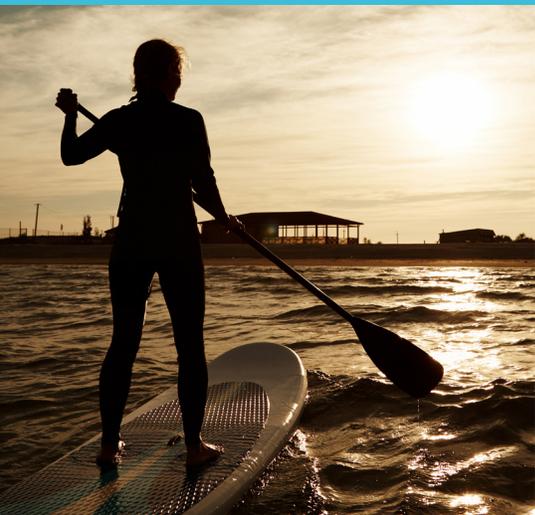


Challenge Accepted.



A STAND UP PADDLE RISES TO THE TOP WITH NEW MANUFACTURING PROCESS AND MATERIALS

 **AVIENT™** » CASE STUDY: CONTINUOUS FILAMENT WINDING TECHNOLOGY





CARBONERRO™ IMPROVES STAND UP PADDLE EXPERIENCE FOR MID-LEVEL RIDERS WITH OPTIMIZED MATERIAL AND MANUFACTURING PROCESSES

THE CHALLENGE

Regarded as an innovative startup in the stand up paddle industry, Carbonerro™ has continued to push boundaries with products that redefine a new standard of quality, performance and excellence for SUP (stand up paddleboard) enthusiasts. Recognized for putting the user experience first, Carbonerro first approached Avient with the need for a paddle shaft that would float, rather than sink, and use composites rather than aluminum to provide an improved experience for intermediate riders.

Development began after the Carbonerro team began hearing negative customer feedback about sinking aluminum shaft paddles, produced outside of the U.S. and predominantly used in the low- to mid-level market. Existing fiberglass options were also problematic due to inconsistent shaft stiffness. Fiberglass shafts were typically sourced from Asia and produced using a traditional mandrel rolling process, which slowed production and limited Carbonerro's design freedom.

SUP pro paddles are typically equipped with carbon fiber shafts, but this option was too cost-prohibitive for the mid-level market. Onshoring the manufacturing process of fiberglass shafts would improve their chances of success. That's when Carbonerro enlisted our help.

THE SOLUTION

The Avient technical support team got involved early in Carbonerro's design process of the Proglas shaft. The collaborative team identified a move away from the traditional mandrel rolling production process used in Asia, and toward an advanced semi-automated continuous filament winding process in the United States.

Using this process together with an advanced composite polymer formulation from Avient would offer a better stiffness-to-weight ratio than that of aluminum and mandrel-made fiberglass. The consumer would see the benefits of a lighter weight, stiffer paddle that would float in water.

Additionally, Avient offered Carbonerro support with the tooling necessary to improve the company's manufacturing process. The benefits were twofold: first, Carbonerro was able to increase design freedom and innovation; and second, the use of an advanced composite material offered a higher quality, higher performing paddle for a similar price point to that of the lower performing competition.

THE IMPACT

Finding a material that would add value to the user in the form of a lighter weight, higher performing paddle was critical. And Carbonerro also needed to keep costs down to produce a more economical solution for the non-professional enthusiast.

Avient was able to help this company evaluate its manufacturing processes and recommend a superior composite material solution. Furthermore, by moving production of the shaft to the U.S., the company gained control of product design, ensured part consistency and shortened cycle times.

The end result? An unsinkable stand up paddle with improved stiffness and performance, and an overall cost savings to both the consumer and the company.

To learn more, please contact Avient at +1.844.4AVIENT (1.844.428.4368) or visit www.avient.com.