

Armstrong

By Janet Zambai

I teach a class I call “Bubble Glass,” designed to show students how to purposely trap bubbles in fused glass. When I saw a product advertised as “Bubble Powder,” I was excited and figured it was something I should know about. That started an interesting journey of sorts. I learned way more than I bargained for and found a whole product line that is perfect for the variety of techniques I use in my studio.

What is Float Fire 82™ ?

The Float Fire line of glass has been available for over four years, and the full line of powders, confetti, frits, stringers, bubble powders and paints have been available for a couple of years now. Aside from seeing “bubble powder” ads, I didn’t really know much about it. I actually found it to be quite exciting, with all of the possibilities the full line has to offer.

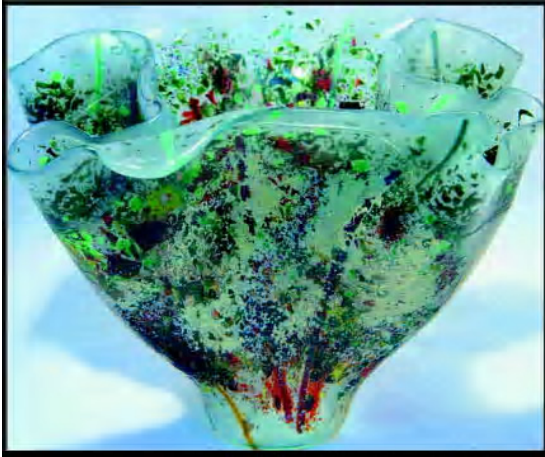
Float Fire 82™ is Armstrong’s fusing glass. It has a COE of 82+/-3 and can be fused with standard window glass, which is also known as “float” glass, thus the name, Float Fire 82™. The COE of float glass varies among manufacturers between 79 and 85, so test firing is recommended for the appropriate firing temperatures.

You can do just about anything with the Float Fire line, including fusing, slumping, draping, bending and sandblasting (Photo 1).

In addition to the line of sheet glass available in 43 colors, frits, powders, confetti, eggshell, stringers, bubble powders and glass paint are available in 36 different colors. Talk about variety and options!

Advantages of Using Float Fire 82™

Because Float Fire 82™ is compatible with window glass, you may be able to find scrap glass at no charge at a local commercial glass dealer or from a broken window in your house. If you don’t have any scrap window glass around the house, you can purchase it for a fraction of the cost of tested compatible fusing glass.



1. Floral vase fused with clear English Flemish glass and Float Fire 82™ frits and stringers. ALL PHOTOS: Janet Zambai.

2. For this project I used one of my digitally altered photographs. I made a stencil with the Photo-brasives Rapid Mask, high detail photo resist film that does not use water to wash out. Once the film is exposed, it is applied to the glass and then sandblasted. For this project, I used F1020 Black/White Float Fire 82™ sheet glass. I used a 120-grit silicone carbide abrasive and blasted at 40 pounds of pressure.



3. To find the tin side of float glass, you will need a shortwave UV light, sometimes called a tin detector or tin scope. The tin side will produce a white glow when the UV light is shone on it at a 45-degree angle.



4. Since the bubble powder comes in powder form, you can sprinkle it onto the glass and manipulate it with paint brushes, a palette knife, fingers, spoons, whatever it takes to apply the powder in the desired shape.

Float Fire 82™

Float glass is available in virtually any size or thickness you can imagine. This makes Float Fire 82™ frits, powders and confetti the logical choice for large architectural projects.

There are a lot of clear textured glasses on the market that are also compatible with float glass. Some of these are English Flemish, Cottswold, Taffeta, Reed, etc., and are also less expensive and offer even more variety of options for fusing.

Although Float Fire 82™ Sheet Glass was designed for fusing, it can also be used in traditional stained glass applications. It is currently available in 43 colors, some of which are unique to this line of glass.

Some of the colors in the Float Fire line of sheet glass have a wonderfully beautiful painterly quality I have not found in any other line of glass. I thought I could just buy the paint, paint it onto the surface of the glass, fire it in and get the same results. That doesn't work. The sheet glass is actually made in Germany, and the firing process takes many days.

Float Fire 82™ glass paints are available as a dry powder. They can be used for traditional brush painting or airbrushing. I found the paints to be a little weak in color, and several applications are required to achieve a rich color. If you apply the paint too thick, it will crack when fired.

If you have fusing experience, you should be familiar with the stringers, frits and confetti's. This particular line fires rich and beautifully.

Sandblasting Sheet Glass

For this project, I used one of my digitally altered photographs. I made a stencil with the Photobrasives Rapid Mask, high detail photo resist film that does not use water to wash out. Once the film is exposed, it is applied to the glass and then sandblasted. For this project, I used F1020 Black/White Float Fire 82™ Sheet Glass. I used a 120-grit silicone carbide abrasive and blasted at 40 pounds of pressure (Photo 2).



