SIEMENS

IntegralBlade®

A key technology unique to the wind industry

All blades for Siemens wind turbine platforms with power ratings from 1.3 to 6.0 MW and rotor diameters from 62 to 154 meters are manufactured using the patented IntegralBlade technology. The blades are made from fiberglass-reinforced epoxy resin, and their external design represents state-of-the-art wind turbine aerodynamics.

The IntegralBlade technology invented by Siemens Wind Power allows the manufacture of single-piece wind turbine blades in a closed process. The fiberglass reinforcement is laid out to dry using a special molding arrangement with a closed outer mold and an expanding inner mold.

After completion of the fiberglass lamination process, the epoxy resin is injected under vacuum conditions. Then the blade, which is still enclosed in the mold, is hardened at high temperature. Finally, the blade is removed from the outer mold after the epoxy resin has hardened.

The inner mold is collapsed with a vacuum and pulled from the blade. The result is a complete, seamless blade finished in a single process. A truly integrated success.

Answers for energy.

The IntegralBlade process has several advantages compared with traditional processes used by other blade manufacturers. It requires only one mold set for the entire manufacturing cycle, less space, and less manpower.

Moreover, potential issues pertaining to tolerances between shells and spars are avoided. The resulting blade is an integral structure with no adhesively bonded joints that can be weak points potentially exposing the structure to cracking, water ingress, and lightning.

The IntegralBlade technology is a closed manufacturing process from start to finish, so the work environment at the blade factory is outstandingly clean and attractive.

For more information, please contact your local Siemens sales representative.

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