

**3M** Science.  
Applied to Life.™

3M Electrical Markets Division

Rubber, Mastic and Specialty Tapes Application Guide

# Tapes to complete your toolkit



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# Insulating & Splicing

You've built a reputation on standout craftsmanship. So whether it's low-voltage wires or cables carrying up to 69 kV, making a secure cable connection is crucial. Precision tapes for insulating and splicing from 3M can help reinforce your work for years of worry-free and maintenance-free service.



## Scotch® Linerless Rubber Splicing Tape 130C

### Applications

- Insulate electrical connections up to 69 kV
- Seal out moisture from low- and medium-voltage connections
- Insulate bus bars
- Insulate motor leads
- End seal high-voltage cables
- Highly conformable for irregularly shaped objects



Linerless design for fast installation

Dissipates heat well for stable, long-lasting splices

Self-fusing material creates a moisture tight seal

Rated for 90°C continuous operating temperature and overload temperatures up to 130°C

**Stable & Durable for years of maintenance-free service.**



Self-fusing material creates a moisture tight seal

Rated for 90°C continuous operating temperature and overload temperatures up to 130°C

Removable liner protects from dust and dirt during installation



### Scotch® Rubber Splicing Tape 23

#### Applications

- Insulate electrical connections up to 69 kV
- Seal out moisture from low- and medium-voltage connections
- Insulate bus bars
- Insulate motor leads
- End seal high-voltage cables



