

MATERIALS & THEIR USE

CAN I USE POLYESTER INSTEAD OF EPOXY?

No. If the plans specify epoxy, you should use that resin. Polyester does not bond properly to plywood and will delaminate.

WHAT KIND OF RESIN SHOULD I USE?

All our plans specify epoxy resin exclusively. Polyester or vinylester are not acceptable. Polyester does not bond properly to wood and is not sufficiently resistant to moisture. With polyester, water will find its way to the plywood and result in rot, not with epoxy. Use a quality marine epoxy like the one we sell in our kit: it does not cost more.

WHAT IS THE SHELF LIFE OF EPOXY RESIN?

Epoxy has an almost unlimited shelf life. You can keep epoxy for years and it will be as good as the first day. In very cold weather, epoxy may crystallize. It will become liquid and clear after warming up and will have the same properties.

WHAT TYPE OF HARDENER SPEED?

We sell three different hardener speeds. See a table of cure speeds at BoatBuilderCentral. You can mix different hardeners for even more precise control.

WHICH TYPE OF FIBERGLASS SHOULD I USE?

Do not use fiberglass from an auto part store or fiberglass with mat. The fiberglass that we specify is much stronger and is easier to use even for a first-time builder. It bends around corners with less air bubbles and requires less resin: in the end, it will cost less and be stronger. Fiberglass application techniques are discussed in our How To files but here are some important points: - Cut all your fiberglass pieces in advance, check them for size on the dry plywood. - Try to work wet on wet. That means applying fiberglass over putty that is still wet or soft and layers of glass wet on wet, on top of each other. You will work faster and eliminate the need for sanding between coats. Your lamination will have a higher glass content and be stronger. - Less resin makes a stronger lamination: squeeze the excess resin out with a plastic squeegee. - Cover the last layer with a plastic film like polyethylene, roll it down. The plastic will produce a smooth surface with almost no edges showing. Very little sanding will be required. The resin does not stick to the plastic. - For final fairing, switch as soon as possible to paint primer. It is easier to sand than cured epoxy resin.

DO I HAVE TO USE MARINE PLYWOOD? HOW ABOUT CHEAP PLYWOOD?

It depends on the boat and is indicated on the plans or at the study plans page. Some general guidelines: . For a small boat that does not stay in the water, inexpensive Lauan or other exterior plywood is just fine. . For a utilitarian style boat like our OD16-18 or our garveys, good exterior with no voids is a good choice. . For offshore going sailboats, fast planing power boats and for all boats that will stay in the water for more than 2 weeks at a time, we specify marine plywood. This is required for structural reasons mostly. Those are the minimum specifications. Compared to the total cost of the boat, the difference in cost between quality marine plywood and cheap plywood is small: less than 10%. Marine plywood like Okume or Meranti are the best choices: they have superior mechanical characteristics, bend easily and are easy to work with. Build with marine plywood to save many hours of work and obtain a much better-looking boat with a higher resale value. A good compromise if plywood cost is an issue is to use marine plywood for all hull panels and exterior for the framing and inside.

IS 1/4" (6MM) PLYWOOD NOT TOO THIN?

For our small boats, 1/4" is used on the sides and sometimes the bottom and it is the proper thickness. Think of an inflatable boat: it is the water that supports your weight, not the fabric or in this case, the thin plywood. In our larger boats and power boats, there are other loads to consider but, in those cases,, the hull is NOT made of 1/4" (6mm) plywood. It uses 1/4" plywood as the core of a composite sandwich: the plywood is covered on each side with biaxial fiberglass and epoxy. The resulting panel is not only 3/8" (10mm) thick but it is stronger than 3/8" marine plywood, stronger and stiffer than a 3/8" standard production single fiberglass skin. Another advantage is that the thin plywood core is very easy to bend: you would not be able to build those hull shapes from stiff 3/8" (9mm) marine ply. Altogether: easier to build and stronger: a win-win material!

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CAN I USE FOAM INSTEAD OF PLYWOOD?

Foam sandwich is a good construction method for boats 25' and larger. For small boats, the use of foam would result in a heavier boat because of the skin thickness required for resistance to puncture.

WHAT TYPE OF PAINT SHOULD I USE?

In all cases, the epoxy resin must be painted or varnished to protect it from UV's. Almost any paint can be used on our epoxy resins. If your budget is limited, latex porch paint will work. You must sand, or scrub, then clean the cured epoxy before painting. A better finish is obtained with marine enamels and the best-looking boats are painted with two-part polyurethane paints. Those paints produce the highest gloss, but some are difficult if not dangerous to use. We sell a safe, water reducible linear polyurethane that can be applied by spraying or with a brush. Gel coat is not paint: it is a polyester resin used in female molds. The gelcoat of high-quality production fiberglass boats is often painted with linear polyurethane. It gives a much harder surface with a much higher gloss and better resistance to moisture. For the absolute best gloss, use a clear coat as final layer. Epoxy can also be varnished. A proper fiberglass lamination is transparent, and our epoxies have a slight amber color. Use a good marine varnish like Z Spar.