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# HYBRID CORE CONCEPT®

Tailored for ultimate performance

The future  
is greener.



**CORE  
MATERIALS**

[www.3Acorematerials.com](http://www.3Acorematerials.com)

# Hybrid Core Concept<sup>®</sup> Tailored for ultimate performance



## Making the world lighter and therefore a little bit greener

Lightweight is our motivation. Our high-performance core materials enable strong and stiff sandwich constructions that reduce a part's weight to the maximum. These types of solutions not only tie up fewer resources, but also consume less energy in their use phase (e.g. trains).

## Wide variety of material options

For many sandwich parts and their production processes, the choice of the skin material and the resin/adhesive system is predefined. Between the two skins, however, there is the interesting choice of core material. While various core materials can meet the requirements for stiffness and strength, different materials can offer additional application-specific advantages: While the natural product **BALTEK<sup>®</sup> SBC** features unrivalled strength and stiffness; **AIREX<sup>®</sup> C70** is chosen for its excellent ratio of properties to lightweight density and **AIREX<sup>®</sup> T92, T10** combine easy processing with cost efficiency and recyclability.

For more specialized applications, **AIREX<sup>®</sup> T90** offers excellent fire resistance, while **R82/TegraCore<sup>™</sup>** combines outstanding radar transparency, temperature resistance and fire properties. For industrial high-volume applications **AIREX<sup>®</sup> PX** plays its cards best where very high loads meet a humid environment, and for stand-alone panel applications.

## Tailored for ultimate performance

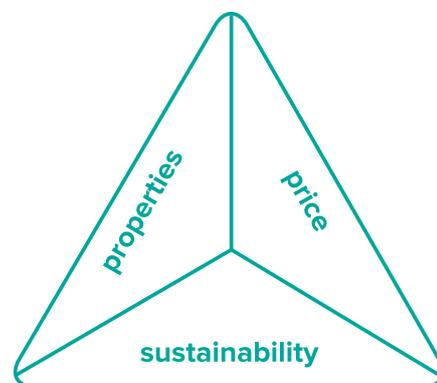
Such an extensive range of specialized materials offers vast opportunities for optimization. Our **Hybrid Core Concept<sup>®</sup>** is the toolset to leverage these opportunities into customer benefits. It allows optimization of each sandwich structure with regard to the concept's three pillars:

**Properties** (weight, stiffness, strength, damage tolerance, heat resistance, etc.)

**Cost** (material costs, resin uptake, finishing options, ease of processing, life cycle costs)

**Sustainability** (CO<sub>2</sub> footprint, recyclability, life cycle analysis, etc.)

Optimization of any of the above-mentioned criteria of the **Hybrid Core Concept's<sup>®</sup>** triangle can be achieved.



## Customized performance

As a first step, we always strive for an in-depth understanding of our customer's drivers: Where do you compete, how do you position your products against other players; what are the drivers in your production processes, and which of your product's properties do you want to optimize. Based on such customer-specific target criteria, we can then calculate and propose the ideal sandwich design and material solution to optimally meet these diverse and customer-specific requirements, thus making our customers more successful.

The combination of stiff and strong **BALTEK**® balsa along with low density **AIREX**® foam can accommodate the very high loads in the blade's root section and help save weight in the blade tip.



## Intelligent combinations

In many applications the requirements vary throughout the entire part. Some areas may be more weight-sensitive, while maximum stiffness is required in others. Using a single material configuration for the entire part may be simple, but in most cases intelligent combinations of different materials will offer a better solution that optimally meets customer-specific target criteria.

## A sustainable solution

The process of acquiring an in-depth understanding of our customer's drivers and needs, and designing the specifically optimized solution based on our **Hybrid Core Concept**®, ensures that our customers are able to offer the best possible product to their clients, thus guaranteeing them sustainable success. With our strong credo of **DRIVEN** by **ECO-LOGIC** we assure that our production processes, products and the end application of our customers all make their contribution to a sustainable future.

## 3A Composites – your global partner

With a history of over 75 years, **3A Composites Core Materials** boasts an Advanced workforce of enthusiastic employees dedicated to designing Advanced material combinations, therefore adding value to our customers through Advanced solutions. Together with our network of local distribution and conversion partners, we can deliver our high-quality solutions and services to you globally, on time and in sequence.

We support our customers in all aspects regarding the application of sandwich technology. Our global team of technical experts offers its cutting-edge expertise in sandwich design, laminate schedule, sandwich production technologies, material testing and certification to make our customers more successful.

All in all a convincing package of products, solutions and services offering the optimum breeding ground for guaranteeing your sustainable success.

Different sections of marine vessels have vastly distinct structural and performance requirements which are often multifaceted and contradictory. Using a variety of **AIREX**® and **BALTEK**® products naval architects and engineers can design lightweight, efficient and cost effective composite laminates – a damage tolerant hull bottom or a light and stiff deck; high temperature resistance for dark colored surfaces, or transoms that don't crush when bolting the engines.

