



**3M** Science.  
Applied to Life.™

**Energizing a more  
sustainable future.**

3M Electrical Solutions –  
Renewable Energy





## Helping you deliver reliable and efficient energy

Power grid designers and builders around the world turn to 3M for electrical solutions to help them meet their toughest challenges. Success for us means working with you to take you further based on an understanding of your business and technological needs. Collaborating with 3M means all of our resources, expertise and creative thinking are practically applied to your specific situation, helping you to improve grid reliability.



# Collaborate for success

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## Flexible training – when and where you need it

A product is only as reliable as the quality of the installation. Get guidance from 3M application experts on how to get the most from your 3M Brand Cable Accessories:

- Specification overviews
- In-depth application training
- Hands-on training
- Modular online training (coming soon)



## Technical expertise – design to installation

Optimizing your electrical system is a complex task. You can count on our team of sales and engineering professionals to help you:

- Obtain the correct details and specifications
- Configure the best customized kits for your project
- Minimize labour and installation time
- Get site support at installation even after training



## Proven technologies – custom solutions

Each power generation project is unique and challenging. Confidence in the design and installation of every part is essential and even more so for the electrical systems used to gather renewable energy. Customized training, kitting and installation instructions can help you:

- Increase reliability by reducing the chance of installation errors
- Reduce inventory demands and storeroom confusion
- Reduce time needed for installation

