

A Better Epoxy Finish

*The particular finish you use isn't nearly as important as how you use it!
Follow these few simple steps and enjoy better results from your next finishing job.*

What rod builder in his or her right mind doesn't want to achieve a level, smooth and even epoxy finish on every guide wrap? Yet strive as they do, many struggle in this area. And if and when faced with a lumpy, wavy finish coating, many go off in search of that next epoxy finish - the one that they think will finally give them that perfectly smooth and level finish coating. Trouble is, there really aren't any bad finishes - only bad finishers. The key to achieving that perfect glass smooth epoxy finish coat lies within the application technique, not the finish itself. If you've been having trouble getting a smooth, level finish then you're a candidate for a slight change in application technique. Let's take a look.

Lumps, Bumps, Hills and Valleys...

Take a look at most any of the internet forums for rod builders and you'll see the same question come up over and over again - "Which epoxy finish will give me a perfectly level finish?" The answer is easy - they all will. Every single epoxy finish on the market levels perfectly. In fact, they can't do otherwise. Like most any liquid, they spread out and self-level automatically. So where do all those unsightly lumpy, bumpy, wavy top coatings come from? Simply put, they come from the person applying the finish.

Take a good look at photo #1. What you're seeing there are 6 different, popular epoxy thread wrap coatings. Each has been mixed and poured out on a piece of flat glass to illustrate that each one levels perfectly. Note that not a single one exhibits any hills, lumps, bumps or waves. Each is perfectly flat and smooth. So, let's go on ahead and toss out the notion that lumps, bumps, waves, hills or valleys are the result of any particular epoxy finish itself. All epoxy thread wrap coatings are perfectly self leveling.

So What Causes Them?

On that flat piece of glass, we only have a top surface. On guide wraps, we apply finish to a surface that is round. In effect, we have a top and a bottom surface, no matter how we turn the rod. Here is where those lumps, bumps, waves, etc., are created - on the bottom surface. Take a look at photo #2. Epoxy finish has been applied to the entire circumference of the thread wrap. But, the wrap has not been rotated. Thus, the finish on top has smoothed and leveled just as it did on our flat plate glass. But, the finish on the rest of the wrap has run and sagged to the bottom of the wrap. Just like any liquid would do in the same situation!

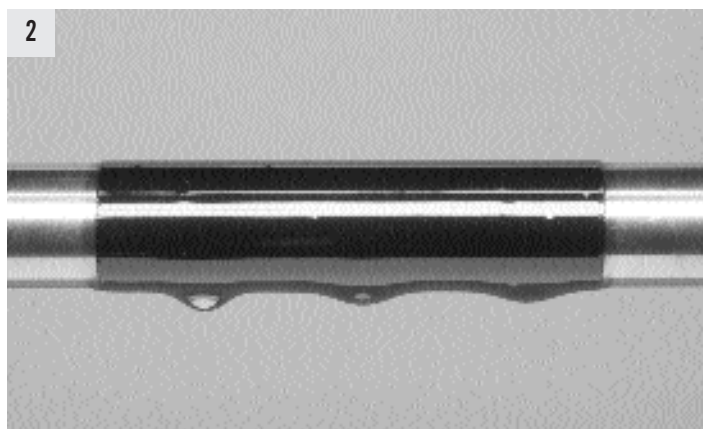
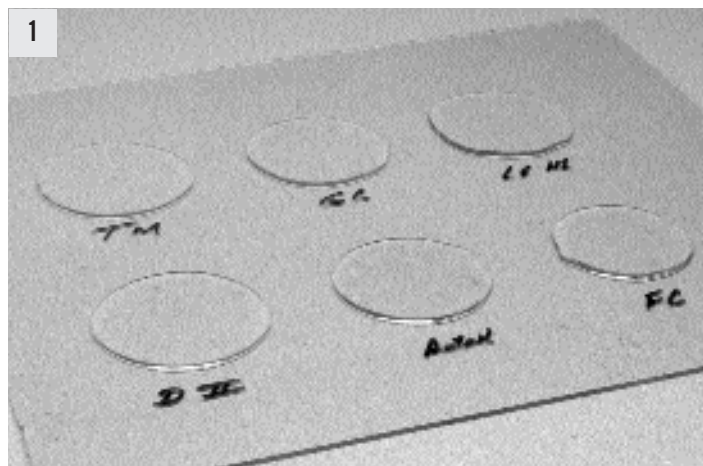
Again, our finish has leveled perfectly, but some of it has run down to the bottom of the wrap and started to sag. Each finish can only support so much of itself and when that limit is reached, sags and droops on the bottom of the wrap are the result. And, when we start to turn or rotate the rod, we then distribute those sags and droops all around the circumference of the wrap. What we often think of as waves, hills and valleys, are really sags and droops that formed on the bottom of the rod and which were then distributed evenly all around the wrap as the rod was rotated.

