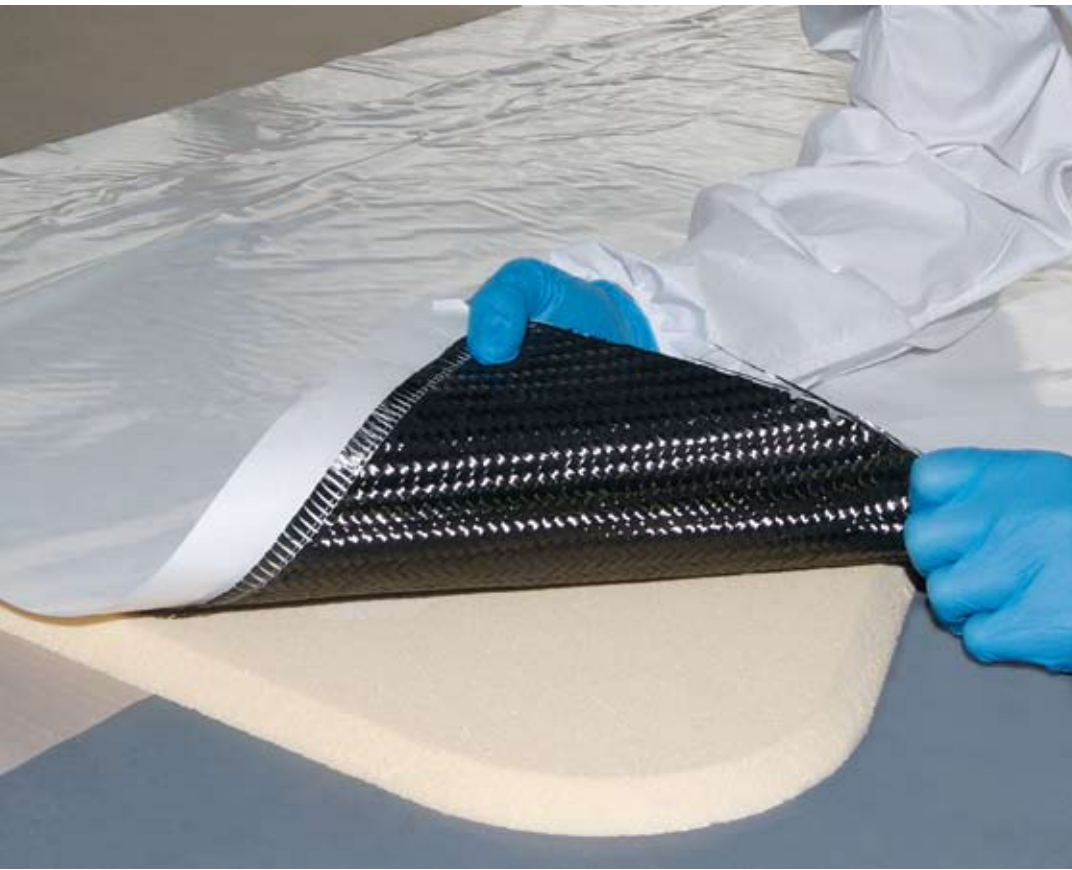


# Divinycell<sup>®</sup> HP

The Proven High Performance, Prepreg Compatible Sandwich Core



Compatible with low and medium temperature prepregs

High mechanical properties at elevated temperatures

Good ductility / energy absorption properties

Excellent adhesion

Exceptional dimensional stability

Small cell size

Thermoformable

Low water absorption

Good insulation values

Wide density range

**DIAB**

# Divinycell® HP

## The High Performance, Prepreg Compatible Sandwich Core

With its unique combination of features - low weight /high strength, wide processing envelope and high temperature performance - prepreg compatible Divinycell HP is ideal for a wide range of applications in the marine, wind energy, transportation and industrial markets.

### Temperature Performance

With its high processing temperature, Divinycell HP can be processed at a much higher temperature than other polymer core materials in general use, making it suitable for not only low but also medium temperature prepregs.

HP's temperature performance (e.g. up to 145°C [293°F] with medium temp. prepregs) is not just beneficial to prepreg users. Temperature peaks can be experienced in both vacuum bagging and closed molding processes. The ability of Divinycell HP to offer good mechanical properties at high temperature means that it is able to withstand these short term temperature peaks.



