



Scotch™ No. 06147 and 06149 Electrical Moisture Sealant Roll & Pad

Data Sheet

Product Description

Scotch™ Brand 06147 rolls and 06149 pads are 45.0 mils thick, self-fusing, rubber based insulating compounds laminated to a flexible, all weather grade vinyl (PVC) backing. These tape rolls and precut pads are designed to insulate, moisture seal and pad all connections up to 600 volts, and have excellent resistance to abrasion, moisture, alkalies, acid copper corrosion and varying weather conditions (including sunlight).

- Polyvinyl chloride (PVC) backing
- Compatible rubber mastic
- Flexible over wide range of temperatures
- Highly resistant to ultraviolet light
- Easily installed to provide maximum protection
- Compatible with all thermoplastic, rubber wire insulation
- Usable for indoor or outdoor applications

Applications

- Bolted connections
- Terminal protection
- Insulation displacement connectors
- Lighting connections

Typical Data/Physical Properties

Thickness
ASTM D-1000
Vinyl 7.0 mils
Mastic 38.0 mils

Adhesion to Steel
ASTM D-1000
0°F 160 oz/in
30°F 270 oz/in
72°F 65 oz/in

Adhesion to Backing
ASTM D-1000
0°F 80 oz/in
30°F 110 oz/in
72°F 60 oz/in

Dielectric Strength
ASTM D-1000 300 volts/mil

Elongation
ASTM D-1000 200%

Breaking Strength
ASTM D-1000 20 lbs/in width

Insulation Resistance
ASTM D-257 >10⁶ megohms

Chemical Properties

Water Vapor Transmission Rate
ASTM D-3833
0.25 gm/100 sq. in./24 hrs.

Water Absorption
ASTM D-570 0.2%

Solvent Resistance*

Saturated Salt Solution 210 days/no effect
Bleach 210 days/no effect
Hydraulic Fluid 210 days/no effect
Liquid Detergent 210 days/no effect
Windshield Washer Solution 210 days/no effect
JP-4 Fuel 210 days/no effect
Horse Urine 210 days/no effect

* Insulated Scotchlok™ connectors dipped twice daily for 10 minutes. Each dip at room temperature (73°F).

NOTE: These are typical properties and should not be used for specification purposes.

Engineering/Architectural Specification

The insulation is a composite of an all weather polyvinyl chloride (PVC) backing and a thick rubber based pressure sensitive adhesive mastic. The product must be applicable at temperatures ranging from 32°F through 100°F without the loss of physical or electrical properties. The product must not degrade when exposed to various environments (indoor or outdoor). The product must also be compatible with all rubber and synthetic wire and cable insulations as well as other splicing compounds.

Characteristics and Test Data

Water Soak Test

Specimens were made using #2 AWG stranded aluminum, cross linked polyethylene insulated 600 volt wire. Compression connectors were wrapped by rolling 06147 Electrical Moisture Sealant around connector and covering wire insulation on each end by 1 inch.

All specimens were then current cycled to 90°C conductor temperature, at room temperature in air for 24 hours, 2 hours on and 2 hours off. Specimens were then submerged in a 3% salt water solution and 120 volts was applied. Insulation resistance after 21 days was found to be in excess of 1×10^6 megohms.

Vibration Test

It was felt that extended life of mechanically spliced wire connections could be achieved by wrapping these connections with Electrical Moisture Sealant. "Scotchlok" insulation displacement connectors were insulated with 2 1/2" x 2 1/2" 06149 pads, placed on a vibrator which averaged 32 cycles per second at 1/16" displacement.

Specimens made without insulation averaged 12,000,000 cycles while insulated connections averaged 27,000,000 cycles.

The end values given above were determined by fracture of the splice causing mechanical and electrical failure.

Shelf Life

Scotch™ 06147 and 06149 Electrical Moisture Sealants have a 5 year shelf life (from date of manufacture) when stored under the following recommended storage conditions. Store behind present stock in a clean dry place at a temperature of 70°F and 40-50% relative humidity. Good stock rotation is recommended.

Availability

Scotch 06147 is available in a 2 1/2" x 10' roll. Scotch 06149 is available in 2 1/2" x 2 1/2" pads from your local electrical distributor.

Important Notice:

All statements, technical information and recommendations related to the Seller's products are based on information believed to be reliable, but the accuracy or completeness thereof is not guaranteed. Before utilizing the product, the user should determine the suitability of the product for its intended use. The user assumes all risks and liability whatsoever in connection with such use.

Any statements or recommendations of the Seller which are not contained in the Seller's current publications shall have no force or effect unless contained in an agreement signed by an authorized officer of the Seller. The statements contained herein are made in lieu of all warranties expressed or implied, including but not limited to the implied warranties of merchantability and fitness for a particular purpose which warranties are hereby expressly disclaimed.

SELLER SHALL NOT BE LIABLE TO THE USER OR ANY OTHER PERSON UNDER ANY LEGAL THEORY, INCLUDING BUT NOT LIMITED TO NEGLIGENCE OR STRICT LIABILITY, FOR ANY INJURY OR FOR ANY DIRECT OR CONSEQUENTIAL DAMAGES SUSTAINED OR INCURRED BY REASON OF THE USE OF THE SELLER'S PRODUCTS.

3M

Electrical Products Division

6801 Riverplace Blvd.
Austin, Texas 78726-9000



Recycled paper
40% pre-consumer
10% post-consumer

Litho in USA
©1995 3M
80-6108-5116-6