BATCH

high temperature glass work /
a Glass Craftsman special feature

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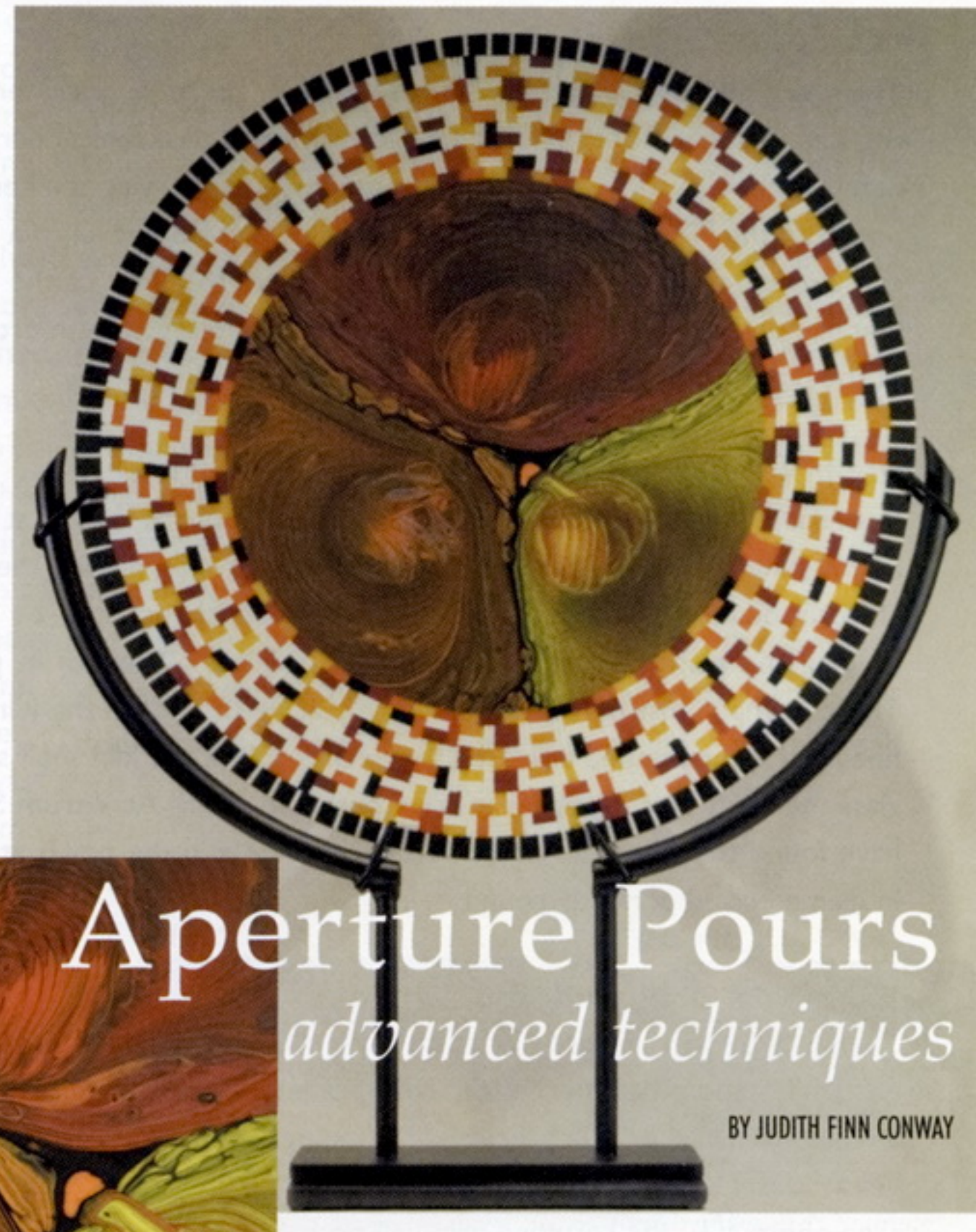
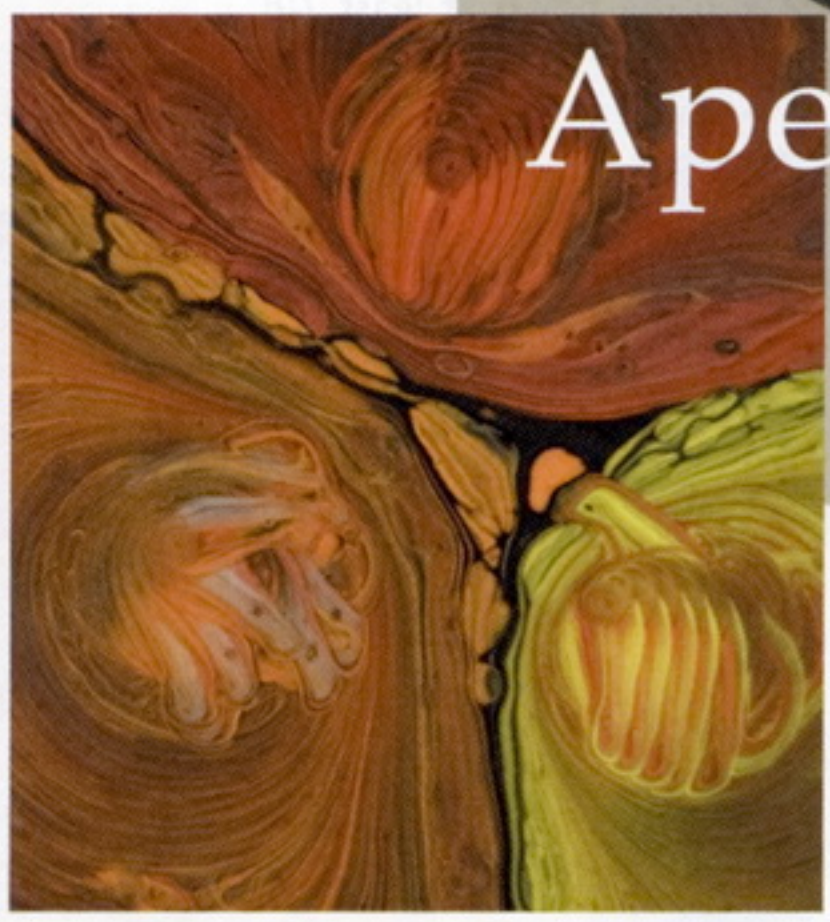
IN THIS ISSUE:





