

Customer Case: Keel - Transat 6.50, Sam Manuard, France

Let other designers give you new ideas

You may aim for great competitive advantages or small cost savings. Anyhow, it often pays to learn the tips and tricks of other designers.

We have gathered some cases that show you how different designers use WELDOX. Their experiences can hopefully inspire you. At best, some minutes in their company might solve the challenge awaiting you on your desk right now.

Design: WELDOX over the Atlantic with an adjustable keel

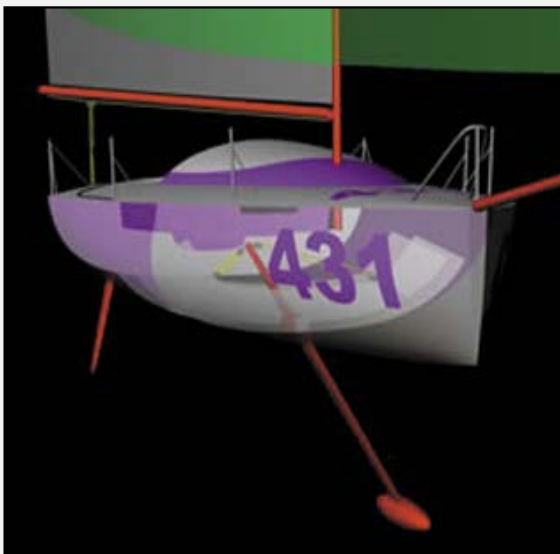
Sailing alone across the Atlantic is a personal challenge that sets extra-ordinary requirements on the design and materials. This is something the designer and race-skipper Samuel Manuard knew when he contacted SSAB Oxelösund in Paris with his idea about an adjustable keel.

To make his dream come true, a material stiffer than carbon fibre, but at the same time light and safe was required. The goal was to participate in the TRANSAT 6.50, an ocean race for 6.5 metre boats which is the most spectacular in the open yacht class. And after two years of preparations, it was finally time to race.

The WELDOX-boat “Tip Tip II” against 39 other boats in the prototype boat class. A serious challenge for an entirely new design. For us it is a piece of art, the art of engineering.



Products: Faster and safer sailing with WELDOX in the keel

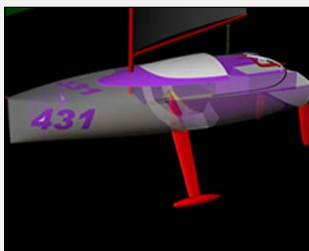


Samuel Manuard won the first leg of the TRANSAT 6.50 in a convincing way. –The keel is stiffer when using WELDOX than carbon fibre which provides the boat with more power and acceleration, says Sam. The secret of the design is a keel fin that can rotate around its own axis. As a result the boat becomes faster.

WELDOX 700 was selected to save weight and at the same time because it is a safe material.

– Since WELDOX is harder than ordinary steel, it is more resistant when cracked. In other words, a larger crack is required before it breaks, Sam continues. The fin is not usually subject to great load, but in a critical situation, like in a collision with a whale, the load can become extraordinary high. And in those situations you just feel safer with WELDOX.

Economy: More prize money for a lower cost



The most important economic gain with WELDOX is a faster boat. A faster boat wins more races and generates more prize money. This year alone, Sam has won ocean races like the Mini Fastnet, Odysées d'Ulysse and the Giraglia Rolex Cup with the WELDOX keel. But it is also about managing to keep costs low.

– By using WELDOX in the keel, it is true that the costs for both material and machining were reduced. But most important was the help I received from SSAB Oxelösund's application engineers and experts. Particularly in connection to machining like welding, milling and painting, concludes Sam.

Machining: Narrow thickness tolerances made bending easier

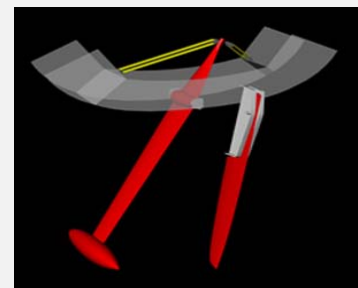


- We built three prototypes of the keel fin using WELDOX 700 and quickly discovered that we didn't encounter any problems when machining, says Samuel Manuard, designer and race skipper. The narrow thickness tolerances saved weight and made bending easier, he continues. We cut out the parts using laser and then spent a considerable amount of time on the welding.

Welded joints are particularly critical because this is mainly where fatigue occurs. The keel fin is therefore exchangeable and also adjustable in order to counteract deflection.

Service: Advice and findings from WELDOX

- SSAB Oxelösund helped with everything from material acquisition, logistics and advice on welding to counteract fatigue. I have received a lot of support in my work, particularly from the local office in Paris who I specifically would like to praise, concludes Samuel Manuard who's now looking forward towards more ocean races with the WELDOX keel.



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