

Zentek Provides Update on Icephobic Coating Technology

2022-10-12

Zentek has successfully completed sand erosion testing and rain erosion testing on Zentek's patent-pending Icephobic Coatings.

[Zentek Ltd.](#), an intellectual property development and commercialization company, has successfully completed sand erosion testing at the National Research Council ([NRC](#)) in Ottawa and rain erosion testing at the Anti-icing Materials International Laboratory ([AMIL](#)) in Quebec on Zentek's patent-pending Icephobic Coatings.

These results, when taken with the strong performance under accelerated ageing announced March 14, 2022, demonstrate that the company's icephobic technology is durable in adverse conditions for both wind turbine and drone industries, where Zentek is currently maintaining its focus.

Summary of overall results to date as reported by the NRC and AMIL:

- As reported in November 2021, icephobicity tests at the NRC yielded strong and consistent results with an average shear stress of 20 kPa required to passively remove ice accretion (results under 100 kPa are considered to demonstrate low adhesion). Retesting a year later yielded the same results, demonstrating strong stability.
- Flight tests in real-world icing conditions demonstrated good performance of Zentek's coating, with results indicating retardation of ice accretion (icephobicity) and low adhesion to accreted ice.
- 1,000 hours of UV exposure, equivalent to two years of UV damage in [Canada](#), slightly increased the ice adhesion properties to 43 kPa, which is still considered to be an effective coating in removing ice.

- Sand erosion testing demonstrated medium to good performance at a high speed of 540 km/h.
- Rain erosion testing at AMIL demonstrated good performance at 160 km/h and 320 km/h based on our interpretation, speeds at which the leading edge of wind turbines blade tips are exposed.
- NRC drone testing demonstrated consistent results of maintaining control of rotor thrust in icing conditions while uncoated blades failed to maintain thrust in the same indoor controlled environment.
- NRC is preparing for outdoor, real-world environment testing of drone rotor blades with Zentek's icephobic coating this winter.
- AMIL is testing the performance of Zentek's coating on a small wind turbine in an indoor controlled environment.

"We are very happy with both the performance and durability test results for our icephobic coating and look forward to continued testing and demonstration of our technology," said Greg Fenton, CEO of Zentek. "Ice accretion is a significant problem in the drone and wind turbine industries with few robust solutions currently available. We believe our patent-pending technology may be a new innovative approach to addressing a significant global need and look forward to continued discussions with drone and wind turbine market participants who see value in potentially more effective icephobic technologies."

Zentek has filed a full patent application with the Patent Cooperation Treaty, the international patent office, on August 2nd, 2022, for Nanomaterial-Enhanced Elastomer for Passive Ice Accretion Prevention. The patent application will publish approximately 6 months from the date of filing, marking the beginning of the 12-month national phase for Zentek to apply directly in each country of interest.

Read the [original article](#) on Zentek.

