Wind power generation blade bonding process

Overview

In a blade bonding process, the adhesive is deposited on top of the stationary bottom shell that is resting at the lower mould, which is then exposed to a significant force by the approaching upper mould that is holding the corresponding counterpart. Metering and mixing systems for adhesives play a major role in the production of rotor blades. In the case of rotor blades that are more than 100 meters in length, up to 1200 kilograms of adhesive are needed to bond the two halves of the blades together. A plurality of spaced apart external access ports into the lumen are defined along the bond line. Let's explore exactly how these massive. In rotor blade production, one obvious way of accelerating the process would be to use polyurethane-based adhesives for rotor blade bonding, although these represent a very recent development in the wind power industry.

Article Content

Adhesives for Wind Power Manufacturers | Turbine ...

Epic Resins supplies structural and bonding adhesives capable of adhering to primed metals and epoxy/fiberglass laminate types commonly found in the ...

Numerical modelling of the bonding process for wind turbine ...

Adhesive is typically used in the joint between the two shells composing a wind turbine blade. The bonding process of a blade can be characterized as a squeeze flow problem where the top shell is ...

Wind Blade Bonding Adhesive | Sika

Collaborating with a prominent Chinese blade manufacturer, they successfully bonded a 102-meter wind turbine blade using SikaPower® epoxy bonding paste. ...

Adhesive curing cycle time optimization in wind turbine blade ...

A 2D cross-section model of a wind turbine blade was created to simulate the adhesive curing cycle in a manufacturing setting. This model was used to highlight critical aspects of the curing ...

Dispensing systems for bonding rotor blades

Figure 2: Bonding the two halves of the rotor blade is a complex and time-consuming process. Where smaller sections of the rotor blades have to be bonded toward the end of the adhesive application, a ...

Faster rotor blade bonding and high temperature adhesive technology

The specialist in high-performance polyurethane adhesives has succeeded in developing a PUR adhesive that satisfies the specific mechanical requirements for use in the wind power industry and, ...

Solutions for Rotor Blade Bonding Processes

Bonding the two halves of the rotor blade is a complex and time-consuming process. The option of choosing different adhesives not only improves the overall efficiency of the bonding ...

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The current turbine blade bonding technology may be completely reshaped by three opportunities: raw material availability, blade recyclability, and the evolution of blade designs.

Method and system for bonding wind turbine blades

Present invention relates in general to wind turbines, and the method for the parts of the wind turbine blade that relates more particularly to be used to bond.

How Are Wind Turbine Blades Manufactured? Step-by-Step Guide

Wind turbine blades are typically manufactured in two halves. Once cured, the two blade shell halves are bonded together with strong adhesives, often along a structural spar (a stiff backbone).

Contact Us

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