

HOW TO BUILD A 1/144 SCALE FIREPLACE

By Fran Sussman

May 13, 2014

This demonstration illustrates the steps in building a 1/144 fireplace that can be used molded—so you can cast yourself as many fireplaces as you want! The built fireplace is called a “matrix”.

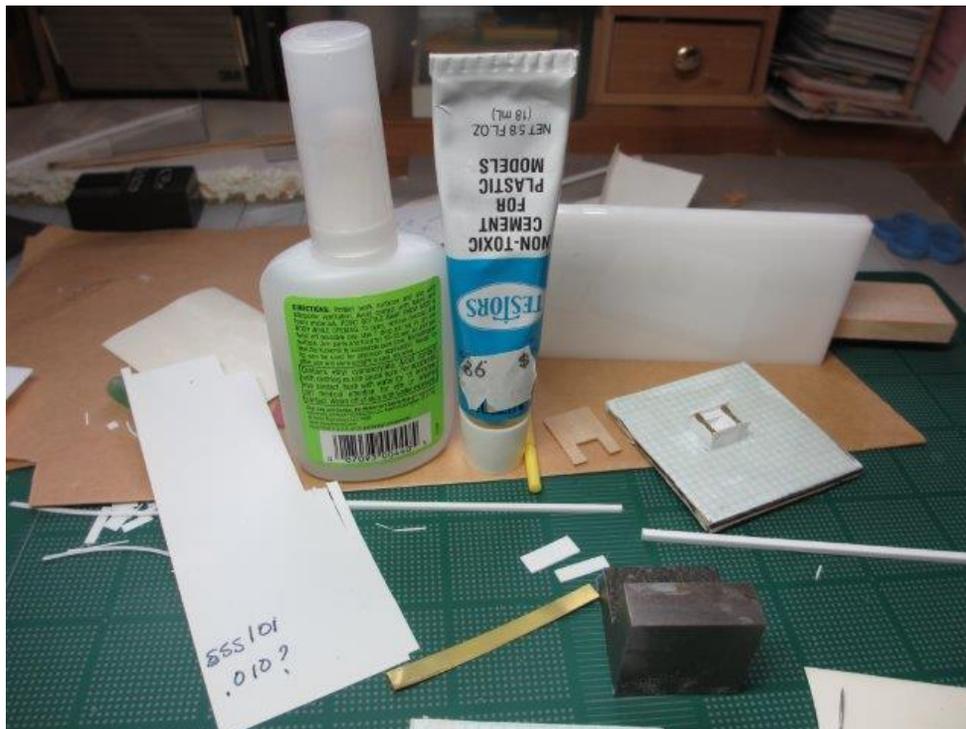
Building a fireplace for a 1/144 roombox requires careful measurement, and very straight and precise gluing. If you are planning to make a mold of the fireplace and you don't build it carefully, you'll be stuck with any problems for a lot of fireplaces.

Pre-cut dimensional materials, like styrene or brass, are ideal: they do some of the work for you. Lots of use of metal blocks and angles, to make sure that pieces are square, also helps.

These fireplaces have a lot of detail that can be difficult to capture. Be careful to avoid undercuts, and use a molding/casting process that can reproduce very fine detail.

The tools and supplies you will need to build a fireplace suitable for casting include:

- For the mounting board--Plastic sheet, taskboard, and graph paper
- Glues—testers or another solvent glue that works with styrene; medium weight CA glue for gluing dissimilar materials together (such as brass and styrene, or styrene and plastic)
- Engineering squares or other metal corners for squaring up edges
- Building material—lots of styrene strips of different sizes, brass etch or other brass materials, and anything else you want to use to build your “matrix”
- 3-D plastic sheets (available from model railroad supply stores) for bricks, tiles, stone, or any other materials you want to add to the fireplace
- Thick, smooth paper (such as Bristol board) if you want to add additional details beyond those you can construct with styrene.
- Sanding block for truing edges
- Craft knife and straight edge



Make the Building Surface

The first step is to create a flat surface on which the matrix can be attached. Make several of these at once.

Taskboard—1/8th thick—makes a good sturdy base that will lie flat. The taskboard is covered with some graph paper, to help square up sides and angles as you build. Clear plastic is glued to the graph paper; paper or other porous materials need to be sealed and protected so that mold materials don't stick to them, but plastic does not. The resulting cast fireplace will be a bit cleaner if you don't use porous materials.

