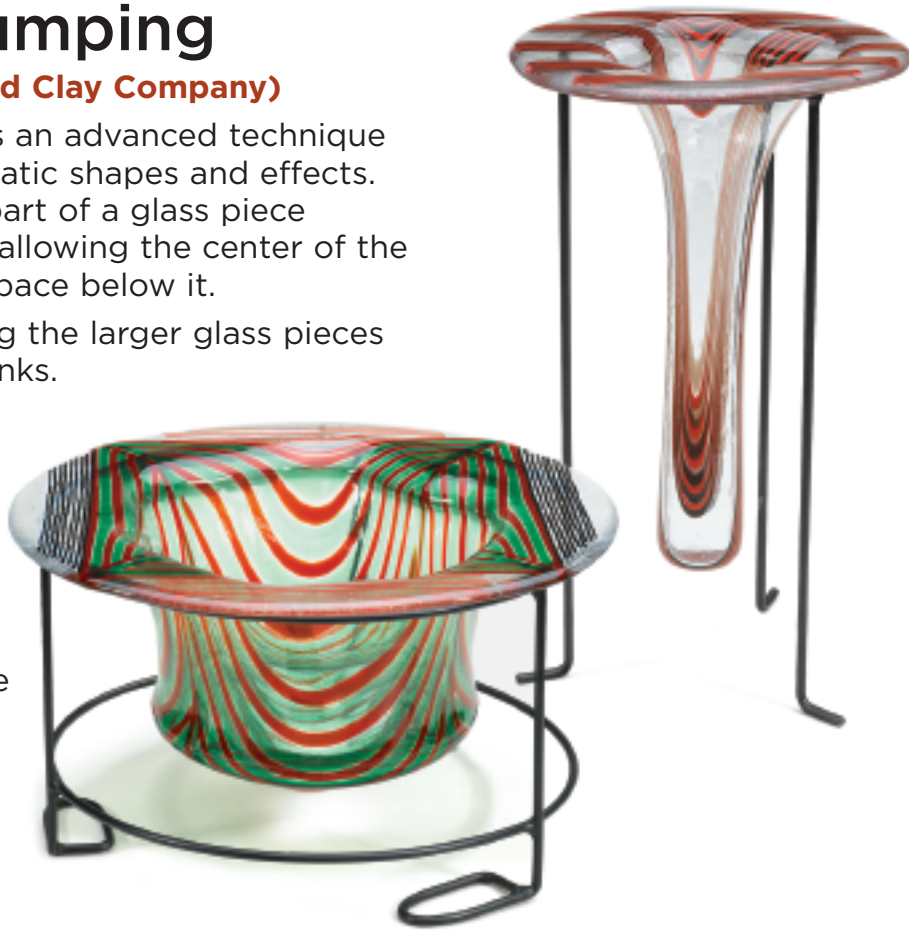
Drop Ring Glass Slumping

Provided by AMACO (American Art and Clay Company)



The drop ring glass slumping process is an advanced technique that produces an endless array of dramatic shapes and effects. This is achieved by leaving the center part of a glass piece unsupported during the firing process, allowing the center of the glass to sag or "slump" into the open space below it.

Bold effects can be created by adorning the larger glass pieces with stringers, noodles, confetti, or chunks. Fusing, slumping, and tacking should all be performed at the beginning of the process.

Drop ring firing requires the operator to peek inside the kiln during the firing process to see how far the piece has slumped. Protective welder's glasses should be worn when looking inside the kiln, and the door should be re-closed quickly, as leaving it open too long will cause the kiln temperature to drop dramatically and interrupt the firing process.

The weight of the glass, gravity, skill, and imagination all play a role in the success of the finished piece, which may be self-supporting, be laid on its side, or be displayed in a custom holder.

Grade Levels 9-12+

Process

Make a Drop Ring:

The drop ring may be made out of any fired moist clay; however, more porous clay bodies such as Amaco® No. 27 White Sculpture Raku clay or Amaco® No. 38 White Stoneware clay are recommended for their ability to withstand thermal shock. (The drop ring may be used multiple times before it will deteriorate or crack.) Cut a smooth, beveled hole into the center of the clay for the glass to drop down into, see (A). The hole may be round or irregularly shaped, and at least one-third of the glass sheet should be supported by the ring on all sides. Take care not

Materials

Amaco® COE 90 Glass Sheets, assorted colors (34100-), need two per project

Glass for embellishment, recommend:

Amaco® COE 90 Glass Noodles, assorted colors (34101-)

Amaco® COE 90 Glass Frit, assorted colors (34959-)

Studio Pro™ Glass Cutter (61434-1000)

Studio Pro™ Running Pliers (61708-1001)

Blick® Multi-Purpose Glue (23872-1065)

