Diab

WE'RE ALWAYS AT THE CORE OF YOUR INNOVATION

diabgroup.com

ALWAYS AT THE CORE OF YOUR 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 probably the widest and most valuable offering in the sandwich composite industry.

THE ULTIMATE ENGINEERING SOLUTION

The volume and number of applications using composite materials is growing steadily, continuously penetrating and conquering new markets. Sandwich composites are probably the most weight-saving and sustainable design method available, enabling you to preserve both energy and important natural resources.

Composites can be formed and joined together in an almost limitless range of geometric configurations with integrated multiple functions. Further, their durability and weather resistance mean less maintenance over time.

Sandwich structures are lighter, stronger, and more easily shaped than traditional materials such as aluminum, steel, and wood. These high-strength, weight saving and insulating materials benefit almost any industry application, like automotive, transportation, building, construction, sports & leisure, subsea, offshore and cryogenic to name a few.

Diab has long experience and deep technical knowledge within the field. We have the widest portfolio of core materials as well as the design and calculation capabilities that are needed to make the most out of your existing or completely novel application.

MORE SUSTAINABLE IN EVERY WAY

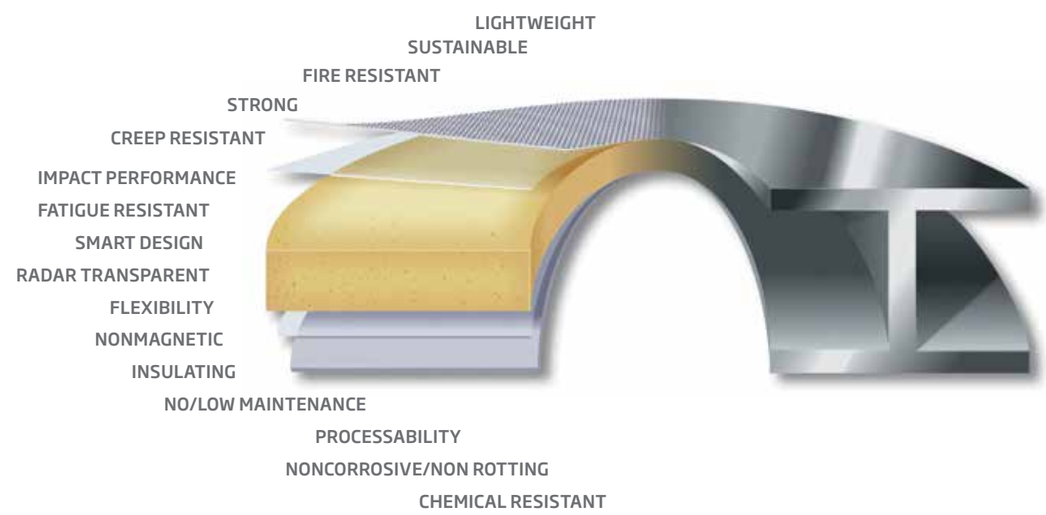
SUSTAINABILITY IS IN OUR CORE
Our products contribute to energy savings and a lower carbon footprint. They will help you boost energy efficiency, reduce emissions, conserve natural resources and create a longer life cycle for your product. Simultaneously, our customers in the marine market are setting increased demands for their 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 approval of our CO_2-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 this 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. This allows each element forming the composite panel to 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 typical sandwich panel the skins are taking tension and compression loads, and the core carries the shear forces. Our PVC and PET cores are engineered foams that absorb and distribute the loads exposed to the sandwich, static or dynamic . They have a stable closed cell structure resistant to water ingress, corrosion and decay, an important characteristic in harsh environments.
A variety of grades can be 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.



THE RIGHT CORE MATERIAL FOR YOUR NEEDS

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 industry applications today and tomorrow.

DIVINYCELL - PVC

The PVC series is an all-purpose series used in multiple industries suitable for different manufacturing processes, such as closed molding, including RTM and infusion and elevated temperature processing with prepreg.

The series comes in grades H, HP, HM, HT, MC, MX and HCP with different features suitable for many applications. Each grade has a variety of densities for tailored engineering. Divinycell PVC offers excellent mechanical properties to low weight. It is widely used and has a proven track record in virtually every application area employing sandwich composites, including wind, marine, industry, transport, subsea and offshore, sports equipment, building and construction, cryogenic and more.

Divinycell MC is the innovative next generation structural core with best in class mechanical properties to low weight. The unique microcell structure renders substantial weight reduction of the laminate, thanks to lower core density in combination with exceptional low level of resin uptake. Divinycell MC60 is a premium structural core, suitable for weight critical applications in different industry applications.