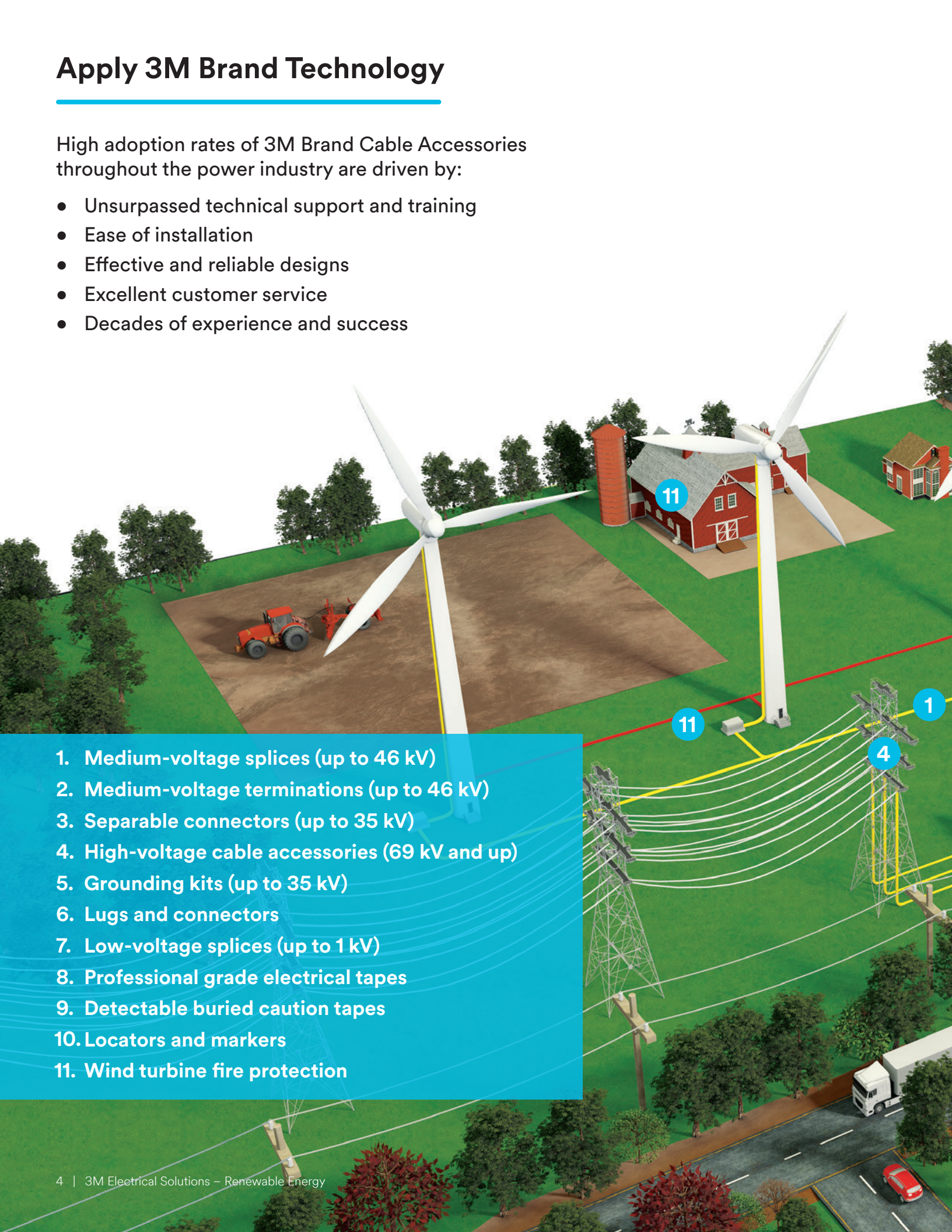




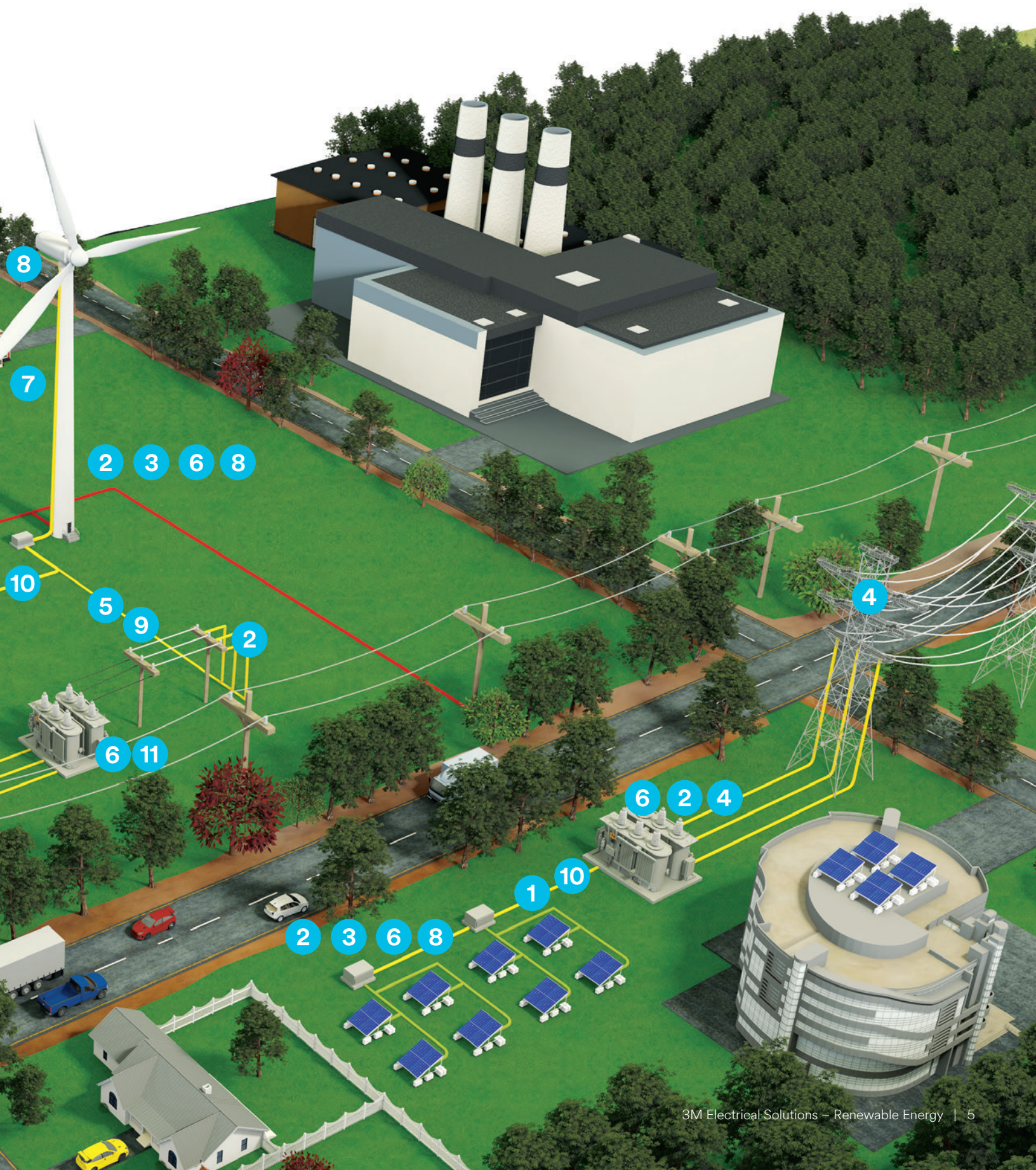
# Apply 3M Brand Technology

High adoption rates of 3M Brand Cable Accessories throughout the power industry are driven by:

- Unsurpassed technical support and training
- Ease of installation
- Effective and reliable designs
- Excellent customer service
- Decades of experience and success

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1. Medium-voltage splices (up to 46 kV)
  2. Medium-voltage terminations (up to 46 kV)
  3. Separable connectors (up to 35 kV)
  4. High-voltage cable accessories (69 kV and up)
  5. Grounding kits (up to 35 kV)
  6. Lugs and connectors
  7. Low-voltage splices (up to 1 kV)
  8. Professional grade electrical tapes
  9. Detectable buried caution tapes
  10. Locators and markers
  11. Wind turbine fire protection







# Install reliability

## 1 Medium-voltage splices (up to 46 kV)

Reduce time, labour and costs involved in a variety of splicing applications with 3M™ Cold Shrink Splices QS-III Series.

- No special tools and no flame required for installation
