

# **EPOXY WARNING!**

It is extremely Important that you read ALL of the instructions. Our epoxy is uniquely formulated and is not the same as other epoxy you might have used in the past.

## **PREPARATION**

These instructions are intended only to provide you with the necessary information for mixing and pouring the epoxy. They do not take into consideration all of the unique variables that pertain to your specific project as there are thousands of surface materials that people can possibly use. **We highly recommend** that you do a small scale test of your project first to ensure that the final application turns out well.

1. It is extremely critical that the product be used in room conditions above **75° F**. When the room temperature is below **75° F**, the heat from the curing epoxy is trapped inside resulting in a completely cloudy surface. Use space heaters if necessary to sustain the temperature during the product curing stage (72 hours). \*Please note that this is not a recommendation, it is a **requirement** and there is no room for variance. Some thermostats may not be 100% accurate so it is best to set the temperature to a few degrees warmer to ensure the **75° F** is met. Please do not call to ask us if the epoxy will work at a temperature lower than **75° F**, **It will NOT**.
2. All surfaces should first be wiped down with a dry cloth to remove any dust before you begin.
3. Make sure to put 2mil painters plastic down around all the area(s) you are working in so that the epoxy does not get on the floor as it is very hard to remove once it hardens. Cardboard is NOT sufficient as the epoxy can soak through and under cracks.
4. If you are coating a commercial bar top, make sure that the beer taps and the refrigerator are turned off several hours before pouring the epoxy. The cold surface will cause the epoxy not to cure.
5. Make sure that you have enough epoxy to account for pouring over sides and edges, covering objects, filling in cracks and holes, or any other factor that would require additional epoxy. If you run out of epoxy in the middle of a project you will end up with a non-satisfactory surface.
6. Always use a new container for each seal coat or flood coat that you mix. Otherwise, you will contaminate the next batch with curing epoxy which will result in a sticky or tacky surface. You can purchase containers on our website or at most home improvement centers.

IMPORTANT NOTICE: All statements, technical information and recommendations herein are based on tests UltraClear Epoxy believes to be reliable. UltraClear Epoxy does not warrant or guarantee the accuracy or completeness of this information. User is responsible for determining whether this product is fit for a particular purpose and suitable for user's method of application. Because there are many factors that can affect the use and performance of this product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate this product to determine whether it is fit for a particular purpose, is suitable for the user's method of application, and meets the user's performance specifications and expectations. ULTRACLEAR EPOXY SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGES, WHETHER DIRECT, INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL (INCLUDING BUT NOT LIMITED TO LOST PROFITS, BUSINESS, OR REVENUES) ARISING OUT OF THE USE OF OR INABILITY TO USE THIS PRODUCT.

## **SEAL COAT**

The epoxy should be applied in two stages. The seal coat stage is a small batch of epoxy that is brushed on in a thin layer to seal any pores in the surface and prevent air bubbles from forming in the following flood coat. It cannot be used as a stand-alone coat as it will not be smooth enough or thick enough for a durable surface. The seal coat is only meant as a primer before applying the flood coat. Our epoxy is used for both your seal coat and your flood coat. You do not need a different product. Both seal and flood coats are always a 50/50 mixture. The seal coat is followed by the flood coat, which will flow and self-level to 1/8".

If you are pouring the epoxy over copper, stainless steel, laminate, or formica, you can skip the Seal Coat step below and move on to Step 1. For copper only, it is necessary to apply a coat of lacquer first as a sealer before applying the epoxy (normal lacquer, no water based products). Each brand differs so make sure to test it first on a small scale to make sure the epoxy does not have a reaction.

If you are pouring the epoxy over wood, concrete, cork, granite, tile, or any embedded objects (bottle caps, pennies....), you **MUST** follow the seal coat instructions below and then proceed to step 1. Failure to apply a seal coat will result in continuous bubbles coming up into the flood coat that will eventually cure in your surface. Even if you have several coats of oil based polyurethane on your surface, it is still necessary to apply a seal coat of epoxy.

