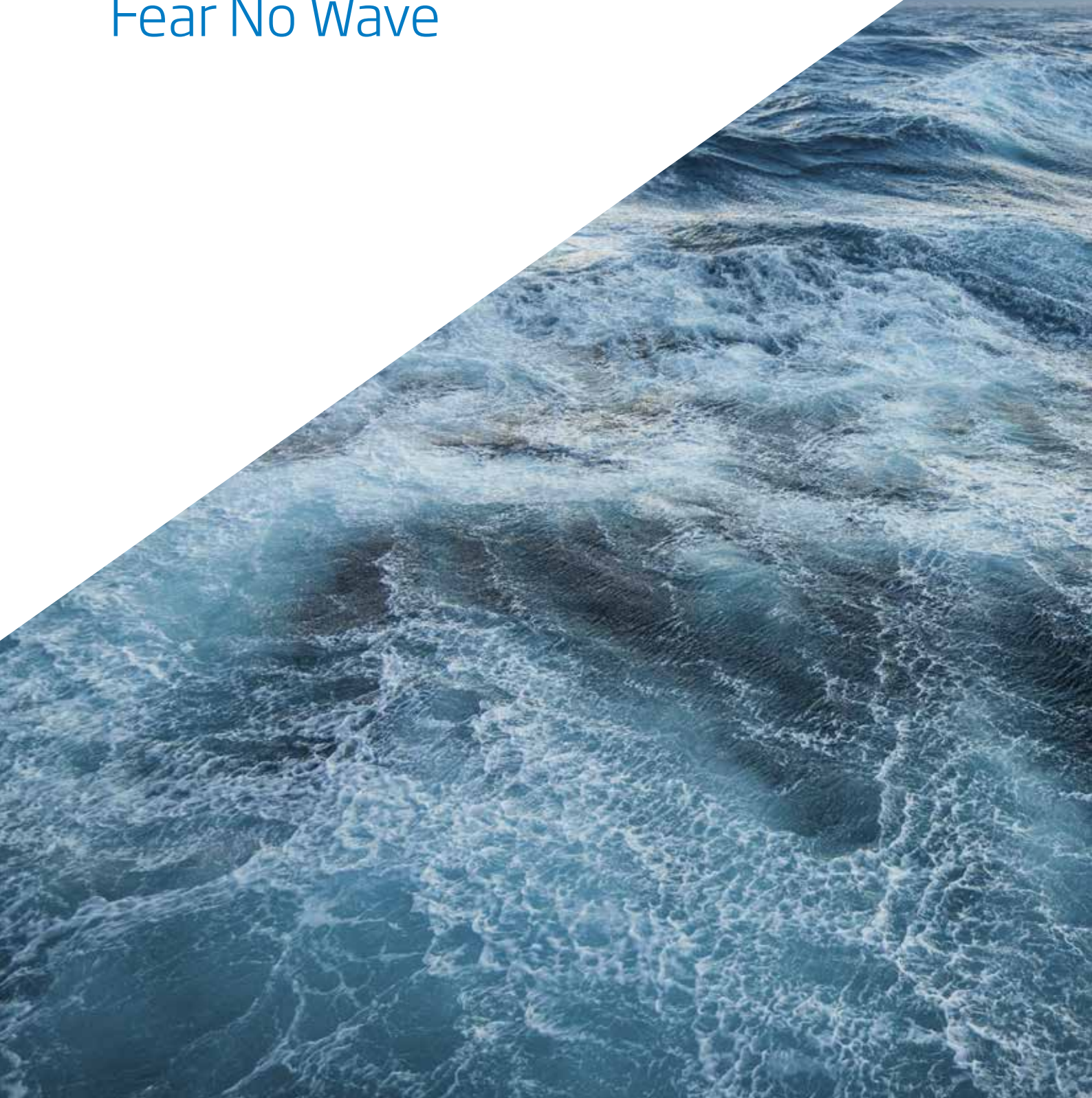


MARINE

# Fear No Wave



Sustainable, comprehensive sandwich composite solutions and high-performing core materials



