

Tabletop, Countertop, and Bar Top Decorative Applications Bulletin

MAX 1618 A/B

EPOXY RESIN SYSTEM

HIGH GLOSS

CRYSTAL CLARITY

SURFACE HARDNESS

CHEMICAL RESISTANCE

MAX 1618 A/B Epoxy System

The MAX 1618 A/B epoxy system is a crystal clear polymer resin that is specially engineered to produce a functional coating that demonstrates excellent color stability, toughness and ease of use. Upon cure, MAX 1618 A/B yields a very high gloss finish that is resistant to common commercial and household cleaning chemicals such as saponified detergents, diluted ammonia, and petroleum solvents.

MAX 1618 A/B is a commercially proven protective coating system that prevents permanent stains from absorbing through the porosity of most countertop substrates such as bare wood, marble, granite, concrete, and other porous surfaces. MAX 1618 A/B can be used on wood, glass, laminated tops, marble, granite, concrete, metal, and other natural and artificial surfaces. MAX 1618 A/B will bond to these substrates and produce a clear high gloss that is chemical, stain-, and scratch-resistant.

Clean-ups can be as simple as wiping the surface with a clean rag. MAX 1618 A/B is safe to use on virtually any surface as high build coating or as an embedding resin system.

Epoxy Resin Finish

The use of an epoxy resin to apply a finish onto a countertop or a bar top is an inexpensive and simple process that can yield very functional and decorative results. Upon cure, the resin cures to a clear high gloss that creates and provides a protective barrier against stains and chemical attacks that can ruin its aesthetic quality. Granite, marble, concrete and bare wood countertops are porous substrates that stain very easily. Removal of stains is virtually impossible on these substrates.

MAX 1618 A/B is available in three unique versions that are specially formulated for specific performance qualities.

Please visit our web site at www.polymercompositesinc.com for more details or call our customer service number:

877 403 8008

Monday to Friday

9:00 am to 4:00 pm PST

You can also find us on eBay at

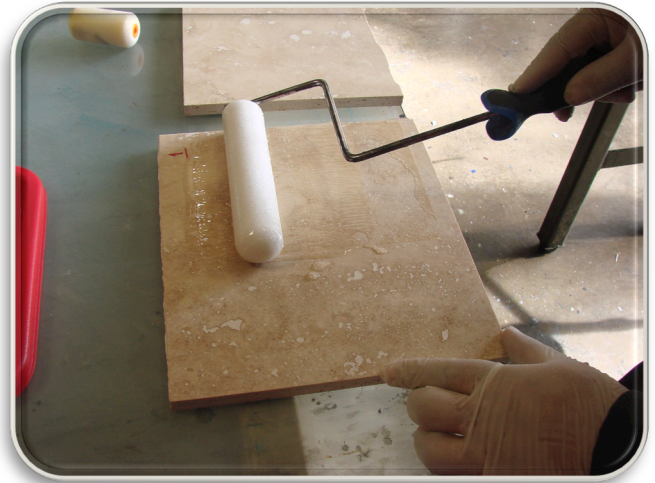
www.stores.ebay.com/Polymer-Products



MAX 1618 A/B for Ceramic and Marble Tile Coatings

Tiles, Concrete, and Masonry Substrates

MAX 1618 A/B can be used as a protective topcoat for masonry tiles and similar stone substrates. Make sure the surface is well prepared by thoroughly cleaning and degreasing the surface before applying the mixed MAX 1618 A/B coating. Apply the first coat to seal the porosity of the tile and allow it to cure for 24 hours. Upon cure, apply additional coats as desired. This will yield a durable stain resistant coating. The cured coating can be further polished for a high luster finish.



Honed and Polished For Satin Finish



Uncoated Travertine Tile Common Stain



Iodine Stain Resistance Test of MAX 1618 A/B on Travertine Tile



MAX 1618 A/B Mixing and Preparation

Working Environment

The environment should be clean, dust free, and well lit to help reduce any dust contamination and detect any surface defects effectively. The ideal temperature of the environment should be between 21.1°C to 29°C. Condition the table or counter top, resin and curing agent at this temperature overnight to insure good flow and wet out. A constant ambient temperature of 23°C will also provide an adequate curing environment for the MAX 1618 A/B. Keep the area dust free by sanding the tabletop in a different area from the curing area and minimize any strong drafts that may affect the surface smoothness.

