

Handling Polyurethane Frames In Your Shop

By Bob Hamon, CPF

In the February 2000 issue of *PFM*, I explained the process of making cast polyurethane frames. In this follow-up article, I will explore how to handle these materials in your shop, from fitting to repair and on to restoration. All the techniques are relatively simple, although restoration using polyurethane parts might best be left to the more advanced framer. Let's begin!

Fitting

Even if you do not sell picture frames made of polyurethane, a customer may bring one in for fitting. And, even if you do not work with these types of frames on a regular basis, you should be able to complete this task with the following techniques.

If the frame has a porous or sanded back, small particles may get between the glass and the mat. In order to prevent this, you can either tape the glass, mat, and backing together along all sides to prevent infiltration or you can paint the back of the frame. (Ready-made polyurethane frames usually have painted backs for this reason. If the back is unfinished, then, generally speaking, the frame was originally made to hold a mirror.) If you need to paint the back of a frame, use an acrylic because the solvents in some paints might erode the polyurethane.

In fitting the back, diamond points, framers points, and staples all drive into the polyurethane frame as they would into a wood frame. The standard dust cover also works well if you attach it with white glue. ATG tape might not adhere to an unfinished back, since it is porous.

The wire should be attached between two small D-ring hangers fastened by a 6" x 1/2" screw. I find that screw eyes are usually inadequate because they pull out easily and tend to break going into harder materials like polyurethane and hardwoods.

Repairs

Occasional repair due to mishandling or abuse is also a fairly simple matter. The polyurethane frame is a plastic and, therefore, is filled and glued as such. The filling material of choice is polyester resin, which can be found on store shelves under the name Bondo (see Photo 1). To fill



Photo 1: Shown here is a polyester resin filler and glues resting on the back of a polyurethane frame.



Photo 2: A clay dam is all that is needed to pour a mold of this antique frame.

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the gouged area, follow the directions on the container to mix the resin and then fill. The cured fill can then be cut, sanded, and finished to match the rest of the frame.

Breaks in the frame can be glued with a cyanoacrylate glue, also known as Superglue. Coat both sides with glue because of the porosity of the material, and then press or clamp together. This glue is fast acting and permanent. It works by fusing the two parts (chemically melting them together). White glue or silicone will not work with polyurethane. You should take the precaution of having a tube of glue deactivator or a recommended solvent for the glue you use, in case of an accident.

Touch-Ups

Painting and touch-ups are fairly simple tasks. Note that some polyurethanes are likely to dissolve in the solvents used in some paints. The most common of these found in the frame shop is lacquer. To avoid the disaster of a disappearing frame, first apply a sample spot of paint on the back side to test its possible reaction.

Touch-up wax and other related gilding creams work fine on the frame surface. Toning waxes and glazes do equally well, but you still need to avoid solvent products. And remember to test!

Polyurethane Parts for Antique Frame Restoration

It is doubtful you would need to cast a part to repair a polyurethane frame, but it is quite possible that a customer will ask you to repair an antique frame by replacing a missing part. Most framers do not delve too deeply into restoration because of time, cost, or space restrictions. However, if you *do* want to explore the casting process, you will need: 1) a well-ventilated area; 2) mixing and measuring equipment dedicated to restoration materials only; 3) plenty of time devoted to the task; and 4) all materials readily at hand.

Unlike the lightweight cast polyurethane frame, the repair part to an antique frame needs to have the same density as a hard compo. The polyurethane that I use is Fast Cast 891 because of its ease of use and fast curing time. Like most reactive curing plastics, this polyurethane



Photo 3: Shown here (bottom to top) is the frame, the rubber mold used to cast, and the resulting cast of the replacement piece.



Photo 4: Here, we can see a close-up of a polyurethane casting.

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generates heat in the curing process which can destroy molds by melting them.

For that reason, silicone molds are the best choice, especially if several castings are to be made. To fill the mold, mix the two chemical parts of the polyurethane and pour into the mold. Within 10 minutes, the cast part is ready for trimming and placement. Glue the replacement on the frame with epoxy or Superglue. Finish with your own techniques to complete a strong and lasting repair. Colorings and additives can also be added to the liquid polyurethane to customize the casting for specific uses.

Note:

Raw polyurethane products are not consumer items and, therefore, not available in stores. If you'd like to utilize the polyurethane casting process, small quantities and helpful tips are available from the following supplier, which produces R1-Fast Cast.

Goldenwest Mfg., Inc., P.O. Box 1148, Cedar Ridge, California 95924-1148, (530) 272-1133, e-mail: goldenws@oro.net

If you decide to use this product, first read and then adhere to all warnings for safe use. ■