- Reliable, dependable, long-term performance
- Permanent, durable, moisture-resistant seal and insulation



## 2 Medium-voltage terminations (up to 46 kV)

3M™ Cold Shrink Terminations QT-III Series is also designed to help you reduce the time, labour and costs involved in a variety of terminating applications.

- No special tools and no flame required for installation
- Reliable, dependable, long-term performance
- Made of lightweight, highly track-resistant material



## 3 Separable connectors (up to 35 kV)

Designed to fully comply with IEEE standards and backed by 3M's outstanding technical support, training and service. Compatible with all separable connectors that comply with the same standards.

- Loadbreaks, deadbreaks and T-bodies
- Surge arrestors and junctions
- Disconnectable joints



## 4 High-voltage cable accessories (69 kV and up)

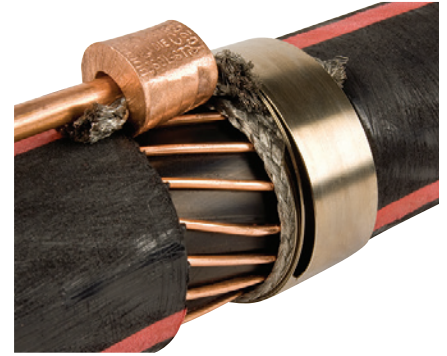
Engineered for fast, economical installation using field-proven technologies and backed by 3M's outstanding technical support, training and service.

