

Squish Mold

Products used in this How To:

- * Original Tail Light Lens
- * High Strength 2 Silicone Rubber
- * Alumilite Regular
- * Dye (Blue used here)
- * Rubber to Rubber Mold Release
- * Glue Gun
- * Sculpting Tool
- * Excel Knife / Putty Knife
- * Corrugated Plastic
- * Popsicle Stick
- * Cups



This How To process will walk you through step by step the procedure for making a two piece mold squish mold.



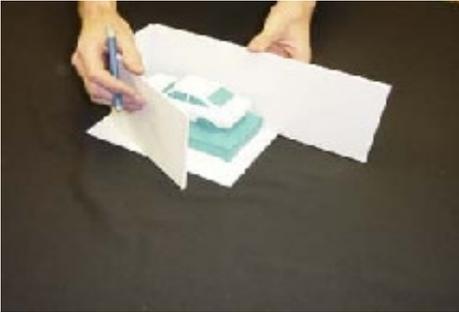
First we will start with an original that requires a two piece mold that will require male and female mold halves. This car works perfectly to demonstrate this because the exterior side will act as our female half of the mold (think of it upside down) and the male (squish) half of the mold will nestle down into the female side to give us the proper part thickness.



We will start by using a bed of Synthetic Modeling Clay to act as the second half of the mold. Here we have taken a piece of plastic to act as the base of the mold box and are smoothing the bed of clay out to have somewhere to set the original.



Here we have put clay on the inside of the car and smoothed out all of the edges. Take your time in this step of the process. The cleaner your edges are the cleaner your seam line will be and the less flash you will have on your cast piece.



Once you have clayed up your original you need to make a mold box to contain the liquid silicone you are about to pour. We chose to use some corrugated plastic that is simply scored and bent around your base of clay. Your mold box should be approximately 1/4 to 3/8 of an inch away from your piece. You can use any nonporous material to make your mold box such as metal, Formica, plastic, wood, pvc, glossy side of posterboard, old yogurt or Cool Whip containers, etc.



Here you can see how we are sizing the mold box right around the base of the clay. We simply score through one side of the corrugated plastic and bend it around the base. We then seal the inside of the mold box by smearing the clay tightly against the box. This ensures us the mold box will not leak. It is a good practice to double check this before pouring your rubber. An extra minute double checking the mold before pouring could save a costly mistake and a real mess.



Here you can see we are using hot melt adhesive to glue and seal the seam of our mold box. We will also use the hot melt to seal all the edges of box to the base just in case the silicone were to seep down between the box and the clay. This will prevent the silicone from leaking. You can also use super glue, caulk, epoxy, clay, tape, or any other material to seal your mold box shut. Just make sure it is sealed tightly.



You are now ready to mix and pour your silicone rubber mold. We chose Alumilite's High Strength 2 silicone mold making rubber to make our mold because it has great flexibility and exceptional tear strength. Mix 10 parts of the base to 1 part of the catalyst by weight. Mix thoroughly and slowly pour the rubber into the mold box. Pour the mixed rubber from one corner allowing it to flow naturally over the part. If you have very fine detail you may wish to paint on one coat of mixed rubber over your part before pouring the rest of the rubber. This will dramatically decrease the chance of trapping any air bubbles against your part.



Let the silicone cure overnight. Once cured, using a dull knife or putty knife, remove the mold box from the base.



Start removing the clay from the mold box and your original using a dull knife or putty knife. It is very important not to move or break the seal of the part nestled into the first half of your silicone mold.



You may also use your fingers to help remove the clay.



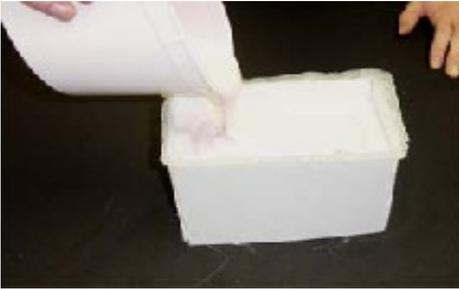
Remove all of the clay from your original. Take the time to remove all of the clay out of the detail of your original ... around the windows, doors, lights, etc. Once you have removed all of the clay you are almost ready to mold release it and pour the second half of the mold.



Here is an important note: Silicone only bonds or adheres to another silicone. Therefore it will not harm your master unless it is made of silicone. But you are required to use a mold release before pouring the second half of your mold. Use multiple coats of Alumilite's Rubber to Rubber Mold Release or UMR between the first and second pouring of silicone. Another great release agent is Vaseline. Simply smear a thin layer of Vaseline onto the rubber. You must have mold release on all the cured silicone surfaces that are exposed that will have new silicone poured against. Baby powder also works as a mold release shown in this picture but Alumilite's UMR, Rubber to Rubber, or Vaseline is preferred and more effective.



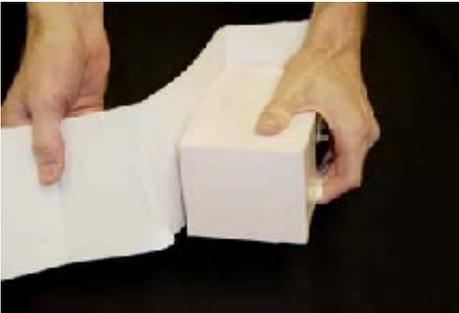
Once you have thoroughly coated the first half of the mold with mold release, you are ready to pour the second half. Mix the High Strength 2 silicone rubber and pour it into the mold box creating the second half of your mold. You can see in this picture we tilted the mold when we began to pour to make sure the silicone got underneath the deep front bumper.