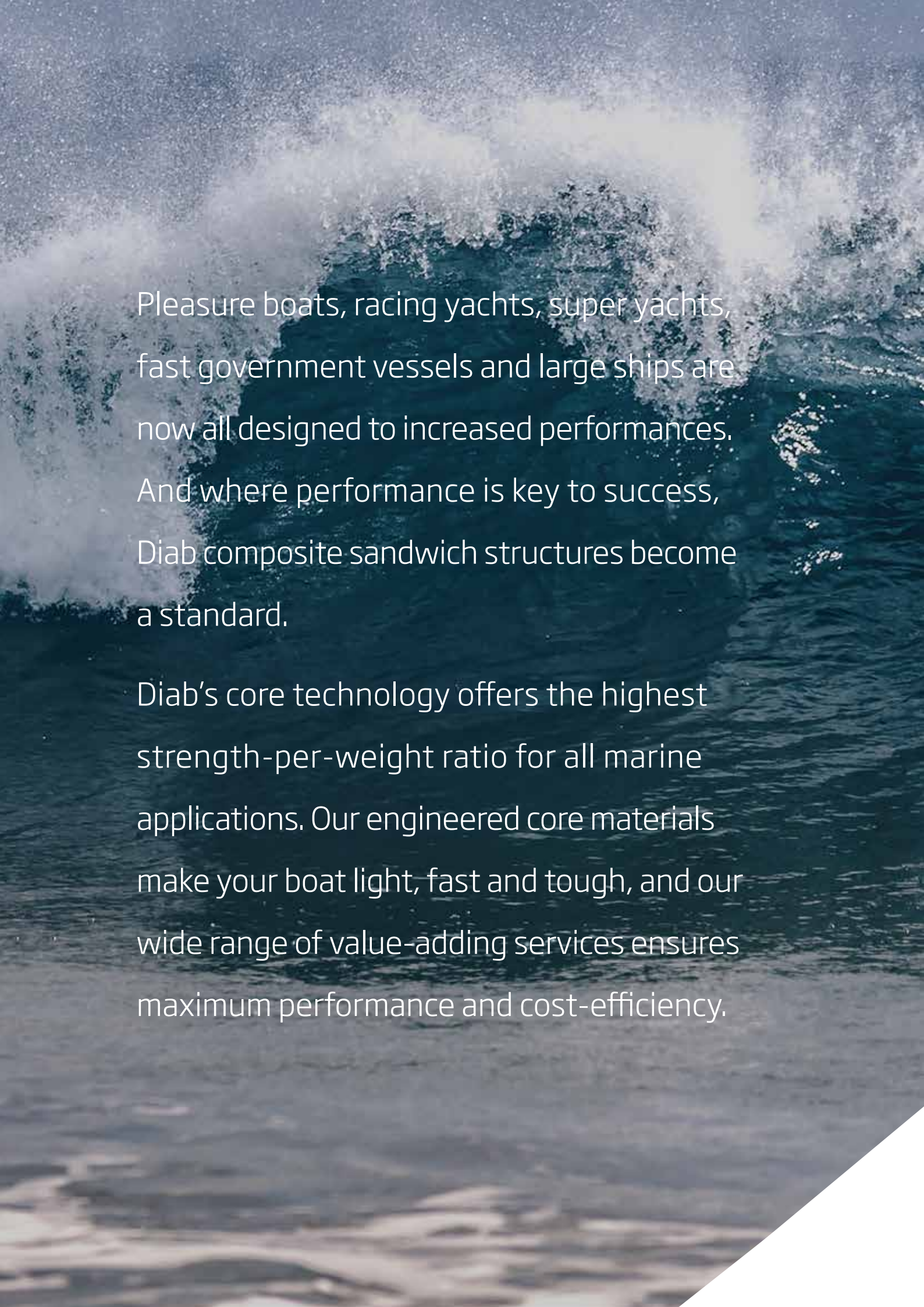




Diab - your  
core partner

Diab, Divinycell, Matrix and ProBalsa are registered  
trademarks in countries all over the world.





Pleasure boats, racing yachts, super yachts, fast government vessels and large ships are now all designed to increased performances. And where performance is key to success, Diab composite sandwich structures become a standard.

Diab's core technology offers the highest strength-per-weight ratio for all marine applications. Our engineered core materials make your boat light, fast and tough, and our wide range of value-adding services ensures maximum performance and cost-efficiency.

# Diab – a strategic partner

We also provide tailored surface finishes and numerous kit options. In addition to our products, we support your efforts with engineering services and applications training.

## **Comprehensive offering and tailored solutions**

Needs within the marine industry are diverse - no two are alike - which is why Diab provides solutions rather than just products. From designers and purchasers to the people on the shop floor, our experience will guide you to the best option for your product and application.

## **Competence through passion, dedication and experience**

Our decades of experience serving the marine industry enable us to develop core material solutions adapted to specific needs. You will find extensive added value in our structural engineering and practical competence.

## **Service and supply close to you**

Diab has local offices and distribution sites throughout the world. We provide on-time support, on-site technical knowledge and fast supply.

## **Innovation and quality**

At Diab, we are continuously expanding our portfolio of core materials and value-added services. Our dedicated R&D offices and strict adherence to ISO 14001 quality requirements ensure we keep you on the leading edge of the marine world.

## **History you can trust**

Diab has offered the best solutions in the marine market for more than 60 years. We are proud to be a committed, organized, stable and innovative company. We honor our commitment by focusing on what is needed to make our customers' products stronger, lighter and smarter - now and in the future.