- No special tools and no flame required for installation
- Conductor ranges up to 2000 kcmil (1000 mm<sup>2</sup>)
- All stress cones and joints are factory tested; x-ray and AC partial discharge



## 5 Cable grounding kits (up to 35 kV)

3M™ Cable Grounding Kits provide a simple, reliable and secure method for grounding and resealing the jacket of direct buried cables. These kits are available for a range of cable types and sizes, including the commonly used JCN cables 1/0 AWG to 1250 kcmil, rated through 35 kV.



## 6 Lugs and connectors

Choose from a variety of 3M™ Scotchlok™ Lugs and Connectors including crimp and shearbolt connectors for power cables in both copper and aluminum. CSA connectors, lugs and dies are also available.



## 7 Low-voltage splices (up to 2 kV)

Choose from several solutions ranging from tapes to heavy-duty heat shrink to our most robust and innovative solution, cold shrink. Provide extra impact resistance by using the broad-range, triple-core QSLVM-series cold shrink tubing.

- No special tools and no flame required for installation
- QSLVM broad-size range minimizes inventory
- Reliable, dependable, long-term performance



## 8 Professional grade electrical tapes

Seal, insulate and help protect with confidence with high-quality 3M Professional Grade Electrical Tapes.

- Designed for extreme conditions, indoors and outdoors
- Excellent conformability, even in cold weather
- Excellent resistance to moisture, corrosion, oils and solvents
- Excellent resistance to UV light and abrasion (vinyl/specialty tapes)



# Install reliability

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## 9 Detectable buried caution tapes

Scotch® Detectable Buried Caution Tapes are designed to help locate valuable underground utility installations like power, water or gas lines quickly and easily.

- Bold, black characters on a bright background
- Aluminum backing detectable with a non-ferrous locator
- Properly installed, they may help avoid catastrophic digging accidents



## 10 Locating and marking

Virtually eliminate time-consuming searches for hard-to-locate facilities by using 3M™ EMS Markers during construction, installation and maintenance.

- Locate, distinguish and help protect your underground assets quickly and accurately
- Frequency- and colour-coded for specific utilities
- RFID markers are ideal for congested areas



## 11 Wind turbine fire prevention

Extinguish fires and minimize damage with 3M™ Novec™ 1230 Fire Protection Fluid. A sustainable alternative for HFCs and powdered aerosols that works quickly, cleanly and efficiently to help stop fires safely.

- Used in cabinets and wind turbine towers where vital equipment resides
- Extinguishes the fire within 30 seconds, residue free, minimizing downtime
- Electrically non-conductive, approved for use in occupied spaces





# Extend equipment life

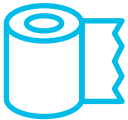
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## Wind blade protection coatings

Help protect the leading edges of wind blades from damage caused by sand and rain erosion, and minor impacts.

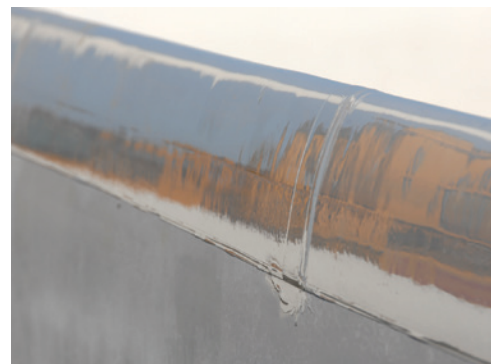
- Designed for easy brush or casting application
- Two-component polyurethane coatings



## Wind blade protection tapes

Help maintain turbine efficiency, reduce downtime and maintenance, and extend the useful life of blades – even in the harshest environments.

- Applied to the leading edge of wind turbine blades
- Exceptionally tough, abrasion and puncture-resistant polyurethane\*
- UV stable, solvent-free and conforms to complex shapes



## Wind blade epoxy and polyurethane fillers

Finish and smooth wind blade surfaces and leading edges during manufacture, or repair minor damage quickly and reliably during maintenance operations.

