

ALUMILITE CASTING

The MOLD

- Mold Material: Most anything can be used as a mold for casting Alumilite as long as it can withstand temperatures of around 180 degrees Fahrenheit. Wood, polyethylene (cutting board material), silicone molds as well as ABS and Poly Pipe work great for molds with proper preparation. Because Alumilite is exothermic (generates heat during the curing process) some plastics like margarine containers cannot be used as they can melt or deform from the heat. I have always used hard-board to make my molds as it is inexpensive and I can create any size mold I need.
- Your mold needs to be completely sealed on the sides so that the liquid Alumilite does not escape. A leaky mold can not only ruin your “pour” but it can also ruin your pressure pot
- Your mold should be oversized to allow space for items to be added (wood burl) and so that you have enough material to “cut away” in the turning process.

WOOD PREPARATION

- It is extremely important to only use wood that has as close to 0% moisture as possible! I use a toaster oven to “cook” my blanks for several cycles which include baking at around 180 degrees Fahrenheit and then opening the door of the oven to allow any excess moisture to escape for about a half hour. I will repeat this as many times as needed until I have achieved the lowest moisture content I can. Even wood that I believe is very dry I will cook 2-3 times just to be sure!
- You should remove all “soft” material from the wood you will be casting with the Alumilite. Using picks, screwdrivers, wire brushes and wire wheels you should be able to remove almost all bark and soft softer layers of wood on the surface.
- Wood FLOATS so you need to secure it into the mold. I normally will use CA glue to attach a part of my wood onto the inside wall of the mold.
- The Alumilite resin needs to surround your wood piece so that it can fill as many voids as possible so position your wood in the mold in a way that will allow gravity to help flow the resin into as many of the voids as possible. I also glue toothpicks to the bottom of the mold before I put the wood in it to raise the piece within the mold itself.
- The wood you are using to cast must have NO waxes, lacquers or other surface coatings/ finishes as the Alumilite will not attach to those coatings and may result in a dangerous failure while turning.
- If you are going to cut your casting out of its mold before turning it is very important to seal the wood immediately so that the wood does not reabsorb any moisture. It is also important to finish your piece as soon as you are finish turning/sanding it to also prevent moisture getting back into the wood. Moisture will cause your wood to expand and this can also cause failures.

I use Wipe-On Poly when I cut my blanks from their molds every time and I use spray lacquer finishes for finished pieces.

FINISHING

- Continuing along the same lines as above, you should apply some sort of finish as soon as possible after turning and final sanding of your finished piece. If your piece is not finished properly you will begin to see and feel the demarkation line between the wood and the resin as the wood has expanded or contracted.
- Again, I use Wipe-On Poly to seal blanks that have just been cut from their molds and spray lacquer for finished pieces.

COLOURING OPTIONS

Colouring your resin is a lot of fun and you can achieve some fascinating results by combining different types of colourants as well as working with cure times. Here are a few options for colouring the resin:

- **Dye:** Alumilite Dye is a great product to use to achieve a transparent effect with most colours. The exception being white, black and fluorescent colours which are opaque and mixing them with other dyes generally makes your “pour” opaque as well. These dyes also have the ability to absorb into the surface of the wood you are casting. That being said the hardness of the wood will affect the depth of absorption. ** Wes System Epoxy can be used to seal an area of the wood if you do not wish the dye to penetrate the surface.
- **Mica Powder/Pigments:** Metallic powders (used in make up) can also be added to colour the resin. These powders come in so many different colours and “finishes” the possibilities are endless! Another interesting thing about mica powders is they DO NOT absorb into the surface of the wood like the dyes can. Some examples of different finishes are:
 - solid colour
 - metallic
 - chameleon (colour changes depending on viewing angle)
- **Oil Based Paints:** These will make the resin be opaque and will not absorb into the surface of the wood like dyes. Someone who has done a lot of testing of different oil paints has found that Armour Coat Rust Paint (from Home Hardware?) gives the best results. It is also important to know that adding oil paint as a colourant will cause your final resin to cure as hard as it does without using oil paint.
- **Glow-In-The-Dark powder:** Photo-luminescent powders are a neat way to make your piece stand out in the dark! Keep in mind that these must be used by themselves and adding dye or pigments will block the Glow-In-The-Dark powder from working.

PRESURE POT:

- Because tiny air bubbles are created during the mixing of Part A & B it is important to use a pressure pot to eliminate those bubbles.
- Follow all safety instructions that come with your pressure pot and **DO NOT EXCEED** the pressure rating of your pressure pot!

IDEAS:

- You can cast almost anything in Alumilite but beware of the exothermic properties while it is curing!
- Large Castings: Alumilite is very expensive so it is important to do your best to waste as little as possible! Keep in mind the capacity of your pressure pot and use some type of filler to get an idea of how much resin you will need!
- Your pressure pot can also be used on its side.
- Once your pressure pot is loaded and charged with the working air pressure, make sure you unhook the air source!!
- Always mix Part A & B together and then separate to mix your colours!
- For castings that will have very thin areas it is important to preheat your molds to 125 degrees Fahrenheit in your toaster oven to aid in the curing. Keep in mind this will also speed up the curing of the entire casting so work fast!
- Mix the Alumilite aggressively to ensure complete mixing! Don't worry about the air bubbles... the pressure pot will take care of that!
- Leave your castings in the pressure pot under pressure for a minimum of 2 hours! I personally wait until the next day to take them out of the pressure pot and I wait for 24-48 hours before I will turn them as they will continue to cure/harden over several days.