Clear Bar and Table Top Finish and How To Do It

by B. Chambers

We've all seen table tops and bar tops in restaurants and bars that are coated with a thick clear finish. Sometimes the finish encapsulates things like photos, dollar bills, and coins. It looks very similar to the old decoupage craft from the early '70s though generally much thicker.

I was recently in a local restaurant, and with this article in mind I noticed that the table tops had been painted with an attractive design and then over coated with a thick clear coating. The finish was still shiny and new looking, despite many previous customers. Done well it's a beautiful long lasting finish that opens up a realm of creative possibilities.

These finishes are tough and can withstand the rigors of a busy commercial environment where food and drinks are spilled, plates and drink glasses are slid across the surface, and many other types of abuse which occur on a daily basis.

But have you ever wondered what this finish is and how it's applied? A club member recently did, and when he asked me the question I had no idea how to answer it, though I knew what he was referring to. It was something I had wondered about myself so I did a little digging to see if I could figure it out.

What is it?

First of all this is not a finish in the traditional woodworking sense and is only suited for table or bar tops. It's actually a coating, and it's not brushed, sprayed, or wiped on. It's a two-part clear epoxy resin that is mixed just prior to application and **poured** directly on the work surface. The typical thickness is around 1/8", but other thicknesses are attainable depending upon your requirements.

Some disclaimers, info, and general product differences

I won't make a product recommendation for a couple of reasons. First of all I've never tried to apply this type of coating, and, secondly, each product has different characteristics that may or may not fit your needs or application capability. Before selecting a specific product I encourage you to visit the product's website and read all the available information.

It appears that there is variability in the viscosity (ability to flow) of these products with some being inherently thicker than others in the liquid state. This will affect the methodology of application, which I will explain later.

This type of coating is not recommended for outdoor use or for use in direct sunlight. Sunlight will discolor the resin over time.

How to apply - Step by Step

What I'll do here is attempt to describe a typical application sequence, but understand that each product is slightly different and may require some variation in this methodology. Again, read the information available on the product website before you choose one. These coatings do have some common traits which I'll explain as we go through the process.

1. Work piece preparation

Before you can coat your project let's discuss the steps leading up to the final pour. This is where viscosity of your chosen product comes into play. Understand that each product is self-leveling, but when this occurs is dependent upon the ability of your chosen resin to flow. Some will self-level at 1/16", others require a minimum of 1/8" to level out. While you might think that you should choose one with a lower viscosity there are some drawbacks to this approach.

If your project does not require that the edges of the work piece be coated then your task will be fairly simple. Just add a molding around the edge of the piece that stands proud of the surface by the amount of thickness that you require. Note that if your product levels at a thickness of 1/8" then it will be difficult to get it level at any thickness less than that.

Because self-leveling is a characteristic of all these coatings your work piece must be absolutely level, otherwise you will have inconsistencies in the thickness of your coating. You will need to have a supply of shims available to make sure that the surface is level in both the X and Y directions.

If you don't want to use a molding around the piece and choose instead to coat the exposed edges then things get more complicated. To accomplish this with a thinner (lower viscosity) resin you must first construct a cradle, or dam, around your table top. This is essentially a frame that stands proud of your piece by the desired thickness and also provides a gap between the frame and the work piece that equals your desired coating thickness. When you make your pour the frame will control not only the thickness on the table surface but also the thickness on each edge.

To prevent the epoxy from sticking to the frame after it's cured you must coat it with Vaseline or some other grease that the epoxy will not adhere to.

Also, since the epoxy mixture is a liquid it will leak out of any cracks in your frame. Consider using caulk to seal any openings where this may occur.

After the coating has cured you can remove the frame and using a fine toothed file round over the edges of the coating and polish with successively finer grades of sandpaper.

There is at least one manufacturer that advertises self-leveling at a thickness of 1/8", and supposedly the product can be poured directly over the edge, coating it without the use of complicated dams. This product is Ultra Clear Epoxy, and their website has some amazing photos of projects done with their product. This is not an endorsement of this particular product. I'm only pointing out that there may be some alternatives that don't require dams to achieve an acceptable result. I strongly recommend that you try this on a test piece to be sure that the edge coating works to your satisfaction before committing your work piece.

As with any finish you need to round off any corners and edges on your work piece because sharp edges will not take any finish well.