- Flexible and tough two-part epoxy or polyurethane fillers
- Applicators help ensure accurate mixing and reduce waste
- Virtually eliminates messy and time-consuming hand mixing









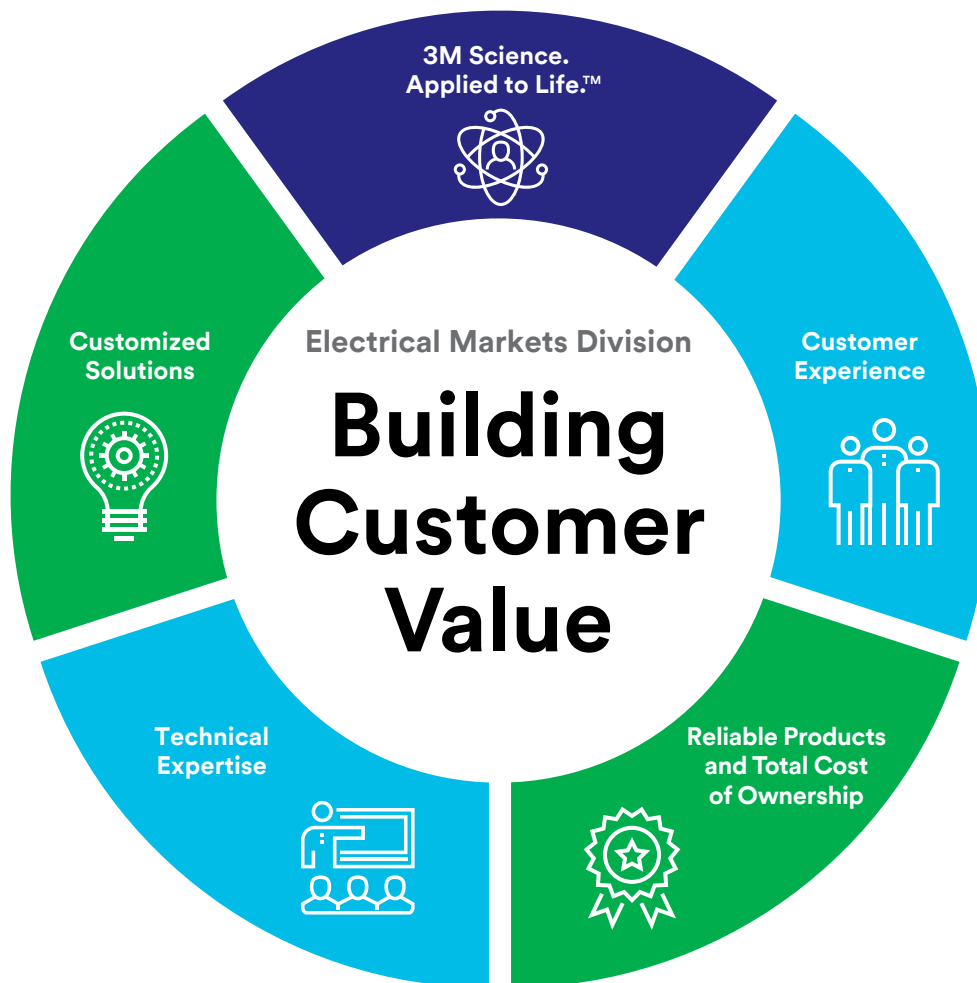


## Build the future safely

Improve worker safety and help reduce lost time injuries with a broad range of personal protection equipment engineered for comfort, convenience and functionality.

- 3M™ Fall Protection
- 3M™ Head and Face Protection
- 3M™ Peltor™ Brand Communications
- 3M™ Speedglas™ Auto-Darkening Filters and Helmets
- 3M™ Hearing Protection
- 3M™ Eye Protection
- 3M™ Half and Full Facepiece Respirators
- 3M™ Filtering Facepiece Respirators





For more information about 3M electrical products and solutions contact us at: [3Menergysolutions@mmm.com](mailto:3Menergysolutions@mmm.com).

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