

BATTLING EXPOSURE WITH BLADE COATINGS



Wind turbine blades are exposed to the sun's rays, temperature extremes, lightning strikes, and airborne particulate matter such as sand and dust. BladeRep coatings can help.

By Jeff Grandgenett

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SMOOTH SURFACES ARE CRITICAL to the performance of wind turbine blades. ALEXIT® BladeRep is an advanced blade coatings solution that maintains smooth turbine blade surfaces for optimal performance and efficiency.

For more than a decade the BladeRep system has proved to perform effectively in all conditions, ranging from challenging to harsh. These innovative coatings meet aesthetic requirements as well as OEM small-to-medium blade specifications for high quality and durable products.

BACKGROUND

For 100 years BladeRep's Hamburg, Germany-based parent company Mankiewicz Gebr. & Co. has led in the development of superior coatings products. From humble beginnings painting horse and buggy coaches to today's highly technical applications on machinery, automobile interiors, commercial airliners, and super yachts, Mankiewicz's sense of environmental responsibility is at the heart of the company's success. In fact, environmental protection has been a corporate edict long before climate concerns arose. Our large R&D department devel-



ops eco-friendly, high-performance products with the best interests of the end user as the primary objective. Mankiewicz's reputation has attracted an international team of coatings authorities that work with R&D to provide superior coatings for the wind-power market.

This revolutionary system is formulated to meet or exceed the ever-increasing expectations and environmental regulations of the global market, both current and future. The selection of raw materials found in BladeRep formulas is based on analyses of long-term availability and environmental compli-

ance, and our team of over 120 chemists continues to ensure BladeRep continues providing innovative global coatings solution.

Based on successes across a multitude of industrial applications, it was a natural progression for Mankiewicz to extend its coatings expertise with the wind-power market. The BladeRep team started with Mankiewicz's proven ability to match groundbreaking formulations with varying engineering needs in order to protect a wide range of equipment and machinery. Our chemists tailored these formulas for wind power use by incorporating recent advances in resin technology with aviation systems developments, which demand both exceedingly durable coatings and stringent safety and environmental compliance.

TAILORED SYSTEMS

The ALEXIT BladeRep coatings system consists of profile filler, pore filler, leading edge protection, and topcoat to efficiently protect and maintain blades from the inherent harsh and varied conditions they are subjected to. All BladeRep products are two-component and polyurethane-based. Once applied a long lasting, durable, and streamlined surface promotes cost-effective operation with an improved lifespan.

BladeRep products are well matched to make up a complete repair system that is GL certified for performance and reliability. Available in a variety of user-friendly packaging and quantities for ease of use, greater cost efficiency is also achieved with less waste. These products are also versatile and can be used individually or as a complete resurfacing system. Each product is packaged for repairs and OEM applications of any magnitude, from a single damaged blade to a new wind farm. BladeRep products are also formulated for easy mixing and



application, with improved drying time and exceptional cured strength. All products meet or exceed OEM standards and are specifically designed for turbine blade applications that are meant to last. Products that can be used alone or as part of the complete system include:

Profile Filler 3: Used for filling major imperfections caused by weather or object penetration, this is a solvent-free, two-component polyurethane filler designed to be used for filling and fairing on glass reinforced substrates. This non-porous filler cures into an easily sanded surface and is ideal for repairing non-structure threatening cracks,

pock marks, hail inclusions, or other deformations caused by flying objects or debris.

Pore Filler 6: Used for filling smaller pinhole size surface imperfections, BladeRep Pore Filler 6 is a solvent-free, two-component polyurethane filler designed to seal any surface to achieve a defect-free, smooth surface prior to applying LEP 9 or Topcoat 12 on glass reinforced substrates. Pore Filler 6 cures to a surface that is easy to sand and is ready for finish coating.

LEP 9: Used as a finishing product specifically designed to protect leading edge areas where a coating with excellent abrasion and erosion re-

sistance is required, this two-component, solvent-free polyurethane product has superior elasticity and flexibility for long-term leading edge protection. These “stretch” properties help distribute the kinetic energy of a variety of environmental conditions such as rain, sleet, snow, and pelting sand, thereby reducing blade erosion and extending the life of the blade.

Adhering to our market-responsive ethos, a built-in BladeRep Maintenance Service Indicator (MSI) was developed from major wind-farm owner and applicator feedback. MSI is a system within the LEP 9 system, where a variety of application colors—red, white, gray, and black—helps to show the wear visible from down tower so you know where you are in your blade life expectancy. By visually identifying erosion, you can now be proactive with blade maintenance to avoid costly repairs after the fact.

Topcoat 12: Used for additional protection as a final topcoat to permanently seal and finish blade surfaces and provide exceptional durability, Topcoat 12 is formulated specifically for coating blades where a superior product with chemical, UV, abrasion, and mechanical resistance is required. This two-component polyurethane topcoat provides applicators with the ideal product for extending blade life and may be applied over all BladeRep products or any properly prepared surface. Available in all color shades, Topcoat 12 can be easily matched to original equipment manufacturer colors as well.

CONCLUSION

By following simple application and maintenance procedures you will add to the efficiency, reliability, and economy of

any wind-power system. Perhaps the best reason to choose BladeRep, however, is the service our business model offers. The BladeRep team doesn’t punch a clock, and our coatings experts hail from a wide range of technical backgrounds dealing with the harshest elements on earth. They are in the field ready to solve any challenges, and in the lab and on the loading dock to ensure that your shipment goes out on time and as ordered. To address increasing demand we have more than doubled the members of our wind-power support team over the last five years, at the same time establishing an easily accessible global network of product distributors. ✈



It's Aerodynamics 101
Smoother surfaces create less drag and result in better efficiency.

That's where we come in.



ALEXIT® BladeRep
The professional approach to blade coatings

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