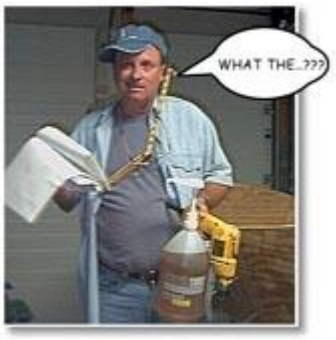
Epoxy and Fiberglass Basics

In our boat building method, the resins and fiberglass are much more important than the plywood. You can use cheap plywood and still get a good boat with the proper resins, not the other way around.

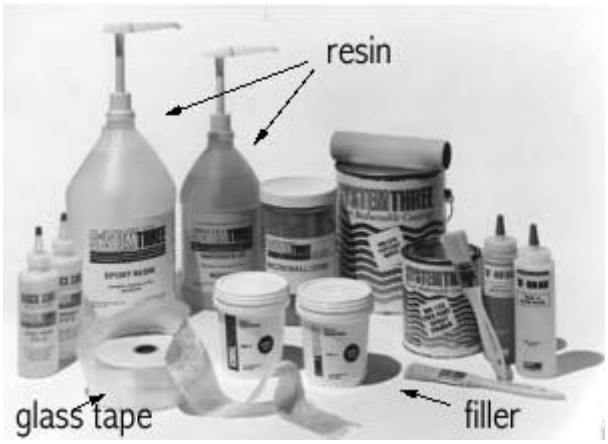


Our stitch and glue tutorial shows the assembly sequence of a small boat but does not provide many explanations about resins and fabrics. We received a good number of questions like: what is epoxy? and fiberglass? how do you use that stuff? Here is a very basic tutorial for those who have never seen resins and fiberglass but want to use them for boat building. Sorry if it looks simplistic to those who have experience with these materials but it is intended for people who know absolutely nothing about composites.

The two major components used to build a "fiberglass" boat or to build the seams on a stitch and glue boat are:

Fiberglass and Resin

The resin is a thick liquid, of a viscosity similar to paint. Here, the resin containers are fitted with **plunger pumps** for easy handling and mixing. The tape shown is standard **4" woven fiberglass tape** used in small boats. The fillers (**micro balloons** and **silica**) are mixed with the resin to make putty.



Fiberglassing or laminating (we use these two terms) means to impregnate the fiberglass fabric with the resin in order to produce a hard, strong finished product. The person on the left is laminating a wide panel with a roll, the one below is doing the same with tape in one of our boats. Each applies resin on the fiberglass, with a roller or a brush.

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The resin will cure (harden) and the result, seam or panel, will be a strong, hard fiberglass part. That is all!
Epoxy & Fiberglass basics

Let's look step by step at the building of a fiberglass-epoxy seam:
coat with resin build putty fillets apply fiberglass and resin

The first step is to mix the resin. It is very simple, just mix the two parts in a small container, see **our video clip of mixing a small batch**.

The resin is then applied on the plywood with a brush or roller. As you can see, it is just like painting (note the gloves).

We need some putty to fill the corner first. The putty is made very easily from resin mixed with a filler: micro-balloons, **wood flour** etc. It can be applied with a spatula but we describe better methods in our "Stitch and Glue" manual. Note that all surfaces are pre-coated before the application of putty or fiberglass.

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Lay the fiberglass tape on the wet putty.

Wet the fiberglass with the resin. It will become transparent while absorbing the resin.

Use a squeegee to remove the excess resin and eliminate air bubbles.

That's all! Your fiber glassing is complete, just wait a couple of hours for it to cure. Now that you learned how to make a fiberglass seam, it is a simple matter to use the same technique to fiberglass large areas like the bottom of your boat. To make it really easy, use one of our kits. Our kits include all what is needed to start building right away: resin, fiberglass, fillers, pumps, cups and gloves and even the Epoxy Book!