

Forton MG Demystified, Part 1

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Recently I have become aware that there are people who are reluctant to use Forton MG (FMG) because they have the impression that it is complicated and expensive. I would like to dispel both of these concerns and encourage people to take advantage of one of the most useful materials available for sculptors.

While FMG does cost somewhat more than just plaster, hydrocal, hydrostone, or any other gypsum product alone, all are inferior to FMG which was developed for outdoor applications and is far more durable especially when exposed to weather. FMG can be blended with metal powders to make amazingly credible cold cast metal pieces. FMG will bond to itself even when completely cured allowing for repairs and alterations. FMG is far stronger and allows for thinner, lighter life casts, bas reliefs, mother molds, etc. FMG really should be compared to resins or metal, both of which are far more expensive. And unlike resins,



Hands 16 feet across in Forton MG with metal powder. This has been in place for about seven years and looks the same as when installed.



This was my first application of Forton MG. I was amazed with how much it looked like real bronze.



Hands of newlyweds



Life cast torso titled "Built Like..." in Forton MG with a brick colored dye



I made a pair of these for a seafood restaurant. The fish is about two feet across

FMG is odorless, non toxic, and water soluble. And unlike any other casting material, FMG neither expands nor shrinks making it ideal for accurate life castings.

Considering its advantages, I consider FMG to be bargain.

There are some FMG copycats available, five that I can think of. I have personally tested them all and the truth is that they are pretty much the same as FMG with three things. Four of the five come with the three solid ingredients pre blended. (See below.) The fifth consists of two liquids which are mixed together for activation. Pre blending may at first seem like a significant convenience, however, as I will explain, blending is a piece of cake and pre blending comes with a penalty, a higher price. In some cases, the copycats are multi-times more expensive.

The ingredients for plain FMG are an acrylic based liquid, VF-812, and three powders: FGR-95 Hydrocal, a resin, and a hardener. For at least the first ten years I used FMG, I keep the ingredients separate and using a table I had made, weighed out the ingredients for whatever size batch I needed. I had done this so long that it was second nature. However, I saw that people in my workshops often found the weighing of the ingredients to be confusing. Hiram Ball of Ball Consulting which makes FMG kept telling me to blend batches of the solids for the various mixes I was likely to use. Then to mix, one would only have to pour out whatever amount of VF-812 one thinks she/he would need and then scoop out twice that volume of solids. In other, no weighing, just for each scoop of VF-812, add two scoops of the blended solids. This is true whether using plain FMG or with additives such as metal powders.

I purchase FMG in the five gallon kit size which consists of five gallons of VF-812, ten pounds of resin, and six ounces of hardener. The FGR-95 is purchased separately in either fifty or one hundred pound bags. If one had a container large enough and a mixer powerful enough, you could mix a hundred pound bag of FGR-95 and the ten pounds of resin and the six ounces of



This is a very standard life casting with metal powders. The cloth was dipped in FMG and is detachable from the casting



This this life casting has powdered limestone or Athletic Field Marker to enhance the white color



This faerie portrait is a combination of metallic, white, and dyed FMG. For an explanation of how I did this, see "A Little More Complicated Portrait Castings" in the April 2008 issue of "Sulpture Journal"

hardener. But it is much easier and more uniform to blend in small amounts. The proportions of powders for plain FMG are some quantity of FGR-95, one tenth as much resin, and one half of one percent of the FGR-95 for the hardener. Let me make that more clear. I take a five or fifteen gallon bucket and dump into it ten liters of FGR-95 or about twelve pounds. (It is much easier to work in metric since ten percent of ten liters is one liter and ten percent of twelve pounds is one point two pounds and most scales aren't calibrated in tenths or hundredths of pounds.) I then add one liter of the resin. I calculate the hardener the following simple way. One percent of the FGR-95 in this case would be one hundred grams, cut it in half for the correct amount which here is fifty grams. I then use a five inch Jiffy Mixer and mix thoroughly repeating the measuring and mixing until I have an almost full bucket.

For FMG with metal powders, the procedure is almost exactly the same except that to each layer, I add one and a half as much metal powder as FGR-95. In the above example, I would have added fifteen liters of metal powder to each layer. Since FMG powders are white and the metal powders are, well, metallic, I just mix until I have a uniform color.

There is one other mixture that I use. While plain FMG is slightly gray in color when it first sets up, it turns almost pure white as it cures. But if I really want something to be perfectly white, I add either powdered or crushed limestone which can be purchased from building suppliers as Athletic Field Marker and Pool Mix.

All gypsum products including FMG have greater compressive than flexural strength. This is why rebar is used in concrete. Fiberglass either chopped or in sheets is the rebar of choice for FMG. However, if I am making mother molds in life casting, I use a particular kind of cloth which is more flexible than fiberglass and conforms to the contours better. The last ingredient is a solution of aluminum sulfate and water (1:10) which is used as an accelerant for controlling the setting time of the FMG.

In the twenty years or so that I have been using FMG. I have used it in almost every way imaginable. I would have produced a much smaller body of work without it. In Part II, I will explain how simply and inexpensively one can produce life casting, mother molds, bas reliefs, solid castings, and more.