Resin Casting Hands-On Session

September 16 & 17, 2017

Fifteen BWWT club members participated in two different resin casting hands on sessions at Jack Boggio's workshop on September 16 and 17, 2017. Each session explained how to stabilize "punky" wood blanks, create different types of poured resin turning blanks, decorate banksia pods with different types of fillers, using Polymer Clays, making your own silicon molds and much more.

Stabilizing "punky" wood blanks

When trying to work with wood blanks that have started to deteriorate and become soft, it is possible to reinforce the wood by forcing a stabilizing resin into the pores of the wood. The resin used was Cactus Juice, a single part polymer resin.

The process starts by placing the wood blanks to be stabilized into a clear glass pot. The blanks should be weighted down so that they don't float in the resin. Pour enough resin into the pot to cover all of the blanks by about 1". The pot of resin and blanks should then be put in a sealed vacuum chamber. Vacuum should be applied so that the air in the pores of the wood is pulled out and the resin is drawn in. You should see the air bubbling out of the wood; the bubbling will stop after about 15 – 20 minutes, depending on the size of the batch being stabilized. After the bubbling has stopped, relieve the vacuum pressure and let the wood absorb the Cactus Juice for twice the amount of time the wood was under vacuum pressure.

After the wood has soaked, remove it from the glass pot and wrap the pieces in aluminum foil taking care to be sure that the wood is individually wrapped so there is no contact between the pieces. All of the wrapped pieces should then be put in a toaster oven at 200°F for 2 – 3 hours or until the Cactus Juice has stopped flowing out of the wrapped pieces.

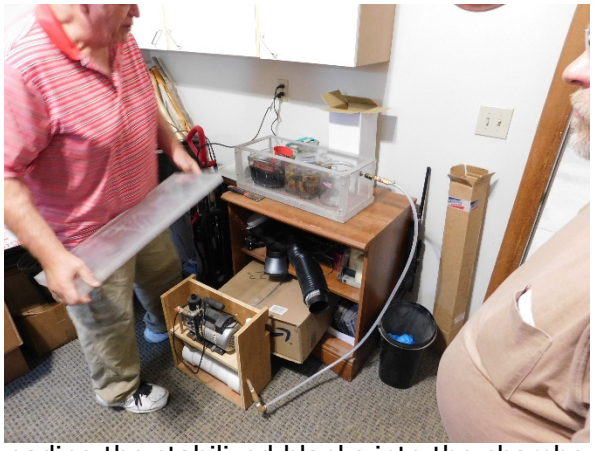
After the pieces have been removed from the oven, remove the aluminum foil and allow each of them to cool. After they have cooled, they are ready to be turned.

Colored dye can also be added to the Cactus Juice to add color to the piece when stabilizing it. Use Artisan dyes or Alumilite dyes to color the Cactus Juice.

After the stabilizing is complete, the remaining Cactus Juice can be reused for stabilizing more wood. Make sure that when the leftover resin is returned to the storage container that the colored resin isn't mixed in with the uncolored resin. The remaining resin must be refrigerated. If it is left out and ambient temperature is above 85°F, it will harden in the container.

Some of the blanks to be stabilized

Adding Cactus Juice to the blanks



Loading the stabilized blanks into the chamber

Stabilizing under vacuum

Wrapping the stabilized blanks in foil

"Cooking" the stabilized blanks

Making cast blanks with Alumilite white

Alumilite is a 2-part resin that is mixed in equal amounts. The first thing to remember about Alumilite is that it doesn't like moisture. If you are using it with wood, make sure the wood is completely dry. It may be necessary to dry the wood in an oven before using it with the Alumilite.

Before beginning to mix the resin, plan what colors are to be used for both the main color and also any colors that will be swirled into the mixture. Keep in mind that for the most dramatic look it is a good idea to make sure there is a strong contrast between each of the colors for them to show.

The next step is to determine how much resin is needed to fill the mold. To do this, pour dry rice into the mold approximately 1" deep so the total volume can be measured. Measure the rice volume and then put half of the rice into a mixing cup. Mark the cup at the level of the rice and then empty the cup.

After the rice has been poured out of the mold, be sure to coat the mold with mold release. PAM cooking spray was used in our sessions.

