



Technical data sheet

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moulds



SSP Technology has acquired a leading position in the field of manufacturing of moulds and tooling for wind turbine blade production. Accuracy of fit when using the production tools has made us a preferred working partner of major turbine manufacturers and their development departments when it comes to structural rotor blade design. During the development phase, special emphasis is placed upon achieving high mould productivity.

Mould concepts for the manufacture of blades from 34 up to 60+ metres in length have been successfully realized and SSP is actively involved in future larger and more cost-effective blade development together with major partners.

High accuracy moulds – blade output with superior aerodynamic performance and reduced finishing and assembly time

Optimized mould skin – with structural integrity and consistent quality

Smart mould solutions – low mould maintenance and downtime as well as high production speed

SSP Technology design features make the set of moulds unique:

- The turning and closing mechanism allows a stand-alone production. No cranes are needed to operate the mould.
- The mould's sandwich laminate uses the core material to distribute the process air. The relatively thin shell laminate allows quick changes in temperature.
- The use of GRP panels creates a strong but light mould cradle that expands together with the blade during cure cycle.
- The shell skin is built out of a combination of vacuum infusion and prepreg material using glass fibre and epoxy resin.
- The moulds are equipped optionally with their own vacuum piping system.
- The moulds are designed in a very compact way for easy relocation and set-up in any conventional production hall.

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Design

The mould is manufactured on a CNC milled master model. The inner skin is laminated using the vacuum resin infusion system with epoxy and glass fibre. As core material perforated aluminium honeycomb is used that allows the distribution of process air for heating or cooling the mould.

The outer layer is laminated with prepreg glass fibre. Sandwich panels bonded onto this surface build the mould cradle, and stressed areas such as lifting points, are reinforced. The heating and cooling system is divided into several sections each independently controlled by the mould controller.

The two parts of the moulds are connected by a turning mechanism with hydraulic hinges that allow the opening and closing of the mould without crane assistance within a few minutes. The turning mechanism and the lifting and lowering system secure a safe and precise opening and closing process as well as easy operation of the mould.

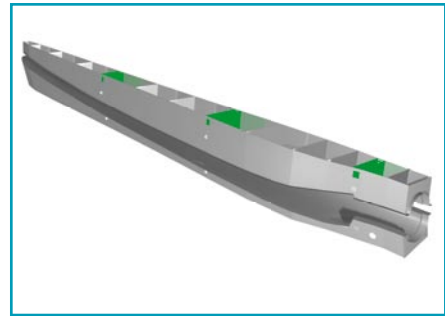
Heating

The heating and cooling system is integrated inside the mould's cradle. Each climate zone has its own electrical heating and fan. The process air is distributed by using the perforation of the honeycomb. This set-up allows an accurate control of the process temperatures. The change of temperature can be done quickly so the input of energy and the mould time is optimized.

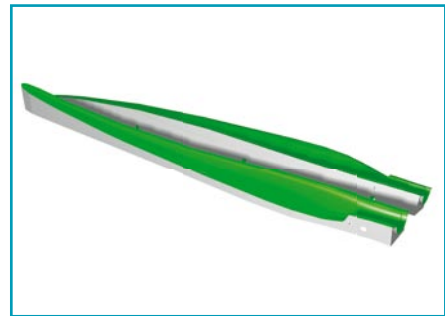
Relocation

The mould construction follows a compact design which makes it easy to relocate and move the mould to other production sites (Plug-and-play) with only a few special facility requirements. Compared to many solutions seen in the industry, the moulds produced by SSP Technology can be set up in any conventional production hall.

Our moulds are compact



Open female moulds



Benefits from SSP moulds

Light	Faster process and less energy consuming
Compact	Flexible and take up less space
Stiff	Accurate blades, high quality and security
All in one	Less investment, flexible and space saving
Computer controlled	Quality and confidence
Logged cure cycle	Traceability
Precise	Faster production and less finishing work
Heatingt/cooling	Process speed and bigger capacity
Plug-and-play	Prepared for relocation

About SSP Technology A/S

SSP Technology develops and manufactures moulds and patented blade components for the production of cost effective, high performance and reliable blades made of composite material. We possess leading edge knowledge in the area of rotor blade technology and mould construction from drawing board to production, placing strong emphasis on aerodynamics, uniform quality, low weight and high productivity. Through the use of SSP's technology expertise, the customer's blade performance will become highly competitive especially with regard to future development.

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