



How To Make a One Piece Mold



Prepare the pieces that you want to reproduce.

Begin by adhering the pieces that you are going to make the mold of down on a flat piece of material that will adequately support your parts during the mold making process.

Prepare a Box or Frame

Glue or screw a frame around your parts. Leave enough space around the parts to allow the silicone to completely surround your pieces. On smaller parts 1/4" will be enough. Larger parts may require more space. Make sure that the box is sealed well against the base to prevent leaking when the silicone is in a liquid state.





Apply a Release Agent

It is always a good practice to apply some type of release agent to your parts before pouring any type of liquid material on them. This will prevent the mold making material from sticking to your patterns. It will also make it easier to remove the mold from your patterns after your mold has cured.

Weighing out the Material

Pour each of the components into a container. Pay careful attention to the mix ratio listed by the manufacturer of the material. Any deviation away from the prescribed ratio could effect the final physical properties of the material.



Mixing the Material

After the components have been poured together they are now ready to be mixed. Mix the material carefully as to not mix in an abundance of air. Also be careful to make sure that the material is thoroughly mixed by scraping the sides of the container and the bottom occasionally during the mixing process.



De-Airing the Material

Air entrapped during mixing should be removed to prevent voids in the cured product. De-air the mixed material under a vacuum of 25 mm (29 inches) of mercury. The mixture will froth and expand four times its volume, crest and recede to about the original level as the bubbles break. De-airing is usually complete about two minutes after the frothing subsides.



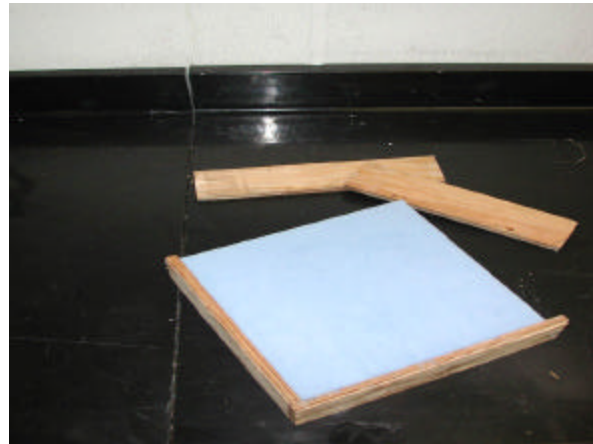


Pouring the Material

Pour the material slowly and carefully into the box. Pour slowly as to not trap air-bubbles against the patterns. It may be necessary to stop pouring during the process to allow the silicone to settle into details on the patterns. Continue pouring the silicone into the mold until it has reached a level of at least 1/4" above the patterns. Larger pieces again will require a thicker coverage.

Removing Your Mold

After your mold has had enough time to cure it is now time to remove the mold from the patterns. If your box was made in a way that can be easily disassembled then do so now. This will increase the flexibility of the mold and reduce the stress that you are placing on your patterns during the de-mold process.



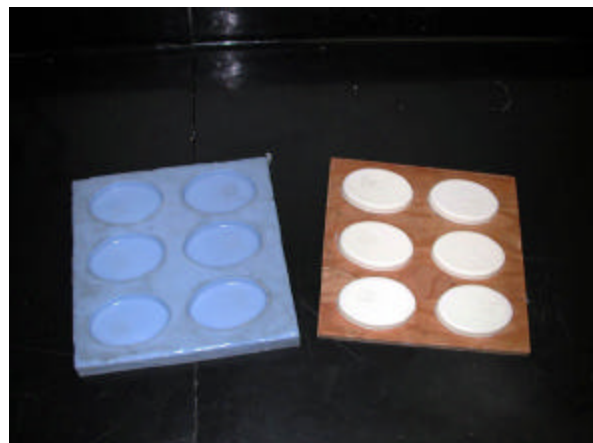
Removing Your Mold (cont.)

After the box has been removed you can now peel the mold off of the patterns. Be careful not to place too much stress on the mold or the patterns. If your patterns have a high level of detail or undercuts you will need to be even more careful in these areas.



The Finished Product

If everything has gone well to this point then you now have your mold. It will be a perfect replica of what you were trying to duplicate. Now you are ready to spray mold release on the mold and start making parts.



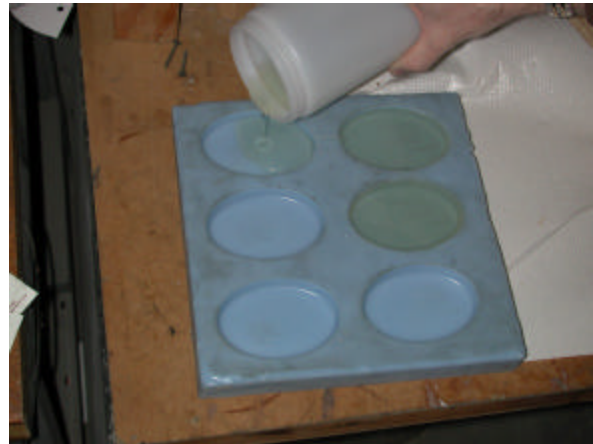


Mixing Material

Mix the components that you will be making parts out of together. Again you need to take care to not mix in any more air than necessary. Also, make sure that the material that you will be pouring is thoroughly mixed. Scrape the sides and the bottom of the container to achieve a complete mix.

Pouring Your Parts

After the material has been mixed you can now pour the material steadily into the mold. Keep in mind the pot-life or gel time of the material that you are using and adjust the speed that you pour accordingly. Faster materials will allow less time to work. Use all of the time you can to make sure the material has time to reach every detail in the mold.



Removing Parts

After the material has had time to harden you can now pull the pieces out of the mold. Your mold will be flexible. This will allow you to bend the mold off of your parts. If there are under cuts in your pieces you may need to pay special attention in these areas. If all is done correctly you will have exact replicas of your original parts.

These are the basic steps in making and using a one piece mold. Finer details may have been omitted as every project has individual characteristics that may require more steps. If you have any questions about the molding process please do not hesitate to give us a call.