Weigh the empty cup on a gram scale and then tare the scale. Add part A of the Alumilite resin to the marked line on the cup. If the resin is to be dyed, add up to 5% by weight Alumilite dye to the part A resin. Record the weight of the resin mixed with the dye. Tare the scale again and add the same weight of part B resin to the mixture.

Thoroughly mix the resin and dye. Keep in mind that there is only a 3 minute working time after starting to mix the resin.

Pour the resin into the mold. Quickly add a few drops of dye of the colors to be swirled through the mix. Use a mixing stick to swirl the dye.

Place the mold in a pressure pot. Pressurize the pot to at least 40 p.s.i. (50 p.s.i. was used in the class) for approximately 15 minutes. After the 15 minute cure time remove the mold from the pot, remove the block from the mold and allow it to cool.

Keep in mind that the natural color of Alumilite is opaque white after it has cured. It will mix clear and turn white during the curing process.

Making cast blanks with Alumilite water clear and material fillers

When making Alumilite blanks with a filler material, use the same mixing methods as described above. The main differences would be that the dye use to color the resin is Pearl-Ex and when determining the amount of resin to be used, the filler that will be used should be included with the rice when determining how full the mold will be. Remove the filler material from the rice before measuring it.

Pour the resin mixture into the mold and then add the filler. Make sure the filler is evenly mixed into the resin. The working time for the clear resin mixture is approximately 15 minutes.

Place the mold in a pressure pot. Pressurize the pot to at least 40 p.s.i. (50 p.s.i. was used in the class) for approximately 2 hours. After the 2-hour cure time remove the mold from the pressure pot, remove the block from the mold and allow it to cool.

After the Alumilite blocks have cooled, cut the molded blocks on a table saw to the desired size.

In order fill the pressure pot as full as possible, make a cradle that will hold as many molds as can be fit into the pressure pot. Directions for the sizes of the molds and the cradle can be found at www.turntex.com/help-center/alumilite-casting-resources

Mixing Alumilite resin part A

Adding Alumilite resin part B and dye

Cleaning walnut shells…


…and more walnut shells


Loading the mold with walnut shells


Molded block of blanks


Cutting blanks to size


Finished products

Easy Cast Resin casting

Easy Cast Resin is a 2-part resin that is mixed in equal amounts by volume. This method of casting resin pen blanks makes full pen blanks without having to cut a block of cured resin. The resins can be colored when it is mixed and fillers added to make a unique blank.

Some items that can be cast into the resin blank are wood chips, cherry pits, pistachio nut shells, pepper corns or anything that would add to the appearance of the turned piece. Make sure that the items cast into the resin can be easily cut with wood turning tools.

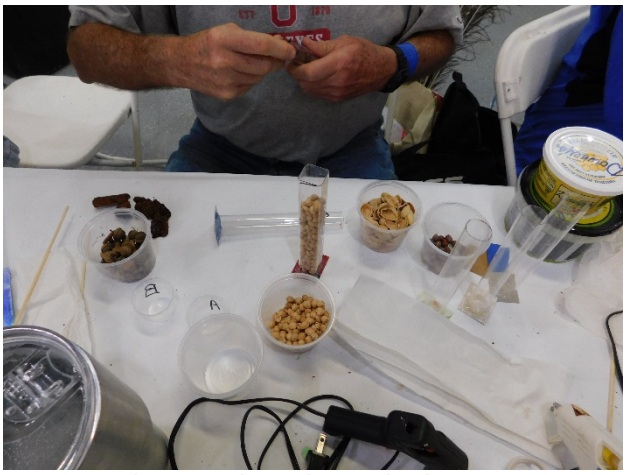
The mold for these blanks is made from either square or round plastic tubing that can be bought in longer sizes and cut to the length needed for the blank. It is best to cut the tube about 1” longer than the intended length of the blank. After the tubes have been cut, use hot melt glue to glue a square piece of card stock to the bottom of the tube. Make sure that there are no gaps between the tube and the card stock for resin to leak out of.

Add the items to be cast into the blank to the plastic mold. Mix the Easy Cast Resin in equal parts by volume. Color the resin with Pearl-Ex and pour it into the plastic mold. You may need to tap the side of the mold to work out the air bubbles and to settle the filler material. Leave the resin in the mold overnight to fully cure.

