

3M™ Wind Erosion Solutions



Leading
Edge
Protection

www.3M.com/wind

3M

Performance Against the Elements

Rotating up to 350 km/hr, 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. Not only is repair downtime costly, but poor blade performance can reduce annual energy production and even impact the integrity of the entire blade.

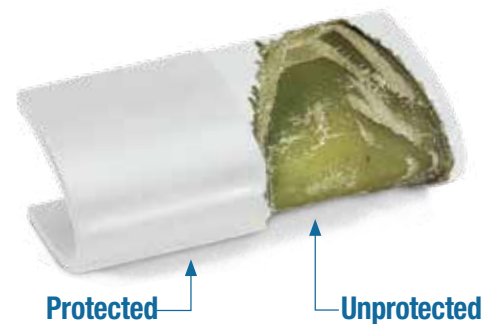
3M™ Wind Erosion Solutions offer an array of products to both repair and help prevent damage caused by minor impacts and erosion. These advanced 3M materials are designed to enhance reliability, improve performance and extend the life of your valuable equipment.

3M™ Wind Blade Protection Coatings

3M™ Wind Blade Protection Coatings W4600 and W4601 are designed to help protect wind turbine blade leading edges from damage caused by sand and rain erosion and minor impact. 3M Wind Blade Protection Coatings W4600 and W4601 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™ Wind Blade Protection Coatings

Product Number	Color	Optimum Temperature Range for Application (°C)
W4600	RAL7035 Gray or RAL9018 White	20-25 °C
W4601	RAL7035 Gray	10-30 °C



Sample tested in rainfall of one inch per hour at 500 mpg at the University of Dayton Research Institute Rain Erosion Test Facility.

3M™ Wind Protection Tapes

3M™ Wind Protection Tapes shield leading edges and surfaces from pitting, wear and water ingress. Constructed from tough, abrasion-resistant polyurethane elastomers, 3M Wind Protection Tapes resist erosion and weathering, are easily applied and conform to complex shapes to best protect your valuable equipment.

Applied to the leading edge of 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 blades – even in the harshest environments.

Can be applied at the factory or in the field via rope or platform access.

3M™ Wind Protection Tapes

Product Number	Color	Opacity	Thickness mils (mm)	Liner	Tensile Strength @ Break lb/in (N/100 mm)	Elongation @ Break (%)
W8607	Colorless	Transparent	14 (0.36)	Poly	80 (1400)	500
W8609	Colorless	Transparent	14 (0.36)	Poly	70 (1228)	500
W8620	White	Opaque	14 (0.36)	Paper	80 (1400)	500
W8640	Gray	Opaque	14 (0.36)	Poly	87 (1542)	500



3M offers many accessories used in the 3M Wind Protection Tape application process. Please see 3M Wind Protection Tape Application Guidelines for additional details.



3M™ Wind Epoxy and Polyurethane Fillers

3M offers a complete line of fillers, abrasives and accessories to repair minor damage on wind blade surfaces. Multiple chemistries and performance times meet a variety of application needs, while innovative 3M™ Duo-Pak Cartridges and Applicators reduce waste and virtually eliminate messy and time-consuming hand mixing. 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. For more information, please visit our website at 3M.com/wind.

3M™ Wind Epoxy and Polyurethane Fillers

Product Number	Chemistry	Work Time	Sand Time	Color
W3120	Epoxy	10 min	30 min	Blue
W3610	Polyurethane	8-10 min	30 min	Dark Gray



3M Renewable Energy Division: Unmatched Capabilities

3M's commitment to the renewable energy industry includes a global organization of research and development, sales, marketing, manufacturing, and technical service – all dedicated to developing reliable materials that reduce costs and improve performance.

Expertise

Founded in 1902, 3M has extensive experience developing durable materials for outdoor applications in transportation, commercial graphics and optics. This includes world-class facilities for simulated and real-time weathering exposure and testing.

Innovation

At 3M, the innovation is never-ending. Whether the free-flow of ideas and solutions is occurring among our people, our technologies, our industries or the geographies where we operate, the human and technological connections within 3M enable infinite combinations and applications of expertise as ideas multiply and solutions expand.



Laboratories	Manufacturing	Sales and Marketing	
USA	USA	USA	China
Japan	Poland	Canada	South Korea
Germany	Germany	Mexico	Japan
South Korea	South Korea	Germany	Taiwan
Singapore	Singapore	Denmark	Malaysia
China	Japan	Spain	India
	Taiwan	UK	Brazil
	China	France	
		Italy	
		Singapore	

For more information on our wind energy product line, contact 3M Renewable Energy at 800-755-2654 or visit us at www.3M.com/wind.

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This Renewable Energy Division product was manufactured under a 3M quality system registered to ISO 9001:2000 standards.



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