

# Glass art

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**Glass art** refers to individual works of art that are substantially or wholly made of glass. It ranges in size from monumental works and installation pieces, to wall hangings and windows, to works of art made in studios and factories, including glass jewelry and tableware.

As a decorative and functional medium, glass was extensively developed in Egypt and Assyria. Invented by the Phoenicians, was brought to the fore by the Romans. In the Middle Ages, the builders of the great Norman and Gothic cathedrals of Europe took the art of glass to new heights with the use of stained glass windows as a major architectural and decorative element. Glass from Murano, in the Venetian Lagoon, (also known as Venetian glass) is the result of hundreds of years of refinement and invention. Murano is still held as the birthplace of modern glass art.



Roman era millefiori style glass cup from Emona (present Ljubljana) grave.

The turn of the 19th Century was the height of the old art glass movement while the factory glass blowers were being replaced by mechanical bottle blowing and continuous window glass. Great ateliers like Tiffany, Lalique, Daum, Gallé, the Corning schools in upper New York state, and Steuben Glass Works took glass art to new levels.

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## Glass fashion

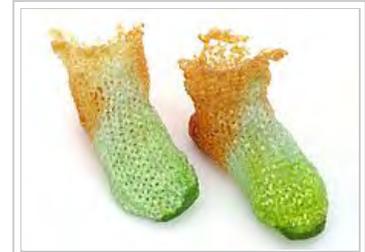
### Jewelry

The first uses of glass were in beads and other small pieces of jewelry and decoration. Beads and jewelry are still among the most common uses of glass in art, and can be worked without a furnace.

It later became fashionable to wear functional jewelry with glass elements, such as pocketwatches and monocles.

### Wearables and couture

Starting in the late 20th century, glass couture refers to the creation of exclusive custom-fitted clothing made from sculpted glass. These are made to order for the body of the wearer. They are partly or entirely made of glass with extreme attention to fit and flexibility. The result is usually delicate, and not intended for regular use.



*Imperfect for You*, knitted glass by Carol Milne

## Glass vessels

Some of the earliest and most practical works of glass art were glass vessels. Goblets and pitchers were popular as glassblowing developed as an art form. Many early methods of etching, painting, and forming glass were honed on these vessels. For instance the millefiori technique dates back at least to Rome. More recently, lead glass or crystal glass were used to make vessels that rang like a bell when struck.

In the 20th century, mass produced glass work including artistic glass vessels were sometimes known as factory glass.

## Glass architecture

### Stained glass windows

Starting in the Middle Ages, glass became more widely produced, and used for windows in buildings. Stained glass became common for windows in cathedrals and grand civic buildings.

### Glass facades and structural glass

The invention of plate glass and the Bessemer process allowed for glass to be used in larger segments, to support more structural loads, and to be produced at larger scales. A striking example of this was the Crystal Palace in 1851, one of the first buildings to use glass as a primary structural material.

In the 20th century, glass became used for tables and shelves, for internal walls, and even for floors.

## Glass sculptures

Some of the best known glass sculptures are statuesque or monumental structures such as the statues by Livio Seguso, or by Stanislav Libenský and Jaroslava Brychtová. Another example is René Roubíček's *"Object"* 1960, a blown and hot-worked piece of 52.2 cm (20.6 in)<sup>[1]</sup> shown at the "Design in an Age of Adversity" exhibition at the Corning Museum of Glass in 2005.<sup>[2]</sup>



Chihuly sculpture,  
Kew Gardens

### Art glass and the studio glass movement

In the early 20th century, most glass production happened in factories. Even individual glassblowers making their own personalized designs would do their work in those large shared buildings. The idea of "art glass", small decorative works made of art, often with designs or objects inside, flourished. Pieces produced in small production runs, such as the Lampwork figures of Stanislav Brychta, are generally called art glass.

By the 1970s, there were good designs for smaller furnaces, and in the United States this gave rise to the "studio glass" movement of glassblowers who blew their glass outside of factories, often in their own studios. This coincided with a move towards smaller production runs of particular styles. This movement spread to other parts of the world as well.