Sealing Surface Porosity

After preparing the work environment, the tabletop is now ready to be sealed. At this point background color and other design aspects are considered. If the bar top has a natural wood grain intended as the revealed finish, use the MAX 1618 A/B as the clear resin sealer.

- If a solid color is desired such as black, for example, the MAX 1618 A/B is pigmented with colorants suitable for epoxy such as the MAX EPOXY COLORANT available on eBay (<http://www.ebay.com/itm/220779288603>).
- This will serve as a sanding sealer for the wood substrate and also create an opaque background if color is desired.
- The porosity of the substrate will be sealed by this application and prevent further absorption. Two to three subsequent coats may be required for very porous substrates.

Epoxy Mixing Instructions

The proper cure and final performance of any epoxy resin system is highly dependent on the quality and thoroughness of the mixing procedure. The resin and curing agent must be mixed to homogeneous consistency to achieve proper cure and tack free results.

1. Measure 2 parts of resin Part A to 1 part of curing agent part B and mix gently but thoroughly. Try not to over-agitate and avoid incorporating air bubbles into the mixture.
2. Mix for 2 minutes.
3. Pour entire contents of mixture into a secondary mixing container and continue mixing for another 2 minutes, or until completely homogenized in consistency.

Pouring Technique

1. Ensure that the surface is clean and level.
2. Pour out the contents of the second container onto the surface in a spiral pattern and allow to self-level.
3. MAX 1618 A/B can hold a .080 inch meniscus at 25°C without spilling over.
4. Wait about 10 minutes to allow any air bubbles to surface.

Surface Blemish Removal

1. An efficient technique for removing air bubbles is the use of acetone. Using a spray bottle, lightly spray acetone over the applied resin.
2. Additionally, a torch or a hot air gun can be used to remove surface bubbles. Make sure not to overheat the applied resin to avoid wrinkling.



Coverage Calculation Guide

RESIN COVERAGE WILL DEPEND ON 3 BASIC FACTORS

1. The thickness of the coating measuring from an impermeable substrate

The type of substrate or material

The absorption of the liquid by the substrate

The surface profile or roughness

The surface tension of the substrate

2. The method of application that will dictate the USAGE or LOSS FACTOR

Spraying the coating has the highest loss factor

Roll coating has less loss factor than spraying

Brush applied has less loss than roll coating

Flow coating yields the lowest material loss factor

3. Solids content; the MAX 1618 A/B is 100% solids. It does not contain any volatile solvents and nothing will evaporate from the applied coating.



COVERAGE CALCULATION GUIDE

Use these theoretical factors to determine coverage of any unfilled epoxy resin.

- **To determine coverage on a flat smooth surface, calculate:**

Length x Width x Thickness in inches

- **To obtain the cubic volume inch of the mixed resin needed, use the following equation:**

1 gallon of resin can cover 1604 square feet per 1 MIL or 0.001 inch cured coating thickness

$(\text{Length} \times \text{Width} \times \text{Thickness}) / 231 \text{ cubic inches per gallon} = \text{cubic inches of coating needed}$

- **For example:**

50 inches X 36 inches X 0.010 (10 MILS) = 18 cubic inches

$18 / 231 = .0779$ gallons of mixed resin

- **For example:**

$231 \times .0779 = 17.99$ cubic inches

- **Or:**

$4195 \text{ grams} \times .0779 = 326.79 \text{ grams of epoxy needed to cover 18 cubic inches of volume}$

- **Use the table below to determine the gallons needed and to convert it to the appropriate volume or weight.**

Fluid Gallon Volume Conversion	
1 US gallon	231 cubic inches
	128 ounces
	3.7854 liters
	4 quarts
	16 cups
Fluid Mass Conversions	
1 gallon of mixed unfilled epoxy resin	9.23 pounds
	4195 grams

