

## Fishing Rod Building Epoxy SPATULA'S Written by Joe Kassuba

### Introduction and Acknowledgement

This article illustrates two models of spatulas designed for mixing and applying epoxy finish to a fishing rod. The spatulas shown all closely follow a design developed by Ralph's O'Quinn. Contact His Rod Shop to order.

### Ordering Spatula's from His Rod Shop

Each spatula cost \$15 plus \$1.50 shipping and handling within the US. Canada Shipping and Handling cost are \$2.50. Overseas shipping and handling varies by country. Ask for details prior to ordering for overseas shipping via UPS or Fed Ex.

Send check or money order to HIS Rod Shop, 3208 West 21 AVE., Kennewick, WA. 99337.

### Stainless Steel Epoxy Finish Spatula



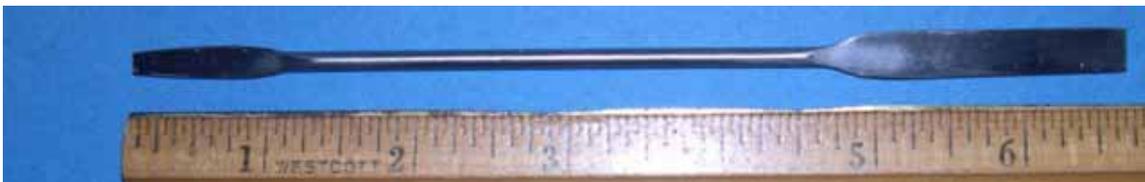
The pointed end is ground to a radius of approximately .030 inches. The finish is buffed and polished to a near mirror finish. Edges are ground and smoothed to a dull knife finish. This Fishing Rod Building tool is used to apply and mix epoxy finishes.

### **Mixing Finish Epoxy:**



**Mix the hardener and resin together using the paddle end of the spatula. Use a slow mixing motion holding the spatula edge against the mixing cup edge. Periodically folding the mixture. Go slow so that excessive bubbles are not formed. Pour it out onto a flat surface after though mixing let it rest. This will reduce the thermal mass increasing pot life and allow bubbles to escape.**

### **Paste Epoxy Spatula**



This fishing rod building tool has a slightly longer paddle end than the epoxy finishing spatula and the narrower tapered end has a blunt nose. All edges are rounded and smoothed to a dull knife-edge finish. The entire spatula is buffed to a near mirror finish.

This tool is used to mix and apply paste epoxy to fishing rods such as, **U-40 Rod Bond™** paste epoxy developed by Trondak Inc ([U-40.com](http://U-40.com)) for the fishing rod building industry. Primary uses for paste epoxy such as **U-40 Rod Bond™** is attaching reel seats, rear and fore grips and building ferrules, splicing and lengthening fishing rods. The unique qualities of **U-40 Rod Bond™** are: it has a excellent working pot life, it stays where it is put, it remains flexible after curing, it acts as a lubricant to slide tight fitting grips into place and it forms a very strong bond. As for any adhesive bond it is important to prepare the surfaces making sure they are clean from contaminates such as silicone and oils and that the surfaces come close together. The thinner a good bond can be made the stronger it will be.

### **Mixing Paste Epoxy:**

Place equal amounts of resin and hardener pastes on a mixing palette. Use care and do not cross contaminate the resin and hardener.



Use the paddle end for mixing by spreading and folding the resin and hardener together on the palette. Scrap the mixture off the palette surface using the edge of the spatula and fold it into itself to mix some more. The paste is fully mixed when the color becomes uniform throughout. The epoxy mixture will become slightly less thick as it is mixed. And you will notice how it acts as a lubricant as you scrape the palette.

### **Finish Epoxy spatula application technique:**

Keep this thought in mind. Let the epoxy flow off the spatula. It has a flat blade end and a tapered point end. The edges are rounded and chamfered to a “very dull knife edge” to allow the epoxy to flow off. The spatula is tilted down with the application end on the rod and the other end above.