Take a look at this picture of a rough edge that was obviously flow coated with no shoring up to coat these edges:

2. Mixing the epoxy - a critical step

Epoxy resins all require mixing of the resin and the catalyst (hardening agent) right before they are applied. Mixing is the single most critical step in the entire process. Measure wrong or mix poorly and your coating will never harden properly. It will remain sticky and you will be left with only two options: either scrap the work piece or attempt a repair of the area that has not cured. Neither is a good situation to find yourself in.

So read the instructions carefully before you mix. All of the resins I encountered require equal volumetric amounts of resin and hardener, and they are shipped in separate containers. How long you have to mix may vary from one manufacturer to another, so again, read the instructions carefully.

You should first calculate the amount you will need for the entire project, including an additional amount for edges and waste. It's better to overestimate and have a little left over than to run short when you begin your pour.

Here are a few tips to make sure you get a proper mix:

a) Have on hand two disposable buckets that can each contain the full amount of material necessary for your pour.

b) In separate containers measure out the resin and hardener, making absolutely sure that you have the correct amount of each.

c) Alternately pour a little of each into the first bucket until all of the resin and hardener is in.

d) Stir vigorously with a flat paddle for several minutes. Mixing will cause the resin to heat up signaling a stop point, but you might want to mix a little longer after you feel the bucket heating up. Once again, check the instructions on how long to mix!

e) Now that the epoxy is completely mixed pour all of the contents into the second bucket. Do **NOT** scrape the sides of the first bucket. Just pour from one bucket to the other. The leftovers stuck to the sides of the first bucket may contain unmixed portions of your coating.

3. Making the pour

So now we're ready for the final step - pouring the coating. Regardless of whether you choose to use a dam, molding, or a straight flow coat over the top and edges some general rules apply.

To make the pour start in the middle and pour a spiral starting from the middle of the work piece all the way out to the edges. Go back and fill in any gaps in your pour. Make sure that the material is flowing out smoothly and that self-leveling has begun. If not then pour more onto the work piece.

Fill or flow coat the edges (depending upon whether you're using a dam or not).

Make sure the pour is leveling out like it should. If not then shim a little as needed to make sure that the thickness of the pour is equal across the work surface.

4. Pop the bubbles

Now you need to watch for bubbles to form, and they will. Lots of them. What you need to combat this problem is a propane torch. Light your torch and begin passing it across the work surface at distance, warming the surface of the pour. Keep moving so that you don't overheat the epoxy.

Some people seem to think that the CO2 generated by the torch pops the bubbles, others think it's the heat. It doesn't matter; just continue to pass the torch quickly across the surface, popping bubbles until it's no longer necessary. A heat gun may also prove useful to heat and thin the epoxy, thus making it easier for the bubbles to pop. You could be popping bubbles for quite a while. It might help to have a friend with a second torch to assist, particularly on a large surface. Also make sure you have an extra propane bottle handy.

Once the bubbles stop forming your job is done. Let the coating cure for at least a day and enjoy your new table or bar top!

5. Seal coat and additional coats

If your work piece is porous (like wood or masonry) you might benefit from applying a seal coat before the main pour to fill small cracks or pores in your table top. To apply a seal coat mix a small amount of epoxy and brush a thin coat over the entire surface. Watch for bubbles and use the torch, moving very quickly across the surface to pop them. Wait about four hours then make your main pour.

If you want a thicker coating you may apply a second pour over the first. You will have a window of opportunity, usually 4-6 hours, during which time you can pour another layer directly over the previous one without sanding. If you miss this window then the most recent layer must be allowed to cure fully and then sanded lightly using 220 or 320 grit sandpaper. Remove sanding dust and clean with either denatured alcohol or acetone. Do not use mineral spirits.

Price

This type of coating is not cheap. You may spend as much as $80 per gallon (mixed) which is enough to coat a 4'x4' table top about 1/8" thick. My calculations show you'll need a little more, and if you add in the edges and waste then it will raise that amount even further. The product manufacturers typically provide charts to help you with these calculations.

Here are a few websites that sell this kind of product. There are others, so don't interpret this as any kind of preference on my part. These are just some that popped up on a simple Google search.

http://www.bestbartopepoxy.com/

http://www.uscomposites.com/kk121.html

http://liquidglasscoating.com/bar-top-epoxy-resin-liquid-glass-coating/

* Photos are from the Ultra Clear Epoxy website