

Conservation Stories

If you've ever broken glass at home, you know how it can break into a mix of tiny slivers, small pieces, and large pieces. Similar to a puzzle, broken glass fragments can sometimes be carefully put back together with special glues. A conservator is someone who works to repair and protect objects so they are preserved for years to come.

The conservators at this museum are experts in the field of glass conservation. Their approach to repairing glass is either passive or active. Sometimes they stabilize an object, leaving losses (missing parts) to show that the object is no longer whole. At other times, they reassemble the glass and fill losses with a synthetic material. This gives an object more structural support and makes it more understandable when put on display.

One guideline of conservation is to handle objects as little as possible. No matter how stable something is, any conservation treatment has the potential to cause further damage. Each treatment is different, and conservators determine the best approach for each object before they begin their work. A very important conservation principle is reversibility: conservators make sure any change made to an object is easily undone. Materials used in treatments can deteriorate over time, and the object may need to be treated again in the future to replace fills or adhesives that have yellowed with age. Reversibility allows the materials used in the original intervention to be removed without causing further damage.

The objects in this case show four different approaches to glass conservation:

1. Islamic Bottle

1000-1099

69.1.39, gift of the American Research Center in Egypt

The 11 surviving fragments of this bottle were uncovered in an archaeological excavation in Fustat, Egypt. When an object is broken, areas that aren't usually visible are revealed. Examining fragments gives a researcher an opportunity to study how an object was made and used. When an archaeological object (an object that has been buried) does not require fills for structural support, conservators like to leave the object with these missing areas. This lets researchers see the broken edges of the glass fragments. Even with missing pieces, this bottle is stable enough on its own, so the missing areas were not filled.

2. Islamic Pitcher

900-1199

2007.1.26

Even though there are 94 glass shards that make up this fragmentary pitcher, much of the object is still missing. Fills are used to provide structural support and to make sure "floating" fragments (fragments that barely touch any adjoining glass) are not lost. They also show what the pitcher looked like before it was broken. Notice the large fill on the bottom of the pitcher. You can see this pitcher and other objects being treated in our conservation lab in the video behind you.

3. Islamic Beaker

900-1199

74.1.18, gift of Mr. Jerome Strauss

Our conservators have filled in the major losses of this thin beaker to provide extra structural support. The fills were made with a very stable acrylic resin by casting the resin into a sheet and then texturing it with tiny bubbles in order to complement the weathered surface of the object. This technique for filling losses in glass was developed in the conservation lab of this museum.

The surface glass of this beaker has deteriorated, a condition that is called “weathering.” Although we call this beaker “weathered,” it did not actually weather or wear away. This surface deterioration is common to ancient glass that has been buried for hundreds of years. The soil conditions in, which the glass is buried can affect the condition of the glass and change it from the surface inward. This often results in hundreds of microscopic layers that can be either relatively stable or can come off in thin flakes or thicker layers.

Weathering can make handling and treatment a challenge because it makes the glass surface very fragile. Much of the weathered surface on this beaker is now lost, revealing a surface that is pitted and much thinner than it originally was. If an object was broken while it was buried, as is the case with this beaker, then weathering occurs on the broken edges, making them less likely to join properly.

4. Islamic Beaker

1175-1225

67.1.19, gift of Wilhelm Henrich

This beaker has been fully restored with fills that match the color and translucency of the original blue glass. Since almost all of the fragments from the middle section are missing, the fills provide necessary structural support for the object. Without them, the top and bottom sections could not be displayed as a single piece. Even though tiny losses still exist, this beaker was restored to look complete.

Blue is one of the most difficult colors to match because fills can be a perfect match in sunlight but look completely different under artificial light. Luckily, the casting and molding process used to make these fills lets the conservators easily recast fills as often as needed in order to get a nearly perfect color match.