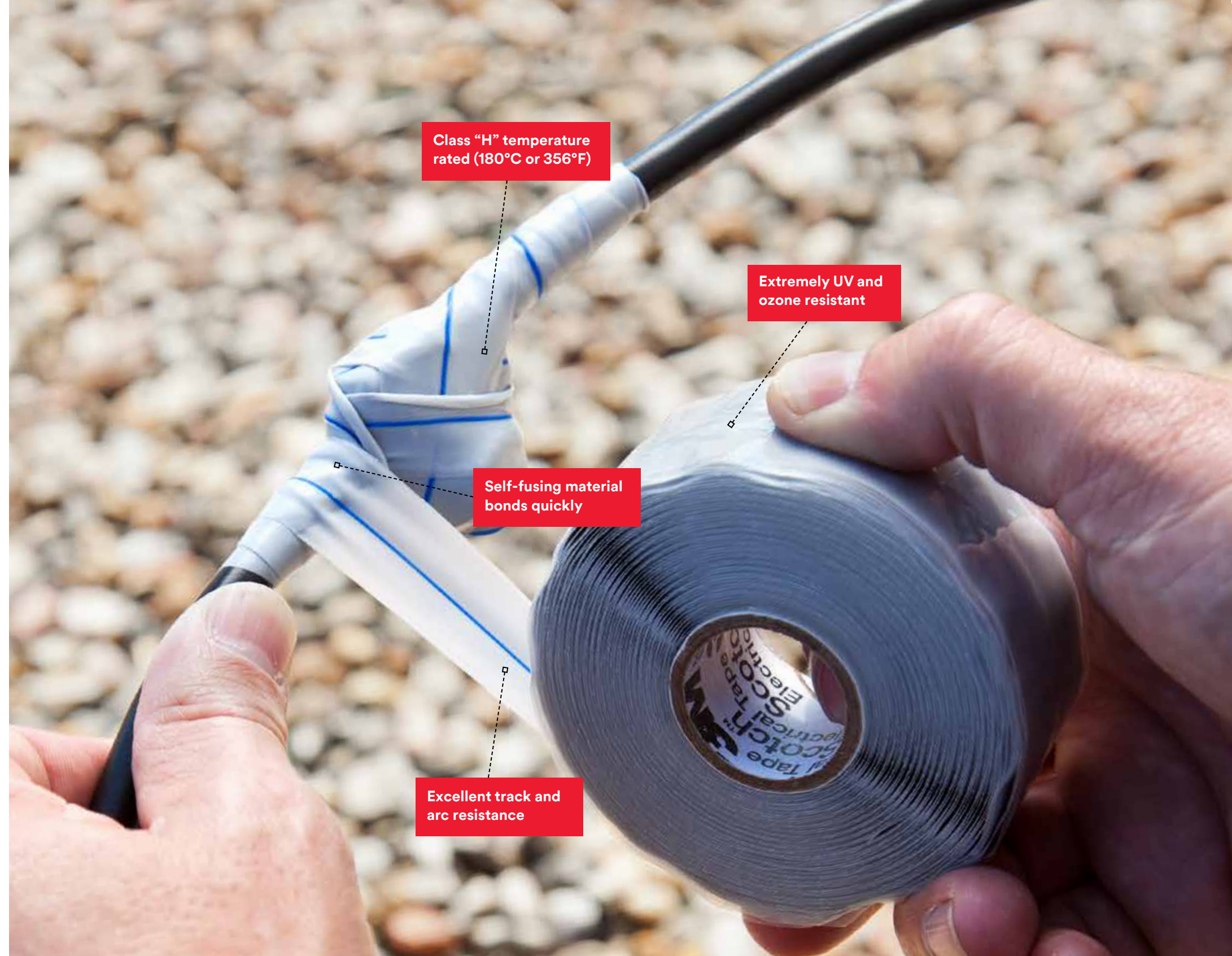
# Insulating & Splicing



## Scotch® Self-Fusing Silicone Rubber Electrical Tape 70 and 70 HDT

### Applications

- Pre-wrap low- and medium-voltage connections for clean re-entry, (e.g. motor lead connections or split-bolt connectors)
- Use as an overwrap for protection of high-voltage cables against arcing and tracking



# Insulating & Splicing





## Scotch® Varnished Cambric Tape 2510\* and 2520

### Applications

- Insulate electrical connections up to 600 V
- Pre-wrap low-voltage connections for clean re-entry, (e.g. split bolt connections)



Temperature resistant up to 105°C

Tough and durable backing provides excellent tear, puncture, and cut-through resistance

\*Available without adhesive for clean removal

# Insulating & Splicing



Self-fusing material bonds quickly

Removable liner protects from dust and dirt during installation

Retains conductivity with stretch

Stable at elevated temperatures up to 130°C

# Insulating & Splicing

## Scotch® Semi-Conducting Tape 13

### Applications

- Replace semi-conducting layer beneath metallic shield in various medium-voltage cable repairs and splices
- Electrically round-out high-voltage connectors and bond to insulating materials to minimize electrical stresses
- Round-out bolted connections on insulated bus bars
- Provide shielding for cable splices on solid dielectric insulated power cables
- Not to be used for electrical insulation!





## 3M™ Temflex™ Rubber Splicing Tape 2155

### Applications

- Insulate electrical connections up to 600 V
- Seal out moisture from low-voltage connections
- Insulate service drops
- Insulate lighting connections



Rated for temperatures up to 80°C

Self-fusing material creates a moisture-tight seal

Removable liner protects from dust and dirt during installation

# Insulating & Splicing



# Sealing, Padding & Shaping

The elements will put your connections to the test. Fight back with 3M and Scotch-brand Mastic Tapes. Engineered to keep water out, you can use them to pad sharp edges, and make smooth transitions over irregular shapes. Plus, the extra, hand-moldable, padding stands up to environmental vibrations.

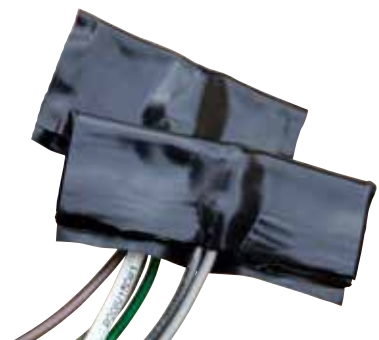


## Scotch® Vinyl Mastic Pad 2200 and Mastic Roll 2210

## Scotch® Electrical Moisture Sealant Pad 06149 and Roll 06147

### Applications

- Seal-out moisture and insulate low-voltage connections in one easy step
- Pad and insulate bolted connections and service drops
- Insulate lighting connections
- Protect grounding rod connections
- End seal cables
- Scotch® Pad 2200 and Roll 2210 offer a thicker mastic layer for complex shapes and robust applications requiring more padding in temperatures down to -18°C
- Scotch® Pad 06149 and Roll 06147 offer moisture protection in a thinner profile for smaller, light-duty connections and applications temperatures down to 0°C



An excellent choice when you need to create watertight connections.