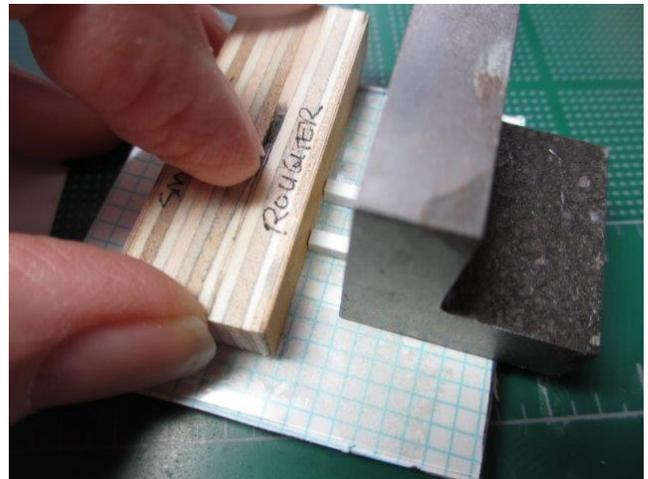
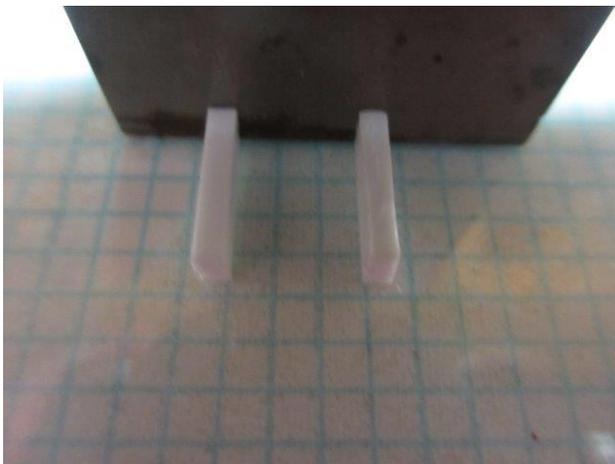


First example: marble pillars

1. Build up outline of the fireplace

Think about how tall and wide you want the fireplace to be. The outside width of the fireplace will be the outside width of the initial pillars you put down for the fireplace. Decide how thick the mantel and the apron will be, and deduct that from the height of your fireplace—that will determine how tall the initial pillars are.

