



## **PRINTING REPORT**

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# 1 EXTENDED STERN

Part was designed to extend the stern of a vessel, while keeping unique lines of the vessel design. This project was mentioned already in previous printing report and below pictures of painted product can be seen The shown product just needs some final details on it. For comparison a picture of a starting point can also be seen below.



*Figure 1.1. Starting point of design*

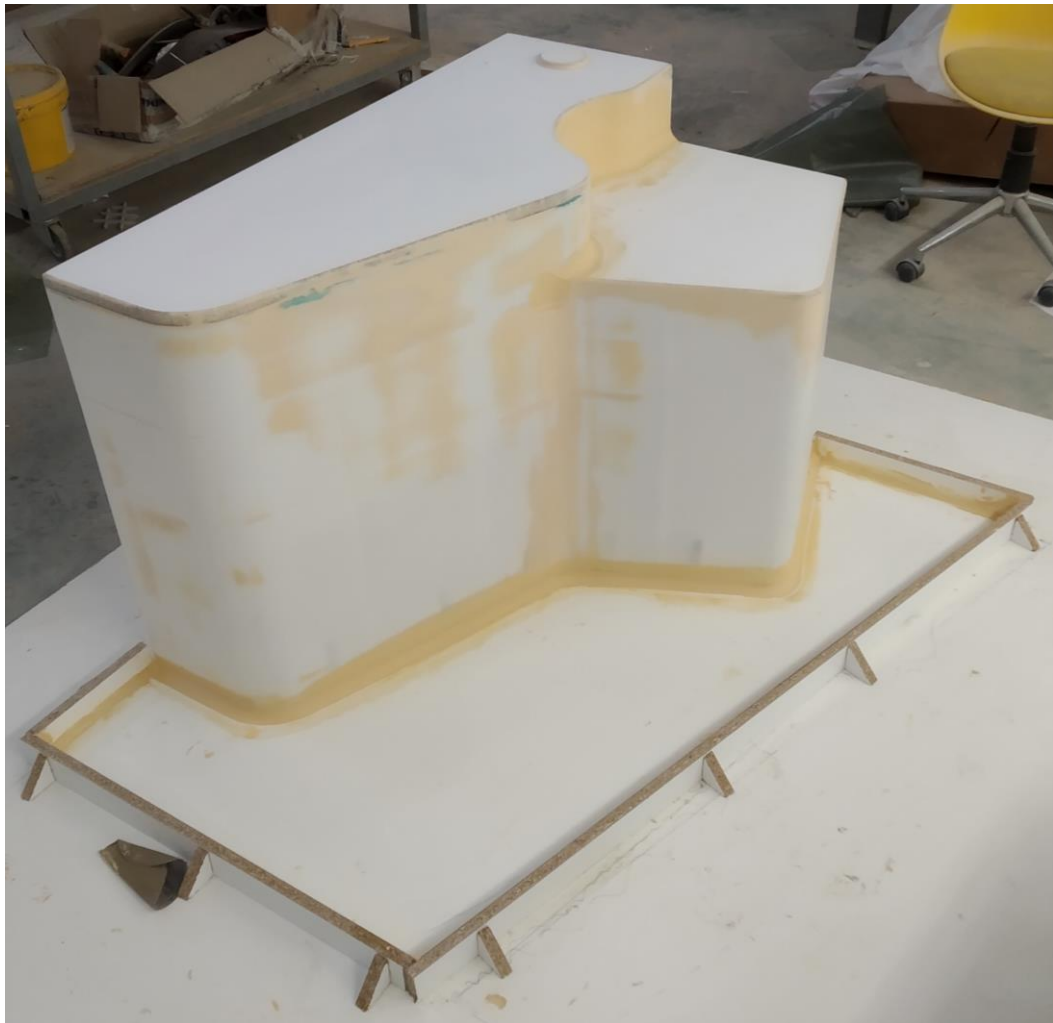


*Figure 1.2. Painted product*

## 2 BATHROOM MOLD

An area on a vessel was measured and bathroom was designed. We decided it was best to use a printed part as one component of a mold for whole bathroom. Making the whole bathroom from a single piece ensures that it is water tight, which is one of the most wanted features in bathrooms designed to be integrated in vessels.

