



Elizabeth Johnson Art Glass

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FLAMEWORKING PROCESS

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 rub, flake or chip 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. Using more clay, she creates dams around the sculpture and then fills the resulting space 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.

After the mold is filled with glass powder Elizabeth fires it in a kiln to 1600°F. 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.