

MAKING SAILBOAT URETHANE MOLDS WITH POR-A-MOLD

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Using HYPERLAST (PATHWAYS POLYMERS):

POR-A-MOLD TA-333 Thixotropic
Used to make the flexible mold

POR-A-KAST -TA
Used to strengthen and make the mold rigid so it will not distort

SYNLUBE 531
Spray Release Agent



TOOLS NEEDED:

Polyethylene mixing cups, containers
Putty knives, table knives
Cheap chip 1-2" brush
Toulene for thinning
Protective gloves
Acetone for cleaning your knives
Rags



INTRODUCTION

The great advantage of POR-A-MOLD is its ability to record the most intricate details of the master or positive model and the ease it can be removed from the master model with undercuts.

POR-A-MOLD can be used to make patterns that are exact copies of the master and are used in the ceramic shell and brass lost wax investment casting techniques.

It also can be used to make copies of all kinds of master models that can be recast in the other materials such as wax, resins, epoxies, liquid wood, urethanes gypsum, plaster or cement products.

POR-A-MOLD allows the production of large editions with little wear or deterioration of the mold from repeated use.

Care must be taken that you work in a dry, low humidity area. Open can must be sealed once material has been removed. Urethane is sensitive to moisture until cured.

POR-A-MOLD THIXOTROPIC

THIXOTROPIC material has the consistency of peanut butter and is used as a troweling type material to build a mold by the paint and trowel method.

One reason for using this type of material is that the master model is too large to use the pouring type material for reasons of economy or the master is too complex for a pouring type mold.

One example of this would be to make a mold of animal horns or antlers. The pour type method would be almost impossible and would use a large quantity of material.

This example of a THIXOTROPIC mold will work on any upright master model or a master model that is complex in shape.

If the master model has undercuts or fine details that need to be reproduced, we suggest that the first coat(s) be painted on. We can do this by using the pouring type POR-A-MOLD for the brush coat(s) or thinning the THIXOTROPIC material with toluene. Mix a small portion of the material in a container and add 15% to 25% toluene until you have a brushing consistency. Brush this material on the master being sure to brush out any air trapped between the master and the painted coat.

After the brush coat(s) have set 45 to 60 minutes or the material has started to gel and is still tacky to the touch, you can then trowel on the THIXOTROPIC material to the desired thickness.

After you have reached the desired thickness, use POR-A-KAST as a final coat to make the mold rigid.

MAKING THE MOLD

1. Seal the plug with an automotive lacquer, varnish or quick drying enamel. Master MUST be dry.



2. Spray on release agent, Synlube 531, mist several light coats on.



3. Mix a 6 oz. (3 oz. Each of part A & B) of THIXOTROPIC. This will be enough to coat the RG-65 plug. Thin the THIXOTROPIC material with 20% toluene (1.2 oz) (available at most hardware or automotive paint stores) until you have a brushing consistency. It is paramount to make sure you have equal parts of A&B mixed together. Mix slowly and thoroughly to avoid entrapment of air bubbles.

4. Paint this blended THIXOTROPIC material over the surface of the plug.



5. Allow this paint coat to set up. Wait until it has started to gel and is still tacky to the touch (approximately 45 to 60 minutes).

6. Mix up 8oz. (4oz. each of A&B) THIXOTROPIC material to trowel onto the plug. With a small trowel or putty knife carefully build up the mold to a thickness of $\frac{1}{4}$ " or greater. Be sure not to leave any thin areas. After you have troweled on the THIXOTROPIC material has started to set or gel, mix up (8oz.) and apply a 3rd coat of POR-A-MOLD.



After you have troweled on the desired thickness and the THIXOTROPIC material has started to set or gel, apply a coat of POR-A-KAST.

Three coats of POR-A-Kast is all you will need.

Mix up 10oz. (5oz. Each of A&B). With your putty knife you can smooth POR-A-KAST onto the POR-A-MOLD.

