

Decreasing the cost of energy from wind



Sandwich composite solutions for the wind industry

We know what matters

Application development within the wind industry is driven by the need to decrease costs and increase efficiency. These two objectives are challenging to combine, but necessary to make wind energy a viable alternative to fossil fuels. Quality requirements within the wind industry leave no room for errors, further increasing the challenges for wind turbine suppliers and manufacturers. DIAB looks at these challenges from a holistic point of view. By combining design, manufacturing and quality with the right core materials, we achieve significant results together with our customers. DIAB offers invaluable solutions because ***we know what matters.***

WTG (Wind Turbine Generator) manufacturers' ability to provide competitive cost per megawatt relates to:

- Provision of high performing WTG
- Manufacturing efficiency
- Security of supply
- Six Sigma quality levels
- Continuous innovation and product development
- Sustainable products

Partnering with DIAB leads to improvements in all areas. DIAB is an expert in sandwich composite solutions and has extensive experience working with the wind industry. Because we understand our wind customers' unique needs and challenges, we focus on one clear objective: helping you decrease the cost of energy from wind.





Power more with DIAB

DIAB has every important strategic capability for wind, qualifying us as a leading supplier of core materials and sandwich composite solutions for the wind industry.

DIAB – a strategic partner

Competence Gained through Experience

DIAB probably has the highest competence level in the industry. Our decades of experience serving the wind industry give us invaluable insight into our customers' unique products and processes, which enables us to develop solutions adapted to your specific needs.

Our forward-thinking research and innovation are coupled with the knowledge and wisdom that only experience can bring. With that winning combination, we help you develop applications with the right performance to boost your productivity and increase your competitiveness.

From our work with all major turbine manufacturers, there are now approximately 200,000 DIAB cored blades in service around the world.

Most Valuable Offering in the Industry

DIAB serves a wide range of markets with diverse needs and challenges. To meet the wind industry's needs, DIAB provides one of the widest offerings in the sandwich composite industry. Combining our five high-performing product lines of core materials and numerous finishing and kit options with our top-level engineering services and experience, DIAB presents the most valuable offering available.

Security of Supply

We have positioned ourselves to serve our customers locally while offering all the benefits of working with a global company. With eight manufacturing plants in strategic locations around the world, all offering our full range of materials, DIAB ensures high efficiency, quality and an optimal supply chain — giving you security and flexibility.

Innovation & Quality

At DIAB, we are continuously developing and expanding our portfolio of core materials and value-added services. Our development department and our dedicated R&D function ensure we keep our customers in the forefront of the industry.

Working closely with DIAB gives you continuous access to innovation and continuous product development in core and composite technology.

All of DIAB's factories work according to the highest quality standards and we are constantly improving the quality and efficiency of our products.

Commitment

DIAB is a long-established, stable company. We take our customers' trust very seriously and we honor our commitment by focusing on what is needed to make our customers' products stronger, lighter and more competitive. Partnering with DIAB gives you access to our full value now and in the future, allowing you to continuously develop your business.

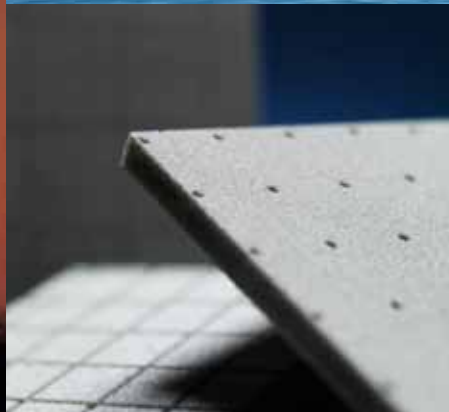
High-Performing Composite Solutions

Needs within the wind industry are diverse, differing between application, manufacturing process and manufacturer. No two needs are alike, which is why we provide solutions rather than products.

DIAB's sandwich composite solutions combine high performance core materials with value-added services and engineering expertise based on an in-depth understanding of our customers' requirements.