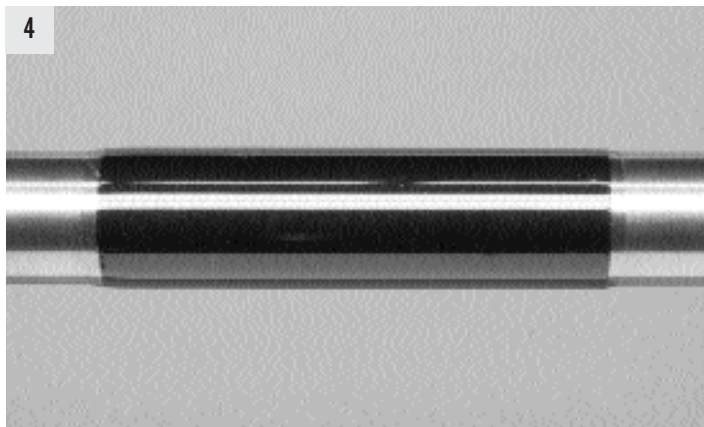
But suppose we rotate the rod even as we're applying the finish? Won't that stop the problem? Unfortunately, no. Even if the rod is rotated while the finish is being applied, if too much of a particular finish has been applied, the finish will continue to sag and droop and will be evenly distributed around the entire circumference resulting in waves, lumps, hills and valleys (3).

The Cure

Okay, so wavy, uneven finish is most often the result of excess finish sagging downward (or being pulled downward by gravity, if you prefer). As the rod rotates, that unevenness is spread all around the wrap. What can we do to eliminate it and get that perfectly smooth, flat and level surface we saw on the piece of flat plate glass?

It's easier than you think. All liquids tend to stick together to a certain point. Thicker, heavier viscosity liquids tend to have more adhesion or greater attraction between their molecules than thinner, less viscous liquids. For that reason, the thinner (light or low build) epoxies cannot be applied very heavily or they'll tend to droop and sag quite easily. The thicker epoxies can be applied heavier before they'll sag and droop, but get enough on there and they'll do the same. One trick to getting a nice level epoxy job, is in learning how much of a particular epoxy you can apply before you reach the point where it will sag and droop. It's not hard to learn, of course, nor is it hard to correct when it happens. When applying your finish, if you see those waves or





Popular 2-Part Epoxy Thread Coatings

*This list may not be complete - new finishes appear on the market regularly.

Clear Coat Low Build Clear Coat High Build

American Tackle Company
8 Fourth Street
Harwich, MA 02645
800-516-1750
sales@americantackle.us
www.americantackle.us

Classic Rod Coat

Rod Products Inc.
265 West Foothill Blvd.
San Dimas, CA 91773
rodcoat@mindspring.com

Diamond II

Gene Bullard
1605 Water Street, Suite 41
Kerrville, TX 78028
(830) 896-7023
xenia@stx.rr.com

Flex Coat

Flex Coat Lite

Flex Coat Company
PO Box 190

Driftwood, TX 78619
512-858-7742
flexcoat@texas.net
www.flexcoat.com

2-Part High Build

Gudebrod, Inc.
274 Shoemaker Road
Pottstown, PA 19464
610-327-4050
sales@gudebrod.com
www.gudebrod.com

LS Supreme LS Supreme Hi-Build

Trondak U-40
17631 147th St. SE #7
Monroe, WA 98272
360-794-8250
aquasealtr@aol.com
http://U-40.com

RodSmith

Pacific Bay International
165 Business Park Loop
Sequim, WA 98382
800-2PACBAY
www.fishpacbay.com

ThreadMaster ThreadMaster Hi-Build

Lamar Manufacturing
830-460-4265
aldear@lamarreelseats.com
www.lamarreelseats.com

lumps forming around the wrap, just go in and remove some of what you've put on. Some builders actually apply their epoxy finish, then allow the rod to stand just a bit until the finish begins to sag heavily on the bottom. At that point, they simply remove the sags and droops with a brush, spatula or old credit card, and then set the rod to spinning. Usually this will result in a perfectly smooth and level finish all around the wrap (4).

In photo #4, the same finish from our batch was applied at the same time as that in photo #3. It was rotated at the same speed, at the same time, for the same period. The only difference was in the amount of epoxy applied. The amount of finish applied, or left on the wrap, in photo #4 was less than that in photo #3.

Generally, thinner finishes cannot be applied as thickly per application as can the heavier or thicker epoxies. If you wish to build more depth with a thinner epoxy, you'll be better off with thinner multiple applications rather than trying to put on more per a single application. Remember this rule.

Some Tips

My personal technique has always been a bit different than most rod builders I've met down through the years. I've never been a fan of any rotation/drying device - there is something about the constant rotation that I believe causes the finish to do something odd. The slight centrifugal action of the rotating rod moves the finish outward around the circumference of the wrap, at the same time pulling the finish away from the wrap edges. Combine that with a little too much finish and you end up with the common "football" shape. Better than lumps and bumps, but still not smooth and level.

