

Is it OK to put fiberglass over wood or not?

There are two dimensions to this question. The first is whether or not to glass over wood in new construction. The second is whether or not to glass over wood on an old boat. The first is a common practice in stitch and glue construction. The second is not as common but is sometimes used to extend the life of some older boats that have structural problems.

The normal procedure in stitch and glue construction is to glass over all the seams of the boat with fiberglass and epoxy. Then the exterior of the boat is often sheathed in fiberglass. There is nothing wrong with this. The normal technique in stitch and glue construction is to coat all of the wood in epoxy, which effectively completely seals the wood. This stabilizes the wood and under normal conditions prevents water penetrating the wood. If the boat is given normal maintenance and given an occasional new coat of epoxy the boat will last indefinitely and the wood will remain stable. The problem arises when the wood is penetrated for whatever reason and water expands the wood, and rot spores begin to grow. Then the wood never dries out because the moisture is trapped in the wood. Eventually rot will spread throughout the boat and destroy the wood. However, if the boat is properly constructed and maintained, this rarely occurs and thousands of boats have been built using this technique. It is not just used for dinghies and canoes either. Some large boats, up to the thirty foot range, have been built using stitch and glue. It is a proven and effective method of boat building. (in fact I have built a boat using this technique, and I was a skeptic.)

So, what about older boats that were originally built using traditional wood boat building methods? There are thousands of existing boats built of wood that are nearing the end of their life due to various reasons, or that have serious structural problems. Often in cases like these the cost of rebuilding the boat using the same method as the original is very expensive, sometimes prohibitive. So the question is, how can I save this old boat? One technique is to simply fiberglass over the wood hull of the boat, essentially sealing out the water and adding the structural strength of the fiberglass to the hull. But this has its downside.

On an old boat the wood in the boat is wet. Because of the damp, rot has probably infected the wood even though the boat looks sound and is seaworthy. Sealing the wood then traps the moisture and the rot spores. The boat then rots from the inside and the rot is generally not evident until you are left with a fiberglass shell and no structural integrity.

Certainly you can dry out the boat to a great extent, but that causes the wood to shrink, often leaving large gaps between the planking and seams. These can be filled with epoxy paste or wood powder and epoxy filler. The seams can then be glassed over with fiberglass and resin. However, if you seal only one side of the wood, it will still absorb moisture from the air. It will still expand and contract. If fiberglass is bonded to the wood eventually the bond will weaken and the glass will disconnect from the hull.

Some people advocate a mechanical connection as well as the chemical bond. This is usually achieved by stapling the fiberglass cloth to the wood after applying the resin. When everything sets, the glass is not only chemically bonded to the wood but mechanically bonded as well. Those who use this method claim it stabilizes the glass and keeps it from delaminating from the wood.

So, should you or shouldn't you? Some claim that if the boat is no longer structurally sound and the cost of restoring it is prohibitive, then this is a good technique to get a few more years out of the boat. Others believe this is a perfectly acceptable solution for any wood boat regardless of condition. I have even seen fiberglass sheathing on new Navy wooden minesweepers.

My own personal belief is that the only times that fiberglass sheathing is an acceptable practice is for new boats that are completely coated with epoxy or some other resin that seals the wood, and when there is no other way to save an old boat that is going to be far too costly to restore. I believe that coating any other wooden boat with fiberglass is just inviting disaster and will accelerate the aging of the boat.

There are other experienced, knowledgeable people who disagree. They believe that if done properly, making sure to get a good mechanical and chemical bond between the wood and the glass, the boat will last longer and rot will not occur.

Unfortunately, this is one of those subjects that does not have a definitive answer. Experiences vary from builder to builder and boat to boat. There does not seem to be a consensus opinion on this. What a person needs to do is weigh the cost versus how much longer the boat would last. In other words do a cost/benefit analysis. If you can get a few more years out of an old boat then it may be worth it.

Glen-L on how to fiberglass wood. <http://www.glen-l.com/methods/how-to-fg.html>

eHow How to fiberglass wood. http://www.ehow.com/how_4473981_fiberglass-over-wood.html

Boat Building. Stitch and Glue http://www.common-sense-boats.com/boat_building.htm

Devlin on Stitch and Glue construction. <http://www.devlinboat.com/stitchandglue.htm>

Wikipedia Stitch and Glue construction. http://en.wikipedia.org/wiki/Stitch_and_glue

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Peter Eikenberry

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