**Helpful Hints For Resins**

- To extend working time, pour catalyzed resin directly onto the surface to be coated rather than holding the mixture in bulk.
- Select the appropriate epoxy system for your working temperature. Epoxy curing above 80°F is not recommended.
- A test patch is recommended prior to glassing below 60°F.
- Temperature of the surface being coated is as critical as the surrounding air temperature.
- If chemical resistance is required, test before using on surface.
- Expect slower wet-out of fiberglass reinforcement when using epoxy. Epoxy is not recommended for use with fiberglass mat.
- Epoxy and polyester may be built-up, strengthened, or thickened to make a paste by the addition of TAP fibers. Dry and clean sand may be used to bulk-up epoxy for concrete floor repairs or for building leveling ramps.
- See Product Bulletin 13 for Gel Coat information.

**To minimize deterioration from weather elements and the sun,** avoid temperatures below 60°F.

**For more information: check our website tapplastics.com**

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**Why Fiberglass?**

The term fiberglass means, for our purposes, to combine man-made fibers and liquid resins to form tough, durable parts. The fibers can be made from glass, carbon, or aramid, which are woven in various forms to allow you to select the right fiber for your project.

Polyesters and epoxies offer a variety of physical properties to select from as well. The key to success is selecting the right combination of resin and fiber.

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**Use It To...**

- **Build**
- **Strength**
- **Repair**
- **Convert**
- **Beautiful**
- **Waterproof**
- **Protect**
- **Adhere**

**Use It On...**

- **Cars**
- **Boats**
- **Industrial Surfaces**
- **Athletic Equipment**
- **Decorative Surfaces**
- **Ponds**
- **Tanks**
- **Surfbords**
- **Sailboards**
- **Surfboards**
- **Sailboards**

Use it on... structures, appliances, cars, boats, industrial surfaces, athletic equipment, decorative surfaces, ponds, tanks, surfboards, sailboards, surfboards, sailboards, polyester resins.

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**RESINS POLYESTER • EPOXY**

**Epoxy Resins**

- Epoxy resins have better mechanical strength, better adhesion, and generally better water resistance than most polyester resins. For repair work epoxy is recommended because of its ability to ‘stick to stuff.’ Epoxy has virtually no odor or flammability.

Unlike polyester, the ratio between resin and hardener must be carefully measured and not varied from in order to produce good results. Therefore, working time is dependent on the resin, not the mixing ratio as in polyester. Because of its adhesive properties, it is always recommended when bonding or glassing redwood, oak, teak, and mahogany. Epoxy fully surface cures without wax (unlike polyester), so sanding must be done if more than 24 hours transpires between layers.

**Polyester Resins**

- Polyester is considerably more economical than epoxy. Second, and more importantly, polyester resin cure time can be controlled to match temperature conditions and user speed. By adjusting the catalyst, the user can accurately control the resin working time and rate of cure.

Another advantage of polyester is that it does not fully cure at the surface, which allows successive layers to be added over time without having to sand between layers. If your project is going to extend over a day or so, polyester will eliminate surface preparation between layers. For a final surface cure, TAP Surface Curing Agent can be added to any of the polyester resins.

**TAP carries four polyester resins. The proper resin for your project will depend on the final properties important to you. Below are brief descriptions. See our website, tapplastics.com or visit one of our stores for more technical information.**

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**Use It For...**

- **New Projects**
- **Saving Repairs**
- **Things You Can’t Do Any Other Way**

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**You Can Fiberglass-It-Yourself!**

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How to Fiberglass

Fiberglassing is done either in a mold (to create a 100% fiberglass product), or over a substrate like wood or foam. The description below will describe fiberglassing over a substrate. See a TAP sales person for information on lay-up in a mold. Whether you are fiberglassing a boat, a surfboard, or your deck, the process is pretty much the same. The instructions below are intentionally general.

For specific issues on your project, speak to a TAP sales person.

Beginning the Project

- Wear gloves, safety glasses, coveralls, respirator (if there is not adequate ventilation.)
- Vacuum the surface to be glassed. All wax, oils, grease, etc. must be removed by sanding and acetone wipe in order for resin to stick.
- Lay fiberglass fabric on the surface to be glassed and trim to size. If the area is wider than your fabric, overlap the fabric seams at least 2”. Never “butt joint” the edges of fabric. This will produce a weak seam.
- To help hold the fabric in place while trimming, push pins through the fabric into the substrate (if it is soft like wood or foam).
- If the surface is curved, you may need to cut V-shaped notches so that the fabric can lie flat.
- More than one layer of fabric is to be used, repeat the process with the next layers trying not to allow seams to stack on top of each other. This would create a bulge due to the double layers of fabric at the seams.
- Once the fabric is cut and trimmed, you are ready for the lay-up.

Lay-up over a Substrate

There are a couple of lay-up methods you can follow. First we will describe the “dry method”, which works well for small projects with lightweight cloth. Then we will describe the ‘wet method’.

- For small projects with light fabric and not too many layers, leave the dry trimmed fabric in place, ready for the resin.
- It is best to try to determine how much resin you will need before you start. Running out of resin in the middle of a project is frustrating, and can damage the end result. So it is always best to buy extra since you can return unopened, clean containers of resin (within 30 days).

For ballpark calculations, use the following numbers per layer of fabric:

- One gallon of resin will cover about:
  - 20 square feet of 29 oz. Knitex
  - 20 square feet of 1.5 oz. mat
  - 50 square feet of 9 oz. "A" cloth

Coverage on wood depends on the porosity of the wood. Edges of plywood absorb a lot more resin than the surface. Remember, do not use polyester resin on redwood, oak, teak or mahogany.

- Mix the amount of resin you can use within the cure time available. Experiment with small batches first. Throw away any mixture that is not a uniform color.
- To maximize your working time, immediately pour the mixed resin onto the fabric surface. Use a brush (disposable) or squeegee to move the resin around the fabric and to make sure the resin saturates the cloth all the way to the substrate.
- Use a squeegee to remove excess resin, taking care not to create dry spots in the fabric.
- If more than one layer of fabric is to be used, repeat the process with the next layers trying not to allow seams to stack on top of each other. This would create a bulge due to the double layers of fabric at the seams.
- Once the fabric is cut and trimmed, you are ready for the lay-up.
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- Once the fabric is cut and trimmed, you are ready for the lay-up.

- Lay the first piece of fabric on the wet resin and saturate it with more resin.
- Continue to add layers of fabric and resin, forcing each layer down tight to the prior layer with a squeegee or roller (described above). The key is to get the fabric tight against the substrate and the resin on top where the excess can be squeegeed away.
- Watch your working time! Once the resin gels, it is no longer workable. If this happens in the middle of a lay-up and you have excess resin or a wrinkle in the fabric, you will have to stop, let it fully cure, and grind back down to the surface you desire. Never try to squeegee or roll gelled resin. It will just create a bigger mess.
- One of the advantages of polyester is that when one layer is completed, the next layer can be done at any time, even days later, without sanding between layers. When working with epoxy, each layer must be added before the prior layer cures (usually within 24 hours) in order to avoid sanding between layers.
- Once all the fabric is applied and the resin has gelled, add a final layer of resin to fill up the fabric weave. If you are working with polyester resin, add Surface Curing Agent to the resin for the final coat.
- Once that layer cures, sand and paint with the appropriate finish.

Each project, resin, and fabric has its own idiosyncrasies. Experiment to become an expert on your specific situation.

TAP also has numerous books describing most fiberglassing operations.

Visit us at: tapplastics.com