



MATERIALS FOR EXTREME PERFORMANCE!

THE COMPOSITES STORE, INC.

www.cstsales.com

It's Easy!
Order all your
supplies for this
project on-line or
at Tech Support:
661.823.0108
Mon - Fri
7:30am-4pm PST

Molding Parts in a Simple Rubber Mold

Parts with a very complex shapes can be quickly produced by using a flexible rubber molding compound. This material allows parts with deep undercuts to be produced from a very simple mold. The part pictured below is a fuel tank bulkhead that fits into a molded part to isolate a fuel tank compartment. The pattern has been fabricated from Rohacell foam then painted. Wood also works well to build patterns. On this part only the front and sides of the part needed to be duplicated so a single part mold was used.



Step 1

First we must build a simple box to contain the rubber molding compound while it is curing around the pattern. The box should be larger than the pattern by 1/4 to 1/2 inch. The height of the box should also extend 1/4 to 1/2 inch above the pattern. This box was constructed quickly by using balsa sheets and cyanoacrylate glue. Make sure that all the seams in the box are sealed with glue. The bottom of the box must follow the back surface of the pattern. One method that works well is to use clay on the lower surface of the box to fill in up to the pattern.



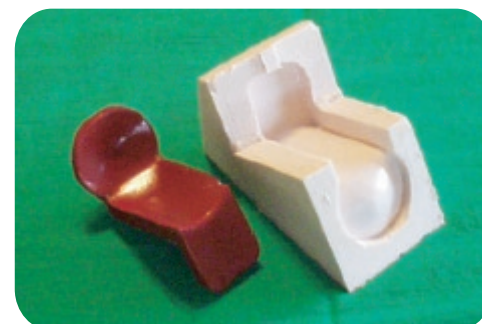
Step 2

The RTV rubber molding material has a low viscosity and a 40 minute pot life so air bubbles that are introduced while mixing the material quickly rise to the top of the liquid and degassing the mixture under vacuum is not necessary. To help assure that air will not be trapped next to the pattern while you are pouring the liquid into the box use a small disposable brush and apply a thin layer of the rubber mixture over the pattern. When this is completed slowly pour the rest of the rubber mixture into the box so the liquid can flow over the pattern and fill the box.



Step 3

Allow the rubber mixture to cure overnight then peel the sides and bottom of the box away and remove the pattern from the cured mold.



Molding Parts in a Simple Rubber Mold Cont.

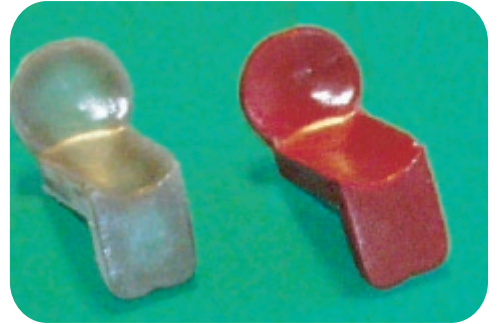
Step 4

Now you are ready to mold a fiberglass part in the new mold. Because the mold is made from a silicone rubber no mold release is needed. The part is molded the same way you would proceed if you were working with a rigid epoxy and fiberglass mold. Use a laminating epoxy such as West System Epoxy and begin by mixing a batch of epoxy and filler to fill all the details and corners of the part. It is difficult to force glass cloth into corners with less than a 1/4 inch radius so all these areas must be filled with this thickened epoxy paste. If the corners are not filled the glass will pull away from the corners and cause an air bubble. Use West System Colloidal Silica Filler in the corners for most parts, but if the corner requires high strength use a milled glass filler. Brush the mixture into the corners and let it cure to a solid that is only slightly tacky on the surface you will have to wait about 2 to 3 times the pot life of the epoxy. Then wet out the surface of the mold with another batch of epoxy and lay in the glass cloth. CST style 3733 glass cloth has a course weave that wets out easily and conforms to shapes well.



Step 5

Trim the excess material from the edges with a Dremel cutoff wheel. Then sand the edges to the final shape.



Supplies to complete this project:

- Molding Supplies: [HSIII RTV Mold Making Rubber M410](#)
[Release Agent for 2-part rubber molds M411](#)
[Chavant #307 Professional Modeling Clay M307](#)
- Epoxy: [WEST SYSTEM Resin A105](#)
[WEST SYSTEM Hardener A205](#)
(If you prefer a longer working time, refer to the [WEST SYSTEM Epoxy Selection Chart](#), as A206 or A209 will also work.)
[Metering Pumps A300](#)
- Epoxy App. Tools: [Reusable Mixing Sticks A804-8](#)
[Reusable Mixing Pots A5001](#)
[Disposable Glue Brushes A803-12](#)
[Disposable Gloves A832-4](#)
- Fillers: [Colloidal Silica A406-2](#)
[CST Milled Glass A4010 \(optional\)](#)
- Fiberglass: [Fiberglass Cloth 5.8 oz. G37330](#)

**Click here
to buy
these
products!**

It's Easy!
Order all your
supplies for this
project on-line or
at Tech Support:
661.823.0108
Mon - Fri
7:30am-4pm PST