\*For embedded objects, please read our Advanced Techniques section first at the end of these instructions before preceding to the seal coat stage.

\*\*For extremely porous wood such as old barn wood, knotty wood, wood with cracks and holes, please read our Advanced Techniques section first at the end of these instructions before preceding to the seal coat stage.

### **SEAL COAT STAGE**

It is important that any prior stains or finishes be completely dry before beginning. Any types of oils, greases or uncured finishes can potentially cause fisheyes or product curing problems. If your surface has an oil based stain or oil based paint, you must apply 2-3 coats of oil based polyurethane before doing the seal coat. The epoxy seal coat will not stick to an oil based stain or oil based paint. The polyurethane will cover that and allow the epoxy to stick. This does not take the place of the epoxy seal coat as that is still necessary. For the seal coat, mix up a small batch of epoxy (16 oz. of Hardener + 16 oz. of Resin). Mix for 2-3 minutes by hand ensuring that the epoxy is **WELL MIXED** before painting it on your surface. No specific type of paint brush is required. Just select a brush that will not shed bristles into the epoxy like the cheap ones often do. You will paint the epoxy on your surface just as you paint on a wall. The epoxy cures rather quickly in the container so it is necessary to paint the seal coat on quickly or mix up a smaller amount (8 oz. of Hardener + 8 oz. of Resin) so that it does not cure in the container while you are still working on it. When you run out of mixture in the container, just mix up another batch in a new container and keep going until the entire area is sealed. The seal coat does not need to be smooth as the flood coat will fill in the brush strokes and irregularities making it crystal clear. Once the entire surface is sealed, wait 4-6 hours to pour the flood coat. Do not exceed 10 hours or you run the risk of the flood coat not blending into the seal coat flawlessly. It is not necessary to use a heat gun or a plumber's torch on the seal coat, that is only used for the flood coat.

# FLOOD COAT

- 1) Flood coats are applied in 1/8" layers at a time and as many as desired can be applied. However, one coat is average for tables, countertops, and bar tops. You cannot pour a thinner coat as the epoxy automatically self-levels at 1/8" and therefore you cannot control the depth of the pour. If you are doing multiple coats, make sure to wait 4-6 hours between each coat. The epoxy will still be sticky so the next pour will stick to it. If you wait more than 10 hours, you must scuff up the surface lightly with 220-300 grit sandpaper then wipe it clean with denatured alcohol or acetone before applying another coat. Just a minor scuffing of the surface is all that you need to do so the next flood coat has some grip to stick to it.
- 2) Make sure you turn the heat up above 75 degrees several hours prior to mixing the epoxy. Use space heaters if necessary. It is extremely important that the temperature remain above 75 degrees for a full 72 hours in order for the epoxy to cure (Below 75 degrees and the product WILL FAIL). This is absolutely critical and we cannot stress it enough. Please do not call us to ask if you can keep it at 75 degrees for less than 72 hours. The answer is NO.
- 3) The container(s) of **RESIN must be warmed up in a sink with warm/hot water** for 10-15 minutes prior to mixing. This will allow the epoxy to blend more easily during mixing, but it will also reduce the amount of time the product can stay in the container. You will need to pour it on your surface immediately after mixing. **NEVER** put the hardener in warm/hot water, only the Resin, otherwise the epoxy will get extremely hot and start curing in the container almost instantly and your batch will be ruined.
- 4) A flood coat consists of mixing 1/2 gal. Hardener + 1/2 gal Resin in a container. Smaller amounts can be used in a 50/50 mixture but never more than 1/2 gallon of each. **Never** mix up several batches at one time as the epoxy will cure quickly in the container as there is no room for the heat to escape the bucket. Mix one batch and pour it, then mix up your next batch and pour it. You have 20 minutes to get your next batch poured up against the previous batch so there is no need to rush the batches as the clock resets with each new batch that you pour. For large bar tops, several people can help. One person can mix a batch while the other pours. Repeat the process until the entire area is covered. To start, pour in the HARDENER first, up to the 2-quart line on the container. Next, pour in the RESIN from the 2-quart line up to the 4-quart line. Never mix up more than 1/2-gallon hardener and 1/2 gallon of resin at a time as it will not blend properly and you will end up with sticky or gooey epoxy that will never cure.
- 5) A mixing drill bit is highly recommended for mixing the epoxy as it will blend the material much better than stirring by hand. The mixing drill bit can be purchased on our website under Tools & Supplies, or you can find them at most Home Depot Centers (Workforce 1-Gallon Helix Paint Mixer Model# HM1HD Store SKU # 811981). This is the **ONLY** drill bit style that will work. Do not attempt to use another style as the epoxy will not get blended enough. The blending stage is extremely important as under-mixed epoxy will not cure correctly and will result in a surface that is tacky or in a "jello-like" state.