HP's elevated temperature performance also extends to the 'in service' life of the component. Divinycell HP will retain a high percentage of its mechanical properties despite long-term exposure to high ambient temperatures.

### Strength Performance

The strength performance of HP has not been compromised to achieve its elevated temperature properties. It exhibits at both ambient and elevated temperatures impressive compression and shear properties (normally the most important for a sandwich core material) that are better than other commonly used 'elevated temperature' core materials. The figures for shear strain show that HP has good ductility and energy absorption characteristics. Testing has shown that HP also outperforms linear cores in terms of slamming resistance.

### Adhesion

Another area where Divinycell HP excels is in adhesion. Compatibility tests have been performed using commonly used resin systems and prepregs with excellent results.

### Dimensional Stability

The dimensional stability of Divinycell HP is also exceptional. Taking HP 80 as an example, at 60°C (140°F) dimensional changes are hardly measurable, less than 0.1%. Even at 90°C (194°F), the dimensional change for HP 80 is still less than 0.5%.



Full details of the core's properties are contained in the comprehensive Divinycell HP Technical Manual which can be downloaded from our web site - [www.diabgroup.com](http://www.diabgroup.com).

### Wide Density Range

Divinycell HP is also available in a wide range of densities and thicknesses. Currently HP is available in densities from 60 to 250 kg/m<sup>3</sup> (4.1-15.6 lb/ft<sup>3</sup>) enabling designers and fabricators to optimize their structures.

### Standard & Special Finishing

Divinycell HP sandwich core can be supplied with probably the widest range of finishes available in the industry. The aim is to facilitate and speed core installation, enhance component quality / performance and to meet specific process requirements. These include grid-scored, double cut and 'infusion' grooved/perforated forms.

### Ready-Made Kits

For those involved in series production, Divinycell HP can be supplied in ready-made construction kits where each piece is pre-cut, shaped, as necessary, and numbered to fit exactly into its designated place in the mold. This substantially reduces build times, saves labor costs, improves quality and cuts waste.



### Worldwide Supply

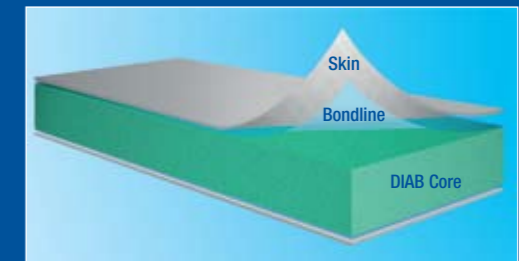
Divinycell HP is a global material for today's global market. It is manufactured in two locations in Europe and one in the USA. DIAB also has its own finishing / kitting facilities in Australia, China, India, Italy, Lithuania, Sweden, Thailand and the USA plus a global network of 15 sales/technical support operations.

### Global Product & Technology Support

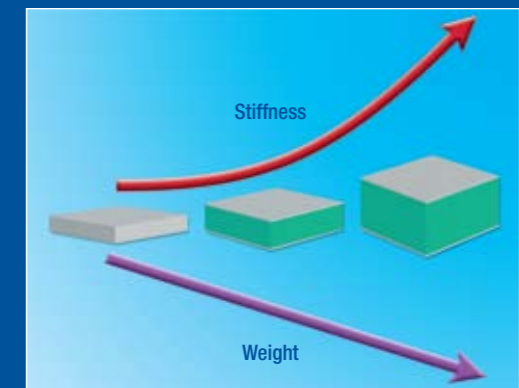
DIAB customers worldwide can take advantage of the company's unrivalled level of product support and the specialist skills offered by DIAB Technologies.

DIAB Technologies' role is to help our customers take full advantage of the benefits offered by the DIAB sandwich concept. Their aim is to maximize time, labor and materials savings and improve quality. With their long term experience and knowledge of sandwich composites, DIAB Technologies can help with specific challenges or be involved in the complete product development cycle - laminate design, structural engineering, prototyping, process auditing, development and optimization, training, manufacture and testing.