Once we knew we had the silicone underneath the bumper we simply put it back flat and finished pouring it. You can see the hot melt glue from the first half of the mold still on the edge of the mold box.



Let the silicone set up overnight. Using a dull or putty knife, break away the mold box from your two halves of your mold.



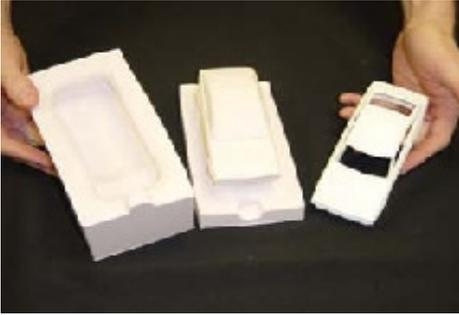
Completely remove the mold from the mold box.



Find the seam where the two halves come together and begin to separate them. It may start a little difficult around the edge but should then separate fairly easily throughout the rest of it.



Here you can see the two halves of the mold separating. We wanted to show you this shot, so you can see the advantages of the High Strength 2 flexible silicone rubber with an extremely high tear strength. You will not rip this mold when you demold it. Unfortunately, it is difficult to see the white car body inside the mold. The colors of the rubber and the car are just too close. But the car body remains inside the mold until you flex the bottom half of the mold and remove the original.



Here you can see the unharmed original car body and the perfect silicone mold that picked up every single detail of the original. You can also see in the front of the mold the locator that we put into the clay before we poured the rubber. Then when we poured the two silicone halves it provides us a mechanical locator to match or seat the mold properly when putting it back together.



Now we are ready to pour our cast replica. We chose to add some blue dye to the resin to help it show up a little bit better. We simply mix equal amounts of the A side and B side of Alumilite Regular with a few drops of Alumilite's Blue dye. We mixed 2 oz of A and 2 oz of B. Even though the part only requires 2 oz total we use a little more to make sure it squishes properly and pushes all of the air bubbles up and out the seam line.



Before casting, it is always good practice to warm your mold and also use baby powder to help the material cure more evenly and reduce surface tension in the mold allowing for a less chance of trapping air bubbles. Mix the resin for approximately 20-30 seconds. Try to avoid whipping in excess air into the resin when mixing. Once mixed thoroughly, simply tilt your mold and allow the resin to flow into the hard to reach areas and pool into the bottom of the mold.



Once you've poured all of the resin into the mold, simply rotate the mold to allow the resin to coat every side of the mold. Important Note: Make sure to work over a piece of scrap plastic or wood. Or make sure to mold release a table or work area so the resin will not adhere to it. Do not spill or squish the resin over any type of carpet, fabric, or clothes. The resin will stain and once hardened will not come out.



Then starting from the side with the locator, flex the silicone rubber and squish the top half of the mold into the bottom half. Important note: When we use the term squish, we do not mean to apply force. We simply mean to set the male side of the mold into the female cavity to allow the excess resin to be squished out the seam line.



The Alumilite Regular has 90 second work time and a 3-7 minute demold time. With a thin walled car you will want to wait closer to the 7 minutes before demolding. You can wait longer if you wish. The longer you wait, the harder the casting will be. The Alumilite Regular features a color change to at the 90 second point to notify you when the work time has ended. You can see the color difference in the blue as it begins to harden.



Once the material has hardened, simply peel off the excess material that was squished out of the mold.



You are now ready to demold your cast piece. Simply start from one end and flex the male or top portion of the mold until you can remove it. You may have to simultaneously flex the lower half depending on the depth of undercut you have on your piece.



Here you can see the male portion of the mold being removed from the cast piece and the female half of the mold.



This shows you the path of the resin as it was forced up and out the seam line of the squish mold.



Next simply remove the flash from the car. The flash is the thin film of resin that was stuck and cured between the two halves of the mold.



Then flex the bottom half, the female side, of the mold and remove your perfectly cast replica of your original. You can see how flexible the High Strength 2 silicone rubber is and how far you are able to stretch it without harming the mold. The tear strength is very high and you would not be able to tear this mold without cutting it with a sharp knife.



Here is a good picture of the original car along side of our perfectly cast replica. Now all we have to do is to trim out the windows, wheel wells, and bumpers.



It is much easier to trim the excess flash away when the material is still setting up (within 5 minutes of demolding). If you can trim the car with a sharp Excel or Exacto knife while it is still semi flexible, it will make it much easier. If you wait 15 minutes or more before trying to clean up the casting, the material gets very hard and does not trim as easily.



Once cured the Alumilite Regular can be painted, machined, sanded, polished, electro plated, and even heated back up to be reshaped (works best in thin sections). Take your time finishing up the trim work on your cast replica. The better job you did claying up the original, really saves you the time in these finishing steps as you will notice a significantly cleaner and smaller seam line.



Here you can see the original car body and your brand new cast replica and your mold is ready to cast another Alumilite part.