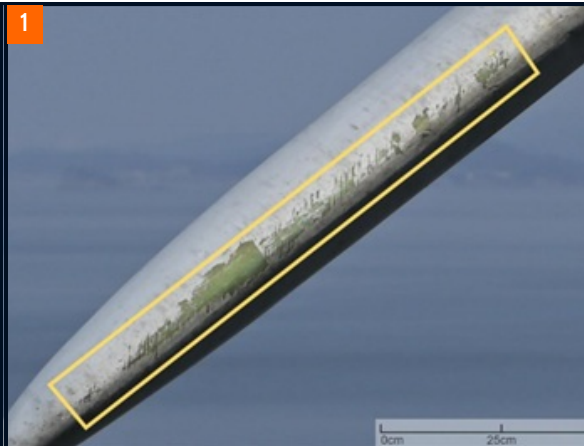


BELZONA LEP SYSTEM PROVEN EFFECTIVE FOR WIND TURBINE LEADING EDGE PROTECTION

ID: 10304



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PROBLEM

The client had been using a combination of reinforcement tape and a polyurethane coating system on the wind turbine blade leading edges. However, as blade sizes increased and exposure to rain impact, friction, and erosion intensified, the system was no longer able to provide effective leading-edge protection.

In addition, the system's multi-layer application process was time-consuming, leading to higher operational downtime cost. As a result, the asset owner sought a more durable and efficient leading-edge protection solution.

APPLICATION SITUATION

The leading-edge protection system was applied in situ using rope access, allowing the work to be completed without removing the blades.

Where required, Belzona 5711 was applied to the leading edges to restore the blade profile and re-establish the substrate geometry. Belzona 5721 was applied as a single-layer coating to provide a durable protective barrier against environmental exposure and operational wear.

Both products were supplied in cartridge format, simplifying the application process, particularly during the summer months, when higher temperatures can reduce the working and cure times of conventional materials.

APPLICATION METHOD

Surface preparation was carried out using sanding to ensure adequate surface roughness and cleanliness of the FRP substrate.

Where require, Belzona 5711 was applied to the leading edges to rebuild the substrate.

Belzona 5721 was applied in a single layer to achieve a thickness of approximately 400–600 microns to protect the wind turbine leading edge.

BELZONA FACTS

Belzona's LEP system was selected due to its superior performance characteristics, including high adhesion strength, excellent erosion resistance, and the ability to achieve a high-build coating in a single application.

INDUSTRY

Power

LOCATION

Sinan, South Korea

APPLICATION DATE

September 2024

PRODUCTS

Belzona 5711

Belzona 5721

SUBSTRATE

GFRP

PHOTOS

1. Damage on wind turbine leading edge
2. Belzona 5711 rebuilt a wind turbine leading edge
3. Belzona 5721 was applied as a single-layer coating on a wind turbine leading edge
4. Closer view of a wind turbine leading edge

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