Aperture Pours

advanced techniques

BY JUDITH FINN CONWAY

Steve Immerman's work of art, ***Khazad-dum*** *(above)*

Khazad-dum, *detail of the glass used* ***by Steve Immerman.*** *(left)*

MY PREVIOUS ARTICLE ON THIS SUBJECT, THE POT MELT DEFINED, IN THE FEBRUARY/MARCH ISSUE OF GLASSCRAFTSMAN, OUTLINED THE BASIC STEPS FOR CREATING APERTURE POURS (ALSO CALLED POT MELTS) IN THE KILN. IN THIS ISSUE, WE WILL LOOK AT WAYS TO TAKE THE TECHNIQUE A FEW STEPS FURTHER. WE DELIBERATELY TRY TO CHANGE THE APPEARANCE OF THE MELTED GLASS DISK THAT RESULTS FROM AN APERTURE POUR BY MANIPULATING THE FLOW OF THE GLASS AS IT LEAVES THE POT. YOU CAN DO THIS BY CHANGING OR INTRODUCING JUST A FEW FACTORS, WHICH WE WILL DISCUSS IN THIS ARTICLE.

Glass artist and photographer Steve Immerman (www.clearwaterglass.com) has been working with aperture pours for several years, and has photographed many of his experiments testing various methods of manipulating the flow of glass as it leaves the pot, as well as the results of the pour. He has graciously shared some of these process images for this article, along with images of his work using aperture pours as design elements.

basics for this technique

There are many ways to vary the results of an aperture pour: for example, the size and shape of the hole through which the glass melts, increasing the number of holes through which the glass melts, or varying the height of the pot from the kiln shelf and adjusting the kiln shelf from level to a slant. You can also create some sort of 'barrier' to affect the flow of the glass with metallic objects intended to interfere with the molten stream dropping out of the pot.

the placement of the glass within the crucible

In order to get nice, concentric circles (See photo #1), use at least two contrasting colors of compatible glass and try evenly placing the colors in all four quadrants of the pot. Spring tension clamps can be helpful in holding the glass in position as the pot is filled, as shown in photo #2. These clamps must be removed before placing the pot in the kiln! The pot needs to be positioned at least a few inches above the kiln shelf so that the glass melt can swirl freely as it drips onto the shelf. At Vitrum Studio, we have found that the glass flows better if the hole in the pot is at least 7/8" in diameter and perfectly round.

the shape of the hole

The shape of a flowerpot's drainage hole can be altered with tools as basic as a chisel and a hammer, a drill and masonry bit or a rotary tool with an aluminum oxide or silicon carbide grinding tool. If you carefully drill or gently chisel the original hole in the terra cotta pot into a rectangular shape (See photo #3), the resulting drip will no longer take on a circular pattern,

THERE ARE MANY WAYS TO VARY THE RESULTS OF AN APERTURE POUR: FOR EXAMPLE, THE SIZE AND SHAPE OF THE HOLE THROUGH WHICH THE GLASS MELTS, INCREASING THE NUMBER OF HOLES THROUGH WHICH THE GLASS MELTS, VARYING THE HEIGHT OF THE POT FROM THE KILN SHELF AND ADJUSTING THE KILN SHELF TO BE LEVEL OR SLANTED.

