CASE STUDY

DAY 1 CATAMARANS

Reinventing Marine Manufacturing

The DAY 1 catamarans by Chantier de l'Arsenal and Yacht Concept use Armacell's recycled PET foam, ArmaPET® Struct GRX, to reduce resin use and streamline their One Shape process.
Sailing towards a sustainable future with Armacell.

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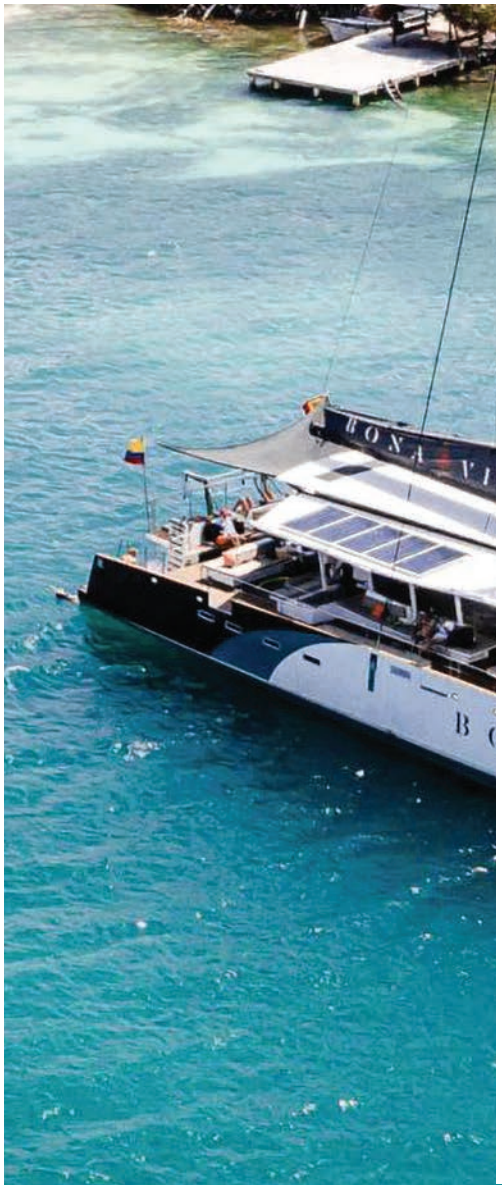

