Elizabeth Johnson Art Glass, LLC
Elizabeth Johnson, Sole Member and Manager
PO Box 3434, Boulder, CO 80307, USA
Tel: +1-303-908-0593
Email: orders@elizabethjohnson.com
Website: www.elizabethjohnson.com

LAMPWORKING PROCESS

Lampworking (also called Flameworking) is the process of sculpting glass in the 4000°F flame of an oxygen-propane torch. The Italian-made glass Elizabeth most often uses has a working range between 1,000°F and 1,700°F. In the upper part of that range, the glass can become as liquid as honey and must be constantly rotated to prevent it from dripping. Toward the lower end of the working range, the glass begins to solidify and develops plastic qualities much like clay or soft wax. The sculpture in progress must be moved back and forth in the flame to maintain it in that critical plastic temperature range. If the piece is allowed to get too hot, surface details will be melted away and the sculpture spoiled. If it is heated unevenly or cools too much, the sculpture will shatter apart, sending near-molten bits of glass in all directions.

Each flameworked object Elizabeth makes is hand sculpted; therefore no two are ever exactly alike. Variations in the surface color are achieved by carefully controlled heating and cooling, by mixing several glass colors together, or by applying vitreous enamel, which is finely powdered glass. When enamel is used, it is completely fused into the sculpture and will not fade or flake off. Any stems, such as those on cherries, are embedded into the glass and are made of solid copper wire that is unfinished or has an oxidized patina. No paint is applied to any of the objects.

PÂTE DE VERRE PROCESS

“Pâte de verre” means “Paste of glass” and refers to the process of creating glass objects with the use of molds and powdered glass. Elizabeth begins the process by creating an original sculpture or “pattern”. This can be a natural plant or leaf supported by and embellished with water clay. Or it may be a hand-sculpted wax original. She builds a mold around the pattern with a plaster mixture which has been modified for use at high temperatures. After the refractory plaster has set, the original plant parts and clay are removed, or the wax is melted out. This leaves behind a hollow plaster mold. The final mold may be made of one, two, three or more parts which fit together.

When the mold parts are complete and assembled, Elizabeth fills the resulting space with powdered colored glass. The powdered glass may be mixed with water and a binder to make a paste which is brush-applied into different parts of the mold, giving precise control over the placement of color. Or the color may be dry sifted into the mold in layers, allowing for gradual changes in color across the surface of a leaf, flower petal or background. If several numbered glass pieces are made using the same original mold, the hand-placement of colors ensures that each finished piece in the series will be unique.

After the mold is filled with glass powder Elizabeth fires it in a kiln to 1600ºF. This fuses the powder together into a solid glass object, which is then gradually cooled to room temperature over many hours or days. The plaster mold is then broken away. Finally, in a painstaking process using sandpaper and progressively finer and finer grits, the resulting glass sculpture is cleaned, refined and polished.

KILN CASTING PROCESS

The Kiln Casting process is very similar to the Pate de Verre process in that both use molds. However, in Kiln Casting the glass used to fill the molds is most often chunks of lead crystal. The chunks are placed in a plaster reservoir that sits above the mold in the kiln. As the crystal melts, it flows down from the reservoir into the mold. Since it isn't possible to control where and how the crystal will flow, placing several different colors into the reservoir can produce unique and beautiful patters of color flow in the finished glass object.

FUSING PROCESS

"Fusing" refers to the process of heating several glass elements in the heat of a kiln to fuse them into a single piece of glass. These elements may include glass sheets, glass powders or frit, or three-dimensional glass elements previously made through the lampwork process. The elements are often fired flat on a prepared kiln shelf. But they may also be contained to a specific shape by ceramic dams or slumped over or into a shaped mold such as a bowl. Elizabeth finds open-faced fusing especially useful to make thin objects such as her glass fried eggs and bacon. Because the process is completely free-hand it introduces an element of serendipity that is not present in pate-de-verre work, and it ensures that no two sculptures will be alike.

After being assembled on the kiln shelf in their cold state, the elements of a project are brought to temperatures between 1200ºF and 1400ºF depending on the degree to which the glass must flow for best effect. The resulting glass object is gradually cooled back to room temperature to remove inner stress. Once cooled, it may be drilled or shaped, or have other elements added. A project may be fired as many as four or five times, with each successive firing adding to the detail or dimension. After the final cooling the piece is polished and signed.