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NEI Corporation introduces NANOMYTE® SuperAi, a Durable Anti-ice Coating

Somerset, New Jersey – NEI Corporation announced today that it has introduced NANOMYTE® SuperAi – a nanocomposite coating that imparts anti-icing properties to the underlying substrate. The transparent coating also provides a hard, dense and smooth finish. Surfaces treated with SuperAi exhibit reduced ice adhesion, thereby preventing ice buildup. SuperAi can be applied to a variety of substrates, including plastics, metals, glass, and ceramics. In some instances, a suitable primer may be required for maximum adhesion of the SuperAi coating.

NANOMYTE® SuperAi is a single component coating that is easily applied by dip, spray, or brush. Potential applications include occurrences where ice removal is a challenge (e.g., wind turbine blades, power transmission lines and cables, windshields and other glass surfaces in automobiles). The coating also provides durability and additional corrosion protection. The figure on the right is an example of how SuperAi can eliminate ice buildup on a substrate.

NANOMYTE® SuperAi is uniquely engineered so that the treated surface becomes highly slippery and hydrophobic, which facilitates the reduction in ice adhesion. Data obtained so far by our customers and collaborators indicate that SuperAi is effective in mitigating buildup under icing conditions. For example, in a simulated industrial trial, ice accretion on coated and uncoated aluminum conductor cables were measured. The outside of one cable was coated with SuperAi. Both coated and uncoated conductors were subjected to icing conditions for two hours under a regulated spray of water and ice solution at fixed time intervals. Ice accumulation was determined by weighing the cables before and after the test. It was established, in multiple test runs, that the ice accretion was reduced to half with application of the coating. Similar results were obtained on sections of a wind turbine. In addition, in-house measurements of ice adhesion strength with a force gauge show that SuperAi reduces the adhesion tendency significantly.

NANOMYTE® SuperAi can be applied on clean surfaces using a commercial high volume, low pressure (HVLP) spray gun. The coating can also be applied using a roller or brush, where coating is done in a cross-pattern; left to right, then up and down as quickly as possible since the coating dries quickly. SuperAi can be cured at room temperature by exposing the coating to ambient conditions for 6 to 8 hours. Accelerated curing is achieved in 1 hour or less at temperatures in the range of 100 – 150°C. NANOMYTE® SuperAi is available in one liter bottles, 5 gallon pails, and 55 gallon drums.

About NEI Corporation: NEI Corporation is an application-driven company that utilizes nanotechnology to develop and produce advanced materials. The company’s core competencies are in synthesizing nanoscale materials and prototyping products that incorporate the advanced materials. NEI offers an array of Advanced Protective Coatings for metal and polymer surfaces. The coatings have tailored functionalities such as anti-corrosion, self-healing, scratch resistance, ice-phobic, and self-cleaning.

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