

MARKET

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VISION

WIND ENERGY

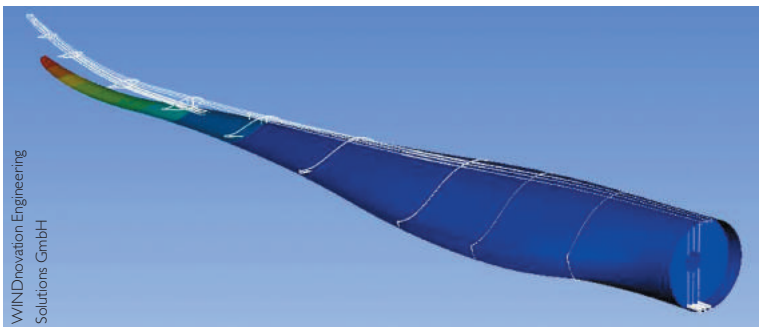
Ultrablade™ fabrics technology improves wind turbine blade designs

WINDnovation Engineering Solutions GmbH, one of the world's leading designer of rotor blades for wind turbines, teamed up with Owens Corning to take its new blade designs from art-to-part.

existing designs thereby saving weight and cost; and for given wind turbines, when extending their rotor diameter, it enables increasing their energy yield making low wind sites competitive.

These design options put us in a very competitive position", stated Heiko Hartfiel, Material Department, WINDnovation.

“ Depending on the specific application, the use of Owens Corning fabrics slashed blade weight by approximately 3-5 percent compared to traditional E-glass designs,” Hartfiel concluded.



To cost-effectively design new lightweight rotor blades for its international customers, WINDnovation needed a material with extreme stiffness, strength and anti-fatigue properties. After carefully analyzing different glass fiber options, Owens Corning's newly developed Ultrablade™ unidirectional and multiaxial glass reinforcement fabric was selected for the spar cap and trailing edge.

Power generation cost reduction

“One of the key optimization parameters for modern wind turbine designs is Cost of Energy (CoE). To reduce this magic value, wind turbines need to be produced as economically as possible while harvesting as much energy as possible.

Ultrablade™ fabric is providing all options to help achieve this goal. It is enabling WINDnovation to optimizing

Newly developed and proven blade design

Customized by Owens Corning for WINDnovation's new blade designs, the Ultrablade™ fabric improved blade stiffness and strength by more than 15 percent compared to traditional E-Glass which helps to cut down the amount of materials needed and the manufacturing costs.

For proven designs, WINDnovation used Ultrablade™ to substitute E-glass in order to reduce blade mass or to take advantage of the improved stiffness in order to extend the blades' load envelope. Ultrablade™ also helps to make newly developed glass fiber blades possible whose lengths are heading towards 80m. This extends the application range of glass fibers into a market, until now, dominated by very expensive and delicate to handle carbon fiber.

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