

Using Thin Epoxy in Woodturning by Will Hunt

I have found several uses for low-viscosity epoxy. My choice is System Three's MirrorCoat, which is designed for bar top finishing, but I am sure other vendors have similar products. I have not tried solvent thinning of regular epoxy.

The main difficulty in using epoxy is the retention of bubbles. The lower the viscosity, the better the chance of avoiding them. But there are still some measures to reduce/eliminate them.

1. Raising the temperature of the bottles before mixing further thins the system, minimizing bubble development. Immersing the bottles for 45-minutes in hot water from the household tap is helpful.
2. In mixing the epoxy/hardener, use gentle stirring. A slow back-and-forth motion (rather than circular) helps.
3. Applying the mix to a bare wood surface traps air adhering to the wood surface that is hard to remove. This can be countered by applying a seal coat before the epoxy.
4. Using a brush to gently "tip out" the visible bubbles after application is good practice.
5. Finally, heating the applied epoxy with a heat gun or hair dryer at least 12-14" away from the surface brings the bubbles to the surface. Avoid riffling the surface with the air stream. Heating time depends on many variables. My best gauge is to continue the heating for a couple of minutes after the last bubble seen.

Deep Bottoms

Pieces with narrow inside access more than 3-4" deep (ex. boxes, vases) can make smooth turning or sanding of the bottom surface difficult. A pour of thin epoxy 1/8" deep will result in a clear, colorless, glass-smooth surface. Cured, the epoxy can be sanded and finished with most oil/varnish or wax-base materials. TIP – with the above System Three MirrorCoat, a **slight** excess of the hardener component will promote a harder cured film/layer.

Waterproof Vases and Planters

This involves a 2-step application process – 3-step for planters. Turn, sand, and seal the interior. With the lathe running slow (40-50 rpm), apply the epoxy liberally to the bottom and inside wall surfaces. Mount a heat lamp on the lathe rails or tailstock 12-15" from the vase rim. Continue the slow lathe rotation (to avoid slumping) and check for bubbles on the surface every 3-4 minutes. With a paper towel, wipe off any visible bubbles. Continue until no new bubbles have appeared. If you are working with burl or other situation (ex. segmented) that may have open cracks or channels to the exterior, check carefully for bleed through or leaks by filling with water and let stand over night. Since the above wiping of the coat reduces the amount of epoxy film, a general recommendation is to repeat the process to close any potential small leaking.

Planters should have holes in the base to allow excess watering to drain off. The hole and underside of the base should be proofed as above.

Punky Burl

Have you ever had a burl that looked like a winner but was so soft and punky it could not be turned or sanded to a smooth surface or, worse, one that alternated soft and hard areas? Applying thin-viscosity epoxy will soak down through all softer areas and present a clear, hard, sandable, non-porous surface. To achieve a sandable surface for finishing, apply multiple coats until the 100% epoxy glass-like surface has been reached.

Potting

Here, the reference is encapsulating decorative objects (eg. coins, minerals, metals) in cavities or voids in a woodturning. This is often done in box lids or the inside bottoms of bowls. The procedure is essentially the same as in "Deep Bottoms" above. To get a "floating" appearance for the object, 2 epoxy pours with the object resting on the surface of the first works well and the layering is not apparent. There are colorants than can be used with the thin epoxies, but trials need be run before the potting is done. NOTE: The "Inlace" and "Castolite" systems that also work for this purpose have, for me, proven more sensitive to moisture and mixing variations than epoxy.

Multi-piece Inserts

This mainly applies to segmented work but may have applications elsewhere. When a multi-piece emblem or other decorated assembly is inserted into a solid base, the expansion/contraction from changes in humidity will frequently result in the joint lines in the insert developing separation lines in the finish or even cracks between the pieces. Using a thin multi-piece assembly and limited amount of glue to fasten the insert to the base helps mitigate these effects. Doing a pour of the thin epoxy over the inset before finishing firmly sets the inset pieces so that they do their expansion/contraction movement in another direction – the space between the insert underside and the base.

Box Lid Adjustment

To experience a sloppy lid fit on an otherwise excellent box is discouraging to say the least – but it happens. One answer is to "paint" a small layer of thin epoxy on one of the joining surfaces. Since the epoxy is clear, sandable, and accepts most regular finishes, it proves a second chance (even a third if needed) at getting the fit you want -- call it a crafter's secret adjustment.

Using Color

System Three has a range of colors dispersed in epoxy. A little goes a long way and they are fairly costly. Most dry pigments available art stores are compatible, but tests are advised. In any event, the color should be mixed into epoxy (without hardener) to a fairly thin consistency and then let down with more resin. Bubble removal will be more difficult so mixing care at all stages is needed.