If you find a void in the blank while turning, mix up some 5 minute epoxy and color it with the same color used for the resin and fill the void.

It is not necessary to remove the plastic tubing used for the mold. The mold can be cut away during the turning process.

Hot melt gluing card stock to tube



Loading up the tube with cherry pits

Topping off the tube with resin

More tubes in process

Keeping going on filling tubes

Finished products and supplies

Pour-On Resin Casting

Pour-On Resin is available at Michaels, Home Depot, Menards and other craft stores. This resin is clear and is mixed the same as the Easy Cast resin, in equal parts by volume. It should only be cast in 1/8″ poured layers if it is used in a mold that lays flat. If it is poured in thicker amounts it will heat up and generate bubbles that get trapped in the resin. Air bubbling is not a problem when pouring this resin into plastic tube molds that stand vertically.

Pour-On Resin can be used to enhance a number of objects. Some examples would be pheasant feathers, computer images, snake skin and fish skin. The process to incorporate these items in a pen blank would be to apply them to a white pen tube with spray adhesive. When using pheasant feathers it is more noticeable if several feathers are applied with an overlap to make sure the entire pen tube is covered. After the object is glued to the pen tube, apply 1 or 2 coats of thin CA glue to seal the decoration. After the CA glue has cured, insert small corks in each end of the pen tube to prevent resin from flowing into the tube.

Use card stock to make the mold for the resin casting. Cut strips of card stock about 1″ wide and 4″ – 5″ long. Fold 2 pieces of card stock with about a 1″ long leg. Use hot melt glue to glue one end of the cork in the pen tube on the short end of the card stock about 3/8″ from the bottom. Do the same for the other end of the pen tube. Use hot melt glue to glue the mating edges of the 2 sides and the bottom edge of the card stock mold to a third piece of card stock, forming the base of the mold.

Use Pour-On Casting Resin to pour the pen blank up to a thickness of about ¾″. Remember to pour in 1/8″ thick layers. After the resin has cured, remove the blank from the mold and trim it to the length of the pen tube.

Gluing on pheasant feathers

More pheasant feathers

Snake skins ready to be glued up

Molds ready to use

Banksia Pods

Banksia pods can be enhanced before turning. The process for decorating banksia pods would be to drill a hole through the length of the pod for a brass pen tube. Glue in the brass tube and after the glue has cured rough turn the pod to about ¾" diameter.

Prepare a filler to fill in the holes in the Banksia pod. 2 kinds of fillers can be used.

- Pour In-Lace or a similar material into the holes and openings and soak with thin CA. Multiple applications can be used until all of the holes are filled to your satisfaction.
- Make a mixture of water putty colored with acrylic paint. Press this mixture into the holes and openings of the Banksia pod and allow to cure.

After the filler has cured the blank is ready to turn.

Polymer Clay

Polymer clay can be purchased with colors already swirled into the clay or with different shapes included in the clay. You can also mix different colored clays by kneading the different colors together.

Roll the clay to a thickness suitable for the thickness of the part you need. The clay can be rolled with one of the following methods:

- Use a noodle rolling press set to the desired thickness
- Use a rolling pin or other round object that rolls on wood rails that are the desired thickness of the clay.

Apply the clay to the pen tube being careful to make sure the seam of the clay is blended in. After the clay has been applied to the tube, bake the tube in a toaster oven as directed on the polymer clay package.

After baking and cooling the blank is ready to be turned.

Silicone Molds

Create a master object that needs to be duplicated in a poured resin.

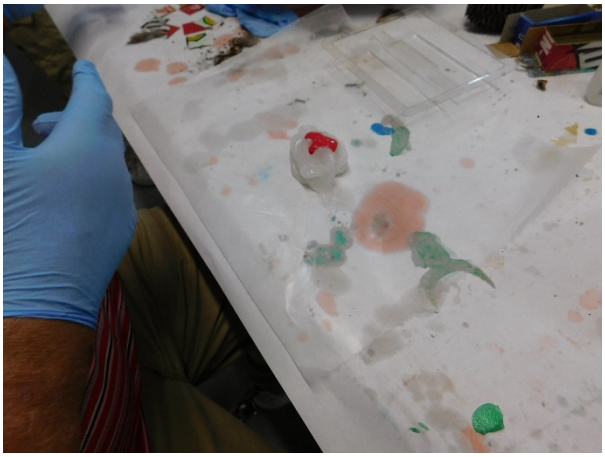
Silicone molds are made by mixing 100% silicone caulking with a few drops of acrylic paint. The colored mixture is then thickened with corn starch. Use enough starch to make the mixture into a dough that is no longer sticky.

