company.

Electrical Markets Division
6801 River Place Blvd.
Austin, TX 78726-9000
800.676.8381
FAX: 800.828.9329
www.3M.com/oem

Please recycle
© 3M 2012 All rights reserved
78-8141-5624-2