Fabricating Techniques for Applying High Build Coatings for Bar Tops, Tabletops, and Similar Applications

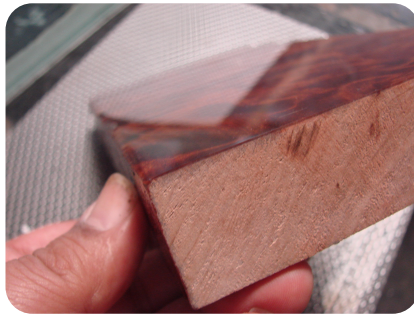
There are some considerations that need to be kept in mind when using any epoxy resins as a countertop coating or as an embedding resin for other projects.

First, one must consider the construction of the countertop or bar top itself. When a polymer coating is applied on one side of a piece of wood or any anisotropic substrate (any material whose mechanical property is directionally dependent) to form a clear continuous film, the dimensional shrinkage that occurs when a liquid polymer converts to a solid plastic will impose enough stress to cause it to curl and contort like a potato chip.

Although the dimensional shrinkage of MAX 1618 A/B is well below 0.5%, extrapolated over the surface area, it will produce enough force to distort the most rigid wood species and rigid veneers. Note the curl on this 20 mil wood veneer coated with 2 mils of epoxy coating.

The base countertop should be made from a single continuous piece of wood to eliminate any seams and joints. If two independent pieces are to be used and the coating will bridge the seam, the bond between the two pieces must be bonded by a structural adhesive and then

supported by a framing on the backside. This will keep the seams from separating and prevent the coating from splitting or



cracking over time. Use an adequate thickness of wood to prevent warping and curling.

Another consideration is the weight of the resin that will be added to the overall weight of counter or tabletop. The structure that will be supporting the countertop (legs and cross brace) must be able to bear the load of the countertop and the added weight of the resin.

A common 100% solids (no solvent or thinner) mixed epoxy resin weighs approximately 9.1 pounds per gallon and it will cover 160 square feet at 0.010 inch thick coating (3 times the thickness of a typical bond or printer paper). The added coating weight must be considered during the construction of the tabletop.

Curl Resulting From Epoxy Coating



MAX 1618 A/B Coating for Commercial Bar



Large Tabletop Construction

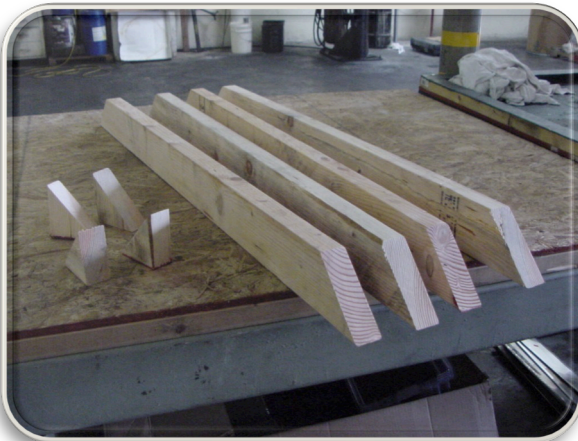
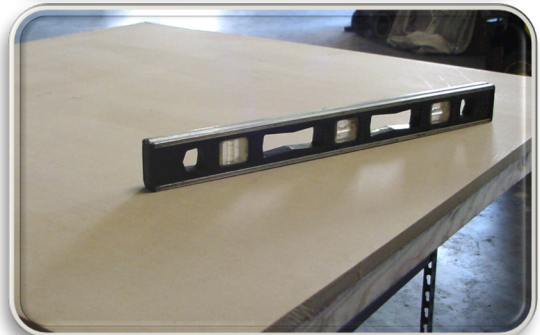
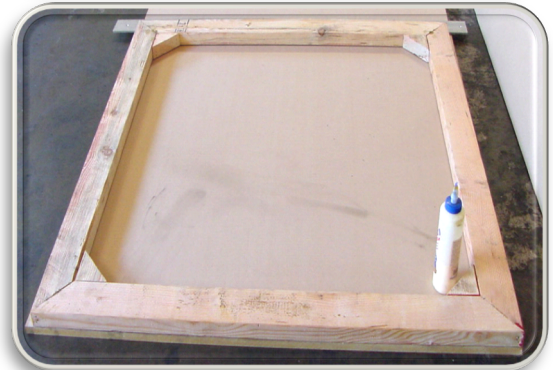
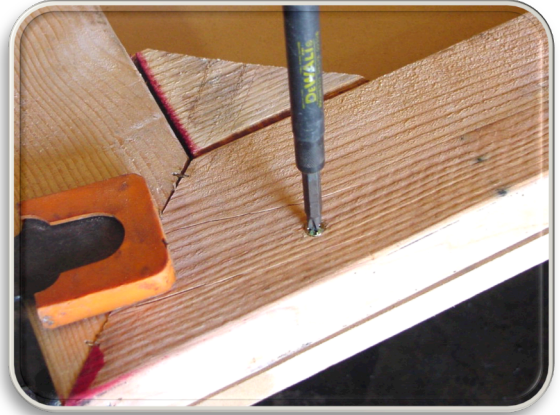
If constructing a new countertop or bar top, choose the best grade plywood. Using 3/8-inch plywood for coatings greater than 1/4-inch is ideal. For recoating projects, reinforce the underside by using a structural epoxy adhesive, such as our **MAX BOND THIXOTROPIC ADHESIVE**, available on eBay (<http://www.ebay.com/itm/220594244713>).

