WE’RE ALWAYS AT THE CORE OF YOUR MARINE SOLUTION
Diab was founded in Sweden in 1950. Ever since the beginning, and throughout our steady development into a global company, we have been dedicated to constant innovation and promoting a widespread adoption of structural core materials. Our products and solutions have been used in applications for marine, wind, aerospace, and industry for decades and are qualified according to relevant industry standards. With a complete range of high-performance core materials, numerous finishing options and kit operations in combination with engineering services and expertise, we present presumably the widest and most valuable offering in the sandwich composite industry.

Whether you manufacture sailing boats, super yachts, fast motorboats, or large commercial vessels, it’s all about maximizing performance. Low weight, which is one of the main advantages with structural core materials, increases speed, reduces fuel cost and allows for a higher payload. The core solutions by Diab offer the highest strength-per-weight ratio for all marine applications. Our engineered materials make your boat light, fast and tough, and with the help of our technical expertise, structural engineering services and applications training, you can achieve maximum performance and cost-efficiency.
MORE SUSTAINABLE IN EVERY WAY

SUSTAINABILITY IS IN OUR CORE
Our products contribute to energy savings and a lower carbon footprint. They will help you boost energy efficiency, reduce emissions, conserve natural resources and create a longer life cycle for your product. Simultaneously, our customers in the marine market are setting increased demands for suppliers in terms of quality, safety and environmental issues. At Diab we work hard to make a difference when it comes to sustainability. We are strongly committed to making your solution more sustainable in every way.

A PART OF THE RENEWABLE ENERGY SUPPLY CHAIN
Sustainability is one of our top business priorities. We are adopting to the responsible framework of UN Global Compact; our Sustainability report is publicly available, and we have gotten approval of our CO₂-reduction targets from the Science Based Targets Initiative. We strive to be a part of the renewable energy supply chain, and we also believe that such approach drives long-term profitability and competitiveness.

MAKE THE MOST OF YOUR APPLICATION

THE SANDWICH TECHNOLOGY
Composite materials are made from two or more materials with significantly different physical or chemical properties, that when combined, form an overall structure with characteristics different from the individual components.

The basic idea is simple; the execution is a bit more advanced. Two thin, strong and stiff skins, of fiber reinforced plastics or solid material, are attached to a lightweight core by press-bonding or lamination. By doing so each element forming the composite panel can be designed to minimize weight and maximize strength and stiffness, or other desired features. The result is a component with a very high stiffness-to-weight and high bending strength-to-weight ratio. A Diab sandwich has all the advantages of conventional materials, such as steel or wood, but none of the disadvantages, such as heavy weight, corrosion, or design limitations.

MASTERS OF SANDWICH CORE
In a sandwich typically the skins are taking tension and compression loads, and the core shear forces. Our PVC and PET cores are engineered foams fit for the sandwich purpose to absorb and distribute the loads exposed to the sandwich, static or repeating. They have a stable closed cell structure resistant to water ingress, corrosion and decay, an important characteristic in harsh environments.

A variety of grades is used to give the final product additional desired features, such as fatigue and impact resistance, fire resistance, insulation, radar transmittance and many more.

Diab offers the widest range of high-quality sandwich cores, but our true strength goes beyond the material. You can draw from our knowledge when it comes to anything from sandwich design to efficient production methods. With our experience and expertise you can make the most of your application, existing or new.
Every application and manufacturing method has its special demand on the material used. To be able to get the most out of your product, Diab offers the widest range of core materials and grades with unique properties that will suit the needs of your marine applications today and tomorrow.

**DIVINYCELL - PVC**

The unique composition of our PVC foams yields impressive mechanical performance to a very low weight.

*Divinycell HM*

Di vinycell HM is our ultra-performance core designed for fast marine hulls where extra toughness is required. Di vinycell HM combines all the qualities of Divinycell H, plus a very high shear elongation. As a result, Divinycell HM is a very tough product, capable of absorbing high dynamic impacts such as slamming loads.

Divinycell HM’s very high elongation (above 40%) exceeds the minimum requirements of ISO12215, GL and ABS rules to allow for reduced safety factors in structural calculations, providing a lighter, yet strong structure. Divinycell HM offers a high operating temperature, reducing the risk of print-through on dark hulls.

*Divinycell H*

Divinycell H needs no introduction. This closed cell structural core has set the standards in the marine industry for decades. With its long-term, proven performance and exceptional mechanical properties it is the product of reference for naval architects and manufacturers.

Divinycell H has the highest strength-to-weight properties in the market and excellent fatigue resistance. It has a superior resistance to a wide range of chemical products and because of the fine close cell structure it has a low resin absorption. Furthermore, it is compatible with all polyester, vinylester and epoxy resins used in the marine industry and is totally safe to use, with no release of harmful products when cut or machined.