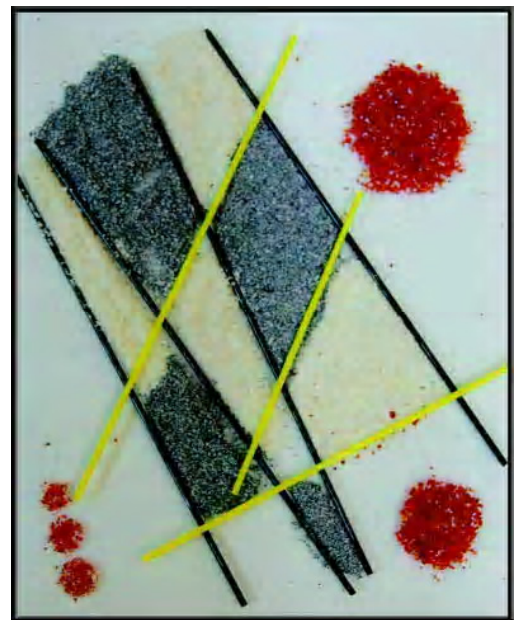
5. Since the bubble powder comes in powder form, you can sprinkle it onto the glass and manipulate it with paint brushes, a palette knife, fingers, spoons, whatever it takes to apply the powder in the desired shape.



6. Light blue and gold violet bubble powder formed into the shape of a watery flower on clear glass.



7. Fired tile from photo 6 topped with clear float glass.



8. A simple geometric design was created using yellow stringers, black, amber and cherry red bubble powders on clear float glass.

Float Fire 82™ Bubble Powder

Since I took my first fusing class in Denver with Gil Reynolds about 20 years ago, I have been fascinated with bubbles trapped in glass. My main interest in the Float Fire 82™ line of products was in exploring the Bubble Powder.

Getting Started

To make commercial float glass, molten glass is poured onto a bed of tin, which leaves a residue on the glass. That is the

tin side, and the other side is the air side. A different appearance will result depending on the side you use. To achieve consistent results, it is necessary to determine the tin side of the clear float glass. To do this you will need a shortwave UV light, sometimes called a tin detector or tin scope. The tin side will produce a white glow when the UV light is shone on it at a 45-degree angle (Photo 3). I find the tin side easier to identify in a dark room. The tin side of the glass should be face up in



9. The result of Photo #8 fired and topped with clear float glass.

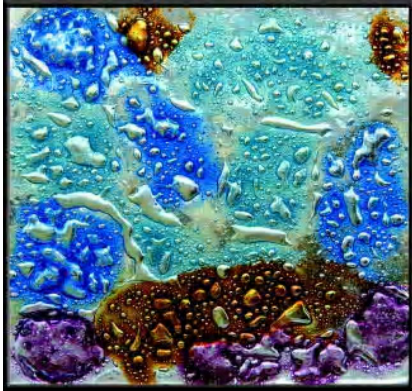
the kiln. If you have a hard time finding the tin side, you can use a devitrification spray, like Super Spray or Spray A, on the top surface of the glass.

Bubble Powder allows you to create bubbles in glass in a more controlled way. The Armstrong line of Bubble Powder is a powder form of a bubble agent, mixed with fine frit, so it is available in the full line of 36 colors. The bubble powder has to be sandwiched between two pieces of glass to trap the bubbles. I like to experiment, so I threw together a few tiles to see how the powder worked on different types of glass.

Since the product comes in powder form, you can sprinkle it onto the glass and manipulate it with paintbrushes, a palette knife, fingers, spoons, whatever it takes to apply the powder in the desired shape (Photos 4 and 5). If you work with clear glass, you can place a picture, image or photo under the glass to use as a pattern. You can also sprinkle the powder over a stencil (Photos of samples 6 through 12).



10. Cherry red and clear bubble powder was sprinkled on clear Taffeta glass and fired.



11. Light blue, gold purple, pale aquamarine and amber bubble powders sandwiched between two pieces of English Flemish glass, then fired.

I fired the samples to 1510 degrees F and held for 10 minutes. The size and quantity of the bubbles can be varied by modifying the fusing temperature, soak time, the quantity or thickness of the powder and by using different thicknesses for the top layer of glass. The opaque colors tend to create larger bubbles for the quantity of powder used. Note: Transparent colors all contain lead.

Applications

The bubbles trapped in glass generally remind me of water, especially the blues. The bubbles are sparkly and add a lot of life to fused glass. With the variety of colors of the bubble powders available, my imagination soars with the possibilities. The greens and browns look reptilian. The pinks, reds, yellows and oranges could be used for flowers. The bubble glass pieces could be fired and incorporated into stained glass panels. The powders could be incorporated into fused art glass wall hangings, landscapes, win-



12. A tile made in one of my "Bubble Glass" classes by a student in Vegas. Clear float glass encases the amber and gold violet bubble powder with black stringers.

dows, bowls, plates, tiles, vases — let your imagination go.

I certainly got more than I expected when searching for the Bubble Powder. I am impressed with the versatility of the Float Fire 82™ product line. It offers yet another option to make your work unique. Walt Disney called being unique the most vital element of business success, and we all want to achieve that goal.

For more technical information and specific firing schedules check out the Armstrong Glass Web site at www.ArmstrongGlass.com. Janet Zambai runs a full production studio in Casper, Wyoming, where she creates custom commissioned work in all aspects of glass, with the exception of blown glass. She is a published writer, artist and educator. View her Web site at www.janetzambai.com. ♦