### Guide Wraps Finishing

-With the tapered end of the spatula, fill the tunnel formed by the guide foot and thread wrap. Then apply epoxy around the circumference of the ring end of the wraps forming a bead of epoxy against the guide wrap. To do this, load the tapered point end of the spatula with epoxy and rest the point against the wrapping and slowly rotate the fishing rod.



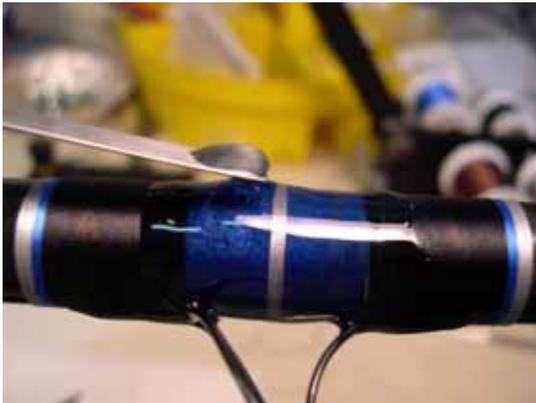
As the fishing rod is rotated form a bead of epoxy against the thread edge. With practice a thin or thick bead can be made in this way.

- Using the pointed or paddle end of the spatula apply epoxy onto each side and top of the guide foot covering these areas completely with epoxy. Use the spatula flat surfaces to force epoxy into the “tunnel” areas between the guide foot and fishing rod blank (get the air out!). I suggest doing each guide ring end wrap for the entire fishing rod this way and then apply epoxy to the guide foot end of the wraps.

- Using the pointed end of the spatula makes it easy to control where you place the epoxy around each guides ring end wrap. If an under wrap is used apply epoxy under the ring and between each guide foot using the tapered point end of the spatula.



- Rotate the rod and apply more epoxy either using the blade end or continue to use the tapered end until the entire under wrap is coated with epoxy.



- Again I suggest doing the entire fishing rod under wraps and then apply epoxy finish to the rest of the fishing rod wraps.

### **Applying epoxy to the foot end of Guides**

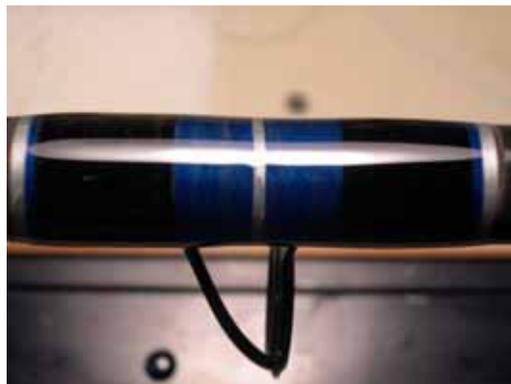
These directions are written assuming the fishing rod is turning. The turning rate is assumed to be nominally 20 to upwards of 100 or more rpm. Keep in mind that all of the epoxy can be applied to a hand turned rod using similar techniques.

-Start the rod turning.

-Scoop up some epoxy with the spatula blade end



-Apply it to the turning rod covering the area to be coated by touching the epoxy blob to the turning fishing rod. As the epoxy is applied, gently move it along the axis of the rod



to "spread it out".

Keep adequate epoxy on the area being coated by scooping more up with the spatula as needed. Excess epoxy can easily be removed from the turning rod after the wraps are totally coated. Repeat this until you have covered the entire area (threads, design, etc)

-At the foot of the guide or at one end of the length of rod where epoxy is being applied make a "tire" shape "bead" in the epoxy with the blade end by gently pressing into the epoxy. Little pressure is needed to create this "tire" bead.



This tire bead will make an even finish edge around the circumference of the fishing rod. The epoxy will flow in and fill up against the tire as it turns. If there is insufficient epoxy add more. Repeat this step for the entire rod.



### **Leveling and Distributing Epoxy**

The following instructions are for using a spatula to help level and spread out applied epoxy along the fishing rod covered area.

Tilt the spatula so that epoxy will stay on the fishing rod and not flow off onto the spatula.



