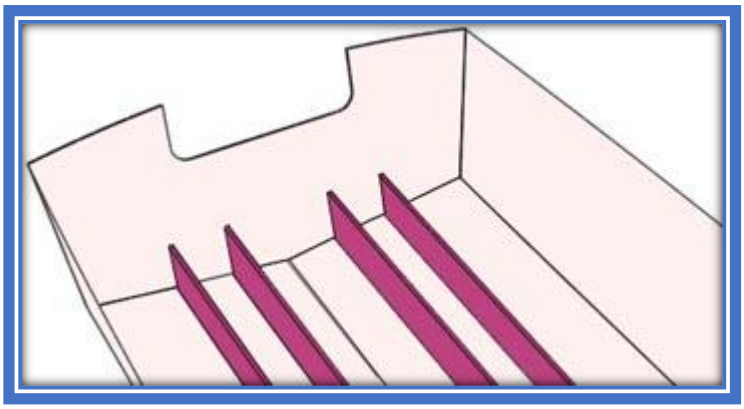
TRANSOM AND MOTORWELL DETAILS

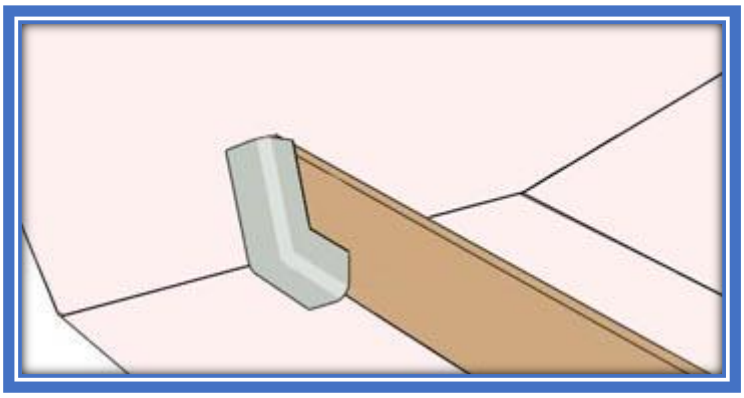
Transom Fiberglass

The transom of an outboard powered boat is subject to high stress including torsion loads. Please pay attention to the fiberglass lamination around the transom. This file reviews the most important points of that fiberglass structure.
(The drawings below are not specific to one boat.
Tabbing means building a seam between two parts with fiberglass tape on a fillet.)



We assume that all fiberglass laminations between hull panels, frames, bulkheads and stringers are complete.

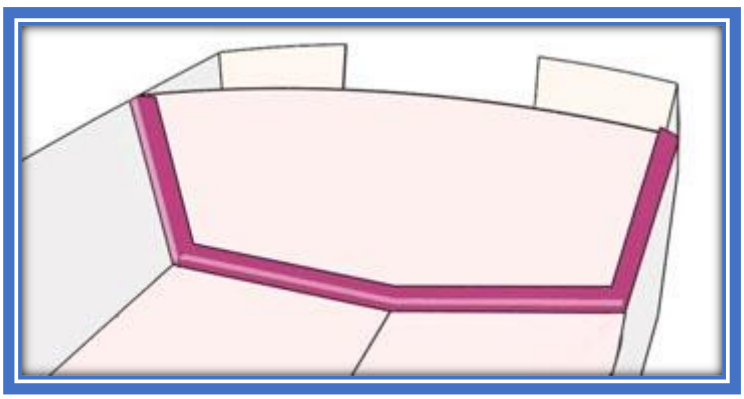
For all boats, the fiberglass laminations around the transom are made of more layers of tape than the other parts of the boat. See the plans for exact specs.



The stringers are always tabbed to the transom with the same type of glass and number of layers than the stringers to hull bottom.

At this point, your hull structure is like a production fiberglass boat and at least as strong. The production boat will be fitted with a deck and sole in one or two parts. In most cases those molded parts will be fitted to the hull with fasteners and sealant. Those parts do not add strength of the typical production boat.
In our boats, we will integrate parts like the motor well, sole and deck in the structure to build a stronger and stiffer boat.