While timing yourself with a clock or stopwatch, blend the mixture for 2 minutes with the Drill Bit at medium speed (too slow and the epoxy will not get blended well). Make sure to move the drill all around and up and down in the container to ensure the epoxy mixture is blending properly. This is one of the most important steps. You have to mix the epoxy very well otherwise you end up with areas on your surface that are hard and cured mixed with areas that are tacky and sticky. **DO NOT** lift the drill bit completely out of the epoxy while blending as you will draw air into the epoxy creating tons of bubbles. After 2 minutes of mixing, use a stir stick to scrape the sides and bottom of the container to ensure they get mixed. Also, the top layer of epoxy sitting on the surface of the container needs to be blended into the rest of the mixture with the stir stick. You will need to push the epoxy down from the surface into the middle of the container so that it is mixed well. This is very important. One minute of mixing with the stick is sufficient. Next continue to mix the epoxy with the drill bit for an additional 3 minutes. Do not mix any longer than 3 minutes as you will over mix the epoxy. Make sure to pour the epoxy immediately after mixing, as the epoxy will cure quickly in a small container and could start to smoke. The drill bit can be reused without cleaning it over and over again. \*If you are mixing a smaller amount of epoxy such as 1 quart resin and 1 quart hardener, you will need to mix that by hand for 4 minutes to avoid over mixing from the drill bit as that is only intended for a full gallon size batch.

- 6) The epoxy self-levels approximately 1/8" thick. If depths thicker than 1/8" are desired, multiple coats are necessary. You must, however, wait at least 4 hours between flood coats but not longer than 10 hours. The best way to apply the epoxy is to start at one end of your surface and pour it slowly from left to right and right to left

working your way down the length of the surface. The key to a good pour is to have control over the container and pour it SLOWLY back and forth. You can fill in any areas that you missed by simply pouring more epoxy in that area. The epoxy will flow to a self-leveled 1/8". Never scrape the sides or bottom of the mixing container when pouring epoxy. If any unmixed material remains on the side of the container and falls onto your surface while pouring it will leave an uncured wet or sticky spot. It is natural to want to use up every last drop you have mixed. However when you pour onto the surface, you should just dump it out and set the container down. If you use a stick or a brush to try and remove every drop you will very likely end up with sticky spots.

**Bar rails:** It is recommended that you attach the bar rail to the surface first before pouring the epoxy. This way the epoxy will seal itself up against the bar rail and keep spilled drinks from dripping through the cracks between the rail and the surface. It is best to put a bead of Elmer's Glue or Acrylic Latex Caulk around the bar rail and corners to prevent air bubbles from forming during the epoxy flood coat. Never use silicone or any product containing silicone to seal the bar rail as the epoxy will not stick to silicone products. We suggest coating the bar rail with polyurethane instead of epoxy. Some find this easier than pouring epoxy on the bar rail as the epoxy is thick and can be a challenge to get a smooth and even coat on a curved bar rail.

