

Kiln Crafting

Hot Tips for Fusing and Slumping

by Gil Reynolds

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"Frits, Enamels, Powders and Paints - Part 4"

Hi, readers. I have a special guest today. I'd like to introduce Peter McGrain, world renowned glass artist and glass painter. I thought I would interview Peter to get some added insight into the use of glass paints for this the fourth and final installment of the series "Frits, Enamels, Powders and Paints."



Peter McGrain

Gil: How do paints differ from the other three forms of powdered glass?

Peter: I would say that traditional glass stainers paints give you extended control over different effects that go beyond anything you could achieve with the other forms you have mentioned.

How are paints used?

Traditionally, they are used for enhancing the imagery in stained glass windows. You can only accomplish so much by cutting and leading together pieces of colored glass. With the introduction of painted elements, you can be far more specific in your imagery in terms of depicting faces, folds and wrinkles in clothing, enhancing backgrounds and in the addition of nomenclature and text to dedicate windows.

How are the paints applied?

In the classic sense, there are two basic application methods. "Tracing" is a technique where a long narrow brush is used to apply your paint to the glass in a linear sense—like in calligraphy.

So it is a solid black line similar to what a lead line would look like?

Well, it can look like a lead line, but the beauty is that you have the opportunity to bring it down to as narrow or as intricate a line form as you want without having to deal with the fact that it is a physical metal line connecting two pieces of glass together. When you are using a black tracing line, it appears to the viewer aesthetically the same as a lead line. So by integrating painted black lines within your stained glass work and within the lead line framework of your piece, you extend the lead line aesthetic to a degree that goes beyond anything you can achieve with cutting and leading.

What is the other painting process?

The other common application technique is called "matting." It involves applying a lighter wash of paint over the entire piece of glass. This gives it an even, uniform layer of medium-toned paint that is not as dense as the black line used for the tracing. After the applied matte has dried and before it is fired, it can be manipulated to remove the paint in certain areas. A process called "scrubbing" involves dragging a stiff bristled brush across the painted area, actually scratching away the paint to allow light to come through the glass. "Stippling" is where you tap the surface to remove small points of paint.

So matting is a subtractive process? You cover the entire piece of glass with an even layer of paint, then take away selected areas to let the color of the glass come back through?

Exactly. And that's the big difference between painting on canvas and painting on glass. When you paint on glass, it is really more a process of

removal, where you are kind of etching away the paint. In some ways, this is a much more delicate skill because you can't just build up layers of paint and expect it to work. The more paint you apply to the surface, the more opaque it becomes and the more light you cut out, thus losing control over the light balance in your piece. The best painters are the masters who know how to bring just enough light through so that the painted surface actually glows.

Are these multiple step processes? Are you firing the paint after each application?

Pretty much. Each painter develops his or her own specialized technique. They all have different ways to apply and remove the paint. Now and then, you will just use tracing. For example, if you are just painting words onto a piece of glass. Other times, you may just use a matte. This is commonly seen in old stained glass windows where every piece of glass appears bright in the middle and it seems to get hazy and dark and sort of dirty looking around the edges. That's often a painting application that makes the piece look old and antique. A matte has been applied and worked off of the middle of the glass to give it a nice aged look.

If you are painting faces or the fold of clothing, or in contemporary work, depicting the illusion of depth and perspective, you will combine tracing and matting together. The most common approach is to first do the trace lines in black to define the image. Because the paint is very delicate at this stage you can go in with a sharpened chop stick and scratch away any unwanted paint. You can make the lines narrower or just clean them up. You can straighten up the edges and scrape off any dribbles that happened along the way. It is wise at this point to fire the paint to make it permanent. The next step is to apply a matte over your traced area as a subsequent application. Then you go through the process of shading by selectively removing areas of paint.

Are you just doing one matte or are you doing multiple mattes?

It totally depends on how extreme you want to get or upon the effect you are trying to achieve. You can do one trace, fire, and then add one matte and fire. If you find that you need a darker application in certain areas, you can add a second or third matte.

Can you also add some colored mattes now with the transparent enamels?

Yes, but because the paints we've been talking about fire at a higher temperature than the enamels, you will want to make sure that you have all of the black—I call them shading mattes—in place before you start working with the lower firing enamels. Then enamel mattes can be used to add new colors to a piece of glass.

We have discussed using a dark black paint for the tracing and a medium density black for the matte. Are there other colors available?

Of course. You can do your trace lines in anything. There are various browns and grays, but they are very subdued. These are the traditional glass stainers colors that are available from the Reusche company.

Where do the stains come into play?

Stains are a third category unto themselves.

When people mention stains, they are most often referring to silver stains which are usually applied to the back side of the glass. After firing, the paint is washed off and a yellow or amber or orange color is left on the glass. This is probably where the term "stained glass" actually came from. In the old days, clear or lightly colored glass was literally stained with these silver stains to achieve its color. The earliest pallet was clear glass with black or brown paint and the yellows and ambers from the stains.

Do you use electric kilns to fire your painted pieces?

It depends. I started with an electric kiln and it worked fine. The problem is the long firing cycle. Because I fire some pieces four or five times, the electric kiln presents a bit of a bottle neck in the process. Most professional glass painters use gas fired "flash kilns." I use a Hoaf "Speedburn" kiln from Holland. It is pretty much state of the art as far as gas kilns go. My kiln will heat a 16" square of double strength glass up to the maturing temperature of enamels in anywhere between five and fifteen minutes. It will cool the glass down to a temperature that I can handle in about 45 minutes. So my complete firing cycle is less than one hour. This really maximizes my production time.

Most electric kilns cost anywhere from \$1.00 to \$2.00 per firing. How much does it cost to fire your gas kiln?

It uses propane which runs me about \$5.00 to fill a tank that is good for about 70 firings. That works out to about \$.07 per firing.

Wow. What's the catch?

The initial cost of the Speedburn is over \$3,000 for the small 16" x 16" kiln. But if you are doing several firings per day, you will pay for the kiln in less than a year with the savings in fuel costs.

Amazing.

Well, there you go, fellow kiln workers. Thank you, Peter, for your useful insights. I can see where it would definitely be worth spending a little time exploring one of the oldest art glass processes... painting on glass.

Until next time,
Keep a warm kiln...

During the 20+ years he has worked in art glass, Gil Reynolds has gained worldwide recognition as a leading innovator of fusing and kiln forming techniques. He is the author of *The Fused Glass Handbook*, a step-by-step guide to learning the art of fusing. He teaches seminars and has artwork in many locations in the U.S. and abroad.



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