



High Performance Meets Sustainability

Futures Fins introduces environmentally friendly stand-up paddleboard fin



Surf equipment manufacturer, Futures Fins, is introducing a new fin for stand-up paddleboards (SUP) created from biocomposites. The RWC (reclaimed wood composite) Keel is an environmentally friendly biocomposite-based fin that meets, and in some aspects exceeds, traditional performance demands.





The new fin is made from a wood-plastic composite manufactured by Green Dot Bioplastics. Futures Fins came to Green Dot looking for an environmentally friendly material with the natural aesthetics of wood, that also met the performance requirements of the engineering-grade plastics normally used for this application. One of Green Dot's Terratek wood-plastic composites, a blend of reclaimed wood fibers with recycled plastic, was the right solution.

Futures Fins' prerogative has been to market products as the ultimate, premium performance. They use materials such as carbon fiber and Kevlar to produce high-quality, performance-driven, dramatic-looking fins. The new biocomposite fin disrupts this traditional marketing model.

Visually, The RWC Keel tells a different story than the other products. It's a fin that looks and feels different than anything else Futures Fins manufactures, but performs at the same level, or better than many of the other fins for stand-up paddleboards.

The biocomposite-based fin tested well

Each SUP fin receives a rating on the Speed vs Stability scale based on flex, rake and foil tests to assist customers in determining the specifics they need according to their skill level and desires.

Flex – Just like the name implies, flex is the stiffness rating of a fin. It plays a large role in the way a board will handle on the water. Stiff fins provide stability for both beginner and expert stand-up paddlers to track straight and get more strokes per side. Stiffness is the hardest quality to achieve in lightweight, non-traditional materials.

Rake – This is the measurement of how far back a fin curves compared to its base. Boards with less rake will have less drag and be faster through the water. Boards with more rake draw straighter lines and are more stable on the water.

Flow – The fin's shape is known as the foil, and has an impact on how water flows under the board. The fin is hydrodynamically shaped from front to back. The shape can determine how much lift is achieved in various wave conditions, in addition to how much drag is created under the board.

The new biocomposite-based fins tested just as well in these three categories, but at a lighter weight as compared to the products they were replacing.



Previous attempts to manufacture an eco-friendly fin

Futures Fins makes thousands of plastic products every year. As surfers who manufacture equipment in Huntington Beach for other surfers, they are deeply connected to the beach and ocean. Seeing trash and plastic waste wash up on the beach was more than bothersome. The owners felt a responsibility to protect the environment, and aimed to create a product that would reduce landfill waste and be as friendly to the earth as possible.

Collaborating with Green Dot Bioplastics and using the wood-plastic composite wasn't Futures Fins' first attempt at creating an environmentally friendly fin. Previous materials were also experimented with: mushroom foam, hemp, flax, soy-based items and more. Ultimately, these materials were difficult to work with, and did not meet the performance level required.

The composite used ended up being a plug-and-play solution. It's easy to mold, and creates a product that's about 35% lighter than the standard products Futures Fins manufactures. Green Dot's wood-plastic composite can achieve a wide range of characteristics by adjusting the species, size and concentration of wood particles in the formulation. While the formulation can change to produce dramatic differences, the common characteristic among all iterations is sustainability.

Futures Fins future

Futures Fins is living up to their name as they plan to continue collaborating with Green Dot Bioplastics to introduce more products utilizing biocomposites and bioplastics. The key will be increasing the stiffness while keeping the product light, a task Green Dot is prepared to help Futures Fins achieve. This will enable fins to be made for long board and twin fin surfboards as well. The holy grail will be the development of a biocomposite or bioplastic for short boards, but the aggressive riding style demands more out of the fin.



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