**Edges:** The epoxy coat can be allowed to run over the sides which will create a coating on the vertical edges. You will not end up with icicles of epoxy on the edges as the drips will form 1/2" underneath the bar-rail or edge instead if poured correctly. These drips can be sanded off once the epoxy has cured. Make sure you have accounted for the excess epoxy that will run over the sides as you do not want to run out of product in the middle of your application. Pour SLOWLY! Deeper sides and edges (from 4"-6") can be a bit challenging to achieve a smooth coat from a surface pour dripping over. In that instance, you can allow the epoxy to cure and then sand the sides smooth with 200-300 grit sand paper. Wipe clean with acetone on a clean cloth and then apply a coat of epoxy with a paint brush. You will want to use the heat gun or plumber's torch to remove any brush strokes. Another method is to dam the edge. Please refer to the Advanced Techniques section of these instructions.

7) After you pour the epoxy on the surface, you will need to pop air bubbles using a Propane Plumber's Torch or a Heat Gun (torch works better). Both are sold at Home Depot or Lowe's for around \$20. Do not use a hair dryer as it blows too much air and does not get hot enough to work correctly. Keep the torch or heat gun a few inches from the surface and move along the area to pop the bubbles. Do not stay in one spot too long or you will burn the epoxy. This process should only take one or two minutes at most as you are simply sweeping back and forth until you cover the entire area. After you have popped all the air bubbles on the entire surface, wait about 5-10 minutes, then go back to the beginning again and look for any bubbles that may have since appeared and pop them as well. It is easier to see air bubbles if your head is eye level to the bar. Do not use the torch or heat gun on the epoxy after 20 minutes have passed since the pour. You could end up burning the epoxy as it has started to cure. It may also cause waves or ripples that will not go away. Wait 72 hours before using the surface.

#### **\*Important Handling & Care Information\***

For the longest life, this product must have coasters and placemats used at all times when putting extremely hot items on it. The first couple months are the most critical as the epoxy is about 99.5% cured but has not developed its FULL scratch and heat resistance. It cannot be treated like granite or tile in regards to heat. The peak resistance after 100% curing in a couple of months is about 135 degrees. Until epoxy is 100% cured, we highly recommend using coasters and placemats at all times or else hot plates or cups might leave a slight imprint on the surface. Never put a hot pan or skillet from the stove or oven directly onto the epoxy! Caution when using products containing red dye or other colored dyes as they can stain the epoxy.

#### **Cleanup**

Drill bit and stir sticks can be used over and over again without cleaning between uses. You can clean any wet epoxy off of your hands with simple orange. To clean up spills on floors or other areas, you can use acetone but you need to be very careful as it can damage the surface underneath.

#### **Maintenance**

To protect the epoxy finish, DO NOT use abrasive cleaners or abrasive sponges as they will ruin your surface. Clean with warm soapy water and a soft cloth or soft sponge. A little Windex can be used if you prefer. The epoxy cannot be polished or buffed as it is plastic and it will only scratch and become cloudy. You can, however, pour a new coat over the surface after years of wear and tear and it will look brand new again.

## **ADVANCED TECHNIQUES**

**Embedding solid objects:** Wood, rocks, shells, bottle caps, coins, etc. may be embedded with this product also. All porous objects must be sealed first with a good coat of epoxy. If the objects are not properly sealed, they will release tiny air bubbles which will form around the object during the flood coat. Placement of these objects may be done before you apply the first seal coat or they can be placed into a seal coat using it as glue to hold them down. Make sure that your seal coat completely surrounds the embedded objects so that when it hardens they are secured to your surface and do not float up into the flood coat. You will want to wait 24 hours before pouring the flood coat if you are using the seal coat as a glue. This will allow the seal coat enough time to harden. If you are not placing objects in the seal coat, then they must be glued down or they can float up into the flood coat. Most regular glues will work fine except for hot glue sticks. In that instance you will pour the flood coat 4 hours after the seal.