This part was also mentioned in the previous printing report. Since then plywood was added on the printed part which ensured a straight bottom of the bathroom. Part was then sanded and a filler was added. All of that can be seen in the pictures below.

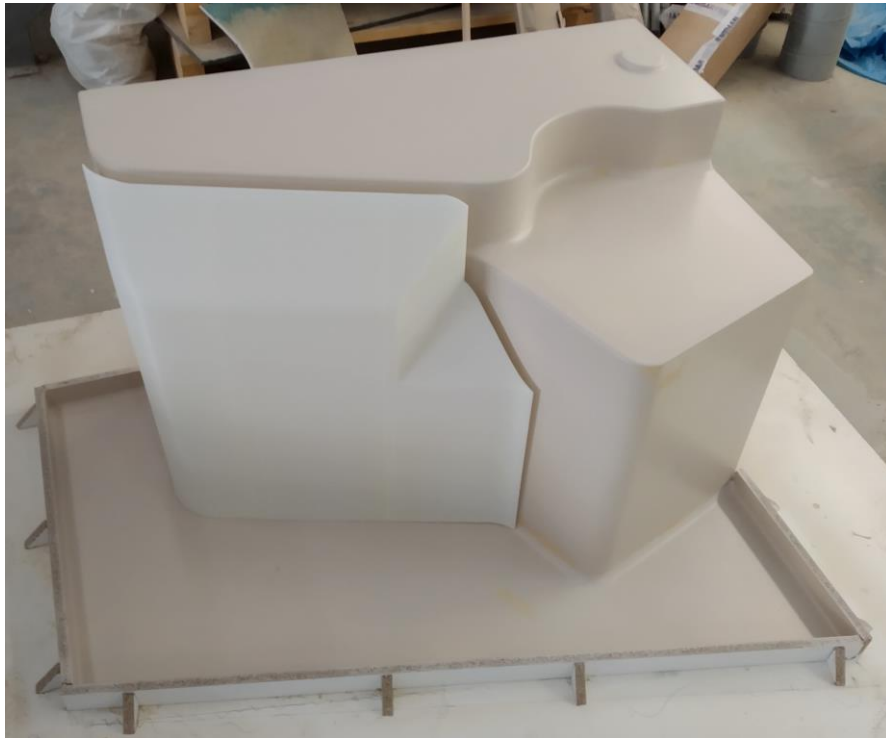


*Figure 2.1. Sanded part with plywood*



*Figure 2.2. Prepared mold*

This is when we decided to print extra part that was meant to extend bathroom area. In the pictures below you can see the extra printed part being added to the main part and then filler was added and part was ready to be used as mold after some sanding. Before adding filler some area was being filled and modeled to change a design a bit. This specific corner can be seen in the pictures below and the reason for it not being printed with printer directly during printing process of the extra part was so that the printer can be left overnight without supervision. To do so the extra part was needed to be designed in such way it would minimize a chance of nozzle getting dirty.



*Figure 2.3. Extra printed part*



*Figure 2.4. Mold ready to be used*



After the mold was ready to be used, some reinforcement was added to the part along with resin to connect it all together. The printed parts were then removed and the finished product was ready for installation in a vessel. Pictures below show the process till the end. Of course some post-processing is yet to be done before getting the final form.