Others will disagree, maintaining that the football shape of the cured finish is just the result of too much finish being applied at one time to a shorter overall area. The finish droops on the bottom and is then spread around the wrap circumference as stated earlier. I will not disagree with them - applying too much finish is always a likely culprit when you have any finish that does not cure in level fashion.

I apply the finish to each wrap, then simply turn the rod by hand 180 degrees as needed. No quarter turns, no predetermined intervals between turns. Just a full 180 degree spin when needed. So how do you know when it's time to turn the rod? It becomes obvious when you see the finish begin to get heavy on the bottom of the rod. A key location to watch for this is at the junction of the foregrip and foregrip trim wrap. Watch that bead of finish there and when it starts to get a little heavier or thicker on the bottom, rotate the rod 180 degrees. Continue doing this until the finish is set. The more time that

that expires, the less often you'll have to turn the rod.

In most cases and with most common epoxies at room temperature, the entire job takes about 2 hours. But do always hang around a bit longer, just in case!

Combine the Two!

Okay, you don't have time to babysit your rod for a solid two hours, flipping it over every few minutes. Fair enough. Start your application and turn the rod as needed, for the first 30 to 40 minutes, or however long the finish takes to become fairly thick. At this point, you can use your rotation device to set the rod spinning. The finish should retain the same smooth and level surface as it did when you turned it by hand that last time. The rotation will keep it that way and because the finish is now a bit further along towards setting, the rotation will not upset the carefully hand turned perfection you've achieved.

One Caveat

Many builders simply take far too long to apply finish to their wraps. As an epoxy begins to set and become a bit thick or "gelled," it then tends to stay where you put it. At some point near the end of your epoxy's pot or working life, it will actually refuse to level, remaining instead just as it was as you applied it. The answer here is to work a bit more quickly while the epoxy is still liquid enough that gravity will cause it to move and flow, resulting of course, in perfect leveling.

Most builders can greatly reduce the time it takes them to finish a wrap by keeping in mind that epoxy wrapping finish should be *applied*, not brushed, dabbed, stuck or smidgeoned onto the wrap. Whether you use a brush or spatula as your application tool, load the tool with epoxy, apply it to the wrap while the rod is rotated (by hand or mechanical means) one or two revolutions, and then move over and repeat. You can come back after all the wraps have been coated and touch in any dry or thin areas. The main thing, is to quickly apply the epoxy without wasting time brushing or dabbing it on in small amounts.

There are other tips and tricks to getting a great epoxy finish job, but we'll save them for another article. In the meantime, most builders will find their finishes will greatly improve if they'll just modify how much epoxy they apply and spend less time applying it. Remember, how you apply the epoxy is more important than what particular brand of finish you use.

Rotation Speed

How fast is too fast and how slow is too slow when employing a constant rotation device for finishing? Well, if the finish becomes lumpy or wavy, you've either got too much finish on the wraps or your rotation speed is too slow

for the particular viscosity of the epoxy you're using.

Can you rotate a rod too fast during the drying process? Yes. If you see finish working its way up the guide legs you may be too fast for the particular finish you're using. Generally, thinner epoxies require higher rotation speeds while thicker finishes can be rotated more slowly and still give nice results. A good all-around speed for most epoxies is 18RPM to 25 RPM. However, there are many rod builders rotating finish during set up at speeds well in excess of this. 40 to 50 RPM is used by many builders who report good results. The way to find out the best speed for you is to try a variety with the particular brand finish you use and see which speed range seems to suit you and your finish the best.

Temperature

Temperature plays a major role not only in how long a finish takes to cure, but how long it takes to set or stop "moving." Each epoxy will have its own pot or working time. But higher temperatures generally reduce that time while cooler temps increase that time. So, higher temperatures reduce pot life but make the epoxy a bit easier to work with. Lower temperatures increase pot life but result in the epoxy being thicker and perhaps a bit harder to work with. The happy medium? Room temperature is ideal - from about 68F to 75F.

Get It Level

A rod whose centerline is not level will cause epoxy finishes to do odd things. I've seen off-kilter rods send epoxy to one end, or the middle or even to opposing ends! Take a few minutes and make sure the centerline of your rod is on the level.

As mentioned earlier, there really aren't any bad epoxy finishes on the market today. Those that are hard to apply or don't give good results are quickly weeded from the market by rod builders who won't buy them! Nine times out of ten, a bad finish job is the result of poor application or finishing technique on the part of the person applying the finish. So don't blame the finish - question your technique when things don't seem to have gone very well.

No builder becomes an expert epoxy finisher overnight - it takes some practice and a willingness to experiment a little. The main thing is to remember that the finish has no bias - it's just doing what it does in the realm of where and how you've applied it.

Finally, try not to do too much to your finish. Prodding, thinning, torching, etc., have ruined many a finishing job. Just apply the finish in the correct amount and then just let the epoxy do what it *knows* how to do! 🐦