

# Two Piece Mold

## Products used in this How To:

- \* Original Piece
- \* QuickSet Silicone Rubber
- \* Alumilite Synthetic Clay
- \* UMR /Rubber to Rubber Mold Release
- \* Putty Knife
- \* Corrugated Plastic
- \* Glue Gun
- \* Popsicle Stick
- \* Paint Brush
- \* Cups



A two or multiple piece mold is typically required when the object you need to mold has detail on all sides of the piece.



As you can see with this bear, the back is not flat and has detail in which the mold and casting will need to have in order to reproduce the piece exactly. In order to mold both halves, you will need to start by making a mold of the front and then making a mold of the back. You will need to start by determining a parting line which is where the two halves of the mold will meet. This is typically an edge or perhaps the half way point from the front and back.



You begin by building a clay base and pressing your piece into the clay.



Press the bear down until it is close to where you want the parting line.



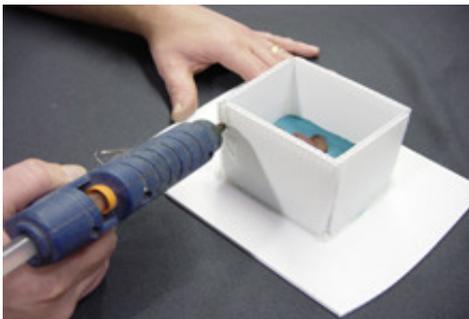
Using clay tools, smooth and flatten the clay to establish a perfectly smooth and clean parting line where the clay touches the part. The cleaner the edge, the smaller your parting line will be and the less clean up will be required on the seam line of your cast resin piece.



Once the part is completely clayed up to the parting line you've established, you are ready to build your mold box to contain the liquid rubber.



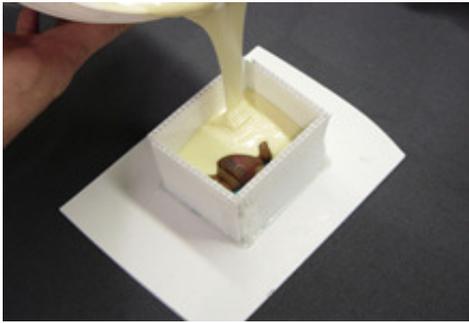
Using corrugated plastic, angle iron, wood, a recycled piece of plastic, Legos, or any other non porous material, construct a mold box to contain the liquid silicone rubber. Build your box so that the walls are  $\frac{1}{4}$ "- $\frac{3}{8}$ " around the outside of your original. Building your walls too big around the outside of your piece require much more silicone which wastes unneeded silicone.



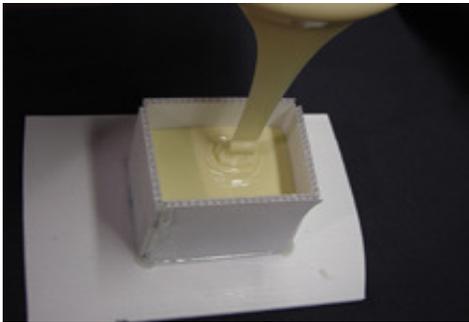
Make sure to seal the box well to prevent leaks. Hot melt, super glue, clay, or even caulk works well.



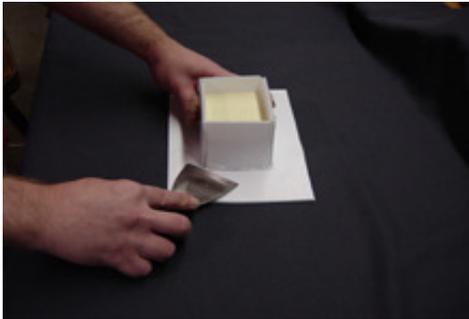
A very easy to use, general purpose, 2 part silicone mold making rubber is Alumilite's QuickSet silicone. It has a very low viscosity, picks up great detail, and is great for simple one and two piece molds . Using the cups and scoop inside the QuickSet kit or by measuring the mix ratio of 10 parts base to 1 part catalyst, properly measure the QuickSet and thoroughly mix the rubber. If you need help calculating the volume needed for your piece, visit the Material Calculator page on this site.



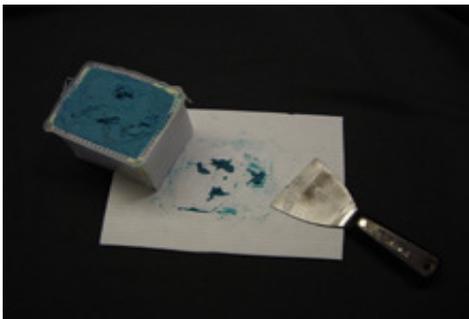
Once the silicone is thoroughly mixed the QuickSet, pour the silicone in the sealed mold box. Start from one corner and allow the liquid rubber to flow naturally over the original rather than pouring the rubber directly onto the piece. This technique will reduce the possibility of trapping air on the surface of the original.