Photo #1A
Finished piece, entitled: ***Miordi***

Photo #1
Concentric circles

Photo #2
Spring clamps are helpful for loading glass into the pot in a controlled manner, but remember to remove them before firing.

Photo #3
Making a rectangular opening with a hammer and chisel.

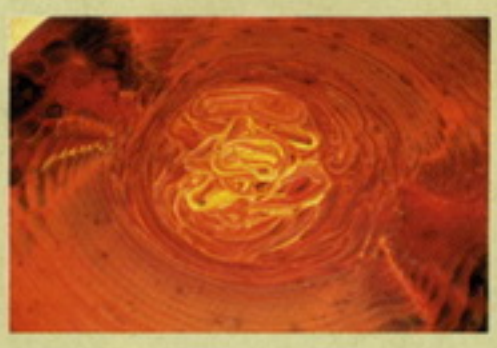


Photo #4
Striated pattern in the glass from a rectangular opening.

Photo #5
Showing a partially melted three-hole method using a ceramic saucer.

Photo #6
The result of the three-hole melt shows the possibilities of this technique.

but instead will emerge as a ribbon and fold onto itself. The result will usually be a striated pattern such as that shown in photo #4.

the number of holes

For different technique, we begin with a terra cotta plant saucer. Because it does not have a pre-drilled hole, you are able to decide on specific placement of the holes. You can measure to determine even placement for the holes, or decide to use a random-placement. Using the same choice of methods as described earlier, create the desired number of holes in the saucer. Fill the saucer with a different color of glass above each of the holes. (See photo #5) The resulting disk will have distinct areas of color and some wonderful interactions where two colors meet. (See photo #6). The aperture pour in the photograph was used in Steve Immerman's breath-taking Khazad-dum. (See first page)

THE SHAPE OF A FLOWERPOT'S DRAINAGE HOLE CAN BE ALTERED WITH TOOLS AS BASIC AS A CHISEL AND A HAMMER, A DRILL AND MASONRY BIT OR A ROTARY TOOL WITH AN ALUMINUM OXIDE OR SILICON CARBIDE GRINDING TOOL.

interrupting the glass flow

Using a stainless steel object to interrupt the flow of the glass as it drips out of the hole can result in a wide range of different results. In photo #9, we see a stainless steel fork placed on a sheet of wire mesh, and positioned firmly between the pot and the kiln shelf. The glass flows out of the pot's hole and over the fork's tines, forcing a more random pattern to the resulting glass melt, as clearly seen in photo #10.

USING A STAINLESS STEEL OBJECT TO INTERRUPT THE FLOW OF THE GLASS AS IT DRIPS OUT OF THE HOLE CAN RESULT IN A WIDE RANGE OF DIFFERENT IMAGES.

You can also change both the shape of the aperture, and interrupt the glass flow at the same time. In photo #11, a stainless steel spaghetti server is used to interrupt the flow from a pot that has a rectangular hole. Note that the melt is being contained in a kiln-washed ceramic saucer. Containing the melt in this way will result in a perfectly round shape, with a thickness determined by the amount of glass that was originally loaded into the pot. Obviously, the greater the amount of glass placed in the crucible, the thicker the result will be.

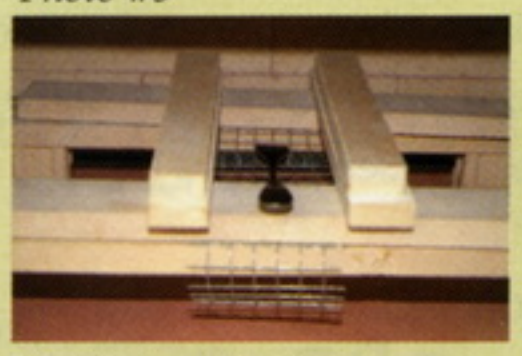
level or inclined shelf

You can also vary the appearance of a melt by varying the angle of the kiln shelf onto which the glass pours. In this example, the shelf was placed on kiln posts at an angle to allow the glass melt to flow downwards from the landing point on the kiln shelf. (See photo #12) Slanting the shelf in this manner produces an oval shaped melt and distorts the pattern somewhat. In photo #13, the aperture had been rectangular.