After the dough is no longer sticky, put the mixture in a small container and form it around the master of the object to be duplicated. Determine which area of the mold will be used to fill the mold with resin and make sure the silicone is clear of that area.

After the dough has cured (approximately 2 hours) remove the object from the silicone mold.

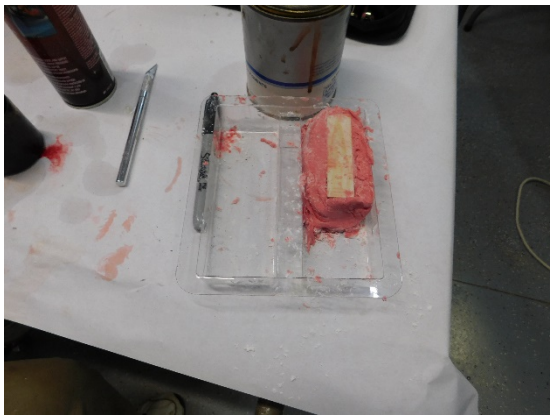
The mold is now ready to be used for pouring cast resin blanks. Be sure to spray the mold with mold release before you pour any resin into it.

Silicone caulk

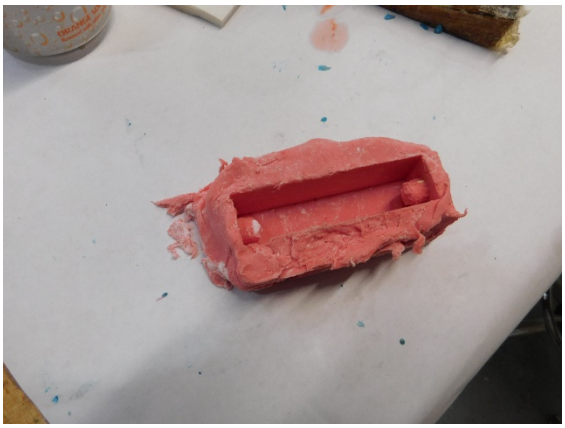

Getting ready to mix the silicone

Mixing the silicone

Making the mold



Waiting to cure



Finished and ready to use

Wrap Up

There were many other tips and tricks that Jack passed on to all of the participants. A way to drill a hole straight through the middle of a corn cob and how to trim a corn cob (or any other irregular round object) to a square were only a couple of the many tips. This hands-on session was well worth the time and all who attended learned a lot of new things. Everyone had a great time as the pictures show.

Saturday session

Sunday session

Lunch on Saturday

Jack

Resource Links

Alumilite water clear - https://www.alumilite.com/store/p/1045-Alumilite-Water-Clear.aspx

Alumilite white - https://www.alumilite.com/store/p/934-Alumilite-White-Amazing-Casting-Resin.aspx

Cactus Juice and vacuum chambers - https://www.turntex.com/

Easy cast resin - https://www.amazon.com/Environmental-Technology-128-Ounce-Casting-Craft/dp/B004Y46G10/ref=sr_1_4?ie=UTF8&qid=1504192232&sr=8-4&keywords=easy+cast+resin

Pour on Resin - Home Depot, Michael's, Menards or https://www.amazon.com/Environmental-Tech-EnviroTex-Finish-gallon/dp/B000VKZFLI/ref=sr_1_2?s=arts-crafts&ie=UTF8&qid=1504192284&sr=1-2&keywords=pour+on+resin

Small banksia pods - Roy@RoysWoodenWonders.com

Inlace - https://www.turtlefeathers.net/product-category/inlace-products/

Pearl-Ex - https://www.jacquardproducts.com/pearl-ex-pigments.html or amazon.com, Dick Blick or most art suppliers

Plastic tubing - https://www.mcmaster.com/#catalog/123/1605/=196iomy

Casting mold cut list and pressure pot mold rack - https://www.turntex.com/help-center/alumilite-casting-resources