## 3M™ Scotch-Seal™ Mastic Tape 2229

### Applications

- Electrically insulate and seal-out moisture from low-voltage connections
- Seal high-voltage cable splice and termination accessories
- Pad sharp edges of a low-voltage connection to prevent cut-through of vinyl tape overwrap
- Smooth transitions of irregular shapes
- End seal cables



Material flows to cover punctures or cuts

Excellent moisture sealing capabilities

Aggressive mastic provides excellent bond

# Sealing, Padding & Shaping





Easy to mold and shape  
by hand down to 32°F (0°C)

Excellent aging properties -  
will not dry out

Noncorrosive,  
synthetic rubber

# Sealing, Padding & Shaping

## 3M™ Scotchfil™ Electrical Insulation Putty

### Applications

- Build-up cable splices and fill out major irregularities and voids in low-voltage splices to create a uniform base for further taping
- Smooth bus bar irregularities, round out connections, and pad sharp edges
- Create a moisture seal at ground wire exit points in high-voltage splices
- Create a moisture seal in multiconductor cable connections





## Scotch® Rubber Mastic Tape 2228

### Applications

- Primary electrical insulation for bus bar connections up to 35 kV
- Insulate electrical connections up to 1,000 V
- Seal-out moisture from connections

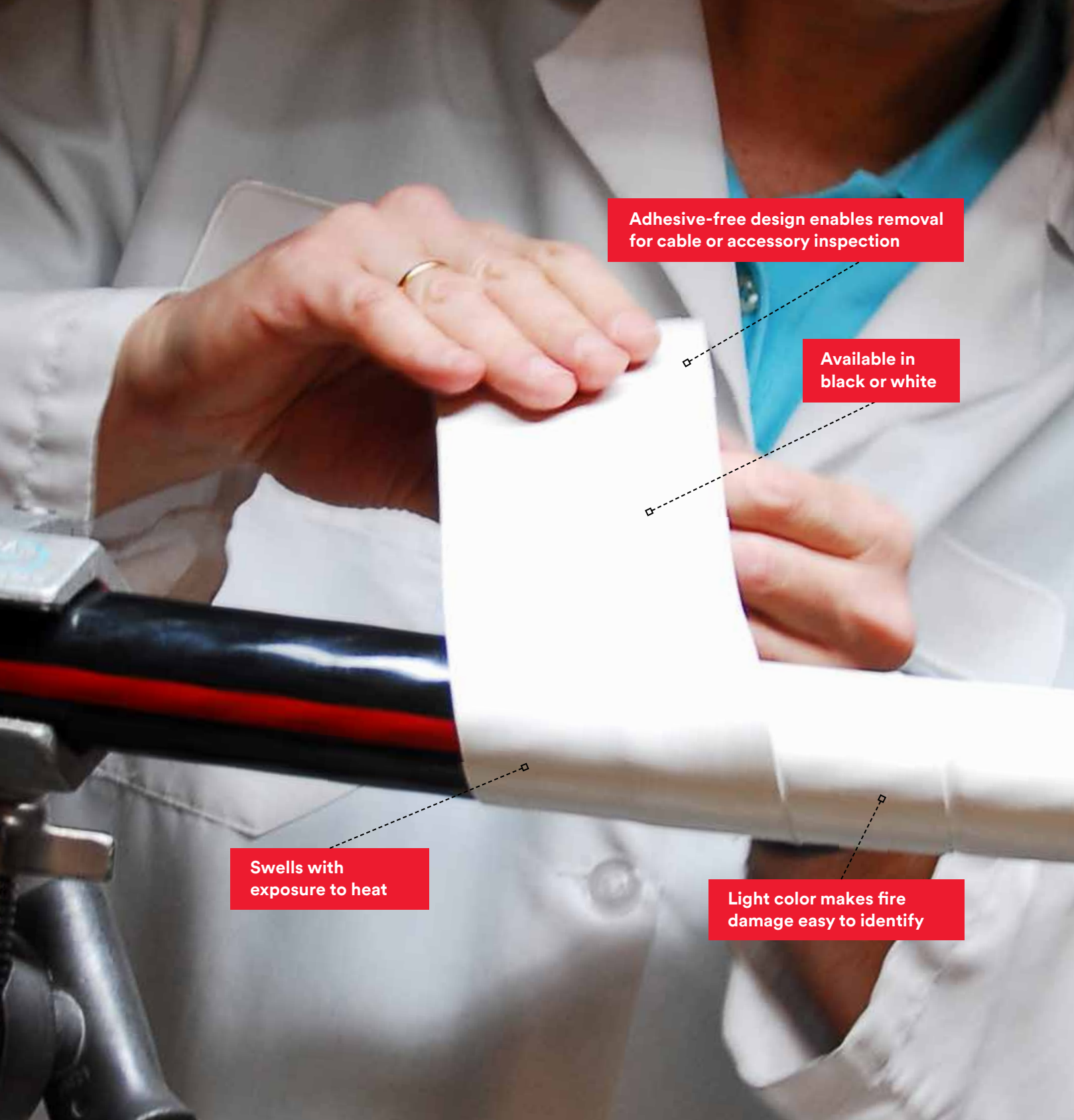


Rated for 90°C continuous operating temperature and overload temperatures up to 130°C

Self-fusing material creates a moisture tight seal

Flexible and conformable over irregular shapes

# Sealing, Padding & Shaping



Adhesive-free design enables removal for cable or accessory inspection

Available in black or white

Swells with exposure to heat

Light color makes fire damage easy to identify

# Fire Retardant & Arc Proofing

You can plan ahead for the best outcome in fire and arcing scenarios. Protect your low- and medium voltage cables and accessories with 3M's arc proofing and fire retarding tapes. When the heat rises, the tape expands putting a thick layer of char between the flames and your cable to help minimize potential damage.

## Scotch® Fire Retardant Electric Arc Proofing Tape 77

### Applications

- Protect cables from electric arcs and fires
- Use on energy cables running in close proximity to other energy cables, such as:
