

CONCRETE MOLD MAKING **STARTER KIT**



The following stepping stone mold making tutorial includes the key steps that need to be taken in order to make a rubber mold; however, stepping stones are only one example of how this kit can be used. Other project ideas include: decorative tiles, flexible texture mats, small tabletops, decorative stone, pavers and much more! **ATTENTION:** Review all Safety Data Sheets (SDS) and enclosed literature prior to the use of products included in this kit. Refer to the Poly 74-Series Technical Bulletin for detailed Poly 74-45 Liquid Rubber information.

STEP ONE: USE PLASTICINE CLAY TO SEAL THE EDGES OF THE MODEL

Place and center your model on a baseboard that is at least 2" larger than the model on all sides. (TIP: If the baseboard is not sealed, seal it with the **Poly PVA Solution** and allow it to dry). Once positioning is determined, remove the model and drill a hole through the baseboard near the center of the model placement. A lightweight model should be glued or screwed in place to prevent it from moving/floating. Be careful not to seal the air hole you just drilled. Seal the edges of the secured model with **Poly Plasticine Clay** to prevent the liquid rubber from running under it during the mold pour (TIP: warming the clay will make this step easier). Clay can also be used to eliminate undercuts, even out the model and cover imperfections.



POLY PLASTICINE CLAY



INCLUDED IN THIS KIT:

- Poly 74-45 Liquid Rubber Gallon Kit (16 lb)
- Poly PVA Solution (Sealer)
- Pol-Ease® 2300 Release Agent
- Pol-Ease® 2650 Concrete Casting Release Agent
- 6-Gallon Mixing Pail
- Poly Paddle Mixing Tool
- 3 Brushes
- Plasticine Clay (1 lb)

TOOLS & SUPPLIES:

Tools and supplies you may need that are not included in this kit:

- Personal Protective Equipment (See SDS)
- A Model (e.g., a stone)
- Concrete Mix
- Containment Area Materials
 - Screws
 - Epoxy/Glue
 - Drill
- Screw Driver
- Utility Knife
- Digital Scale
- Measuring Containers
- Putty Knife/Pry Tool

VIDEO TUTORIAL:

Scan the QR code below to watch this video tutorial, or visit <https://youtu.be/rrCYQmE6jVc>.



QUESTIONS?

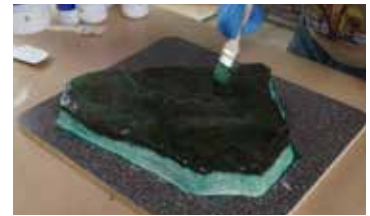
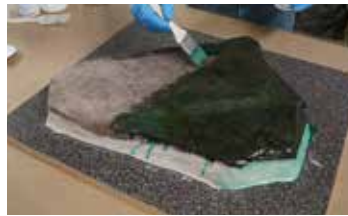
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STEP TWO: USE POLY PVA SOLUTION TO SEAL THE MODEL

Porous models (e.g., stone, wood) must be sealed with **Poly PVA Solution** (a water-soluble sealer) prior to mold making. Use one of the supplied brushes to apply this sealer; the green color helps to ensure thorough coverage. **Poly PVA Solution** dries in approximately one hour, depending on conditions. **NOTE:** Non-porous models only require application of **Pol-Ease® 2300 Release Agent** (applied in STEP FOUR).

POLY PVA SOLUTION



STEP THREE: CONSTRUCT CONTAINMENT AREA AROUND THE MODEL

Construct a containment area around the model approximately 1" beyond all sides and at least 1/2" taller than the model. In this example, we use melamine-laminated particle board; however, many other materials can be used. Ensure that the walls of this containment area are firmly attached to the baseboard and to each other. If your containment area material is porous (e.g., untreated plywood), seal it with **Poly PVA Solution** and allow it to dry.



STEP FOUR: APPLY POL-EASE® 2300 RELEASE AGENT

Generously spray **Pol-Ease® 2300 Release Agent** onto the baseboard, containment walls and model and then brush out to ensure even coverage and no puddling.

POL-EASE® 2300 RELEASE AGENT



STEP FIVE: MEASURE, MIX & POUR POLY 74-45 LIQUID RUBBER

Poly 74-45 Liquid Rubber has a 1A:1B mix ratio (by weight or volume), 30-minute pour time (i.e., the amount of time you have to mix and pour the liquid rubber) and 16-hour demold time (i.e., the minimum amount of time that the rubber has to cure before you can remove the mold from the model). Determine how much rubber is needed for your project (follow calculation on the right). Measure out Part A & Part B at a 1A:1B mix ratio. **Example:** For a project requiring 16 lb of rubber, weigh out 8 lb of Part B first, then weigh out 8 lb of Part A (TIP: Add Part B to the mixing pail first because it is lower in viscosity and less likely to cling to the sides). Thoroughly mix the components together with the **Poly Paddle**. Scrape the bottom and sides of the mixing pail several times. Pour **Poly 74-45** into the lowest point in the containment area and allow it to rise and flow across the model. Do not scrape the bottom or sides of the mixing pail during the pour; unmixed materials tend to cling to these areas and may result in uncured areas of the mold. Spray **Pol-Ease® 2300 Release Agent** across the back surface of the mold to reduce small surface air bubbles.



POLY 74-45 LIQUID RUBBER



POLY PADDLE



ALLOW POLY 74-45 LIQUID RUBBER TO CURE FOR 16 HOURS AT ROOM TEMPERATURE.

STEP SIX: DEMOLD

Remove the mold box walls, carefully loosen the edges of the mold from the baseboard and then remove the entire mold.



STEP SEVEN: APPLY POL-EASE® 2650 RELEASE AGENT TO THE MOLD

Pol-Ease® 2650 Release Agent is a silicone-free release agent designed for use when casting concrete or plaster into polyurethane molds. No drying is necessary before casting. Brush the release agent into the mold and ensure that there is no puddling. If necessary, use a rag to wipe away excess.

POL-EASE® 2650
RELEASE AGENT



STEP EIGHT: CAST CONCRETE

Select a suitable concrete mix design for your project. Mix the concrete and pour into the mold (TIP: To reuse the mixing pail for mixing concrete, peel out the cured polyurethane rubber and then wipe down the pail with denatured alcohol). Allow the concrete to cure according to the manufacturer's specifications. Once the concrete has cured, loosen the edges of the mold and remove the casting. Stain and seal the concrete as desired.



Properly designed molds can be reused hundreds of times.

CALCULATION:

Determine volume of the containment area:

$$(L'' \times W'' \times H'') = \text{_____ in}^3$$

Determine volume of the model:

$$(L'' \times W'' \times H'') = \text{_____ in}^3$$

Subtract the volume of the model from the volume of the containment area:

$$\text{_____ in}^3 - \text{_____ in}^3 = \text{_____ in}^3$$

Divide the result by 27.5 in³/lb (the specific volume of Poly 74-45 Liquid Rubber) to determine how many pounds of Poly 74-45 Liquid Rubber are needed:

$$\text{_____ in}^3 \div 27.5 \text{ in}^3/\text{lb} =$$

$$\text{_____ lb of Poly 74-45}$$

VOLUME CALCULATIONS

RECTANGULAR BOX

$$V = abc$$

CYLINDER

$$V = \pi r^2 h$$

SPHERE

$$V = \frac{4\pi r^3}{3}$$

RIGHT CIRCULAR CONE

$$V = \frac{1}{3} \pi r^2 h$$

PYRAMID

$$V = \frac{lw h}{3}$$