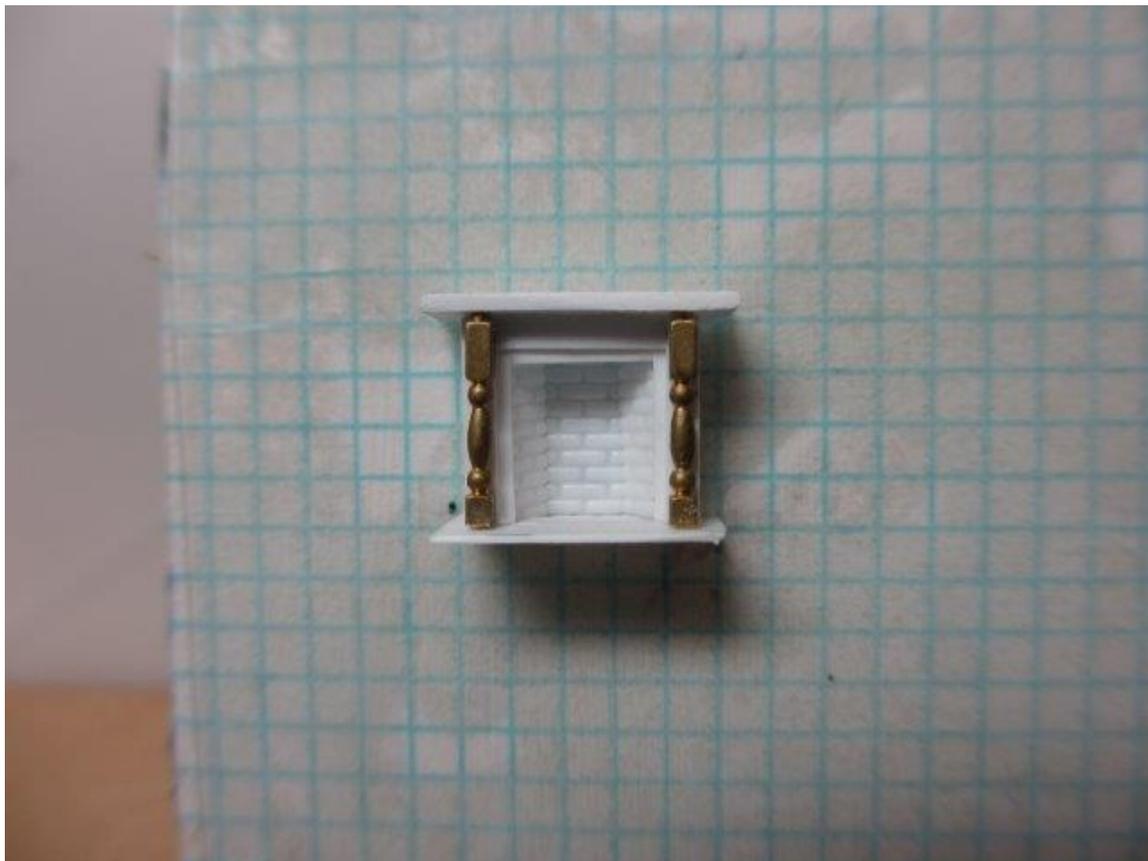
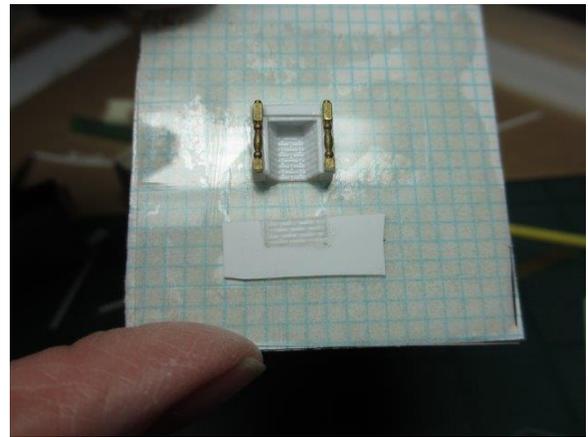
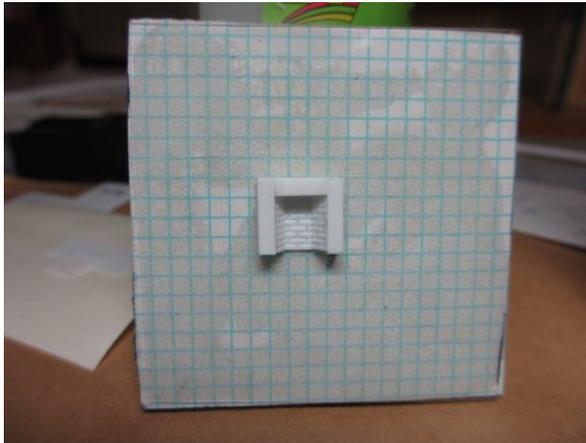
Glue the pillars in place—use the graph paper and metal corners or engineer squares to be sure that everything is lined up. You can use a sanding block to further straighten any edges.



2. Add the firebox

Add a cross piece to complete the basic frame.

Then build the firebox inside the frame. First put a piece of 3-D scale brick at the back, then add the sides. Add other details as desired. Finally, finish off the top with a mantel, and the bottom with an apron.