DIVINYCELL - PET

Thermoplastic recyclable PET foam core materials suitable for many applications. Used in many industries, such as wind energy, transport and construction, the Divinycell PET series is available in different grades and densities. High density versions are often used as wood replacement. The multipurpose grade Divinycell PN is suitable for many different applications. The series also includes Divinycell PY, the latest addition to our PET offering. PY brings along with the benefits of the traditional PET foam, an improved mechanical performance and lower resin absorption.

Divinycell P has good mechanical and Fire, Smoke & Toxicity (FST) properties, making it ideal for public transportation and construction. This series is compatible with most resin systems and capable of elevated temperature processing.

PROBALSA

High-density organic core material featuring high compressive strength. Made from end-grain balsa wood, ProBalsa is used in a wide range of applications and is often combined with foam core materials as hard points. ProBalsa is compatible with most resin systems and manufacturing processes. It is also suitable for elevated temperature cure systems.

RESOURCES TO ENHANCE YOUR PRODUCT

Alongside the broadest range of core materials, we also offer you a comprehensive array of added value products, such as kits with pre-cut parts and surface finishing options for form and flow.

WITH THE OPTIMAL FINISHING YOU CAN GET A COMPETITIVE EDGE

The right combination of core material, laminate and finishing affect performance and quality of the final product. Finishing refers to the machining of structural core materials. You can choose from a wide range of cuts, grooves and perforations in different variations each serving a specific purpose for the core to adapt to curvature, or for air evacuation & resin distribution in vacuum assisted manufacturing process. With our long experience in composite design and manufacturing methods, we can recommend the finishing suitable for each purpose.

OUR FINISHING OPTIONS:

Flow
To evacuate air and distribute resin in vacuum assisted processes requires perforations and/or grooves in the core surface.
Proper design of the flow finishing will ensure good wetout of laminate and proper core bonding. Grooved and perforated cores can also remove the need for an additional distribution medium.

Form
Formable finishing options enable the core to conform easily to the surface in complex mould shapes. A number of form finishes are available both with and without scrim backing, and with either one or two direction cuts in the core.

Flow & Form
A combination of both of the above, used where the core needs to adapt to the shape of the mould and also has to distribute the resin as part of the production process.

KITS TO BOOST YOUR PERFORMANCE

A kit consists of pre-cut parts that are shaped as necessary and then numbered to fit exactly into their designated places in the mould. By eliminating the on-site shaping and cutting of sheets, you can reduce build times, save labour and material costs, and reduce waste. Easy assembly and exact fit in the mould mean you can consistently achieve a high quality in less time.
The kit can consist of everything from flat sheets to precise 3D shapes made with CNC routing. The design is based on your requirements for component weight, cost and quality level, as well as the geometry and manufacturing process selected.

OUR KITTING OPTIONS

Industrial kitting
High quality kitting that meets your needs for 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 from 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 laminate surface finish. Combining Diab knowledge of kits and infusion and by creating custom software specifically 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 resin uptake.

KNOWLEDGE THAT OPTIMIZES YOUR SOLUTION

MAKE THE MOST OF YOUR APPLICATION WITH OUR EXPERTISE
Diab Application Center is our powerful team with engineers, product specialists, and process specialists ready to team up with you to realize the total value of composites.

PRODUCT SUPPORT
We are here to support you with selecting the suitable core material for your application, advice on finishing the best fit for purpose, and essential advice on different manufacturing processes. Product support always comes for free with the purchase of our products.

COMPOSITE CONSULTING GROUP (CCG)
Our experience in sandwich core materials and related manufacturing processes is well documented. CCG provides specialized composite technology and engineering services to improve your product further. With broad competence within everything from design and structural engineering to process optimization – including flow modeling for closed molding, tooling design, and infusion training – we ensure that you can realize the total value of composite designs.

KIT ENGINEERING AND PRODUCTION
Diab uses a well-defined kit process that enables us to provide the most competitive offering, top service, and quick turn-around times. Whether the kit consists of flat sheets or 3D machined parts, we look at surface requirements, tolerances, weight limitations, and it all affect the approach we take for each kit design.

COMPOSITE PART & PROTOTYPE PRODUCTION
Prototyping and short production runs have high investment costs and can limit other daily operational activities. Our experienced engineers and fabricators can quickly bring your concepts to reality, whether you are in a start-up or existing business with a lack of resources or equipment.