Do not use screws or any mechanical fastener on the surface of the counter top as it will leave a distortion or a noticeable dimple on the surface once the coating has cured. This is caused by the differential surface (metal from the screws and wood from the base substrates). Instead, use screws on the underside of the countertop.

For large coating applications such as this tabletop, some construction aspects must be considered.

Here a tabletop is constructed using 3/8-inch thick MDF particleboard with a 2x4 framing for support.

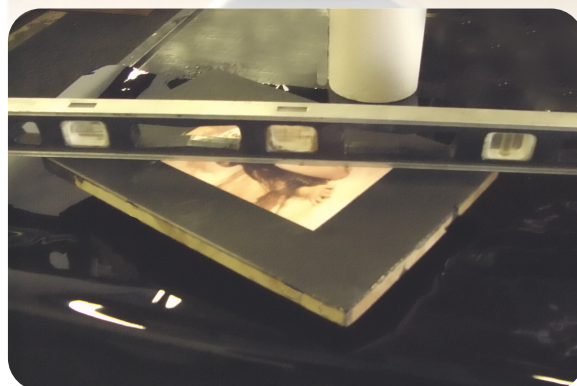
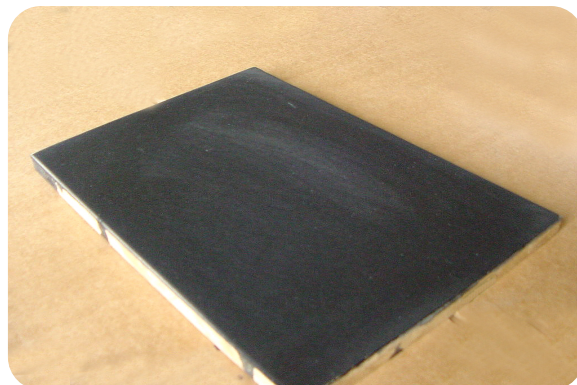
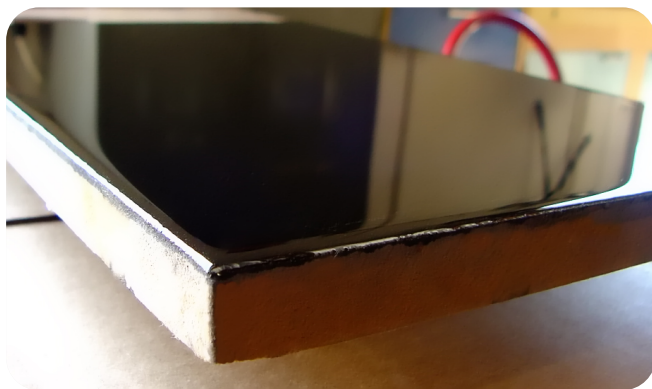
- The framing is bonded together using carpenters glue and screw fasteners.
- Use nails or screws to fasten the framing to the base from the bottom
- Make sure it does not penetrate the surface of the tabletop. This will eliminate any divot marks or indentations appear on the surface over time.
- Use a leveling tool to plane and level the tabletop.
- After the framing has been secured to the base, place the tabletop on secure surface and allow the resin to cure.



