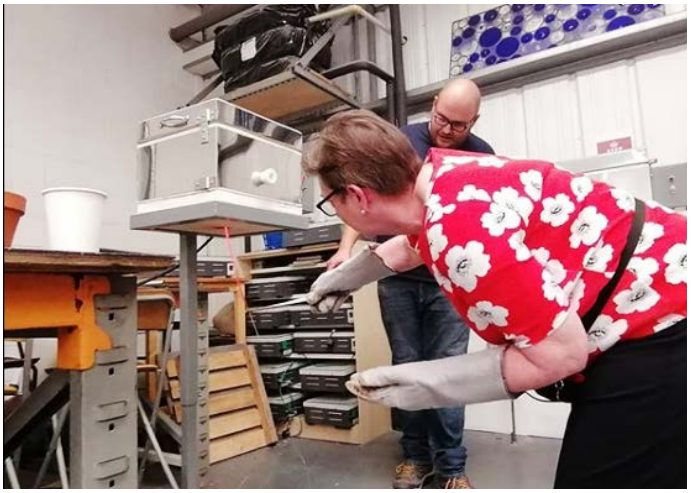
Pulling stringers with a Vitrigraph kiln

Pulling stringers from a vitrigraph kiln has lots of benefits; you can create your own colours, produce organic, shapely stringers that are one of a kind, and with practice you can create controlled shapes such as spirals.

What you need:

- A vitrigraph kiln
- A good quality terracotta pot
- Scrap glass
- Oversized tweezers
- Steel scissors
- Kevlar glove
- Mirror

Setting up



It is best practice to fix your vitrigraph kiln to a wall just above eye height. This means you have more working area in which to pull the stringers out and downwards and manipulate the shape.

For the glass, fill your terracotta pot with scraps that you build up in strips from the edges inwards. It's important that the strips are not tall enough to overhang your pot, as this creates the risk they will melt over the edges of the pot and stick to the walls/base of the kiln. Ensure one piece of glass is stood up near the hole in the bottom of the terracotta pot, this will make it easier later when you can grab hold of it easily with the tweezers to pull it.

In terms of colour, you may find you have lots of a certain colour of scrap you want to use. If you use a selection of blue offcuts for instance, the result will be a blue tone created from the mixture. You can also try using a variety of colours and experimenting with how you place them in the terracotta pot to get different colour designs in your vitrigraph stringers.

Process

Remove the kiln lid and place the pot inside, being careful to line up the pot with the hole in the bottom of the kiln. If you are using the vitrigraph kilns at Creative Glass Guild, we will assist with this as our kilns are high up on the wall, accessed via a ladder.

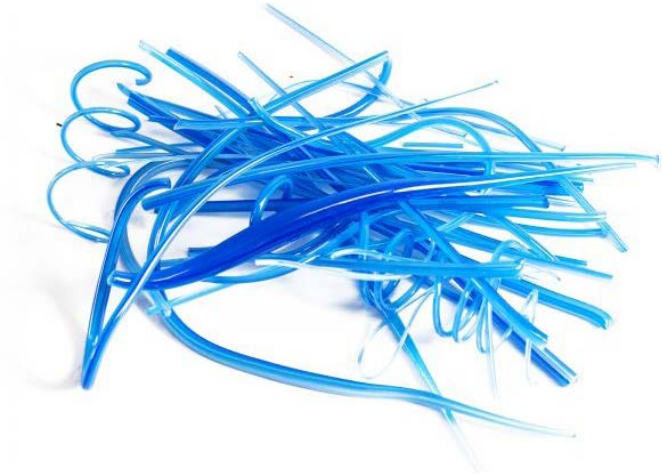
Replace the lid and run the program.

This is our firing guide:

Segment	Rate Celsius/hr	Temp	Hold time (hr:min)
1.	120°C/hr	to 120°C	0:20
2.	AFAP* or 9999°C/hr	to 950°C	1:00

*AFAP = as fast as possible, some controllers will not allow a rate of 9999°C /hr

This data is a guide only, firing programmes may need to be adjusted according to size and thickness of glass and the kiln's performance. Ensure that data is entered into the controller accurately, otherwise glass may not fuse correctly.



On our Olympic vitrigraph kilns, we have the option of setting an alarm, and we set it to go off when the kiln has reached 900°C. (If you don't have an alarm function, this usually takes approx 1.5hrs.) At this point, the glass is approximately 10 minutes away from being ready to be pulled, which gives you time to prepare.

IMPORTANT Never put your head underneath the vitrigraph kiln to see if the glass is ready to pull. You put yourself at risk of molten glass landing on your face. Instead, use a mirror to view the glass inside the kiln.

You will need a Kevlar glove to protect the hand you are using to pull the stringers. It's also recommended that you tie your hair back and wear cotton clothing.

To start pulling the glass through, grab a protruding piece of glass with the tweezers. Alternatively, carefully push a mandrel into the molten glass, wait for it to adhere, then pull the mandrel through. Be careful not to be too forceful as you can topple the pot inside the kiln, ruining the internal fibres.

The glass moves when you pull it. If you pull it slowly, you will get a thicker stringer. If you pull it quickly, a thinner stringer. The glass cools quickly, as does the time you have to manipulate it. When cutting the stringer, you have to cut it near to the hole in the kiln, where the glass is still molten.

Keep the tweezers near to where you are cutting the stringer to avoid long lengths of molten stringer swinging towards you.

Using your stringers

When your stringers have cooled you can pick them up and get a better understanding of the organic shapes you've created! At this point they can be carefully broken with your fingers or a mosaic cutter if necessary.

Why not try creating an abstract design with your stringers? Or incorporate them into a pictorial design, maybe as stems for flowers moving in the breeze!