DIAB Core Materials

DIAB provides a wide range of materials suitable for the wind industry — available in plain sheets with a variety of finishes and in pre-cut kits. All of our materials are good environmental choices and can be reused or recycled.



Divinycell Matrix^X

The Matrix Series is the latest addition to the Divinycell family and our most iterated product. Divinycell Matrix delivers relevant mechanical properties at the lowest possible weight, enabling our wind customers to increase their competitiveness. Matrix is a recyclable, structural, all-purpose grade that providing excellent strength-to-weight performance within a wide range of mechanical properties. The Matrix series is compatible with most low-temperature pre-pregs and wet resin systems.

Divinycell H

Divinycell H is a recyclable, structural, all-purpose grade material appropriate for various applications within the wind industry. Available in a wide range of mechanical properties and product characteristics, Divinycell H has an excellent strength-to-weight performance.

Divinycell P

Divinycell P is a recyclable, structural PET core material suitable for various wind applications. Divinycell P is apt for high-temperature processes such as pre-pregs and is also thermoformable.

Divinycell HP

Divinycell HP is a recyclable, structural, all-purpose grade appropriate for various applications within the wind industry. Divinycell HP is suitable for most pre-pregs and is high-temperature resistant. Available in a wide range of mechanical properties as well as product characteristics, Divinycell HP has an excellent strength-to-weight performance.

ProBalsa

ProBalsa is an organic core material mainly suitable for blade production. DIAB has its own balsa tree plantation and manages the entire process from beginning to end. Certain circumstances allow for 100% ProBalsa or it can be mixed in hybrid kits consisting of both foam and ProBalsa.



Kits

To significantly reduce cost, all of DIAB's materials can be delivered in ready-made construction kits to optimize efficiency throughout the manufacturing cycle. By eliminating the on-site shaping and cutting of flat sheets, customers can substantially reduce build times, save labor cost and improve the quality of their products.

With the DIAB kit concept, each piece is pre-cut, shaped and formed as necessary and numbered to fit exactly into its designated place in the mold. Speeding the lay-up process saves even more time.

DIAB has unrivaled experience with manufacturing core kits, which further speeds up the kit process and improves quality. The end result is a high quality component with increased efficiency, virtual elimination of core material waste and a reduction in inventory levels.

Finishing

Selecting the correct finishing options in combination with the right kit can significantly improve cost, quality and efficiency. DIAB provides a wide number of finishing options relevant to blade, nacelle and spinner manufacturing.

Core infusion

DIAB Core Infusion™ brings together all the benefits of sandwich composites with the processing, performance and health and safety advantages of closed molding. Core infusion is a DIAB concept that significantly decreases cycle times, improves quality and decreases the resin consumption and cost of consumables for blade manufacturing.

DIAB Technical Services

DIAB Technical Services is the powerhouse of composite knowledge and experience. Technical Services makes sure you get the most out of your composite solution and provides you with invaluable advice for your operations.

Technical Services is an excellent speaking partner in terms of core, kits and finishing selection. They assist our customers in optimizing the full solution.

COMPOSITES CONSULTING GROUP

Composites Consulting Group, an independent DIAB Group company, provides world-class composite services to companies with a desire to make innovative products using composites.

Companies working with CCG realize the full value of designing with composites. CCG provides services within design, engineering, testing, tooling, process optimization and training.

Composites Consulting Group has an impressive list of projects from the wind industry with various services for products such as wind turbine blades, spinners and nacelles. CCG also provides focused training courses such as our Wind Turbine Blade Manufacturing training course aimed at increasing efficiency and improving the quality of blade manufacturing.

Making you more competitive

DIAB is a world-leading supplier of sandwich composite solutions that make our customers' products stronger, lighter and more competitive. Our extensive experience in providing sandwich composite solutions to customers has made DIAB a leading partner in the sandwich composite industry. DIAB's solutions combine high-performance core materials, value-added kits, engineering and process services.

**Core materials | Knowledge | Kits | Processing | Engineering |
Training | Global presence – local service**

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