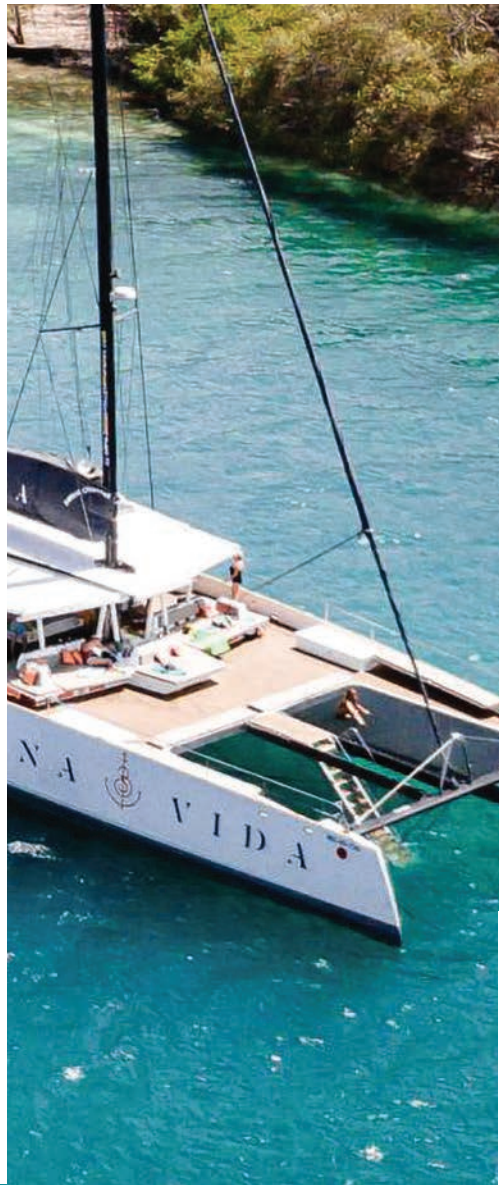

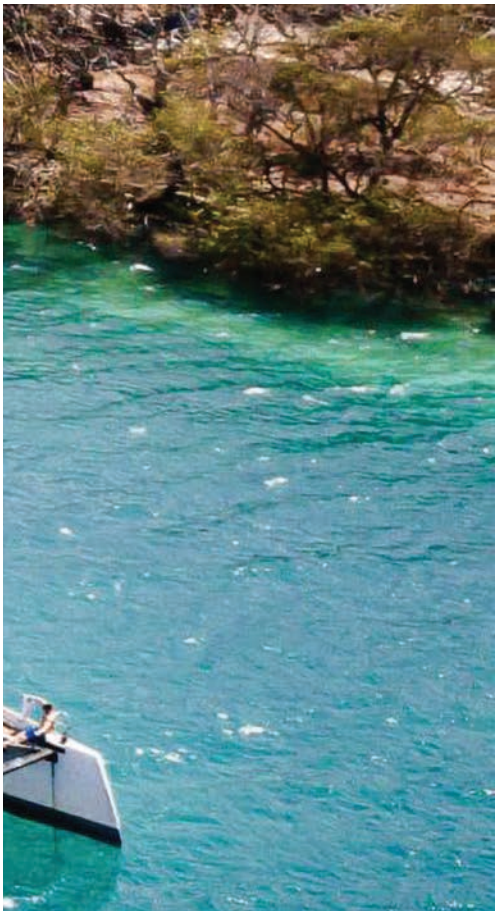

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DRIVING ENERGY EFFICIENCY

SEA THE FUTURE

Founded in 2015, DAY 1 Catamarans have established itself as a global leader in the design and production of bespoke maxi-catamarans tailored for day charter excursions.

With a strong commitment to innovation and sustainability, the company specialises in vessels that accommodate large groups for sightseeing and sea-bound events.

©Chantier de l'Arsenal:
DAY 1 Bona Vida catamaran

DAY 1 catamarans are available in both sail and motor versions, designed to meet the needs of professional shipowners while delivering exceptional performance and passenger comfort. Central to their manufacturing philosophy is the **One Shape method, a revolutionary approach that eliminates traditional moulds and redefines how boats are built**.

Where Every Day Begins with Innovation

As the demand for eco-conscious marine tourism continued to grow, DAY 1 catamarans sought to enhance its One Shape process to meet higher standards of efficiency, durability, and environmental responsibility.

In collaboration with Chantier de l'Arsenal and Yacht Concept, the company aimed to optimise the composite sandwich panels used in the construction of its vessels. These panels form the structural backbone of the catamarans, and improving their performance was critical to **achieving lighter, stronger, and more sustainable boats.**

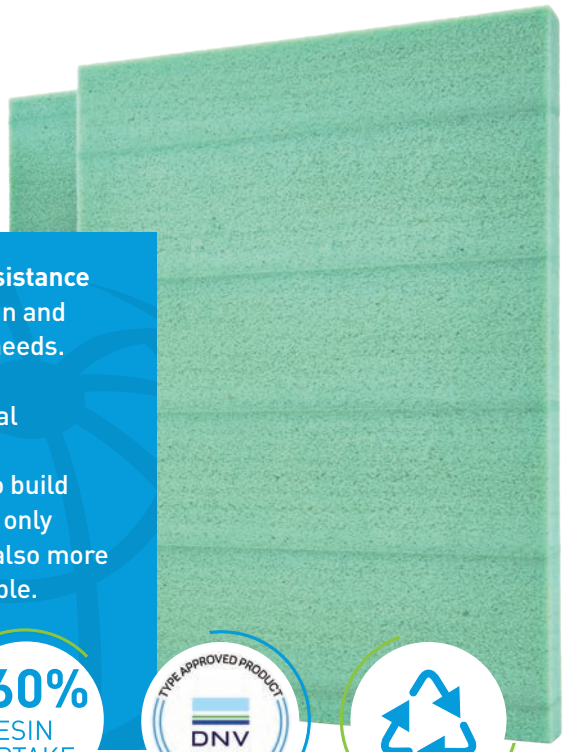
The challenge was to find **a core material that could reduce weight and resin usage compared with standard ST* PET foam, while lowering environmental impact and maintaining DAY 1's high standards of customisation and build quality.**

One Shape, Infinite Possibilities

The One Shape process is a mould-free construction technique that uses a universal flat mould and vacuum infusion to create hulls and panels. By eliminating costly, energy-intensive moulds, it reduces waste, cuts energy use, and supports fast, repeatable, and fully customisable production. Combined with a core that offers lower resin uptake, it further minimises laminate mass while maintaining exceptional performance.

