

**3M Renewable Energy Products** 

# Build. Protect. Enhance.

#### Extending equipment life.

Rotating up to 250 mph, wind blades are faced with erosion caused by rain, hail, salt spray and other debris. As a result, many blades can suffer pitting, gouging and delamination that can affect aerodynamic efficiency and even impact the integrity of the entire blade. Poor blade performance can also reduce annual energy production, and repair downtime is costly.

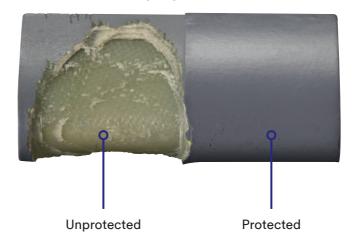
3M<sup>™</sup> Wind Erosion Solutions offer an array of products to both repair and help prevent damage caused by minor impacts and erosion. These advanced 3M materials are designed to enhance reliability, improve performance and extend the life of your valuable equipment.

## **3M<sup>™</sup> Wind Protection Coatings**

3M<sup>™</sup> Wind Blade Protection Coatings are designed to help protect wind turbine blade leading edges from damage caused by sand and rain erosion and minor impact.

3M<sup>™</sup> Wind Blade Protection Coatings are two component polyurethane coatings that provide excellent erosion protection in a single layer. Suitable for application via brush or casting, the coatings provide fast curing and ease of application.





3M Product code	Description	Stock number	Size	Qty/case
W4600	3M <sup>™</sup> Wind Blade Protection Coating W4600 Manual Applicator	7100063625	-	1
W4600	3M <sup>™</sup> Wind Blade Protection Coating W4600 Mixing Nozzle	7100063626	-	50
-	3M <sup>™</sup> Wind Blade Protection Coating Brush	7000087351	75mm	12
W4602	3M <sup>™</sup> Wind Blade Protection Coating W4602	Coming Soon	Coming Soon	Coming Soon



### **3M<sup>™</sup> Wind Protection Tapes**

3M<sup>™</sup> Wind Protection Tapes help shield leading edges and surfaces from pitting, wear and water ingression.

Constructed from tough, abrasion-resistant polyurethane elastomers, 3M Wind Protection Tapes resist punctures, tearing, erosion and weathering. They are UV stable, solvent-free and conform to complex shapes to best protect your valuable equipment. They require no special application tools and are easily applied in factory or in the field via rope or platform access.

Applied to the leading edge of the wind turbine blades, these high-performance polyurethane tapes have a proven ability to help maintain turbine efficiency, reduce downtime and maintenance, and extend the useful life of the blades - even in the harshest environments.



3M Product code	Description	Stock number	Size	Colour	Opacity	Thickness (mm)	Liner	Tensile strength @ Break psi (Mpa)	Elongation @ Break (%)
W8607	3M <sup>™</sup> Wind Protection Tape W8607	7000048848 7000049503 7000049498 7000049502 7000049499 7000049006 7000048847	102mm x 33m 152mm x 33m 152mm x 37m 152mm x 38m 152mm x 44m 254mm x 33m 304mm x 33m	Colourless	Transparent	14 (0.36)	Poly	35	500
W8620	3M <sup>™</sup> Wind Protection Tape W8620	7100030978	203mm x 16.5m	White	Opaque	14 (0.36)	Paper	35	500
W8750	3M <sup>™</sup> Wind Protection Tape 2.0 W8750	7100104265 7100104400 7100104267 7100104245 7100134297 7100123045	102mm x 33m 152mm x 33m 254mm x 33m 305mm x 33m 302mm x 22m 616mm x 137m	Colourless	Translucent	14 (0.36)	Poly	20	600
W8780	3M™ Wind Protection Tape 2.0 W8780	7100141869 7100141799 7100141797 7100141798	102mm x 33m 152mm x 33m 254mm x 33m 305mm x 33m	Grey	Opaque	14 (0.36)	Poly	23	>600

#### 3M<sup>™</sup> Wind Protection Tape



### 3M<sup>™</sup> Wind Protection Tape Accessories

Technologies designed to ensure optimal results and improve production - while simplifying and speeding up installation and repair operations.



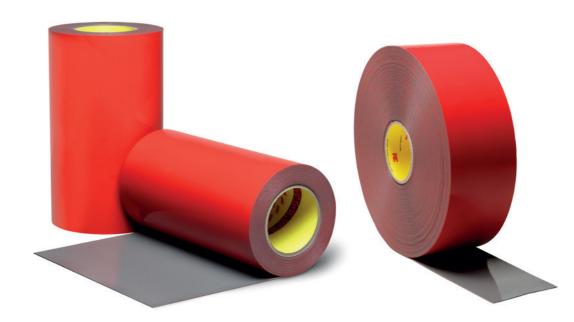




3M Product code	Description	Stock number	Size	Qty/ case	Additional details
W2600	3M <sup>™</sup> Wind Protection Tape Edge Sealer W2600	7000049496	50ml	12	A clear, non-yellowing, durable two-part urethane sealer system used to help smooth and protect edges of 3M <sup>™</sup> Wind Protection Tape. Provides excellent resistance to environmental exposure.
W9900	3M™ Wind Tape and Adhesive Residue Remover W9900 (TARR)	7000049507	473ml	6	Removes 3M <sup>™</sup> Wind Protection Tapes, tape residue and neoprene without damaging composite or metal surfaces.
W9910	3M™ Wind Tape Adhesion Promoter W9910	7100007874 7100007769	473ml 18×18cm	12 5	Designed to enhance initial adhesion of 3M <sup>™</sup> Wind Protection Tapes in demanding situations.