height of pot above the shelf

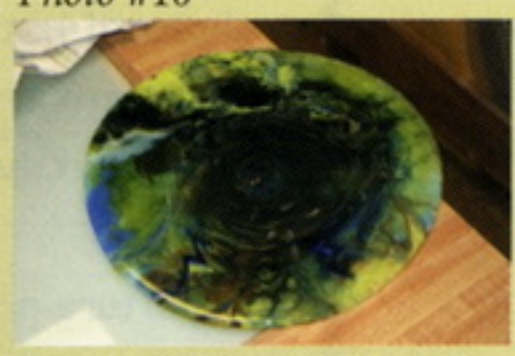
Varying the distance of the pot bottom from the kiln shelf will also change the pattern the molten glass forms as it drips onto the shelf. If the pot is very close to the shelf

Photo #9



Striated pattern in the glass from a rectangular opening.

Photo #10



Result of the melt that had been disturbed by the stainless steel fork.

Photo #10A

Detail of the pour

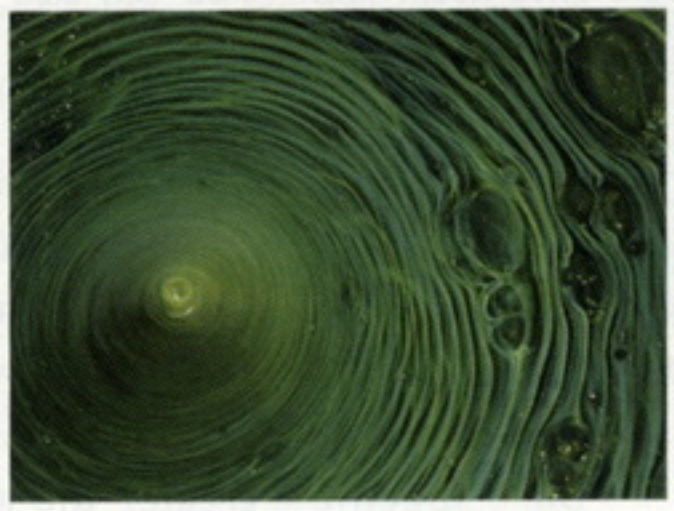
Photo #11

A stainless steel spaghetti server set up to distort the melt flow.

Photo #12

Slant the crucible, or the shelf holding the crucible, for a different effect.

Photo #13

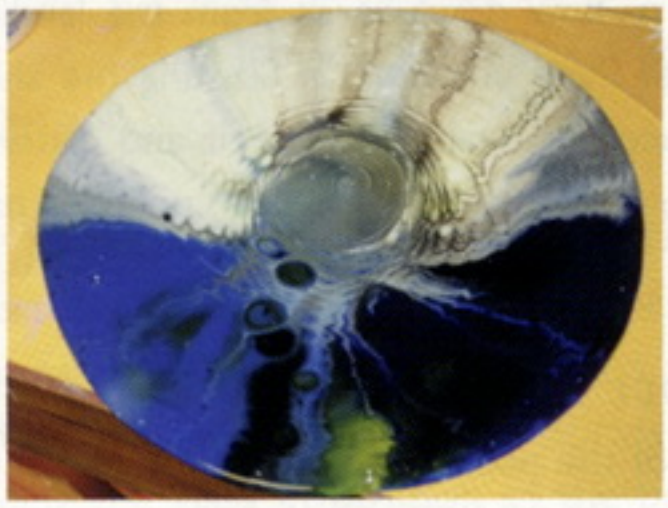


Detail of a pour resulting from a slanted shelf.

Photo #14

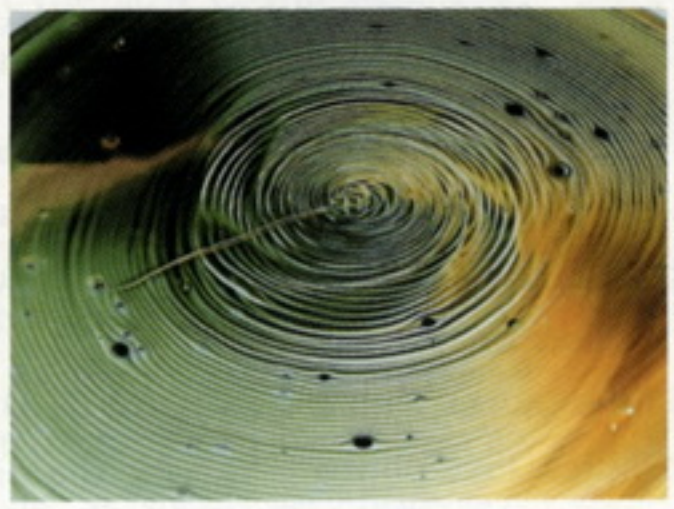
Setting up for a low height pour.

