ONTARIO

KNOW-HOW IN ACTION

BELZONA®
GREAT LAKES

014/2021

WIND POWER
TURBINES BLADES
LEP PROTECTION

BELZONA®
Repair • Protect • Improve
AUTHORIZED DISTRIBUTOR

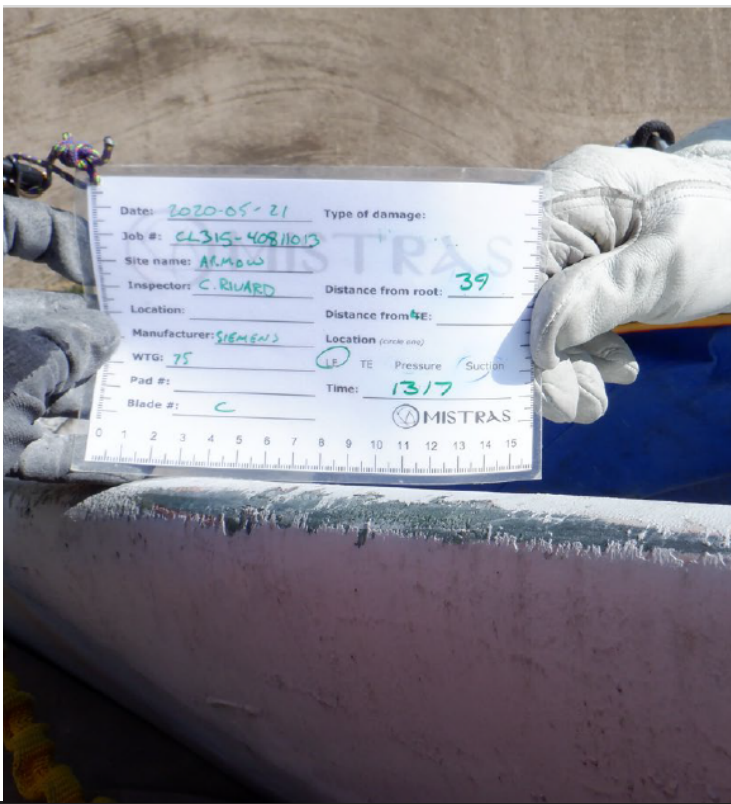
THE PROJECT

LEP PROTECTION
JUNE, 2020

Leading edge damage is recognized as the single largest problem for the Wind Power industry. Evidence has proven that damage to the leading edge can lower AEP (Annual Energy Production) of a wind turbine, with energy losses estimated at between 4% and 20% if the erosion damage is severe.

Studies show that a new set of blades can cost the equivalent of 20–25% of the original price of the wind turbine, whilst a minor blade repair will cost just 10% of a replacement blade.

EROSION RESISTANCE



A customer in Southwestern Ontario was looking to repair and refurbish some of their blades that were affected from severe erosion. The blades were not initially protected and were only put in service with the factory gel coat.

They decided to test Belzona 5721 coating as they were impressed with the features and performance of this product. Belzona 5721 has been tested against internationally recognized standards ASTM G73, ASTM G76 and ASTM G32 and exhibits excellent erosion and cavitation resistance.

THE SOLUTION

Belzona 5721 was specified to be applied on 6 different blades in a wind farm. The application was completed by Rope Access Technicians.

Before the application of Belzona 5721, the surface of the LEP was cleaned and sanded. Defects and areas that needed rebuild were repaired. Once a clean and even surface was achieved, Belzona 2911 (Elastomer QD Conditioner) was applied to condition the surface and allowed to become touch dry. Then, one coat of Belzona 5721 was applied at a thickness of 20 mils. The product was allowed to cure before putting the turbine back in service.

UV STABLE

The image on the left shows one of the blades after being inspected by a drone 7 months in service. The products appears to be intact with no signs of wear, checking or peeling.

Belzona 5721 is a high performance coating, specifically formulated for protecting the leading edge of wind turbine blades from erosion and impact damage. The system is ideally suited for the rigors of in-situ applications, being easy to apply by brush in a single coat. Together with its low-temperature cure technology, full cure in 6 hours at 5 °C, Belzona 5721 can maximize available maintenance opportunities and ensure the turbine's fast return to service.