Sicomin GreenPoxy® Resins Chosen BY GREENBOATS® For First Natural Fibre Composite Nacelle

Sicomin, the leading formulator and supplier of bio-epoxy resin systems brand GreenPoxy®, is delighted to announce its latest collaboration with GREENBOATS® as they deliver the first ever natural fibre composite (NFC) nacelle for an offshore wind turbine.

Not only is the new GREENBOATS nacelle a first for the wind energy industry, but it is also the world's largest NFC structure to date. Working with German distributor TIME OUT Composites, Sicomin has provided GreenPoxy® bio-based resins, intumescent FR gelcoats and UV resistant clear coatings for the groundbreaking new nacelle.

With more than 2.5 million tons of composite materials in use in the wind industry globally, and the first generation of wind turbines now approaching end of life, there is still a lack of well-established recycling options. GREENBOATS' mission is to demonstrate how large-scale NFC structures in wind energy can lower energy consumption in manufacturing and significantly improve the sustainability of the composite materials used in the turbine.

In 2020, GREENBOATS was commissioned by a leading wind energy technology developer to design and manufacture a sustainable NFC nacelle. The resulting 7.3m long structure has a surface area of approximately 100m2 and was engineered by GREENBOATS to satisfy all DNV-GL load cases required for an offshore turbine nacelle, including 200km/h max wind loads and 2KN loads on the guard rails.

Sicomin's market leading GreenPoxy® range met these challenging engineering requirements, with the company's recently expanded manufacturing capability also matching the potential supply volumes required by wind turbine manufacturers.

Sicomin's DNV-GL type approved bio-based epoxy was used to infuse BComp flax fibre reinforcements and balsa cores, with Sicomins' intumescent weatherproof gelcoat applied on the outer surface. Cured panels were cut to shape, formed over a male plug and bonded together, before flax reinforcement plies, hand laminated with GreenPoxy resins and vacuum bagged, were added along all the panel joints lines. Finally, Sicomin's highly UV resistant clear coating products were used to protect and enhance the finish of the flax fibre feature stripe details.

"For a structure like the nacelle, it was critical that we selected materials that process consistently and perform well in large scale components, and that is where Sicomin are so strong." commented Friedrich Deimann, Founder and MD of GREENBOATS, "Their resins, gelcoats and clear coats meet our sustainability targets, and match our NFC ethos, with no compromise on performance. And when we need to scale up, they can really supply on an industrial level."

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PRESS RELEASE

Philippe Marcovich, President, Sicomin comments: “Sicomin and TIME OUT, our German distributor, are enormously proud of the role that GreenPoxy® materials will play in the new nacelle. In particular we are looking forward to the next stage of the project in which the nacelle will first be installed for tests in the Harbor of Rotterdam. This is planned for Spring 2021. Afterwards the nacelle will be installed at its long-term offshore location”.

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