The process results in lighter and stronger hulls, which improve fuel efficiency and overall vessel performance. However, to elevate One Shape to the next level, the team needed **a new core material that could offer superior mechanical properties while aligning with the company's sustainability goals**.

Built to Perform. Designed to Preserve.



DAY 1 partnered with Armacell to enhance the One Shape process using ArmaPET Struct GRX ST*, a high-performance foam made from 100% recycled PET:

// **Optimised resin uptake**
Reduced infusion mass compared with standard ST* PET foam, enabling lighter composite panels.

// **Thermal and dimensional stability**
Delivered consistent quality across production runs.

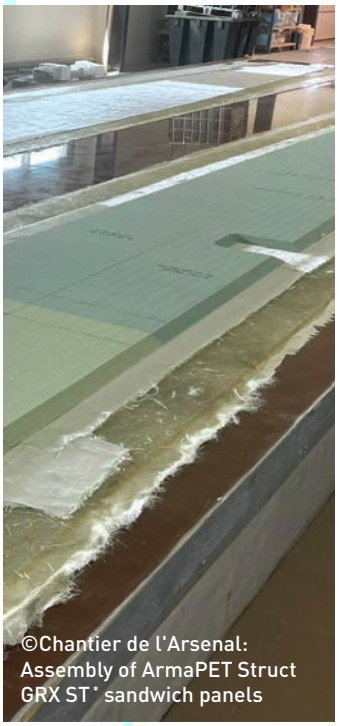
// **Outstanding fatigue resistance**
Extended vessel lifespan and reduced maintenance needs.

By integrating this material into their manufacturing process, DAY 1 was able to build catamarans that were not only structurally superior but also more environmentally responsible.

-60% RESIN UPTAKE

TYPE APPROVED PRODUCT DNV

> "This partnership has allowed us to build vessels that are not only lighter and stronger, but also more responsible. It is a win for performance, for our customers, and for the planet."
>
> — DAY 1 Catamarans Team



©Chantier de l'Arsenal: Assembly of ArmaPET Struct GRX ST* sandwich panels

©Chantier de l'Arsenal: One Shape process

Reimagining Marine Design, Responsibly

The integration of ArmaPET Struct GRX ST* into the One Shape process delivered transformative results for DAY 1 catamarans. **The new composite panels produced hulls** up to 15% lighter than those made with standard ST* PET foams, **improving fuel efficiency and agility.** The use of recycled PET foam significantly reduced the consumption of raw materials and energy during manufacturing, aligning with the company's sustainability mission.

Additionally, **the enhanced process allowed for seamless integration of fiberglass, carbon, or natural fibres,** maintaining the brand's reputation for high customisation and design flexibility. The vessels produced with this method are not only more efficient and durable but also set **a new standard for eco-conscious marine engineering.**

Sailing the Future

With the success of ArmaPET Struct GRX ST* integration, DAY 1 catamarans continue to lead the charge in sustainable innovation within the marine industry. The company is exploring further enhancements to its One Shape process, pushing the boundaries of what is possible in responsible boatbuilding.

This case study exemplifies how strategic partnerships and material innovation can drive meaningful change, delivering products that benefit both customers and the planet.

* ST: Surface-treated

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ABOUT ARMACELL

As the inventor of flexible foam for equipment insulation and a leading provider of engineered foams, Armacell develops innovative and safe thermal and mechanical insulation solutions that create sustainable value for its customers. Armacell's products significantly contribute to driving energy efficiency worldwide. With more than 3,100 employees and 26 production plants in 20 countries, Armacell operates two main businesses, Advanced Insulation and Engineered Foams. Armacell focuses on insulation materials for technical equipment, high-performance foams for acoustic and lightweight applications, recycled PET products, next-generation aerogel technology and passive fire protection systems.

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