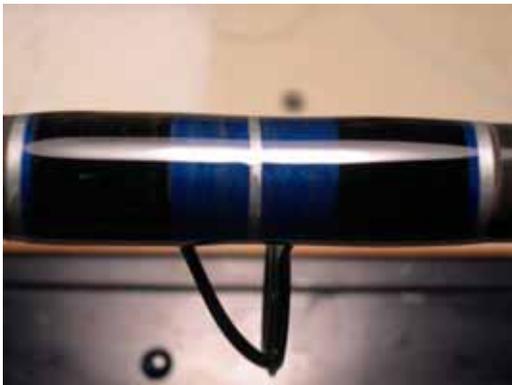
Holding the spatula perpendicular to the rod, place the edge of the blade end into the rotating epoxy. Only light pressure is needed here as the blade's edge could affect whatever the epoxy is covering if it is pressed onto the fishing rod with much pressure. A few examples of sensitive areas are inscriptions, decals, and feathers. Some inscriptions written with gel pens can be smeared quite easily.

-As the rod is turning move the spatula along the rod holding it perpendicular to the rod. This will form a "spiral" in the epoxy coating and help smooth out and level it. This will not redistribute the epoxy very much.

- If redistributing epoxy along the rod is the goal all that needs to be done is make the spatula angle to the rod not perpendicular. The edge now is acting as a putty knife and is plowing the epoxy and when the spatula is moved along the rod this plowing action will move the epoxy in the direction you move, left or right. How much you "plow" is determined by how large the angle from perpendicular is.

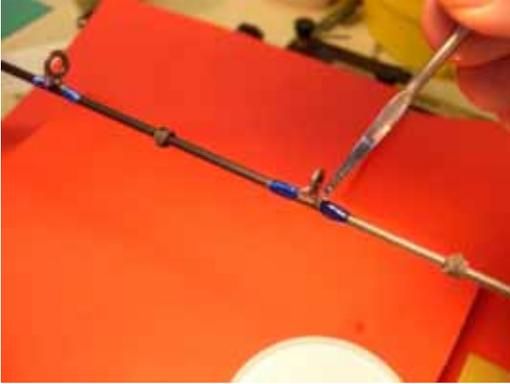


-Do not over do helping the epoxy to level and redistribute. Just thoroughly coat the area being covered and distribute the epoxy somewhat evenly. The epoxy will flow out and level itself, as gravity will work for you.



### **Inspect your Work**

-Turn the fishing rod by hand checking for any voids or areas that are not covered adequately. Especially pay attention to the area around the ring end of the guides on both sides of the guide foot. If needed use the pointed taper end of the spatula to add drops of epoxy to cover these areas.



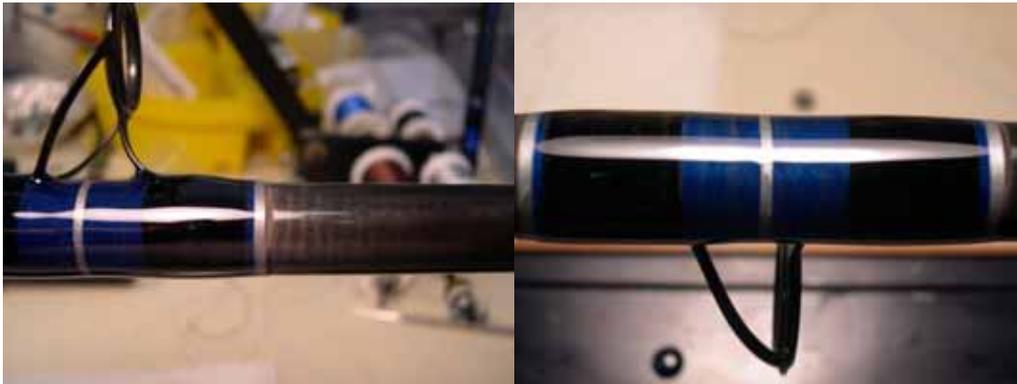
-Turn the rod for a few minutes and check for the “look” you want.

### Removing Excess Epoxy

To remove excess epoxy, tilt the spatula so that epoxy will flow onto the spatula from the fishing rod. Use the spatula blade end to remove excess epoxy by making a "slow wipe off motion". To more easily identify and get at the excess epoxy stop the rod from turning and let the epoxy sag. Then wipe it off.