### **Barn wood, knotty wood, rough wood, planks, and wood with holes:**

If you are coating extremely porous wood, we recommend that you apply two Seal Coats to reduce the chances of having bubbles coming up into the flood coat as this type of wood is very challenging to seal with only one seal coat. The best method for sealing this type of wood uses a plastic squeegee or a plastic putty knife. You will mix up the seal coat as per the instructions on page 2 of these instructions. However, instead of painting on the seal coat, you will pour a little bit onto your surface and spackle a thin coat across. Keep repeating until you have covered the entire surface with epoxy. It is not necessary to use the heat gun or the plumber's torch on the seal coat. Once you have applied the first seal coat, wait 4-6 hours and then apply another seal coat in the same fashion ensuring that it is only a thin coat. Wait 4 hours and pour the flood coat. Make sure to follow the instructions on page 3 for the flood coat.

**Cracks:** If you have wood with large cracks in them, it is best to fill these cracks up first with epoxy doing small batches (4oz. + 4oz.) every few hours until you have filled them up level with the surface. Once they are level, then you can move on to the seal coat stage where you will do two seal coats as mentioned in the above paragraph.

### **Embedding pictures, photos, paper objects, stickers, patches, and newspapers:**

These items must be coated first with Mod Podge so that the epoxy does not eat through them. Mod Podge is a clear coating that crafters use to seal over these types of items. You can purchase Mod Podge at most craft stores, Walmart, or [amazon.com](https://www.amazon.com). After you have sealed the items with Mod Podge, you will move on to the Seal Coat stage of epoxy.

### **Re-Coating:**

When re-coating within a 4 to 10-hour window no surface preparation is needed. The layers will bond together as one. Past 10 hours, you will need to lightly scuff the surface with 220 or 320 grit sandpaper. After scuffing, you should wipe off the surface using a clean rag with denatured alcohol or acetone. Do NOT use paint thinner, aka mineral spirits. The wipe down process with the solvent should be done with a clean rag that will not leave any lint on the surface. Continue cleaning until all sanding dust has been completely removed. You are now ready to re-coat. Don't worry about the sanding scratches. The next pour will fill in the scratches and it will look like crystal clear glass again.

### **Color Pigments:**

We recommend mixing the pigment into the hardener after it has been poured into your mixing container, this allows for the pigment to get well mixed without the risk of the epoxy setting up during the mixing process. You will want to start with small amounts of pigment and mix it into the hardener then add more according to what you are wanting. You can always add more if it is not enough. Once the pigment is mixed into the hardener you can then add in your resin and follow the mixing instruction included above in the Flood Coat section on page 3.

### **Damming the edges:**

We generally recommend allowing the epoxy to run over the edges of your surface as it will self-level at approximately 1/8" at a time. If your application calls for a temporary dam to be constructed it must be done with great care to ensure it can be removed after the epoxy is cured. You can use 2x4 or any sturdy straight pieces of wood covered in Tyvek Tape. Make sure the wood is covered completely so that no areas are exposed for the epoxy to touch, otherwise, it will not remove flawlessly. If you do not have a straight factory edge on your surface, you will want to apply silicone to the wood before pressing it onto the edge so that so that the epoxy will not leak through the dam. Be sure not to get any silicone on your work surface as this may cause the epoxy to have a hard time adhering to the surface. Testing on a small mock up should be done to ensure no leakage or problems will occur with your damming technique.

# **EPOXY TROUBLESHOOTING**

**\*Please visit our FAQ page on our website for the latest troubleshooting help.**

## **Entire Surface Is Soft, Wet or Sticky after 48 hours:**

- 1) Product was under-mixed. Unfortunately, as much as we stress this as the most important part of the project, it can still occur and is the most common cause of this problem. If you do not mix long enough or do not scrape the sides and bottom of the container while mixing you will find under-cured epoxy. The Resin component tends to sit on top of the mixture in the bucket. If it is not rigorously pushed down into the mixture with the stir stick during blending, you can end up with areas that are hard/dry with other areas that are sticky or tacky that will not harden.
- 2) Product was inaccurately measured. You must follow the strict 1 to 1 ratio by volume. Do not guess or eyeball these measurements. Just dumping the product from their original containers is not a proper measurement. The product **MUST** be measured with fairly precise accuracy using a graduated tub.