*Figure 2.5. Added reinforcement with resin*



*Figure 2.6. Clearing out the printed pieces*



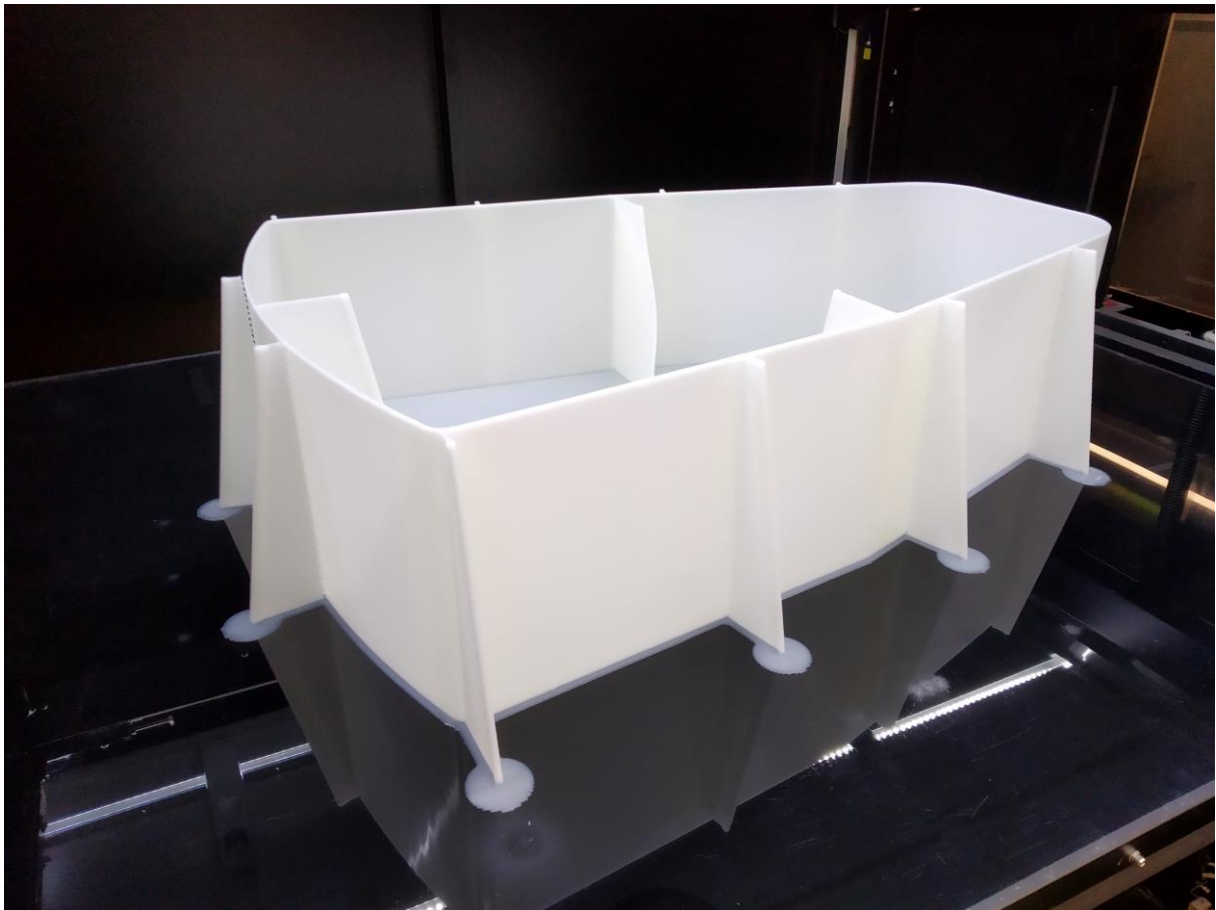
*Figure 2.7. Finished bathroom part*



### 3 BOWSPRIT

On the same vessel where the shown bathroom model is being added, a bowsprit was printed as well. A simple bowsprit design that goes well with the rest of the ship was used. The part was printed in Double Quality mode so it would still have some flex to it which helps do some minor adjustment when assembling the part with the rest of the ship.

To support the part during printing, external ribs were added. A few internal ribs were added as well but just to help with keeping a part together. Part was then added on the front of a ship and laminated just to make it firm so it can withstand winds before further post-processing is being done on it. All of mentioned can be seen in the pictures below.



*Figure 3.1. Printed part*



*Figure 3.2. Assembling the part*



*Figure 3.3. Lamination of the part*

## 4 AIR VENT DIFFUSER

A diffuser for air was needed to be made in such way that it would fit through a specific hole in a wall, but it also needed to keep the same pressure of air floating through it. On the other end a circular connection was needed with a given diameter.

Part was specifically designed to fulfill that purpose and laminated just enough so it would keep its shape. Pictures below show the printed part being laminated and installed.



*Figure 4.1. Printed part*



*Figure 4.2. Laminated part*



*Figure 4.3. Installed part*