Silicone Architectural Models

by **Thinkenstein** on April 22, 2012

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I'm a refugee from Los Angeles, living in backwoods Puerto Rico for about 35 years now and loving it. I built my own home from discarded nylon fishnet and cement.

Intro: Silicone Architectural Models

Silicone rubber is a great material for making architectural models, especially ones with unusual shapes, like domes. Models can be colorized with clear silicone and powdered pigments, since paints do not stick to silicone. The models are waterproof, light-weight, and pretty much unbreakable.

This is a very useful material for architectural model making and should be taught to all architecture students.

Step 1: Tools and Techniques

100% RTV silicone rubber comes in grease gun cartridges from the hardware store. Some standard colors are clear, black, white, aluminum, and bronze. You can mix custom colors by extruding clear silicone onto a palette and mixing in powdered pigments with a palette knife. The colorized silicone can then be spread on with a palette knife, gloved hand, or sacrificial paint brush. You can also pack it into plastic-tipped syringes available at pet stores for finer details. They come with curved, conical tips that can be cut at different locations to change the size of the extrusion.

Be careful not to injure your thumb from pushing too hard to extrude silicone through small syringe tip openings. I usually put a big washer around the syringe to give better purchase for my fingers and then push the plunger with the heel of my hand, if the pressure needed is too much for my thumb. If worst comes to worst cut your extrusion opening larger with a knife so there is less pressure needed. You will sacrifice some details from fine extrusions, perhaps, but your thumb will survive to work another day.

Polyethylene plastic makes a good non-stick surface if you want to spread out flat layers, or draw designs, and then peel them off to work with them. You can stretch and tape plastic trash bags over cardboard or masonite to work on, but my favorite work surface is a rigid polyethylene kitchen cutting board I got from Sam's Club.

You can draw with silicone in the air, to some extent, sticking it to hardened silicone already in place. You can also make shapes out of styrofoam and cover them with a layer of silicone.

Image Notes
1. You can draw small designs and make jewelry this way, too.

Image Notes
1. Syringe from a pet store. The conical tip can be trimmed at different spots to make larger diameter extrusions. Because of the curve, cleaning might call for a curved wire.

Image Notes
1. To push out the plunger cup and clean out the cartridge, use a piece of 1/4 inch rebar.

Image Notes
1. The washer gives your fingers a bigger area to press against.

Step 2: The Castle

This castle model was built over a styrofoam base, representing the mountain top. The base was first covered with a mixture of clear silicone and sand, to represent the soil and rocks. It was mixed on a palette with a palette knife and spread onto the base with the palette knife. The vegetation was made by extruding colorized clear silicone from a plastic-tipped syringe from a pet store.

The walls were built up with extrusions of clear silicone straight from the grease gun cartridge it comes in and then colorized by rubbing on clear silicone with powdered pigments.

I remember making clay castles in elementary school, which was fun.

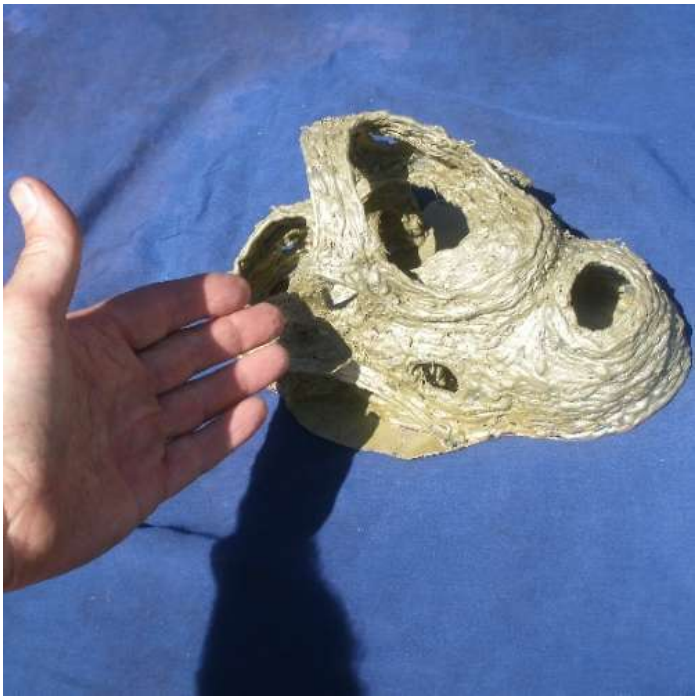
Step 3: A Domed House Model

There are not many ways to make domed models as easily as this.

This model was built up by laying new extrusions onto old ones in horizontal layers, or next to hardened lines in the air. Some of the arches were first drawn on a non-stick surface, peeled off when dry, and then tacked in location with silicone. Extrusion lines were then stuck onto them to fill in areas in the air.

It was done with extrusions of clear silicone directly from the grease gun cartridge it came in, and colorized later with pigmented clear silicone using a rubber glove, or a sacrificial paint brush. Forget about ever cleaning the brush after use.

As you can see from the photos, the model can be crushed and then spring back into shape. It is basically unbreakable, and light-weight -- good advantages for transporting the model or mailing it.



Step 4: Termitopia Model

This is a model of what part of a termite nest city might look like if the domed architecture in the previous step step were to keep building on itself generation after generation. It was all made out of clear silicone first, and then colorized with pigmented silicone.

Image Notes

1. This is a model of part of a termitopia, or termite nest city.

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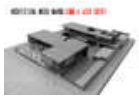

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