## **Solutions:**

- 1) If the surface is hard but only slightly tacky, a new flood coat can be applied over the entire surface and the new product will dry hard and crystal clear assuming the mixing procedures have been properly followed. No sanding is necessary.
- 2) If the surface is wet and soft or gooey like jello, then as much of the material as possible must be removed with a paint scraper or knife. Use denatured alcohol or acetone when necessary to help remove the wet epoxy. Remix and apply a new flood coat. The new coat will cover up almost all effects of the previous error. Be certain to follow the proper mixing procedures.

## **Small Sticky or Soft Spots:**

The most common cause of this is scraping or brushing from the side or bottom of the mixing container while pouring. It is natural to want to use up every last drop you have mixed. However when you pour onto the surface, you should just dump it out and set the container down. If you use a stick or a brush to try and remove every drop you will very likely end up with sticky spots. You may also end up with sticky areas due to the mixture not being completely blended. The Resin component tends to sit on top of the mixture in the bucket. If it is not rigorously pushed down into the mixture with the stir stick during blending, you can end up with areas that are hard/dry with other areas that are sticky or tacky that will not harden.

## **Solutions:**

- 1) If the sticky spots are hard but only have a slight tackiness on the surface, you can mix up a very small batch of epoxy and paint over those areas with an artist paint brush. Make sure to dip the brush into the center of the container to ensure that you paint on blended epoxy instead of touching it to the sides of the container as you might end up with non mixed material. You may also re-pour over the entire surface and the new product will dry hard assuming correct pour procedures have been followed.
- 2) If these spots are soft and wet, you will need to scrape or cut out as much of the soft material as possible using a paint scraper or knife. Use denatured alcohol or acetone when necessary to help remove the wet epoxy. If you are left with deep depressions. As a result, your first re-coat should be used just to fill in the areas in which you scraped. After this pour has set for at least 4 hours, a full re-coat can be completed. This will hide the imperfections and leave you with a hard glass-like surface.

## **Air Bubbles:**

There are many types and causes of excessive air bubbles. We have listed a few below.

### **Air bubbles across the entire surface.**

- 1) No bubble removal technique was used as shown in our instructions (heat gun or plumber's torch).
- 2) Improperly applied or no seal coat was used.
- 3) Wood surface below was extremely porous and the seal coat was not thick enough to cover. (Very common in aged wood).
- 4) Product was whipped or stirred excessively putting so many bubbles in the mix that they could not be removed with the flame/heat technique.

### **Air bubbles in just one spot.**

- 1) Knots, cracks, or holes in wood were not properly sealed and air bubbles continually rose throughout curing process.
- 2) Missed a spot during the seal coat.

**Solution:** Usually the bubbles are not noticeable enough to warrant any further work. If, however, you desire, you may sand or grind the surface to remove as much of the air bubbles as possible and **re-coat the entire surface**. Spot fixing results in a raised (speed bump) looking area and is much worse looking than the bubbles themselves.

### **Surface Cures Uneven with Ripples or Waves:**

- 1) Wooden surface had too much warping or imperfections and one coat of epoxy was not enough to cover the imperfections.
- 2) Applying too thin a flood coat. This product needs to be applied in full 1/8" flood coats in order to properly self-level.
- 3) Applying too much heat during your bubble removal techniques will cause a ripple effect. The heat or torch should be swept across the surface rapidly without holding it in one place.

**Solution:** Applying another flood coat in sufficient thickness should hide virtually all signs of the waves or ripples from the previous coat.