TESTING
Understanding the material and its behavior in a variety of environmental conditions is key to optimized design. Let us help you characterize your composite solution, core materials, and sandwich structures with our own calibrated testing equipment and network of authorized test labs for exotic test methods.

PROOF OF OUR EXPERIENCE

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

STRUCTURAL CORES USED FOR THE SAFE DISTRIBUTION OF COVID-19 VACCINES
The Envirotainer RAP e2 container is used for the safe distribution of Covid-19 vaccines across the world. Structural and insulating performance is of outmost importance securing a stable temperature during door to door delivery.

LIGHT SAFETY SANDWICH FLOOR AWARDED FOR KRONE
Krone is one of the leading trailer producers in Europe. For the new Light Safety Sandwich Floor Krone has received the Trailer Innovation 2021 award (category safety). Congratulations!

UNIQUE EXPERIENCES STAYING IN A BIRDBOX WITH DIVINYCELL INSIDE
Birdbox designed by Livit, a Norwegian company, is an adventure cabin that brings you close to nature with comfort. It should give you comfort and shelter, at the same time be small and light enough to be placed in unique places with minimal footprint.

HOCKEY STICKS FROM SHERWOOD
Ice hockey might not be the first thing that comes to mind when thinking of structural foam core. But in a modern hockey stick that must be extremely light, strong, and flexible, Divinycell foam core plays an important role. Like in the sticks from the renowned company Sherwood Hockey, one of the leading hockey brands using Diab core materials.

LIGHT WEIGHT SANDWICH FLOORS FOR TALGO TRAINS
The new Intercity trains for Egypt and Germany (ECx) based on the Talgo 230 platform specified sustainable sandwich floors to lower weight. Any kg saved in the structure reduce fuel/energy consumption, cost and environmental impact.

SAAB DOUBLE EAGLE ROV
The Double Eagle ROV family is well-proven and used by navies around the world. The Double Eagle family consists of three configurations and mission unique payloads for a wide range of Mine Countermeasure (MCM) operations.

LIGHTWEIGT PANEL CREATED BY PORCELANOSA GROUP AND DIAB
Offering easer and faster installation with reduced weight, the Butech System X light XXL has a core of Divinycell P, sandwiched between skins made from ceramics and aluminum.

RADOMES FOR SATELLITE COMMUNICATION - MADE BY BRÖDERNA BOURGHARDT A PERFORMANCE MOULDER
Satellite antennas keeps us connected and updated, even in the most remote corners of the world. Radomes are covers, protecting the antenna from the mercy of the nature. The radomes are precision instrument, balancing between being strong enough to last the most harsh environments being tuned for specific radiofrequencies to have as low loss of signal as possible. Here the Divinycell foam core plays an important role contributing to both structural strength and transmittance of signals.

Structural cores used for the safe distribution of Covid-19 vaccines.

Light safety sandwich floor awarded for Krone.

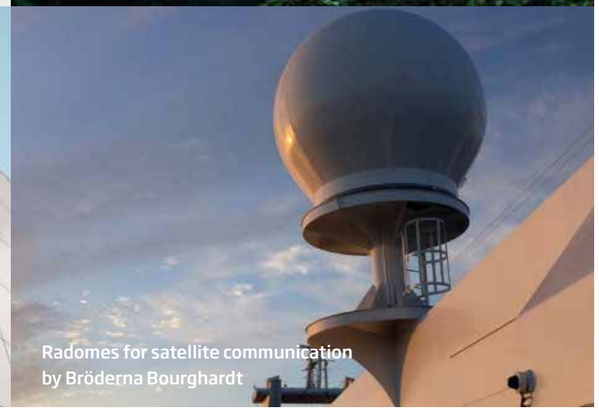
Unique experiences staying in a Birdbox with Divinycell inside.

Hockey sticks from Sherwood using Divinycell core material.

Light weight Sandwich floors for Talgo trains.

Saab Double Eagle ROV.

Lighweight facade panel created by Porcelanosa Group and Diab.


Radomes for satellite communication by Bröderna Bourghardt

DIAB AT A GLANCE

- SALES UNITS
- DIAB'S MANUFACTURING PLANTS
- MANUFACTURING PARTNER
- HEAD OFFICE

1 000
COWORKERS

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.

FOUNDED 1950 IN SWEDEN

8
MANUFACTURING SITES

14
SALES COMPANIES

40
DISTRIBUTORS

OUR FOCUS AREAS:

WIND

MARINE

INDUSTRY

AEROSPACE

Take advantage of our knowledge!
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.

Member of UN Global Compact
Approved CO_2-reduction targets from the Science Based Targets Initiative

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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.