

OVERVIEW

Silicone rubber techniques are employed to achieve desired results in various applications, such as mold making, casting, or creating silicone-based products.

In this module, you can expect to learn the process of creating a brush-on mold using brush-on silicone rubber.

The module provides step-by-step instructions on how to secure a model to a baseboard using hot melt glue, measure and mix the Rebound 25 silicone rubber, and apply the first layer called the detail coat. It emphasizes the importance of thorough mixing and coverage to minimize bubble entrapment. Subsequent layers are applied, allowing the silicone rubber to cure between coats until tacky to the touch.

A cut seam is created using thickened silicone rubber to fill in undercuts and reduce sharp edges. Additional layers are applied to further build up the cut seam and ensure the desired mold thickness. The rubber flange is trimmed, and a rigid support shell is applied in two sections to maintain the shape of the rubber mold during casting. Plasti-Paste II is used for the support shell, and proper mixing and application techniques are explained.

After the support shell cures, it is removed, and the rubber mold is seated into it. Finally, the casting process is covered, involving the measurement and mixing of liquid plastic, pouring it into the mold, and allowing it to cure. The result is a detailed reproduction of the original model.



THINGS YOU NEED TO KNOW

1. A sample model
2. Hot glue
3. Baseboard
4. Rebound™ 25 silicone rubber
5. Brush
6. Glove
7. Thi-Vex™
8. Containers
9. Razor knife
10. Marker
11. Clay
12. Aluminum foil
13. Sonite wax II.
14. Plasti-Paste II
15. Hammer and chisel
16. Rubber bands
17. Large bucket
18. Resin
19. Tint - optional

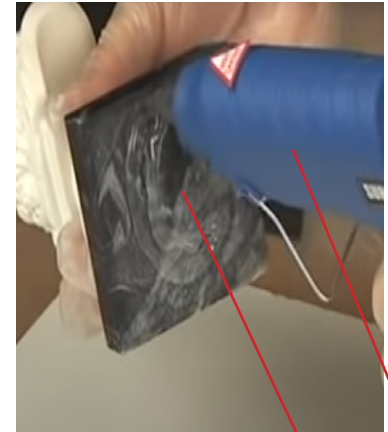
The functions of all these materials and equipment will be explained as we progress through this module.

PROCEDURES

Making a brush-on mold with brush-on silicone rubber

1. Secure model to baseboard

- For this module, a small plastic model was used.
- Apply a Hot Melt glue to the baseboard which is used to secure a model to baseboard.



Glue gun

Hot melt glue

Original model

Baseboard

2. Measure and mix – Rebound™ 25 silicone rubber

- Measure equal amount of part A and Part B in different container.
- Combine parts A and B into one mixing container.
- Part A and B are mixed thoroughly for at least 3 minutes.
- No color streaks indicate material is well mixed.



A

B



A + B

3. Apply first layer- Detail coat

- Apply a thin first layer which ensures minimal bubble intrapment in the finished mold.
- Use brush to work rubber into fine detail.
- Do not over apply rubber.



- **Create rubber flange:** Cover baseboard at least 3" (7.6 cm) out from base of model.
- Ensure thorough coverage – check model carefully for missed areas. Mix and apply more rubber if necessary.
- Let the first coat cure for about 60 minutes at room temperature (72°F/23°C) until tacky. Tacky = Sticky to touch but does not come off onto glove.
- **Mold maker's tip:** Touch rubber off model. If rubber comes off onto your glove, It is not ready for the next layer.
- Ensure rubber is tacky and ready to receive next layer of rubber.



4. Second coat mix

- More material is measured and mixed for the second, thicker coat.
- Dispense equal amounts of Part A and B. Mix thoroughly for three Minute.
- No color streaks indicate material is well mixed.



A + B

5. Second layer application

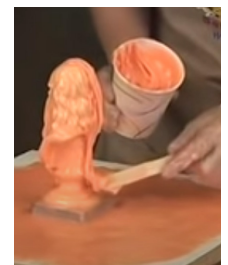
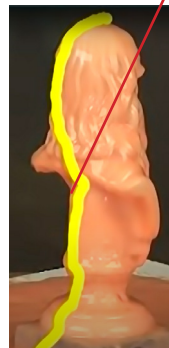
- Apply thicker second layer using more fluid strokes.
- Make sure rubber is applied to all details and undercuts.
- Let second coat cure for about 60 minutes until tacky - not wet to the touch.