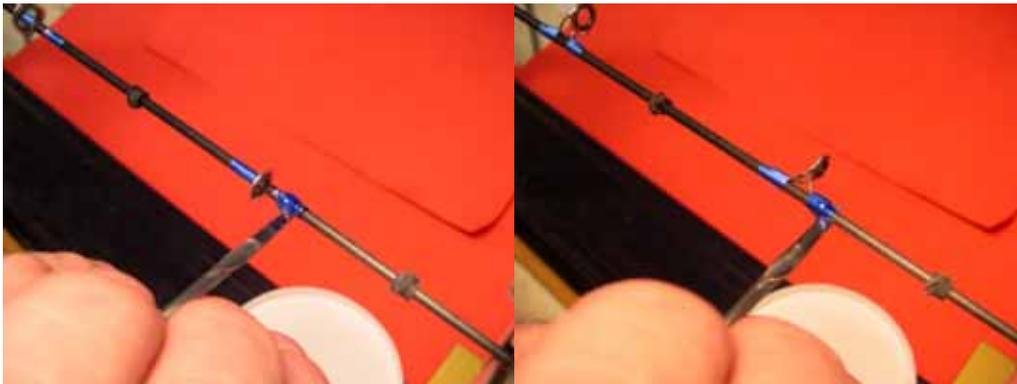


Additional epoxy can be added to create a more football look. Go easy on adding epoxy for a "football" look can be overdone and ending up with a "blob" look. Practice on a section of scrap fishing rod.

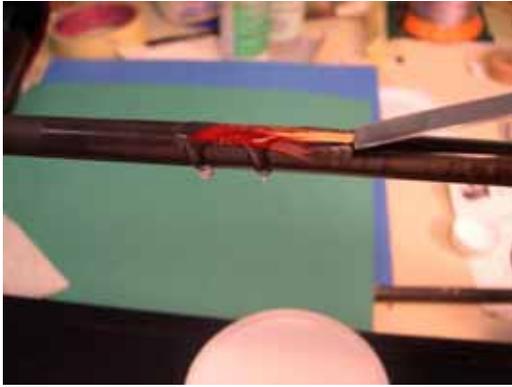


A "square" look can easily be obtained by applying the correct amount to the guides or area to be covered and letting it level against the "tire" beads. Or excess epoxy can be evenly removed from a covered length of fishing rod. To learn how to obtain the different looks turn the rod by hand 180deg at a time. Allowing the epoxy to sag and removing the excess from the bottom of the fishing rod. The finished shapes will be easily developed on a practice piece of fishing rod.

Guides wraps on the upper 3<sup>rd</sup> of the rod are small in diameter. To apply epoxy to them use the tapered end of the spatula as it "fits" the wrap lengths well. Because of the small diameter it is not usually required that the guide foot end be beaded before coating the entire wrap. The epoxy will flow out to the edge as the rod is turned with the epoxy-loaded spatula placed close to the wrap edge. Because the tapered end fits the wraps.



If a long section of fishing rod is to be covered with epoxy, instead of applying epoxy going around the circumference apply it along axis starting on top of the fishing rod.



The epoxy will flow down and around the fishing rod. To do this load the spatula with epoxy and let it flow off while slowly moving along the top of the fishing rod over the whole length to be covered. Then turn the fishing rod about 20 degrees and lay on another strip of epoxy adjacent to the last one. Gravity will help to spread the epoxy down and around the fishing rod. Apply epoxy in this way covering the entire circumference of the rod.



Then use the spatula to “level” the furrows and distribute it. To get an even edge of epoxy around the ends of the coated area use the “tire” technique described above.

