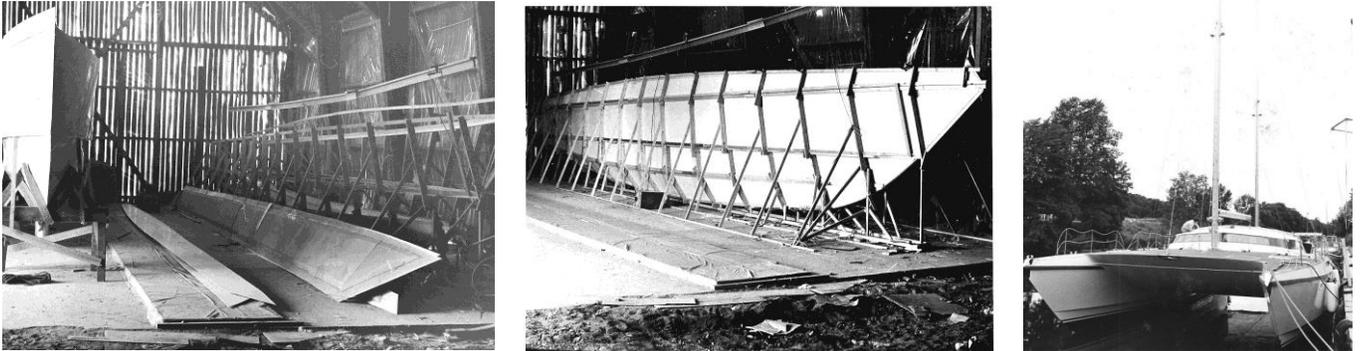


Construction method with prefabricated sandwich panels

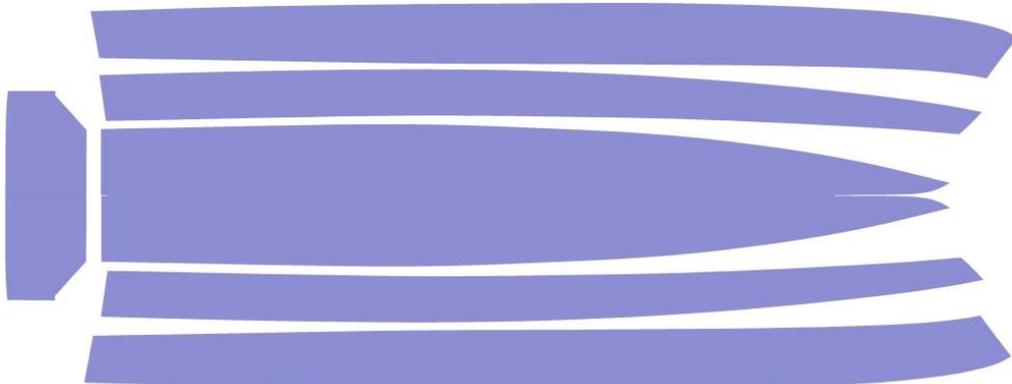


Construction of a fifteen meter catamaran with prefabricated sandwich panels

Construction of fiberglass-reinforced boats is usually done in a mold. The mold is manufactured on a plug. Plug construction is a time consuming and expensive procedure.

Here we present a simplified construction method that directly create a hull with a perfect finish without going through the production of a mold. The method is suitable for all boats that are usually built in sheet material, such as plywood or sheet metal. It fits all sizes of boats, everything from small canoes to large yachts.

The method is based on a number of prefabricated single-curved panels that are joined together into an entire hull.



Examples of unfolded panels



Preparation of the "mold"



Lamination of panels

The "mold" consists of a flat board with a length of the longest panel and a width of the widest panel. In this example, it is the freeboard and the bottom, respectively. The board must have the highest finish corresponding to the outside of the hull. The surface is sanded, polished, waxed and treated as a regular mold.

Just like with regular construction in a mold, it starts with gelcoat being put on the mold. The outer laminate is laid on the cured gelcoat. It can consist of several layers. The sandwich core can be placed directly on the last layer before it has cured. For very thin outer laminates, it may be more appropriate to glue the sandwich core to the cured outer laminate.

