

# 2228 Rubber Mastic Tape

## Data Sheet

### Product Description

Scotch 2228 is a conformable self-fusing rubber electrical insulating and sealing tape. Scotch 2228 consists of an ethylene propylene rubber (EPR) backing coated with an aggressive, temperature-stable mastic adhesive. The tape is 1.65mm thick for quick application build-up. It is designed for electrical insulating and moisture sealing applications. Scotch 2228 can be used on copper or aluminium conductors rated at 90°C, with an emergency overload rating of 130°C. It offers excellent resistance to moisture and ultraviolet exposure and is intended for both indoor and weather exposed outdoor applications.

### Tape Features:

- ❖ Conformable for application over irregular surfaces
- ❖ Compatible with solid dielectric cable insulations
- ❖ Self-fusing tape
- ❖ Flexible over wide temperature range
- ❖ Excellent weather and moisture resistance
- ❖ Excellent adhesion and sealing characteristics with copper, aluminium and power cable jacket materials
- ❖ Thick construction allows quick application build-up and padding over irregular connections

### Applications

- ❖ Primary electrical insulation for cable and wire connections rated up to 1000 volts
- ❖ Electrical insulation and vibration padding for motor leads rated up to 1000 volts
- ❖ Primary electrical insulation for bus bar connections rated up to 35kV (3M drawing 2047B-106)
- ❖ Padding for irregular shaped bus bar bolted connections
- ❖ Moisture seal for cable and wire connections
- ❖ Moisture seal for service drops
- ❖ Moisture seal for ground wire and rod connections
- ❖ Jacket seal on power cable applications

### Typical Data/Physical Properties

<b>Temperature Rating</b> ASTM D-4388	194°F (90°C)
<b>Colour</b>	Black
<b>Thickness</b> ASTM D-4325	1.65mm
<b>Adhesion</b> ASTM D-1000	
Steel	26.2N/10mm
PE	17.5N/10mm
<b>Fusion</b> ASTM D-4388, Type 1	Pass
<b>Tensile Strength</b> ASTM D-4325	1.03N/mm <sup>2</sup>
<b>Elongation</b> ASTM D-4325	100%
<b>Dielectric Breakdown</b> ASTM D-4325	
Dry	19.7kV/mm
Wet	19.7kV/mm
<b>Dielectric Constant</b> ASTM D-4325	3.5
<b>Dissipation Factor</b> ASTM D-4325	1.0%
<b>Water Absorption</b> ASTM-570	0.15%
<b>Water Vapour Transmission Rate</b> ASTM D-3833	0.1g/100in <sup>2</sup> /24hr
<b>Ozone Resistance</b> ASTM D-3833	Pass
<b>Heat Resistance</b> ASTM D-4388	Pass, 130°C
<b>UV Resistance</b> ASTM D-4388	Pass

**Note:** These are typical values and should not be used for specification purposes.

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### 3M Water Seal Test

Samples were constructed using 2228 tape as a seal between PVC cable jackets and connecting ground wires (3M Cable Grounding Kit 2252). The specimens were thermal cycled in water baths at 25°C and 90°C. The total test time of 336 hours revealed no significant change in insulation resistance. The results exceed requirements listed in UL486D “Standard for Insulated Wire Connectors for Use With Underground Connectors” for insulation resistance (6.0 megohms, section 7.1) and dielectric voltage withstand (2.2kV, 1 minute, section 8.1)

### Specification

The tape shall be 1.65mm thick. The tape must be ethylene propylene rubber based and coated with a rubber mastic pressure sensitive adhesive. The tape must be classified for normal service temperatures up to 90°C with allowable short-term exposure up to 130°C.

The tape must be applicable at temperatures of 0°C to 38°C without loss of physical properties. The tape must be classified for use in both indoor and weather exposed outdoor environments.

The tape must not split or crack when exposed to normal operating temperatures and environments. The tape must be compatible with synthetic cable wire insulations. The tape shall not be corrosive to aluminium or copper conductors.

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### Installation

Scotch 2228 should be applied in half-lapped layers until desired insulation build up is reached. Stretch the tape to ¾ of its original width during application for good conformability and to obtain a moisture tight seal.

Scotch 2228 should be overwrapped for mechanical protection with two half-lapped layers of Scotch Brand vinyl electrical tape.

### Shelf Life

Scotch 2228 tape has a five 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 (21°C) and 40-50% relative humidity. Good stock rotation is recommended.

### Availability

Scotch 2228 Rubber Splicing Tape is available from your local 3M authorised distributor.

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**3M UK PLC**  
**Electrical Products**  
3M House, PO Box 1  
Bracknell, Berkshire RG12 1JU  
Telephone: 01344 858616  
Fax: 01344 858758

**3M Ireland**  
**Sales Office**  
3M House, Adelphi Centre  
Dun Laoghaire, Co Dublin, Ireland  
Telephone: 353 1 280 3555  
Fax: 353 1 280 3509

**3M UK PLC**  
**Sales Office**  
PO Box 393  
Bedford MK41 0YE  
Telephone: 01234 229462  
Fax: 01234 229433