

Tape Mold - Casting a Piece



Products used in this How To:

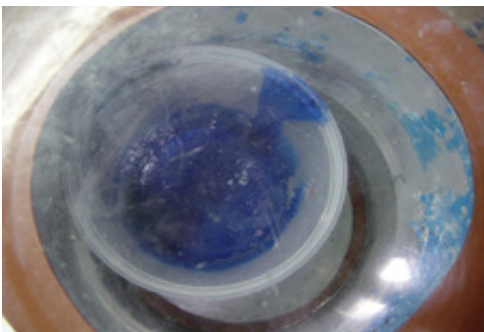
Another method for making multiple piece molds is to tape up your parting lines, suspend your part, pour the mold using a translucent silicone rubber, and simply cut the part out of the mold. The tape will act as the parting line or divider between the two halves of the mold. Once completely poured, you will cut to the part or the tape and the mold will split open creating the two halves of your mold. This eliminates multiple pours of silicone rubber as well as not having to clay up and then clean the clay off of your original. Some parts lend themselves better than others for this process. Typically more organic shapes that do not have flat surfaces tend to be more difficult because it is difficult to achieve a smooth and clean parting line on rounded edges rather than square or flat surfaces. Taping to rounded edges is difficult. Here is one example of the process where both a flat and rounded surface are used. **The original part is an SLA (stereolithography) master that was 3 dimensionally printed from a computer file.**



We are going to pressure cast this part using Alumilite's Flex 60 with blue dye added to it. The Flex 60 is a 1:1 urethane elastomer that cures to a 60A hardness that is similar to the hardness of car tire rubber. It has a 5 minute work time and a 1 hour demold time. So start by measuring out equal amounts of the Flex 60 A & B and then add Alumilite's Blue dye.



Mix the material thoroughly. Be sure to scrape the sides and the bottom well.



Using a vacuum chamber and pump, degas the Flex 60 to remove all of the mixed in air.



Using a large plastic syringe (found at local medical supply companies), suck up the degassed Flex 60 into the syringe which will allow you to inject the resin into the mold rather than trying to pour it.



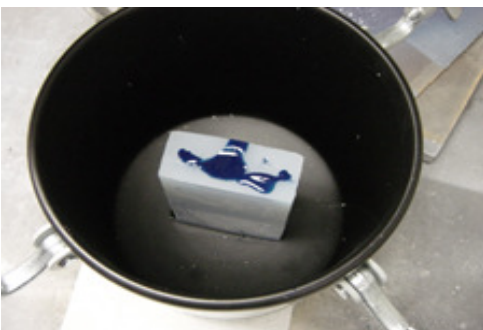
Slowly inject the Flex 60 into the large pour hole.



Observe the resin flow through the mold until it is completely filled.



Tilt the mold if necessary to flush air pockets out of trapped areas of the mold.



Fill the reservoir completely and place the entire mold into your Alumilite Pressure Pot.



Fill the pressure pot with 40 psi and allow the part to cure under pressure (approximately 30-60 minutes depending on mass).



Once cured, remove from the pressure tank and open the mold.



Remove the flash from the cast Flex 60 piece and you have a perfectly cast replica of your SLA original.



Notice the flexibility demonstrated in the cured Flex 60 casting.