Heat-safe Welder's Glasses

Heat-Resistant Gloves (32905-1000)

Kiln-fire clay for making drop ring, recommend:

Amaco® No. 38 White Stoneware (30503-1038) or Amaco® No. 27 White Sculpture Raku Clay (30509-1027)

Amaco® Kiln Shelf Wash (32922-0001)

Amaco® Excel Glass Kiln with Glass Select Fire, (30180-)

Amaco® Kiln Shelf Supports (30129-)

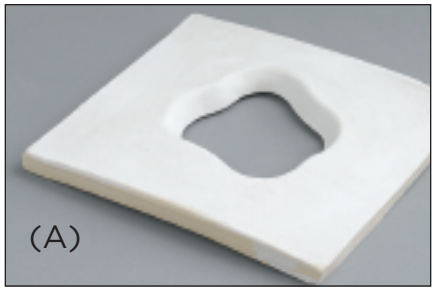
Amaco® Kiln Shelf, 21" x 10-1/2" x 5/8" (30130-1011)

Amaco® Refractory Block, 4" x 3" x 1" (30610-1043)

Stand to support finished artwork

Process, continued

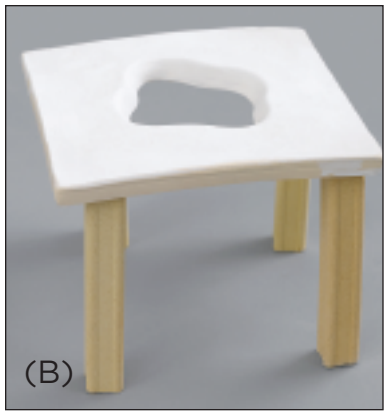
to create any sharp angles as you carve the hole, as the glass will not release from tight corners or curves. Apply a thin coat of kiln wash to the shelf of the kiln and fire the drop ring between cones 05-5 (if using either of the clays recommended above).



A drop ring can be created from fired, moist clay. A smooth, beveled edge in the center allows the glass to slump into interesting patterns.

NOTE: Remember that the drop ring will shrink approximately 10% in size during firing.

Firing Process:



1. 1. Decorate the glass sheet with noodles, stringers, and frit, using a small amount of glue to keep the materials in place during firing. Fuse-fire the sheet flat on a shelf coated with kiln wash. Allow to cool.
2. Coat the drop ring with kiln wash and place it drop ring on ceramic supports in the kiln, see (B). The height of the supports depends on how far you want the finished piece to drop.
3. Place the piece of fused glass onto the drop ring, making sure that at least one-third of the sheet is supported by the drop ring on all sides. The glass should be centered over the hole to prevent it from slumping unevenly or dropping entirely through the hole.
4. Program the kiln according to the firing chart below. Visually monitor the sagging of the piece by looking in the kiln between 1350°F and 1400°F while wearing welder's glasses and heat-resistant gloves.
5. When the piece has dropped to the desired level, prop the kiln door open approximately four inches, using an insulating firebrick. Opening the door will stop the piece from dropping any further. Again, be sure to wear heat-resistant gloves and welder's glasses when opening the kiln door and stabilizing it.
6. Select the "SKIP SEGMENT" button and the program will skip to the annealing segment, allowing the kiln to cool. Watch the temperature on the electronic display and allow it to fall to approximately 1050°F. Close the door and allow the kiln to reheat. The temperature will rise between 100–150°F, and then the kiln will begin to cool.

   NOTE: The glass piece may be allowed to sag just a few inches, without reaching the bottom of the kiln, or dropped all the way until it sits on the kiln shelf below. When the glass piece drops, its neck will thin. It is important that the neck remain sufficiently thick, or holes may result. For a drop ring with a 4" hole, accommodating a 7" round piece of glass that is being dropped 8", the sides of the finished piece should be 3/8" thick. Trial and error may be required to perfect your technique.

National Standards

Content Standard #1 — Understanding and applying media, techniques, and processes

9-12 Students conceive and create works of visual art that demonstrate an understanding of how the communication of their ideas relates to the media, techniques, and processes they use

Drop Ring Visual Firing Technique Firing Ramp

(For 6" X 6" sheets, up to 1/2" thick)

Step	1	2	3	Skip Segment	Step	5	6
Rate	400	600	100		Rate	9999	150
Temp	1000°	1350°	1400°		Temp	950°	750°
Hold	30min	0	30min		Hold	30min.	0
Time	2hr, 48min	36min	1hr, 30min	4hr, 54min	Time	1hr, 30min	1hr, 18min

NOTE: All times assume a one-hour time period for the rapid-cool portion of the cycle. Actual times may vary.

NOTE: All firing and cooling times are approximate. Actual times may vary.