*Divinycell HP*

Divinycell HP brings all the advantages of Divinycell H together with high temperature resistance for prepreg processes or temperature critical components such as dark topsides. It can handle processing temperatures as high as 143°C (290°F).

*Divinycell Matrix 10-8*

Divinycell Matrix is an all-purpose grade with high strength-to-weight ratio. The unique PVC formulation yields impressive mechanical performance to a low weight. Divinycell Matrix delivers relevant mechanical properties and valuable material characteristics and is well integrated in the Diab offering and is available in various finishing options as well as kits. Divinycell Matrix allow naval architects to tailor their design even more for additional weight and cost savings.

The technology behind Matrix 10-8 has allowed Diab to develop a core with higher mechanical properties than our well respected H60, to equal density.

*Divinycell PET*

Thermoplastic recyclable PET foams suitable for many different marine applications.

*Divinycell PN*

This structural thermoplastic PET core material is perfectly well suited for a variety of sandwich applications to increase performance and reduce weight.

It is easy to machine and has good dimensional stability at elevated temperatures, and it is suitable for a variety of processes including infusion, prepreg and press bonding.

The material has a stable closed cell structure and is insensitive to moisture, decay or rot, making it an excellent substitute for organic materials such as balsa and plywood. High density Divinycell PN (PN250) is particularly suited for flooring, decking, local inserts in the way of fittings; either tapped or bolted through and has very good screw retention. Divinycell PN is 100% recyclable.

*Divinycell PY*

Another late addition to our offering, PY brings along with the benefits of the traditional PET foam, an improved mechanical performance and lower resin absorption.

**BALS A**

Balsa materials are particularly easy to work using conventional woodworking tools. They can be drilled, milled, turned and sawn to close tolerances.

*Probalsa*

Probalsa is end grain balsa core material suitable in areas above the water line. It is produced from high quality balsa wood and offers a cost competitive product with very high compressive strength. Thanks to our accurate process and quality control during raw material selection, storage and block assembly, we can ensure high quality and consistent properties of our Probalsa sheets. Probalsa is available coated or uncoated and is compatible with all resins used in the marine industry.
RESOURCES TO ENHANCE YOUR PRODUCT

WITH THE OPTIMAL FINISHING YOU CAN GET A COMPETITIVE EDGE

Our cores can be finished with a wide selection of perforations, cuts, and grooves. Each finishing option is tailored to specific lamination processes and to formability requirements. The right combination of core material, laminate and finishing allows you to save time, money, and resources, and affects the characteristics of your product. Diab has a long experience in finishing for structural core materials, and together, we can find the optimal solution to fit your needs.

OUR FINISHING OPTIONS:

Flow
Using a plain sheet is the most effective way to utilize a core. It can be perforated, grooved, or slitted through machining to make it as functional as possible for the application. To distribute resin, there are several options. Perforations avoid air from being trapped under the core, ensuring proper wet-out and bonding to the laminate. Grooved and perforated cores remove the need for additional distribution medium within the laminate or above it.

Form
To create curves, you have formable finishing options. Grid-scored finish makes the core conform easily to the mold for complex shapes. One-direction cut finish is similar to Grid-scored finish but with cuts in one direction only, creating strips of core. Double-cut finish allows curvature into panels without applying a scrim.

Flow & Form
A combination of above where you have a need for both adapting to the shape of your product as well as distribute resin in your production process.

KITS TO BOOST YOUR PERFORMANCE

You can significantly improve the manufacturing process and quality of composite components with pre-cut core parts (kitting). A Diab kit is a tailor-shaped set of core elements. By eliminating the on-site cutting of sheets, you can reduce manufacturing time, save labor and material cost. In addition, with the easy assembly and exact fit, you can consistently achieve high quality in less time.

OUR KITTING OPTIONS

Industrial kitting
A rational, high quality kitting that meets your needs of speed and efficiency. We use a well-defined kit process that enables us to provide the most competitive offering, top service, and quick turn-around times. Depending on the requirement, we can choose among multiple solutions to optimize weight or cost.

Advanced kitting
Diab’s innovative advanced kits offer optimized fit in the mould, reduced resin consumption, and improved cosmetics for infusion and high-end applications. Combining Diab knowledge of kits and infusion and creating a custom software specifically created for the task, we can optimize the cuts required in the core to allow it to perfectly fit the local curvature of your mould, while minimizing the resin uptake.
KNOWLEDGE THAT OPTIMIZES YOUR SOLUTION

MAKE THE MOST OF YOUR APPLICATION WITH OUR EXPERTISE.
Diab Technical Services have thorough knowledge of sandwich design, finishing and kitting and our skills cover everything from hand lay-up to resin infusion. We help you choose the most appropriate design procedure for each case and when necessary, validate the findings with in-house testing. We can also provide both theoretical and practical training of personnel and then directly assist your team with prototyping and infusion trials.