MAX 1618 A/B

General Preparation and Application Instructions

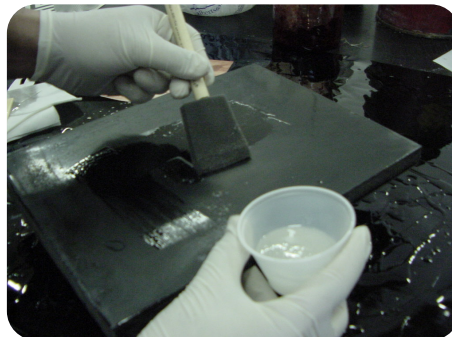
1. After the primary seal coat has cured tack-free (4-6 hours), calculate the amount of resin to be used based on the length, width, and thickness. Please refer to the Coverage Calculation Guide page.
2. MAX 1618 A/B is a low viscosity resin system that will self-level within 20 minutes, so ensure that the countertop or substrate is as level as possible.
3. Spread the mixed volume onto the prepared surface within 10-15 minutes. Allow the resin to self-level and cure undisturbed. Protect the application from airborne contaminants that may land on the surface. Allow application to cure for a minimum of 18 hours.
4. Repeat application if thicker coating is desired. To achieve a structural bond between layers, apply subsequent coating of MAX 1618 A/B within 18-24 hours. Allow to fully cure for a minimum of 48 hours before placing any heavy objects on top of the coating.



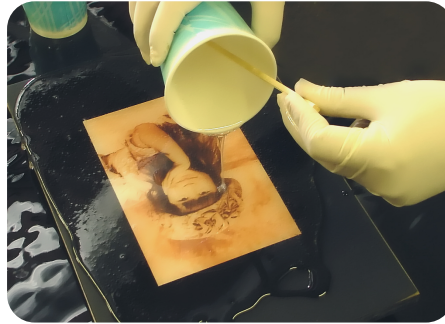
The preparation procedure also can be used on large tabletop and countertop applications. Here a photograph is going to be resin framed to a ½ inch baseboard 9 inches by 12 inches wide. At this dimension the baseboard can be used without framing.

General Guidelines for Picture Embedding

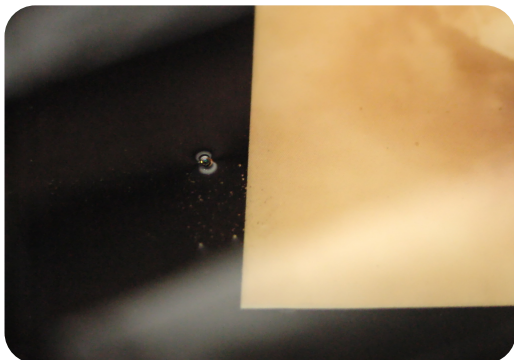
- Flat item such as photographs, cards, chips and other small smooth objects are the best to use. Embedding a picture of the items is much easier and will use less epoxy resin than embedding item itself.
 - Use quality photographic paper or papers that will not soak up resin and become translucent. Avoid using uncoated inkjet printed images since the colors will run and bleed out into the resin.
 - Printing the image using a color laser printer on heavy glossy paper provides the best results.
 - Do not use or pretest ink jet printed photographs to ensure that the ink will not bleed and run.
 - Stickers and decals also makes excellent embeds. Mount the picture using good quality adhesive such as clear paper glue or mix a small batch of the MAX 1618 A/B and use it as an adhesive.
 - Laminate the picture unto the tabletop
- surface and squeeze out to remove all entrapped air bubbles between the picture and the base substrate. Allow the adhesive to fully cure before applying the clear coating. If using a water-based carpenter's glue allow at least 24 hours to ensure complete evaporation of the water.
- Porous or rough surface items must first be sealed to prevent air bubbles from forming during the embedding process.
 - Mix a small amount of the MAX 1618 A/B and use it to seal the items. Allow to fully cure before embedding. Arrange and secure the items using the MAX 1618 A/B as an adhesive for mounting.
 - Laminate the picture unto the pre-sealed substrate and ensure that there is no entrapped air bubbles in between the picture and the substrate.