Examples of 20th century studio glass:



*Vortex Vase*



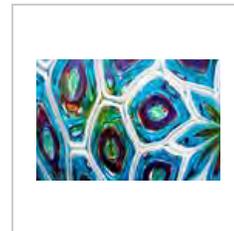
*Wind Song Glass*



Merletto  
canework



*Murrine Foglio*



Murrine detail



Picking up  
murrine

## Glass panels

Combining many of the above techniques, but focusing on art represented in the glass rather than its shape, glass panels or walls can reach tremendous sizes. These may be installed as walls or on top of walls, or hung from a ceiling. Large panels can be found as part of outdoor installation pieces or for interior use. Dedicated lighting is often part of the artwork.

Techniques used include stained glass, carving (wheel carving, engraving, or acid etching), frosting, enameling, and gilding (including Angel gilding). An artist may combine techniques through masking or silkscreening. Glass panels or walls may also be complemented by running water or dynamic lights.



## Techniques and processes

Several of the most common techniques for producing glass art include: blowing, kiln-casting, fusing, slumping, pate-de-verre, flame-working, hot-sculpting and cold-working. Cold work includes traditional stained glass work as well as other methods of shaping glass at room temperature. Glass can also be cut with a diamond saw, or copper wheels embedded with abrasives, and polished to give gleaming facets; the technique used in creating Waterford crystal.<sup>[3]</sup>

Art is sometimes etched into glass via the use of acid, caustic, or abrasive substances. Traditionally this was done after the glass was blown or cast. In the 1920s a new mould-etch process was invented, in which art was etched directly into the mould, so that each cast piece emerged from the mould with the image already on the surface of the glass. This reduced manufacturing costs and, combined with a wider use of colored glass, led to cheap glassware in the 1930s, which later became known as Depression glass.<sup>[4]</sup> As the types of acids used in this process are extremely hazardous, abrasive methods gained popularity.

## Knitted and felted glass

*Knitted glass* is a technique developed in 2006 by artist Carol Milne, incorporating knitting, lost-wax casting, mold-making, and kiln-casting. It produces works that look knitted, though they are made entirely of glass.

Chinese artists Zhengcui Guo and Peng Yi premiered a technique of *felted glass* or "glelting", with positive critical reviews, at the 2015 Ha You Arts Festival.<sup>[5]</sup>



G3DP printing process

## Glass printing

In 2015, the Mediated Matter group and Glass Lab at MIT produced a prototype 3D printer that could print with glass, through their *G3DP* project. This printer allowed creators to vary optical properties and

thickness of their pieces. The first works that they printed were a series of artistic vessels, which were included in the Cooper Hewitt's *Beauty* exhibit in 2016.

Glass printing is theoretically possible at large and small physical scales, and has the capacity for mass production. However as of 2016 production still requires hand-tuning, and has mainly been used for one-off sculptures.

## Pattern making

Methods to make patterns on glass include caneworking such as murrine, engraving, enameling, millefiori, flamework, and gilding.

Methods used to combine glass elements and work glass into final forms include lampworking.

## Museums

Historical collections of glass art can be found in general museums. Modern works of glass art can be seen in a dedicated glass museums and museums of contemporary art. These include the Chrysler Museum in Norfolk, Virginia, the Museum of Glass in Tacoma, the Metropolitan Museum of Art, the Toledo Museum of Art, and Corning Museum of Glass, in Corning, NY, which houses the world's largest collection of glass art and history, with more than 45,000 objects in its collection.<sup>[6]</sup> The Museum of Fine Arts in Boston features a 42.5 feet (13.0 m) tall glass sculpture, *Lime Green Icicle Tower*, by Dale Chihuly.<sup>[7]</sup> In February 2000 the Smith Museum of Stained Glass Windows, located in Chicago's Navy Pier, opened as the first museum in America dedicated solely to stained glass windows. The museum features works by Louis Comfort Tiffany and John Lafarge, and is open daily free to the public.<sup>[8]</sup>



A display at Canberra Glassworks, Australia

The Harvard Museum of Natural History has a collection of extremely detailed models of flowers made of painted glass. These were lampworked by Leopold Blaschka and his son Rudolph, who never revealed the method he used to make them. The Blaschka Glass Flowers are still an inspiration to glassblowers today.<sup>[9]</sup> The UK's National Glass Centre is located in the city of Sunderland, Tyne and Wear.

## See also

- Glassblowing
- Factory glass, Art glass, and Studio glass

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Wikimedia Commons has media related to ***Glass art***.

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