Gurit CASE STUDY

CASE STUDY: BALTIC 67 PERFORMANCE CRUISER

The BALTIC 67 PERFORMANCE CRUISER is a stunning monohull, designed for racing and long-distance sailing, yet still easily managed by a couple of crew. To achieve this balance, having a lightweight boat was critical.

BUILT FOR PERFORMANCE

From the outset, Baltic knew that advanced composites would be essential for the construction of the BALTIC 67PC, not only for light-weighting and performance reasons, but to achieve their innovative design whilst making a versatile, easier, safer and more exciting to sail, boat.

Baltic Yachts drew on their 48 years of design and building experience to create a full composite boat, with a glass hull and full carbon deck. From concept right through each of the build stages, they worked in conjunction with Gurit engineers and materials supply to realise their vision. By building the hull using a sandwich construction with Gurit epoxy SPRINT™ and Corecell™ M foam, Baltic were able to produce a strong, lightweight structure with a significant performance edge.

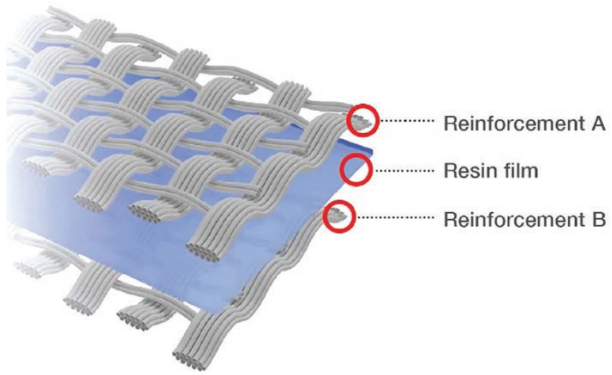
OVERVIEW

The Baltic 67 was developed with structural design from the Gurit engineering team and constructed with Gurit materials. Using SPRINT skins and Corecell M foam in a refined sandwich construction, the hull and deck achieve exceptional stiffness, durability and weight savings. Gurit adhesives and laminating systems further optimised build quality and precision. The result is a strong, responsive composite structure that delivers a genuine performance edge while remaining comfortable and manageable for short-handed crews.

Above: The BALTIC 67PC hull being lifted out of the mold

BUILT FOR PERFORMANCE

For the hull construction, the first layer of material to be used was Gurit surfacing film, which provides a pin hole free finish, ensuring the boat was ready to paint once demoulded. Behind the surface film, Gurit SPRINT was used for the inner and outer skins of the sandwich construction for both the hull and deck. SPRINT is made by applying an epoxy resin film to a layer of either woven or multiaxial carbon or glass fabric. The resin content of SPRINT is carefully pre-determined during the production process to give optimal resin content for the laminate. When cured under vacuum, the dry fibre in SPRINT ensures good air evacuation from the laminate stack, removing the need to de-bulk and resulting in a low void content laminate. Another key benefit of SPRINT is the high temperature performance, eliminating print-through even on dark hulls, leading to a first-class finish and longer life cycle. Alongside the SPRINT, Gurit adhesive film was also used to secure the core in place.



Above: Gurit SPRINT construction.

THERMOFORMED CORECELL M FOAM, FOR REDUCED RESIN UPTAKE

To further lightweight the hull structure, the Corecell M foam which formed the center of the sandwich construction was thermoformed to the correct shape, considerably reducing resin uptake. Corecell M foam is a SAN structural foam core, well known for its unmatched toughness and impact resistance, making it the perfect choice for slamming areas such as hulls. To complement the use of Gurit SPRINT and Corecell, a full range of Gurit epoxy resins and adhesive products were used for the fit out, including: Gurit monocomponent paste for bridging any gaps between the Corecell and SPRINT and creating seamless fillets, and Ampreg™ 31 laminating system and Spabond™ structural adhesive for securing bulk heads in place and structural bonding.

Above: Spabond™ adhesive used for structural bonding

A TRULY MAGNIFICENT EXAMPLE OF MODERN COMPOSITE DESIGN

Using a full package of Gurit materials for the BALTIC 67PC construction ensured full compatibility, providing much-needed peace of mind required for such a high-performance vessel.

The BALTIC 67PC is a spectacular example of modern composite design and engineering coupled with high tech materials, built by the skilled Baltic Yachts workforce, using leading edge marine technology and traditional craftsmanship to create award-winning yachts.

Baltic Yachts: Lighter, Stiffer, Faster, Greener – Together.