When the curing is complete, the sandwich core is chamfered all around to get a smooth transition between single laminate and sandwich laminate.

The panel is then detached from the mold to be trimmed to its final shape.

It is important that the panels fit closely to each other. It facilitates the final exterior filling and finishing.

After the panels are ready, they are placed in the external templates and joined together. The joints must be further reinforced.

When all the panels are in place and joined together, it is time to laminate the inner laminate. After curing, the finished hull is lifted out of the templates and turned over.

Now all that remains is to putty and polish all the joints to the same finish as the panels. It may be appropriate to test the process on a smaller part before the final boat build.



Exterior templates



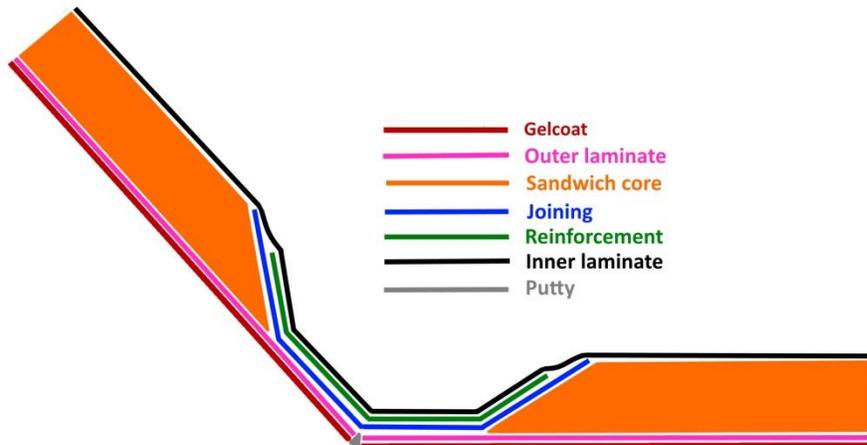
Detail at the bow



First panel in place



Bottom joined





Lamination of inner laminate



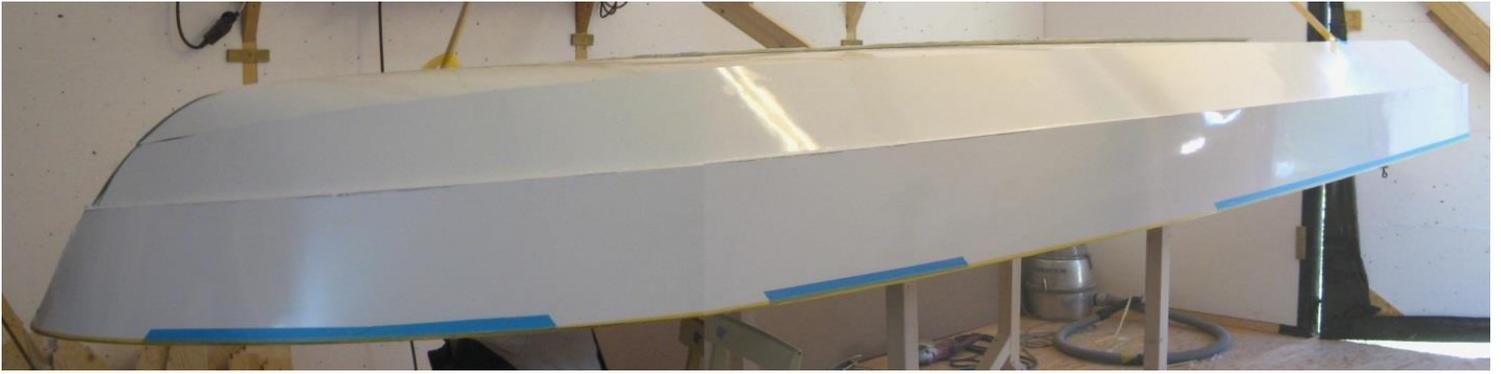
Transom with reinforcement



Detail at stem



Installation of the gunwale



The boat turned over and ready for plastering and finishing of all joints



Finished boat with aftship interceptor ready for a first test ride



The prototype for this boat was built with prefabricated sandwich panels