  - Cables in substations, manholes, and vaults
  - Critical feeder cables and nearby branch circuits
  - Energy cables in buildings that cannot afford to lose power, (e.g. hospitals, military bases, server farms, etc.)
  - Energy cables in cable trays

## Cables During and After the Consolidated Edison Flame Test



Cable Protected with Scotch® Fire Retardant Electric Arc Proofing Tape 77 During Test

Unprotected Cable During Test



Cable Protected with Scotch® Fire Retardant Electric Arc Proofing Tape 77 after test

Unprotected Cable after test

**Insurance for your cables.**

Watch the video!



# Jacket Repairing

Shield your work from environmental wear and tear. When wrapped over a splice or damaged cable jacket, 3M jacket repairing tapes offer layered defense against external hazards. Vulcanized CSM rubber on the outside resists abrasion and chemical damage, while the inner layer includes flame-retardant mastic to keep moisture away and provide excellent adhesion to a variety of cable jacket materials.



## Scotch® Cable Jacket Repair Tape 2234 Scotch® Mining Tape 31

### Applications

- Repair sections of damaged cable jacket
- Seal out moisture and environmental elements
- Overwrap a splice for added mechanical protection
- Scotch® Mining Tape 31 is MSHA approved for cable repair



Extremely tough tape for your extremely rough environments.



# Bundling & Harnessing

You never know what you're going to find encounter on a project site. Be prepared to take on any challenge with 3M bundling and harnessing tapes that bind, hold and organize wires. Bundling tapes also offer excellent mechanical protection and can act like a second set of hands that steady wires in place.

## 3M™ Temflex™ Friction Tape 1755

### Applications

- Bundle and bind wires and cables
- Create wire harnesses
- Wrap tool handles for better grip



Excellent abrasion resistance

Excellent resistance to salt water

High tensile strength and low stretch

Designed to make your job easier.



Water resistant

Strong yet easy to tear by hand

# Bundling & Harnessing Tapes

## Scotch® Electrician's Duct Tape 2000

### Applications

- Bundle and bind wires and cables





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