SPECIALIZED ENGINEERING SERVICES TO FURTHER IMPROVE YOUR PRODUCT.
Our Composite Consulting Group provide specialized composite technology services. With broad competence including everything from design and engineering to testing, tooling, process optimization and training, we ensure that you can realize the full value of composite designs. Contact our consultants in CCG for more information.
PROOF OF OUR EXPERIENCES

We are privileged to have participated in product innovation and development for some of the world’s leading companies in the marine industry. The advances they have been able to make using sandwich composites and other solutions are truly exciting.

SWEDISH SEA RESCUE SOCIETY
Diab have delivered material to life saving boats for more than 25 years. Over 100 boats produced of Swede Ship Composite AB. The specific boat is donated from the family Rassy, 1 of 3 boats. 15.7 m long with a top speed of 34 knots.

OVER 5,000 HULLS & DECKS PRODUCED AT NORCO USING DIAB MATERIALS
NORCO, a leading manufacturer of composite structures and GRP tooling, have been worked in partnership with Diab for over 2 decades. One of the longest running projects which NORCO and Diab have collaborated is the production of all the PVC core kits for the production of Williams jet Tender Ribs (Hulls, decks & parts). This project has seen over 5,000 hulls and decks produced since 2002 using Diab materials.

SANLORENZO: THE ITALIAN FASHION AND THE SEA
The SanLorenzo yard is one of the biggest Italian yards and it is going to leave a permanent fashionable trace in the marine market. Its design, its lines, its interiors as well as the advanced technical choices are highlighting it as one of the most important in the world. Diab is a long term technical partner and supplier, able to address the whole range of grp structures towards a radical kitting choice. Kits are allowing the yard to have the highest quality of surfaces besides a fast layout and production’s cycle, reduced overall costs and optimization of the warehouses’ stocks.

NEW CARBON FIBER CATAMARAN FROM BRØDRENE AA
Closely following the award-winning Vision of the Fjords and its sister-ship Future of the Fjords, Brødrene AAs new carbon fiber catamaran is called Rygerdronningen, constructed for Radne Fjord Cruise to take tourists on sustainable sightseeing tours through the famed Lysefjord in Rogaland, Norway.

ADVANCED COMPOSITE KITS FROM DIAB HELP THE SHOGUN 50 FROM ROSÄTTRA BOATYARD SET SAIL
With an Advanced Kit from Diab together with carbon fiber laminates, and support from CCG Rosattra Boatyard has created an impressively light boat. Rosattra Boatyard knows what it takes to make a fast sailing boat that is also comfortable enough to use as a second home for summer holidays. When the request came for a fast and easy-to-handle sailing boat, the experienced boat-builders chose to design it using an Advanced Kit from Diab together with carbon fiber laminates, and with support from CCG.

FISHING BOAT SEINGEN FOR THE FISHERY OF THE FUTURE
Fishing company Fjordbakk AS in Norway has this year acquired an exciting new fishing vessel Seingen from boat builder Mundal Båt. Mundal Båt has previously supplied larger fishing boats and commercial vessels in composite material.
DIAB AT A GLANCE

1,300 EMPLOYEES

FOUNDED 1950 IN SWEDEN

OUR FOCUS AREAS:

- MARINE
- WIND
- INDUSTRY
- AEROSPACE

MANUFACTURING SITES: 7
SALES COMPANIES: 14
DISTRIBUTORS: 40

WORLDWIDE SUPPLY AND SUPPORT
Ensuring security of supply, cost efficiency, flexibility, and local support. Diab combines a global manufacturing, sales, and engineering presence with local know-how. We follow our customers and anticipate their needs, positioning ourselves in locations to best support them. Our seven manufacturing sites and fourteen sales companies in strategic locations around the world offer our full range of materials and services.

7 MANUFACTURING SITES
14 SALES COMPANIES
40 DISTRIBUTORS

At www.diabgroup.com you can get exclusive access to our expertise via MyDiab. And with our interactive Core Selection Guide it’s easy to find the best core for your application.

Take advantage of our knowledge!

Member of UN Global Compact
Approved CO2-reduction targets from the Science Based Targets Initiative
Diab is a world leader in sandwich composite solutions that make customers’ products stronger, lighter and smarter. Diab provides a range of core materials, cost-effective kits and finishings, along with in-depth knowledge on composites. Diab also provides engineering services for composite technology through Composites Consulting Group (CCG). Diab is a participant in the UN Global Compact.

Subject to possible printing errors and changes.
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