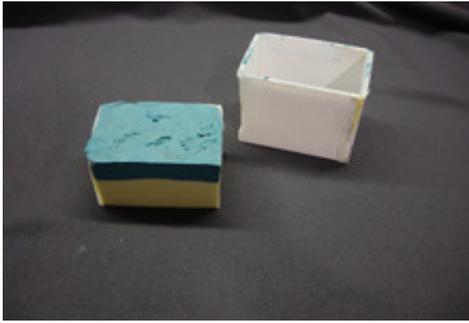
Continue to pour the silicone until the entire piece is covered by at least  $\frac{1}{4}$ " of liquid silicone.



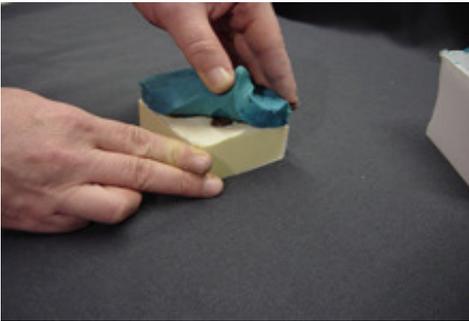
Allow the silicone rubber to fully cure. In this case, the Alumilite Quick Set silicone RTV was used and the cure time is approximately 8 hours. With most silicones, it is always a good idea to allow them to cure overnight.



Once the rubber has cured, remove the mold and box from the base.



You can also remove the mold from the box but if possible, leave the box in the mold to prevent breaking the seal between the box and the mold.



Remove the clay from the back side of the piece but **DO NOT REMOVE THE PIECE FROM THE Poured RUBBER MOLD**. This will break the seal and damage the clean parting line you clayed up.



Remove the bulk of the clay and then go back and clean off all of the left over clay.



Using your Alumilite clay tools, remove every tiny bit of clay from the mold and original.



Once you have cleaned the mold and master off completely of all clay residue, you are ready to cut your locators so the second half of the mold aligns with the first.



Using an Excel knife or better yet a U-Channel knife, cut "v" or "u" channels in the rubber mold. This will allow the rubber you pour during the second half to flow into these channels and provide great locators to align the two halves of the mold.



Cut locators on at least two or three sides of the mold.



Place your mold back into the mold box and reseal it if necessary.



You are now ready to mold release the first half of your mold. The only thing silicone rubber sticks to is another silicone. Failing to use mold release will allow the first and second pour of your silicone rubber to bond perfectly together and not allow you to remove your original without cutting blind to the piece. This would destroy the perfectly placed parting line you established with your clay line. So MOLD RELEASE IS REQUIRED to separate the two halves. Use Alumilite's UMR spray, Rubber to Rubber Mold Release or even Vaseline all over the cured rubber from the first pour. It is not required on your original but some overspray of UMR is expected and will not hurt.



The other option is to use Alumilite's Rubber to Rubber Mold Release. Shake the bottle well before using and brush on multiple coats waiting 5-10 minutes between coats before applying the next.



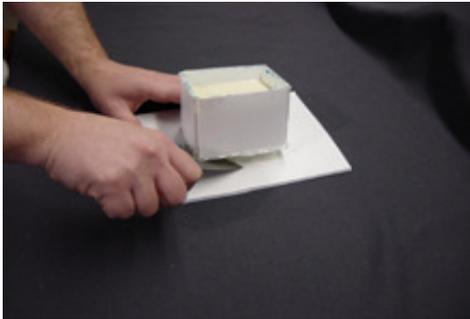
Before pouring your second half of your silicone rubber mold, be sure to check that your mold box is sealed and seal any gaps you may find to eliminate the chance of your entire silicone batch leaking out a hole in your mold box. Once the silicone starts to leak, it is nearly impossible to stop and creates a huge mess along with wasted time and material. It is always best to take a minute to double check to make it is sealed well.



Measure and mix the proper amount of silicone required to fill the second half of the mold. Once again, if you need help calculating the volume needed for your piece, visit the [Material Calculator](#) page on our website.



As you did with the first half of the mold, pour the rubber from one corner of the mold box and allow the material to flow naturally over your original and cover it by at least  $\frac{1}{4}$ ".



Allow the rubber to fully cure and remove it from the mold base.



Remove the mold from the mold box.



Using your hands, find the seam line and begin to separate the two halves of the mold.



As you can see, the mold will separate exactly where the two halves were poured and mold released. You will also see how the second half of the mold filled in the locators from the first half and how it will give you perfect alignment between the two halves.



Remove the unharmed original from your two piece mold.



You are now ready to cut your pour hole and any vents if they are needed. Using an Excel knife, find the most non-cosmetic area to use as your pour area. Ideally this will allow for natural flow of the resin and area in which air bubbles will float to the top and escape without trapping air on flat surfaces of your mold. In this example, we chose to use the bottom of the bear's feet. So using an Excel knife, cut a "u" shaped channel from the bottom of the bear's feet to the outside of the mold on both halves of the mold.



Once you have both channels cut out and place the mold together, you will find a perfect pour hole in which you are ready to pour an exact replica of your original. You can also use 1/8" copper or brass tubing to twist and cut holes through the silicone to place vents and/or injection points throughout the mold.