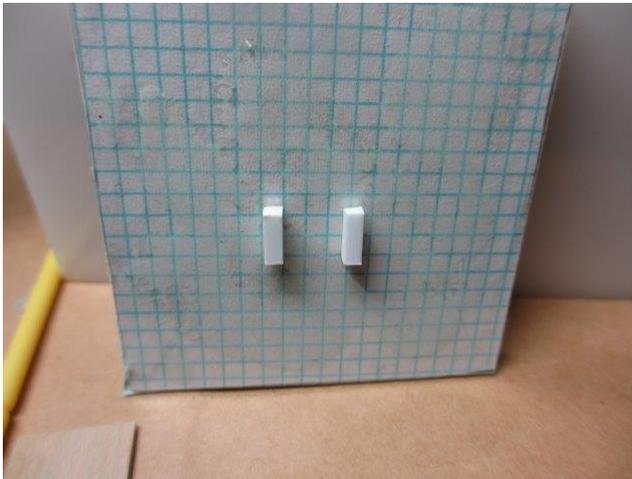


Second example: Adding architectural details

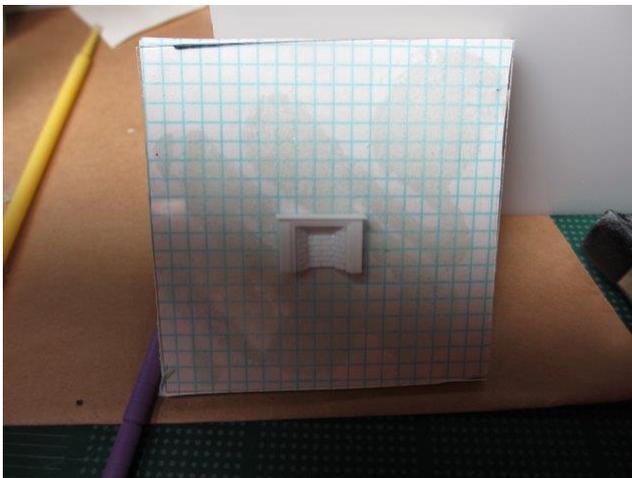
I was heading to the dentist one morning and drove by an area in Capital Hill in Washington, DC where the buildings had some wonderful architectural details. I decided to add these to the next fireplace. It turned out a little larger than a classic fireplace, but only by a few R.L. inches.

Building this fireplace follows the same steps as the one with the pillars, but is made entirely out of styrene:

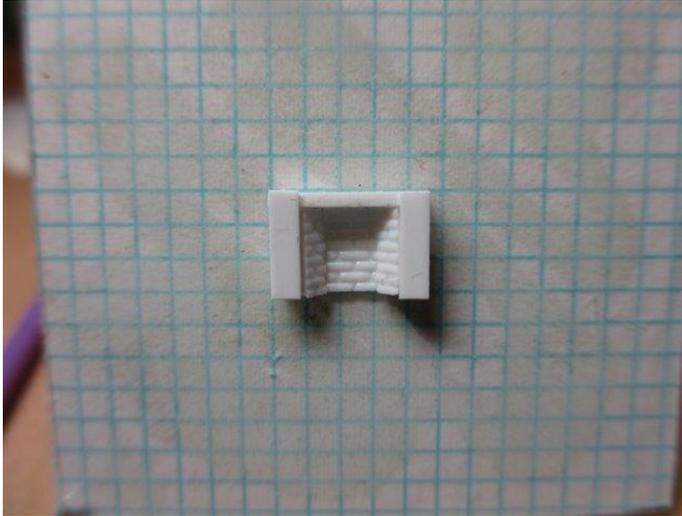
- Build the frame
- Add the firebox
- Add details
- Finish the top with a mantel and the bottom with an apron



Set the dimensions



Build the frame and add the firebox



Begin to add detail



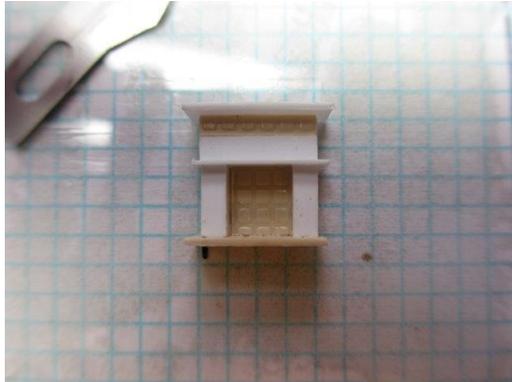
Add the architectural details



Finish up the top and bottom

Third example: tile fireplace

Another example of a finished fireplace—this one using 3-D plastic that looks like “tile”.



Mold and cast your fireplaces

I used the materials and process taught by Judy Andraka (Acorns by Oak). Her class –taught at Philadelphia Miniaturia and elsewhere—is an excellent introduction to the process of building a matrix and molding and casting miniatures.