6. Creating a cut seam with thickened silicone rubber.

- For this model we apply the cut seam down the back of the model.
- Dispense equal amount of part A and B.
- Mix thoroughly.
- Add four drops of Thi-Vex™ II per 1 Oz. of rubber.
- Mix thoroughly for three minutes.
- Scrape bottom and sides of container.
- Ensure that the rubber is now noticeably thicker.
- Build cut seam.
- Used thickened rubber to fill in undercuts.
- Use thickened rubber to fill indentations and deep detail.
- Use thickened rubber to reduce sharp edges and angles.

Yellow line indicating the cut seam - the back of the model



7. Third layer

- Measure and mix rebound™ 25 Silicon rubber – THIRD LAYER
- Dispense equal amounts of parts A and B. Mix thoroughly for three minutes.



8. Third layer application

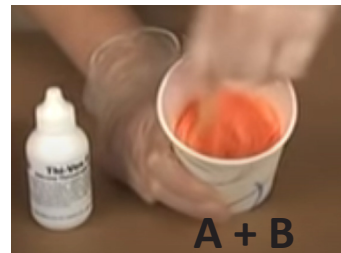
- Apply Third layer.
- Let third coat cure for about 60 minutes until tacky – not wet to the touch.



9. Measure and mix rebound™ 25 silicone rubber with Thi-vex (silicone thickener).

Purpose: Further build up cut seam. Also fill in undercuts and indentations.

- Dispense equal amounts of parts A and B.
- Add four drops of Thi-vex™ II per 1 oz. of rubber.
- Mix thoroughly for 3 minutes.



10. Enhancing Seam Strength and Edge Protection with Thickened Rubber Applications

- Apply thickened rubber to further build up cut seam.
- Further fill in undercuts.
- Use thickened rubber to reduce sharp edges and angles.



11. Fourth layer

- Dispense equal amounts of parts A and B. Mix thoroughly for 3 minutes.
- Apply fourth layer.
- Final mold thickness 3/8" (1cm).
- Let silicone rubber cure for 6 hours at room temperature (72°F/ 23°C).



12. Trimming

- Trim rubber flange with razor knife.
- Rubber flange extends 3" (7.6 cm) in all directions.



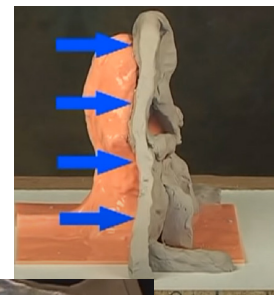
13. Application of a Rigid Support Shell

- Purpose of Rigid Support Shell: Support shell maintains shape of rubber and keeps it from distorting during casting.
- For this model, rigid support shell will be applied in 2 sections.
- Parting line will be drawn along model's high points.
- Draw a line with marker, dividing the model into two halves along the high points.



14. Creating Parting Shim and Reinforcing Support Shell Sections with Modeling Clay

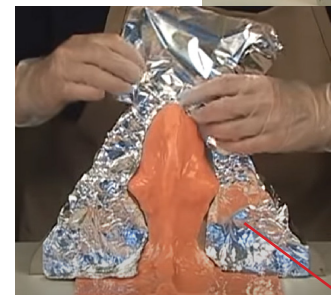
- Apply modeling clay along parting line to create parting shim, which separate support shell sections.
- Place modeling clay along parting line. Follow contour of the model.
- Reinforce clay shim from behind.
- First half of support shell will be applied to the side.



Clay

Mold maker tip: Cover front of clay with thin gauge aluminum foil.

Purpose: Releases plastic shell sections from each other.



Aluminium foil

1i SILICONE RUBBER

MODULE 1 1

15. Apply Sonite wax II release agent to base-board



16. The measurement and mixing of Plasti-Paste II – “Support Shell Material”

-Mix ratio by volume: 1 Part A
2 Part B



A

B

- Part B is a paste and needs to be pre-mixed.
- Dispense Part B – Measuring **cup one**
- Pack material into cup to eliminate air voids.
- Pack in and level off material

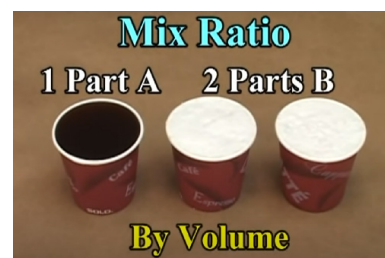


- Dispense Part B -Measuring cup two
- Pack in and level off material
- Dispense Part A



- So, we have achieved the mix ratio, Mix ratio by volume
- Combine all parts into mixing container.
- Mix thoroughly.
- Working time is 10 minutes at room temperature (72°F / 23°C).
- Scrape bottom and sides of container.