# **3M<sup>™</sup> Acrylic Foam Tapes**

3M<sup>™</sup> Acrylic Foam Tapes can be used for a variety of surface bonding applications. The technology behind them has been used around the world since 1980 to replace liquid adhesives and mechanical fasteners in permanent bonding and sealing applications.



3M Product code	Description	Stock number	Size	Thickness	Density (kg/m³)	Qty/ case	Colour
4110	3M <sup>™</sup> Solar Acrylic Foam Tape 4110	7000071861	25mm x 33m	1.10mm	592.7	3	Black
4110P	3M <sup>™</sup> Solar Acrylic Foam Tape 4110P	7100091712	58mm x 66m	1.10mm	592.7	4	Black
4110	3M <sup>™</sup> Solar Acrylic Foam Tape 4110	7100080075	1210mm x 33m	1.10mm	592.7	1	Black
4155	3M <sup>™</sup> Solar Acrylic Foam Tape 4155	7100080075	1210mm x 66m	1.10mm	592.7	1	Black
4155P	3M <sup>™</sup> Solar Acrylic Foam Tape 4155P	7100109614	1219mm x 66m	1.10mm	592.7	1	Black

### **3M<sup>™</sup> Wind Epoxy Fillers**

3M<sup>™</sup> Wind Fillers are flexible, tough two-part epoxy fillers used to finish and smooth wind blade surfaces and leading edges during manufacture, and to repair minor damage on the wind blade surface quickly and reliably during maintenance operations.

Multiple chemistries and performance times meet a variety of application needs, while innovative 3M<sup>™</sup> Duo-Pak Cartridges ensure accurate mixing, reduce waste and virtually eliminate messy hand mix operations. This allows for the flexibility to finish and repair blades at the manufacturing facility, or during operations and maintenance repairs either on the ground or up tower.

3M are always developing new products. Please contact us for further information on your region.

### **Enhancing productivity** at every turn.

#### 3M<sup>™</sup> Dry Layup Adhesive

This sprayable, high tack and fast-drying adhesive is a synthetic elastomer-based formulation for bonding/holding glass fabrics and roving, other reinforcements and other materials (i.e. flow media) in place during the infusion process. Its particle spray pattern and colour provide a visual check of spray level for more consistent application.

3M<sup>™</sup> Dry Layup Adhesive is designed to reduce the amount of time required for dry layup of fibreglass. Ideal for robotic application. It also helps to reduce wrinkles, which can be a major source of failures.

3M Product code	Description	Stock number	Colour	Size	Qty/ case	Application method
9091	3M <sup>™</sup> Dry Layup Adhesive 09091	7100010064	Red	467g	12	Aerosol can
W7900	3M <sup>™</sup> Dry Layup Adhesive 2.0 W7900, colour-change technology	7100074910	Colour- changing	416g	12	Aerosol can
9091	3M <sup>™</sup> Dry Layup Adhesive 09092	7000044933	Red	18.93 Litre	1	Drum
W7902	3M <sup>™</sup> Dry Layup Adhesive 2.0 W7900	7100092138	Colour- changing	18.93 Litre	1	Drum





### **Building for reliability.**

#### **3M<sup>™</sup> MRO Solutions**

3M offers a variety of Maintenance and Repair Operations products. This includes a range of over 30 electrical tapes from general purpose insulation tape, to advanced glass cloth and mastic. The MRO Solutions also contain electrical connectors, gloves and cable identification. All products provide the exceptional performance and reliability you have come to expect from 3M.



#### Sensored Cable Accessories

Transforming the grid starts here. 3M offer a full solution for accurate sensing, monitoring and control of your medium voltage electrical infrastructure.

3M Sensored Cable Accessories are compact and easy to install, so you can reduce the need for current and voltage transformers.

Contact us at www.3M.co.uk/electrical for further information.



#### 3M<sup>™</sup> Locators and Markers

The full line of 3M<sup>™</sup> Locators and Markers helps you quickly and accurately identify underground assets. From finding the exact path and estimated depth of underground utilities, to locating buried passive markers, to reading and writing information directly to the new RFID markers, 3M offers the precision tools needed to manage your assets. And now, certain 3M<sup>™</sup> Dynatel<sup>™</sup> Locators interface with select GPS/GIS field mapping instruments.



#### 3M<sup>™</sup> Cold Shrink Splices and **Terminations**

Ensure easy installation, effective insulation and outstanding peace of mind. Dynamic, compressive seals have proven reliable for over 40 years of field use. Meets IEEE standards. Available for applications up to 69kW.



For further information or to contact us, please visit www.3M.co.uk/electrical

#### **3M Electrical Markets Division**

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