Picture Embedding

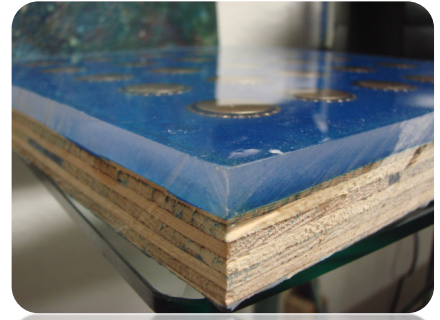


- When the adhesive has set, place the plaque or tabletop on a flat surface and level with a leveling tool. Use a small block about an inch tall and place it underneath the tabletop so it is elevated from the work surface. This will prevent the plaque from bonding to the work surface and makes cleaning the edge off much easier.
- Determine the amount of resin needed as shown in the Calculation Guide. The MAX 1618 A/B will hold a 1/8-inch thick meniscus when poured on to a flat and level surface.
- Use 3/16 inch as the coating thickness, which allows enough resin for flow out. Gently mix the resin in a clean container for about 2 minutes and then transfer it into another clean container and mix for another minute. This mixing procedure will ensure that the resin and curing agent is mixed thoroughly and avoid tacky pots.
- Starting from the center, pour the mixed resin onto the plaque and allow the resin to spread evenly. Any mixed air bubbles will slowly rise to the surface and pop.
- Use a hair dryer or a hot air gun and gently pass it over the coated surface to remove any stubborn air bubbles. By allowing the resin to spread by itself, it will naturally form a coating thickness of about 1/8 inch.
- If the item to be embedded is thicker than 1/8 of an inch, several applications may be required. Small air bubbles will usually appear from the edges of the photograph embedded item. Watch for these bubbles and use the tip of a toothpick or a hot air gun to pop any bubbles.
- The applied MAX 1618 A/B will remain workable for about 60 minutes so guard the surface from any settling dust and debris.
- For thicker coats allow the first layer to cure for approximately 6 hours and then repeat the coating process. Do not move the plaque or tabletop as it has equalized to water level plane. No sanding is required between subsequent coats when it is applied within 24 hours. As long as the previous application has cured to a hard finish and the surface temperature is below 80°F, subsequent coats can be applied and will cure into a unitized layer.
- The MAX 1618 A/B will dry to the touch in 6 hours and will require another 24 hours before it is safe to handle. Drips that formed and cured on the edges can be removed using a razor knife and then sanded flush.
- For countertops and tabletops, it can take up to 7 days to achieve full cure but can be safe to support heavy objects before.
- Indentations may appear if any object is placed on top of the coating before it fully cures. Avoid placing hot coffee mugs or other hot items directly on top of the coating for at least 4 days.
- For a scratch resistant finish, buff the surface with polishing or automotive rubbing compound and then use a soft cotton rag to apply several coats of furniture polish or carnauba wax and buff to a high gloss. Scuffs and scratches can be removed using the same process.

