

Tips on Pouring an Epoxy Tabletop or Bartop

Coverage

1 gallon of anything applied 1/4 inch thick will only cover slightly less than 6.5 square feet.

1 gallon of anything applied 1 inch thick will only cover 1.6 square feet.

At 1/2 inch thick that gallon of epoxy will only cover about 3.2 square feet.

There are 231 cubic inches in a gallon. One square foot is equal to 144 square inches.

The Epoxies

Epoxies are really just a hard plastic. Mix parts A and B together and a chemical reaction occurs between the two parts. The reaction generates heat and the epoxy gets hard. Many epoxies generate A LOT OF HEAT. So much that the mixture might froth up, melt the container it is in, smoke, and most certainly produce an uneven or cracked surface. With standard epoxies, the more volume of epoxy there is the more heat is generated. With such epoxies you generally need to pour multiple thin layers so that less heat and distortion occurs. Our Bio Clear 810 produces less heat than most epoxies but “heat” can still be an issue in large pours. Several shallow pours are always safer and easier to “fix” if something goes wrong. As soon as the first pour is hard, usually in a few hours, the next layer can be poured.

Most people would like a thick clear epoxy on top of their table or bar top. However, the thicker the epoxy layer the more chance that there will be entrapped tiny air bubbles. Mixing and pouring the epoxy introduces lots of bubbles to the mixture. Fortunately most will rise to the surface and pop before the epoxy gets hard and traps them. Heating the air ABOVE the epoxy with a torch or heat gun after the any bubbles have risen to the surface will pop them.

Epoxies may feel hard and 'cured' within a few hours, but they take a week or more to cure completely. If you make the mistake of putting some paper or a heavy or sharp object on an epoxy surface that is less than several days old, the paper will glue itself to the epoxy and the objects will 'dent' the epoxy.

Epoxies do not do well in direct sunlight (direct UV exposure). They will turn cloudy and yellow, lose their shine and perhaps even chalk. All epoxies, especially white and clear epoxies do this. Most do it rather quickly, within a few days of constant exposure. Some, like our Bio Clear 810 do it very slowly (weeks instead of days). There are three ways to fix this: 1) keep the table out of direct sun, 2) varnish seems to prevent yellowing if applied over the epoxy, but it is a yellow coating to start with, 3) one or two coats of clear 2-part Acrylic Poly UV Plus or other clear products with UV blockers will greatly slow or stop UV yellowing of the epoxy.

Like most plastics, epoxies will soften with heat. Generally if you place something that is hotter than about 125 degrees F (such as a hot coffee cup) it might soften the epoxy to the point of leaving a dent, ring or depression in the epoxy that will not go away. Keep hot things away from your epoxy surface.

Most epoxies blush - that means they form a visible or invisible waxy finish on their surface as they cure (harden) if there is excess moisture/water in the air. If that occurs carefully wash the epoxy surface with soap and water before adding another layer of epoxy or some other product.

The Technique

It is necessary to have an edging around the table or bar to hold the epoxy in. It needs to be leak proof so that the epoxy will not drain out. You can test by pouring water around the edge to see if there is any seepage. If the edging is temporary and will be taken off once the epoxy has cured, you will need to apply a release agent to the inside of the edging. As epoxies do not stick to oily or greasy surfaces you can apply Vaseline, wax, or anything greasy. Once the epoxy has cured, you can pop the edging off. You will then have a sharp epoxy edge which you can sand down to the roundness you desire. Finish with a fine grit and apply a clear coat of just about any kind (even nail polish) to hide any scratches. Do not use Bio-Clear 810 for this as it will fish-eye if applied in such a thin layer.

You can encase shells, pictures, etc. in the epoxy. We have heard of the inks/colors running on cheap Mardi Gras decorations and very old photographs. If you are in doubt about colors running, then laminate the object first. Note, some objects might release air bubbles when flooded with epoxy. For instance, bottles caps and sea shells should be filled so that the air inside does not escape into the epoxy. These objects should be glued into place before pouring the epoxy so that they do not move around by the epoxy flooding in. Likewise if the surface is bare wood, some woods are very porous and emit air bubbles into the epoxy. In this case, you either roll a thin coating of epoxy or a pour a thin coat of Bio-Clear 810 down first. Let that layer set up before doing the main pour.

Mixing

Even a slightly less than perfect mixing can ruin a table pour and Murphy's Law seems to always apply. First make sure parts A and B are clear (part A and/or B may have a slight yellow or amber tint, this will not be visible in your pour). Get everything at the same temperature - epoxy and all surfaces and keep it that way for a day or so after the pour. Ideally the epoxy and the surface to be coated should be at a constant 68 degrees or warmer for 24 hours before and after the pour. Avoid applying near windows etc. where sunlight will change the temperature. Temperature changes (warmer temps) may cause bubbles to form. Changes in temperature or humidity within 12 hours before or after the pour is not good. Avoid pouring in temperatures over 85°F.

Next, mix a bit of A and B (2:1 mix ratio) and test on your surface. This is to give you experience with the product, test compatibility with your surface, bubbles coming out of the surface, etc. No one wants surprises with the main pour! Make sure your edges/corners don't leak! (you can seal with a bit of this test bit of epoxy - then re-test for leaks!).

Now, thoroughly mix up batches no larger than 1.5 gallons at a time (3 gallons for larger projects or "experienced" users). Larger batches can be harder to mix well, are more likely to spill, etc. Mix in a separate, large, third container. Pouring into and out of this third container aids mixing. Using a large container will mean you can mix vigorously without concern of it spilling out over the top. Not mixing well vertically (mixing the top and bottom layers) is a disappointment waiting to happen! If you use an electric drill with a mixer attachment, use the lowest speed in order to keep bubble formation low.

Don't try to get the last few drops of epoxy out of your mixing container. The liquid sticking to the sides and corners/edges of the container never get completely mixed. Pour your mixture out of the mixing container but don't keep it draining out for more than 10 seconds or so. Poorly mixed epoxy will always stay tacky or wet, either in certain areas or all over. The "fix" is a fresh layer of more epoxy.

If you are doing multiple pours, wait until the bottom layer is hard to touch before pouring the next layer. Finally, the epoxy will feel dry and firm overnight but will continue hardening for a week or so. Don't place papers or objects on the epoxy for at least several days or they will stick or leave a dent.

Top-Coating & Protecting the Epoxy

Recommendation: If the table will receive direct sunlight, consider topcoating the epoxy (with one or two coats of the Acrylic Poly UV plus (one gallon kits only) - which contains a maximum amount of UV blockers as well as the toughness and gloss of a 2 part polyurethane. For less toughness, try a coat of our Solar Gard acrylic UV blocker (quart kits only).

Note that 2 part urethanes can be tricky/difficult to brush apply. They set up quickly on applied surfaces and can leave brush marks, even when special 'reducers' are used. If using a brush, have our 'slow' SU 93 reducer on hand, use a quality brush, and test your application first, in case you're not happy with the brushed on result (such as on boat hulls, poured on epoxy table tops, etc.). Experts typically spray apply 2 part polyurethanes for best results..

Temperature

Temperature will exert a considerable influence on the rate of curing of chemically cured coatings such as Bio-Clear 810 epoxy. In broad terms expect each 10°C, (18°F), rise or fall in temperature to half or double dry times and pot lives.

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