

# Websuit 1

## The Protective Wetsuit for Olympic Foiling Sailors

The project focused on improving Olympic foiling classes sailing athletes' safety: Nacra 17, iQFOiL, and IKA Formula Kite. The primary objective was to investigate dangerous circumstances with foil sailors to research the mechanisms that cause injuries and develop a design solution to prevent them.

The research performed provides an integrated perspective into the subject of foil sailing safety. The research methods include participatory observational research, one-to-one interviews, multimedia evidence analysis, incident reporting archives study, and explorative retail analysis.

Current wetsuits fail to protect sailors from foil strikes.

Four primary objectives are established. Impact and cut protection on the entirety of the wetsuit's surface, comfort, and aesthetics, which are two factors in attracting the use of such a suit.

The product's name is Websuit 1, which is a protective wetsuit designed for Olympic foiling sailors. Full-length woven Dyneema lining is stacked with lightweight neoprene and GRDXKN foam— a mix of comfort and unprecedented protection.

Results of several iterations have proven that GRDXKN can be printed on Guard Shield. Furthermore, based on the tests, 100% Dyneema lining can be bound to neoprene rubber thanks to lining glues. The proposed wetsuit manufacturing method is the same as the current one, with the addition of a GRDXKN screen printing and heating phase.

Under the impact tower, the GRDXKN absorbed 56% of the maximum force applied from a 10J impact. The developed reinforced neoprene has been shown to distribute the energy over a larger surface, which decreases the stress applied to the body. Furthermore, the reinforced neoprene did not tear or break under stresses caused by 50J impacts. In contrast, conventional neoprene concentrated the applied force on a smaller area for the same energy impact and was torn.

This project provided the first steps into connecting innovative textile technologies with the sailing world.

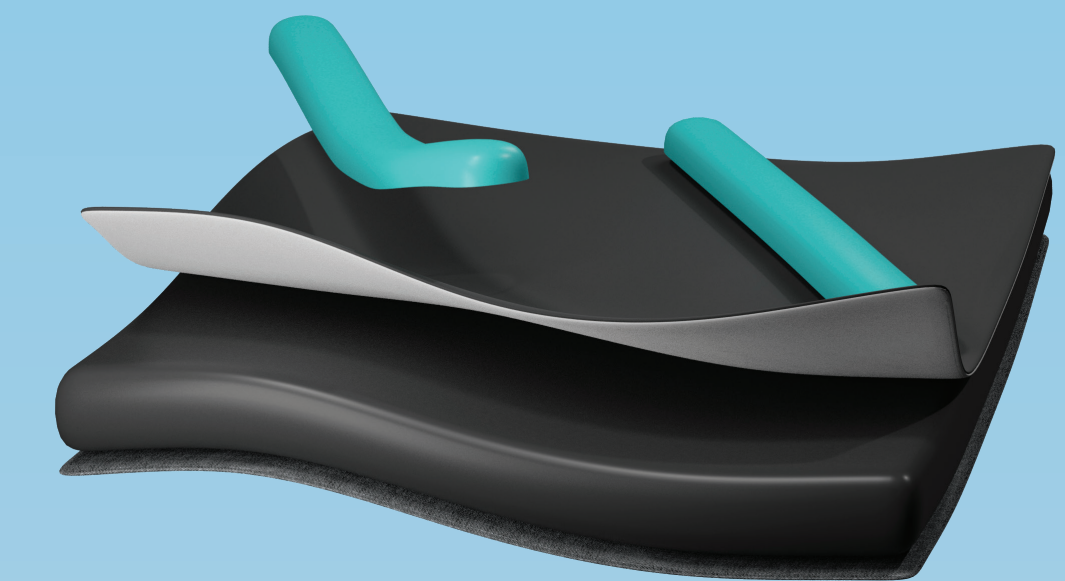


### LOCALIZED IMPACT PROTECTORS

Panels on the joint areas offer protection from impacts experienced inside the boat.

### REINFORCED NEOPRENE

Covering the entirety of the suit is an exoskeleton of GRDXKN filaments screen printed on a cut-resistant lining for protection from foil strikes.



### SUSTAINABLE MATERIALS

Made with Yulex, a plant-based natural rubber that is sourced sustainably.

### ANKLE AND HEEL PROTECTION

The protection extend to the heels, wrists and neck. No area is left completely unprotected.

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Websuit 1: The Protective Wetsuit for Olympic Foiling Sailors  
August 2<sup>nd</sup> 2021  
MSc Integrated Product Design (MVE)

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