On our website, [diabgroup.com](http://diabgroup.com), you will find even more inspiration on how to make your products stronger, lighter and smarter.





# Choose the best core solution

Diab offers three high-quality product lines (IPN, PET and balsa), all certified by the highest authorities.

## ▼ Divinycell HM

Divinycell HM is our new ultra-performance core designed for fast marine hulls where extra toughness is required. Divinycell 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 advantages:

- Highest strength-to-weight properties in the market
- Excellent fatigue resistance
- Superior resistance to a wide range of chemical products
- Low resin absorption through a fine close cell structure
- Compatibility with all polyester, vinylester and epoxy resins used in the marine industry
- Safe to use material 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**

One of the latest additions to our offering, Divinycell Matrix, comes in two densities with different mechanical properties allowing 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 60 kg/m<sup>3</sup> core with higher mechanical properties than our well respected H60.

Matrix 7.7, with an average density of 55 kg/m<sup>3</sup> and good compressive properties, is particularly suited for decks, superstructures or interiors, offering weight and cost savings compared to a 60 kg/m<sup>3</sup> core.

### ▶ **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.

### ▶ **Divinycell PN**

Divinycell PN is a structural PET core material with good strength-to-weight ratio. It also features high-temperature performance and chemical resistance. In the marine sector, Divinycell PN is suitable for non high-spec applications above the waterline, such as internal panels or superstructure panels. It is compatible with polyester, vinylester and epoxy resin systems used in the marine industry and provides excellent FST (Fire, Smoke and Toxicity) properties.

### ▶ **Divinycell PX300**

Divinycell PX300 is a low-weight alternative to plywood for use in the way of fittings, either tapped or bolted through. It offers exceptional screw-holding ability, high compressive properties, low creep and is insensitive to moisture and rot.

# Value-added services

With an integrated range of solutions and services, Diab covers all aspects of the composite design and manufacturing process, enabling you to develop high-performance, high-quality and cost-efficient products.

## Core kit manufacturing

All of DIAB's materials can be delivered in ready-made construction kits to optimize weight, cost and efficiency throughout the manufacturing cycle. Each piece is pre-cut, shaped and numbered to fit exactly into the mold. By eliminating on-site cutting and shaping of sheets, you can substantially reduce build times, save labor cost, decrease inventory and improve the quality and repeatability of your products.

Our technology spans from wire-cutting to 5 axis CNC machines for complex geometries. Optimized nesting minimizes manufacturing waste, improving sustainability. Our local presence is the key to success. We frequently involve our technical teams to measure, fit and gather modifications directly at the yard.

## Complete range of finishing options

Selecting the optimal finishing has a profound impact on the success of your product, directly influencing weight, cost and quality. Diab helps you choose from a wide range of cuts, grooves, perforations and kerfs etc., each serving a specific purpose to optimize your application.

## Diab Technical Services

When manufacturing a marine component, the end result is highly dependent on the process used. The marine segment uses a wide range of processes and our technical teams are familiar with all of them. From wet lamination to RTM, we help you choose the optimal process and guide you to the right application. We are proud to have pioneered resin infusion and successfully introduced it into the marine industry.

## Composites Consulting Group (CCG)

Our independent engineering team, Composites Consulting Group (CCG), has a unique combination of practical and theoretical experience, ensuring that solutions are valuable from both a design and a manufacturing perspective. Our competence in the marine segment includes design, engineering, testing, tooling, process optimization and training.



To learn more about CCG services, please visit [cgg-composites.com](http://cgg-composites.com)





More than 60 years of experience in high-performance core materials give us the highest competence level in the industry. Take advantage of our accumulated expertise to improve your own products. Download our knowledge guides at [diabgroup.com](http://diabgroup.com)



# Everything is possible

At Diab we are privileged to participate in product innovation and development for some of the world's leading companies in a variety of marine applications.



Photo courtesy of Hart Marine

## **Hart Marine Wave-piercing pilot boats**

These French-designed and Australian-produced pilot boats are built using Diab's core materials for maximum performance and guaranteed safe operation. Strength and toughness is a must, 24 hours a day, 365 days a year.

On our website, [diabgroup.com](http://diabgroup.com), you will find even more inspiration on how to make your products stronger, lighter and smarter.



Photo courtesy of Valerio Corniani



### Wild Oats XI

Diab, through CCG, is proud to be part of the racing team for continuous optimization of this 100ft maxi racer and eighth-time Sydney Hobart winner.

### A yacht that rules the waves

Sunseeker's 155 Yacht The largest motor yacht the company has ever produced. It is also approximately 100 tons lighter than other boats this size, thanks to the use of Divinycell IPN materials, which provide extremely strong structures at minimum weight.



Photo courtesy of Sunseeker