In some cases, just like the transom, the motorwell bulkhead is bonded to the hull with more layers than the other bulkheads, see your plans.



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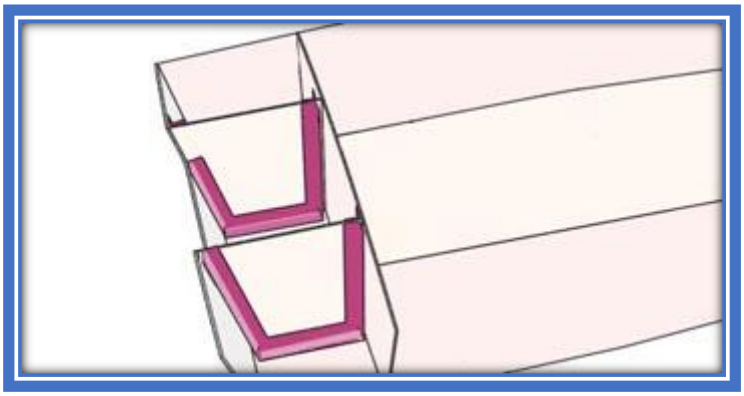
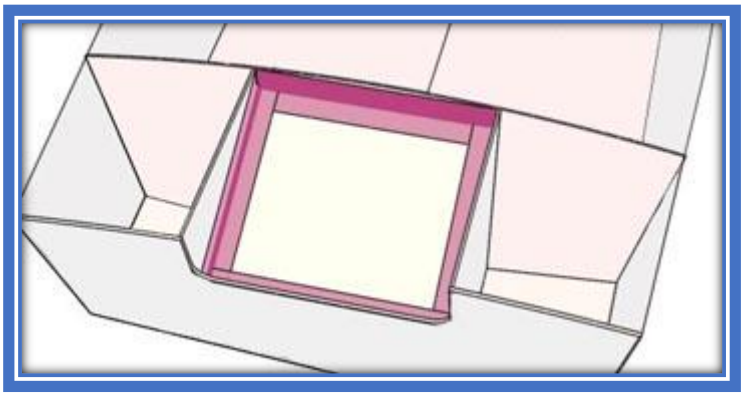
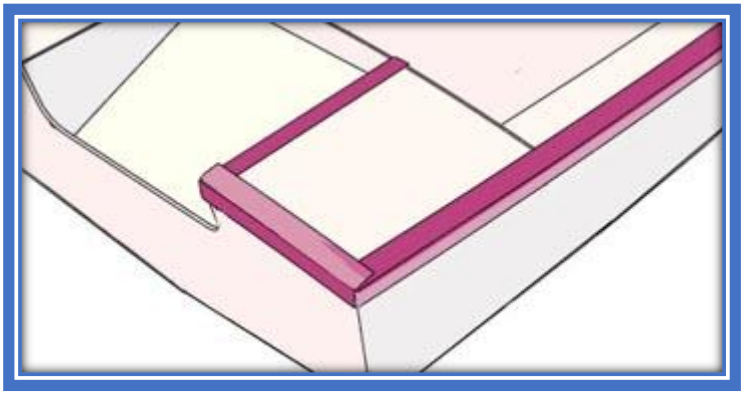


The motorwell sides play an important role in the structure of your boat. They must be fiberglassed to the motorwell bulkhead, the bottom panel and the transom with the same type of glass and number of layers than the stringers to the bottom.
In some cases, the motorwell sides are epoxy glued to a stringer and considering that the stringer is already tabbed to the hull, only one side will be tabbed.



The bottom of the motorwell must be tabbed all around to the transom, motorwell sides and motorwell bulkhead.
Not shown: the sole is installed on the stringers and tabbed to the hull sides and to the motorwell bulkhead with fiberglass tape. The sole participates in the structure: do not omit the tabbing all around the sole.
If there is a sole extension in the side lockers, it must tabbed all around in the same manner than the motorwell bottom.
This complete assembly, hull shell with transom, stringers, bulkheads, motorwell "box" and sole becomes a very stiff monocoque (egg crate type) structure in which the loads are properly transmitted from the engine clamping bracket to the whole boat, not just the transom.