Photo #15



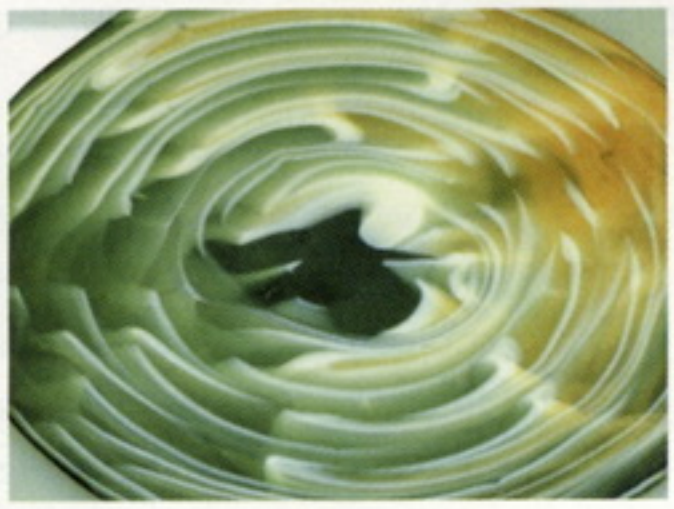
The results of a low pour are different from a higher pour.

Photo #16



What is considered the front of the pour.

Photo #17



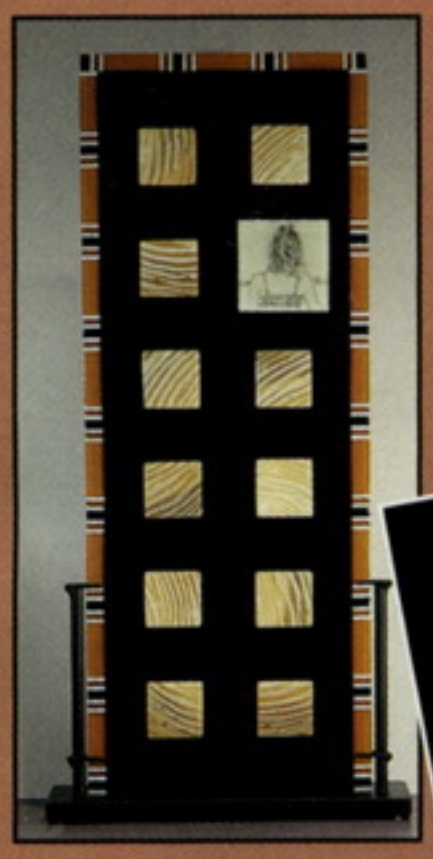
The back, or shelf side, of the pour.

(See photo #14), the glass will not have room to develop a circular pattern as it drips. This can result in some interesting variations in the pattern. (See photo #15).

In any aperture pour, the resulting glass disk will have distinctly different patterns when viewed from the front or from the back (the side that was against the kiln shelf when the glass dripped out). (See photos #16 and #17). You can use either, or both sides in your fused work. At Vitrum Studio' we use a tile saw to cut out the desired areas of the melt, and then sandblast all sides of the selected pieces with 220 grit alumina oxide to remove any trace of kiln wash and to remove the saw marks before using the pieces in any fused design.

Judith Finn Conway is an award-winning glass artist, writer and educator in the Washington/Baltimore area. She has been a contributing editor to Glass Craftsman magazine since the early 1990s. Her work has been accepted in the Arts in the Embassies program of the United States Department of State and is shown in galleries nationwide. She and her partner Kevin O'Toole teach a wide range of glass classes and workshops in all aspects of warm glass in their studio, Vitrum Studio. You can contact her at www.judithconwayglass.com or at the studio, www.vitrumstudio.com.

Steve Immerman



On the Shore *- by Steve Immerman*
This panel shows individual sections of an aperture pour that were tack fused onto a pre-fired and cold worked panel. The size is 20 1/2 x 8", with thicknesses varying from 3/8" to 7/8".

Details from ***On the Shore***

Autumn Garden *by Steve Immerman*
The design elements of this piece are made up of aperture pours created in the autumnal palette, cut to size, stacked, fire polished, and tack fused. Finished size is 20 1/2" x 8", with thicknesses varying from 3/8" to 7/8".

Details from ***Autumn Garden***

Reader Service Information on Page 64

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