## The Sandwich Concept



The DIAB sandwich concept increases structural performance while optimizing weight. A sandwich consists of two high strength skins or facings separated by a core material. The skins take up the bending stresses and give the structure a hard wearing surface. The light DIAB core absorbs the shear stresses and distributes them over a larger area.



Compared to monolithic composite laminates or metals, the sandwich concept significantly reduces weight and increases stiffness while maintaining strength. Even higher strength and stiffness properties can be achieved by increasing the thickness of the core without a weight penalty.

The excellent strength-to-weight ratio of the sandwich concept can be used in a variety of ways - higher speeds, longer range, greater payload capacity or reduced power demand – all of which result in better operating economy. Divinycell sandwich composites require minimum maintenance and should any repairs be necessary, they can be carried out easily without any loss of structural integrity.

*DIAB has pioneered the use of the sandwich concept to make structures that are significantly lighter and stronger than those made from steel, aluminum and wood.*

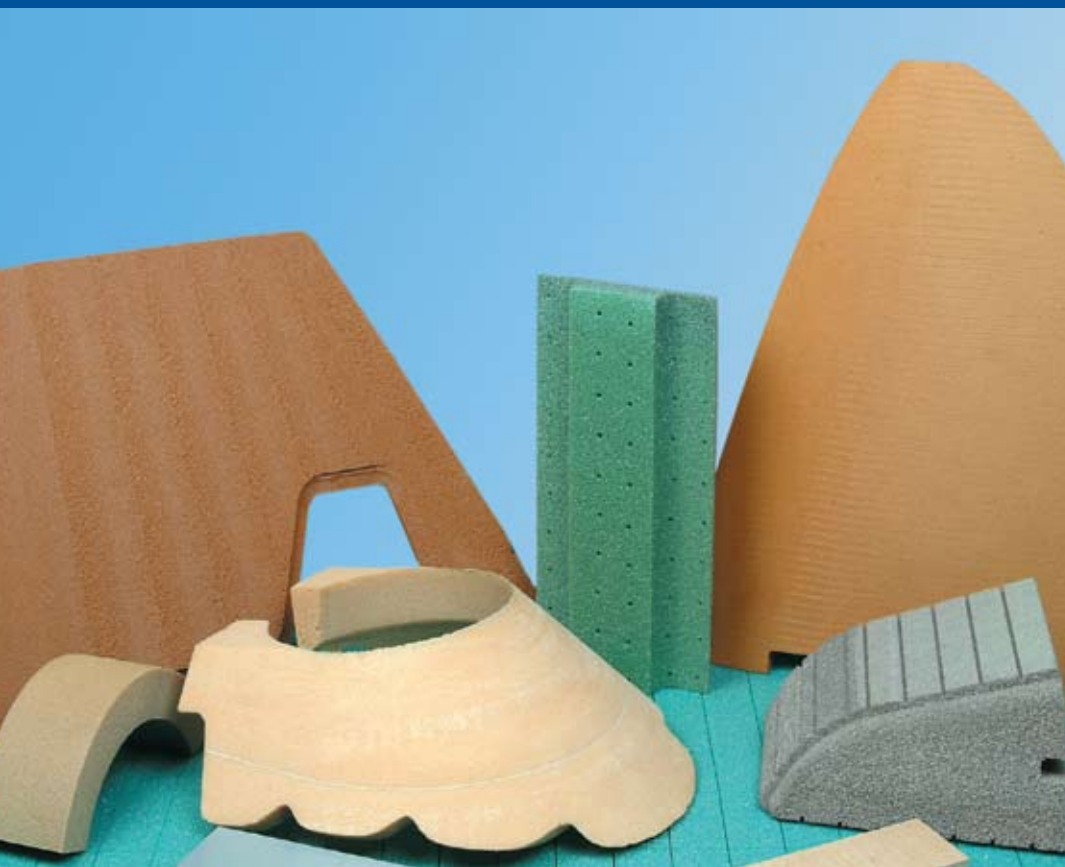
*The company is very much the technology leader. In addition to being the first company to introduce core kits, it has been in the vanguard of new environment-friendly processing developments such as DIAB Core Infusion Technology™.*

*We have always been much more than just a materials supplier. To this end we look to establish long-term partnerships with our customers by providing high performance composite materials and an extensive range of technical support services.*

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