Heavy Duty Reinforcements:

If you plan to install an engine larger than what we specify or expect unusually heavy loads, you can reinforce the structure even further. In most cases, the deck is welded to the hull and bulkheads with cleats and epoxy glue. You can improve the deck to hull bond and increase the strength and stiffness of your hull

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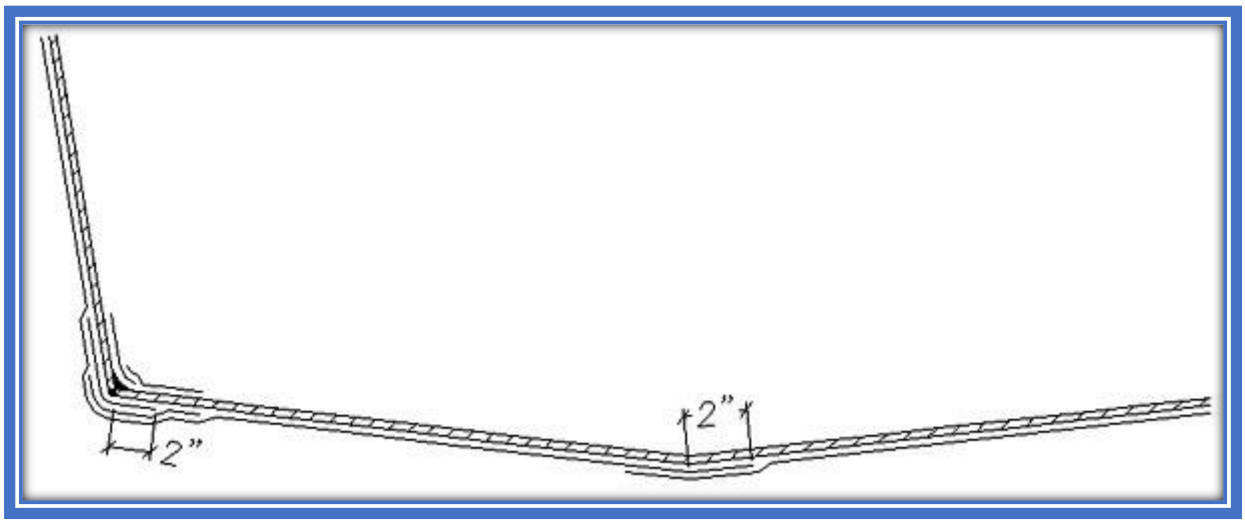
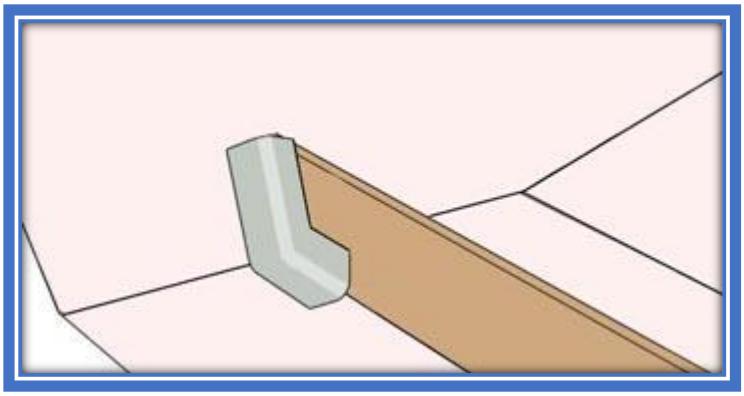
by tabbing all around the deck: between deck and all hull parts, with one layer of the same tape used in the motorwell. The clamping board can also be capped with one layer of the same fiberglass tape (not shown).

Those reinforcements are not required for normal use within the engine HP range that we specify.
General remarks about fiberglass:

Always offset the edges of fiberglass layers to avoid stress concentration.



Extend the fiberglass tape and fabric beyond the corners and edges:



Round the corners of the transom at motorwell.