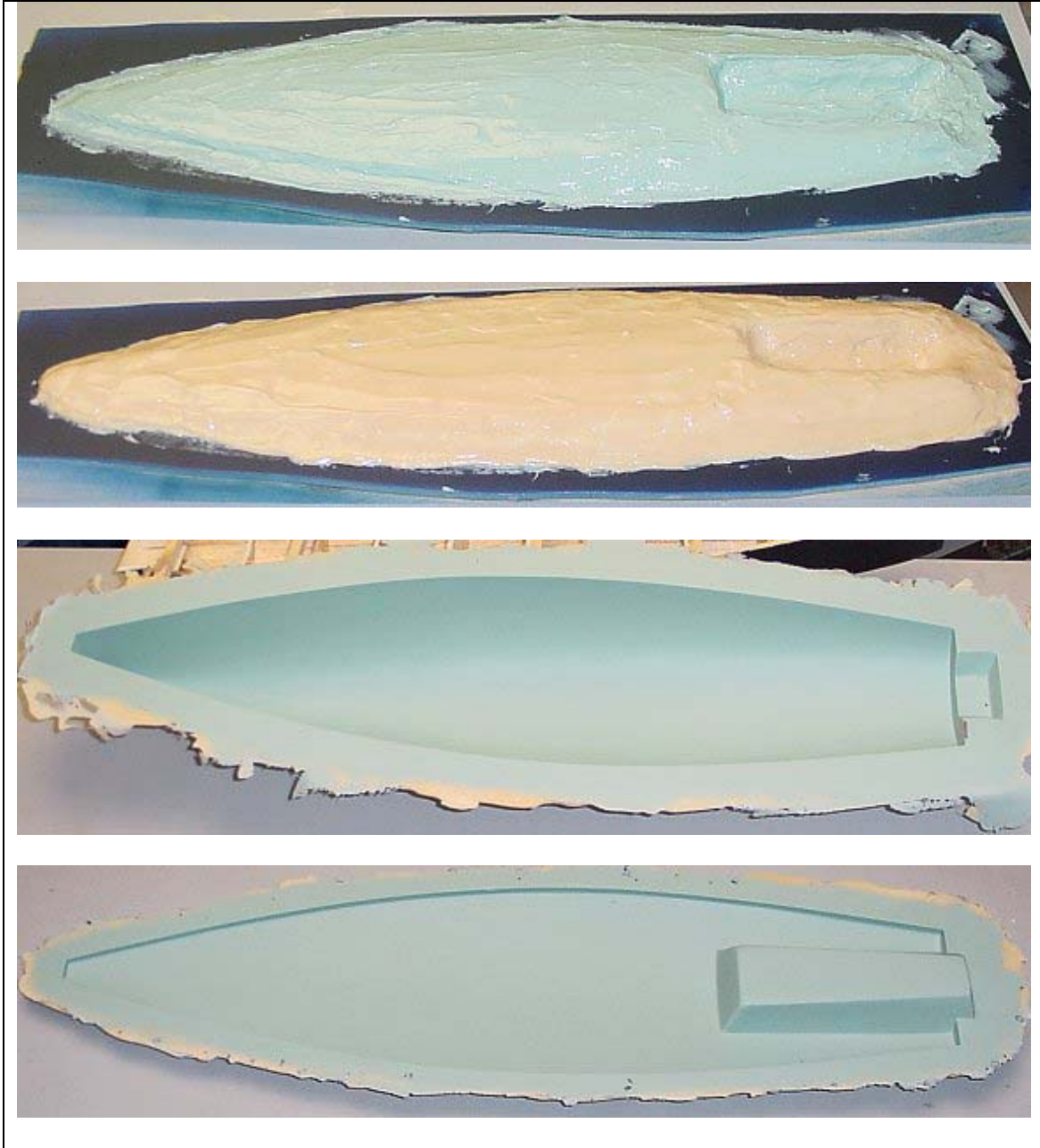


Wait till it starts to set or gel and apply final coats of POR-A-KAST.



The deck is molded up the same way as the hull using, the same amount of molding material per coat. Each coat will be a little thicker since, there will be extra material after each mixing. So you can reduce the amount of coats needed.

- 1ST COAT---thinned POR-A-MOLD
- 2nd COAT---POR-A-MOLD
- 3rd COAT---POR-A-KAST
- 4th COAT---POR-A-CAST



After the proper cure time at room temperature (72°F for approximately 12 hours), you can remove the plug from the mold and you have a mold ready for reproduction casting. I usually will wait about 24 hours before pulling the plug out of the mold.