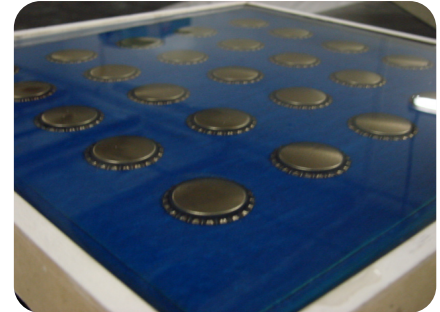
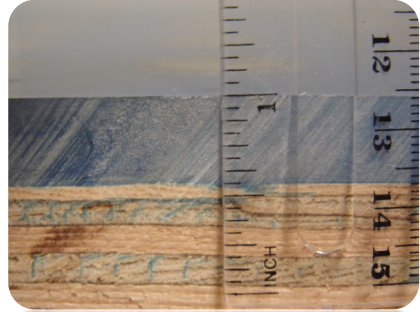
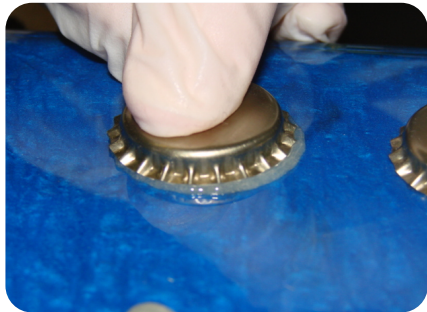


Embedding Thick Objects and Other Memorabilia

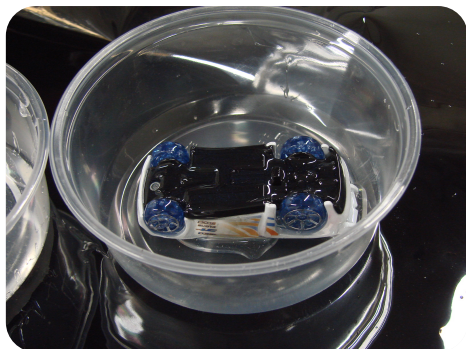
Embedding thick or bulky items must be pre-sealed prior to encapsulating it in the MAX 1618 A/B. The pre-sealing process is required to prevent any outgassing of any air bubbles that as the resin begins to exotherm. Microscopic air bubbles will inflate to a large visible flaw due to the heat that the resin produces, causing the entrapped air to expand. This progression is called nucleation and will occur more prominently on porous or objects with sharp undercuts or drafts. To prevent this from occurring, the object must first be encapsulated to seal off any cavity that



The bottle caps were filled with MAX 1618 A/B to eliminate the cavity. They were then bonded to the base substrate to prevent it from moving during the embedding process.



This Hot Wheels car was pre-sealed with MAX 1618 A/B to fill in voids that could cause outgassing.



Casting and Woodworking Applications



MAX 1618 A/B can be machined after full cure.

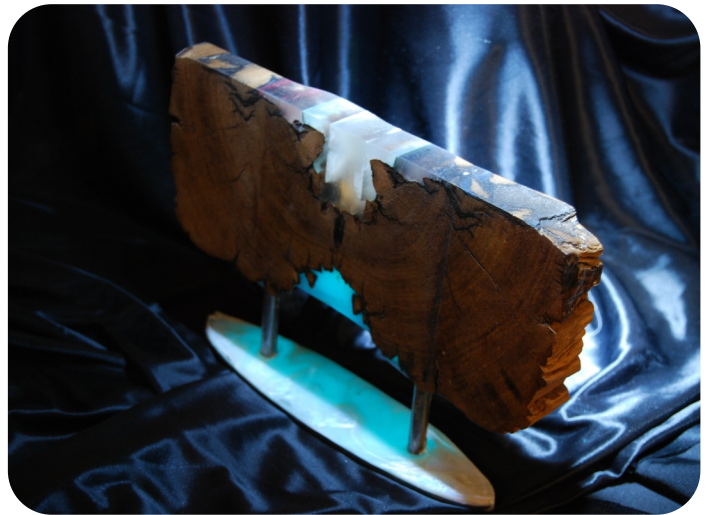


MAX 1618 A/B polished using fine grit sandpaper.



Compliments of Wade Yarber

Casting and Woodworking Applications



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