Components are mixed to a uniform color and consistency.



1j SILICONE RUBBER

MODULE 1 1

17. Application of Plasti – Paste II to rubber mold surface and clay shim.

- Plasti – Paste II is applied 1 inch (2.5 cm) beyond outer edge of rubber mold.
- Mix and apply additional Plasti -Paste II as needed.
- Smooth surface and edges.
- Then cure for at least 90 minutes at room temperature (72°F / 23°C).
- Finished shell thickness is minimum 3/8 inch (1 cm).



Finished shell

18. Second half of support shell

- Prepare for second half of support shell
- Fold foil back onto the cured Plasti -Paste II.
- Remove clay shim and supports.
- Apply release agent (Sonite Wax II) to baseboard and cured support shell.



19. Plasti – Paste II mix

- Measure and mix Plasti – Paste II
- Mix thoroughly



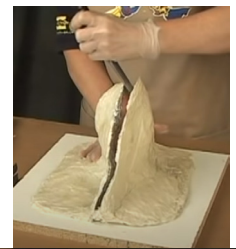
20. Application of Plasti-Paste II to the other side.

- Apply Plasti-Paste II
- Smooth surface and edges.
- Let cure for at least 90 minutes at room temperature (72°F / 23°C)



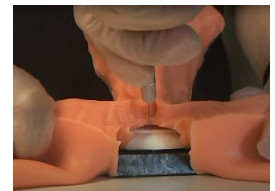
21. Removal of the support Shell

- Use a hammer and chisel or screwdriver to separate shell sections.
- slowly pry support shell segment apart.

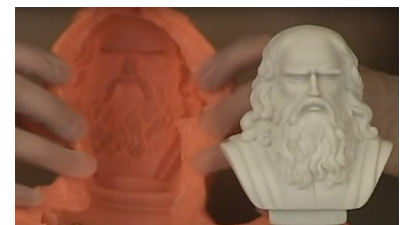


22. Separation of cut seam

- Use Razor Knife to separate cut seam
- Slowly cut rubber seam.

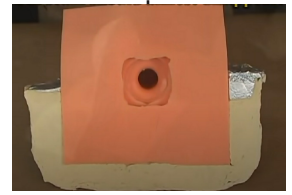
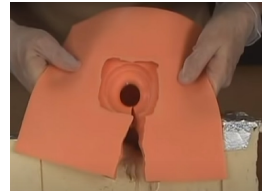


Final result – Rebound 25 has perfectly captured all detail from the original model.



23. Seat Rubber mold into support shell

- Take special care to align cut seam and secure into support shelf.
- Cut seam should almost disappear.

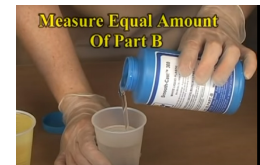


- Use rubber bands to secure support shell segments.
- To make casting easier, place mold in large bucket for level support.



24. Casting – Measure and mix 300 liquid plastic.

- Dispense Part A
- Measure equal amount of part B
- Combine both parts into the same mixing container and mix.
- Pour resin slowly into mold
- After 3 minutes, liquid turns to a solid.
- Let smooth-cast 300 cure for at least 20 minutes at room temperature (72°F/23°C).



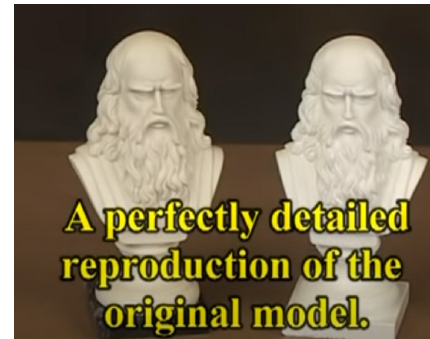
25. Demold casting

- Separate support shell
- Remove rubber mold from casting



FINAL RESULT

- A Perfectly detailed reproduction of the original model is formed.



- Smooth-cast 300 with optional tints and fillers.