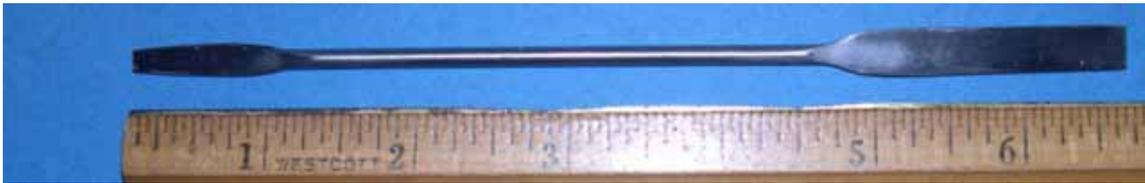


Many rod builders that cover thread weave designs apply epoxy along the fishing rod axis instead of around the circumference.

-Move the rod to the dryer. Or turn by hand 180 degrees at a time to allow the epoxy to cure to the none sagging point. Depending on ambient temperature cure time will vary from a couple of hours to 4 or more before the epoxy will no longer sage. After the epoxy no longer sags move the rod to a stand or place it in a protected corner where it can stand vertical to finish curing. To test for none sagging and dry to touch states, never touch the rod. Instead leave a little in the container used to scoop the epoxy up from and use it for testing.



## Paste Epoxy Spatula



This fishing rod building tool has a slightly longer paddle end than the epoxy finishing spatula and the narrower tapered end has a blunt nose. The spatula shown above closely follows Ralph O'Quinn's design. All edges are rounded and smoothed to a dull knife-edge finish. The entire spatula is buffed to a near mirror finish.

### Paste Epoxy Application

After mixing the paste epoxy on a using the paste epoxy spatula spread the paste out on the palette, as this will increase pot life.

Buff the area of the blank where the epoxy will be applied using a 3M #7448 Scotch rite pad. This will clean and prepare the surface to a water break free surface for good bonding.



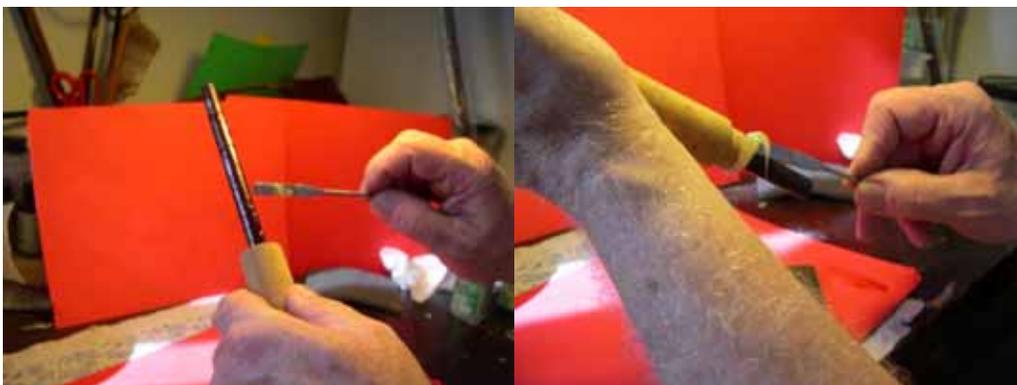
### Applying Paste Epoxy

The following shows mounting a rear cork grip on a sample piece of rod.

-Use the blade end to scoop up some epoxy paste and butter it onto the blank.



Cover the entire surface of the blank with a coat of epoxy where the grip will fit and above this area for about 4 more inches. The extra length above the position where the grip will end up is coated with epoxy paste because when sliding the grip down into place the epoxy paste will be wiped off coating the entire length of the inside of the grip. Do not skimp on epoxy paste put plenty on so that the entire inside of the grip will be coated. The grip is slowly twisted, as it is slide down into position starting when it first touches the buttered on epoxy. This will more evenly coat the ID of the grip and help achieve a good bond to the fishing rod blank.



The spatula is used to skim off the excess epoxy paste and clean the butt end of the grip.

To clean excess or squeezed out paste from around grip, reel seats and butt caps use the blunt taper end of the paste epoxy spatula.



Similar techniques can be shown for using a paste epoxy spatula for mounting:

Reel Seats

Fore Grips

Building Ferrules

Bonding Cork Rings together

Bonding EVA grips to Fishing Rod Blanks

Butt Caps and Fighting Butts