



Glass compatibility

To say that two pieces of glass are compatible, is to say that they can be fused together successfully without risk of breakage.

Different types of glass can absorb different amounts of heat and expand and contract at different rates. When you heat glass it expands and as it cools it contracts. If you fuse two pieces of glass that 'move' differently in the kiln together, when they cool the friction from the two pieces will result in stress. This stress can cause breakage. Unfortunately, it is not always the case that it breaks in the kiln, it can happen days, weeks or even months later.

So, it's important to check that all of your glass is compatible. The way you do this is to look for its COE rating. This stands for 'co-efficiency of expansion' and is a measure of how glass moves in the kiln. The rating is given as a number. Here at Creative Glass Guild all of the fusing glass we sell has a COE96 rating, so you don't need to worry about compatibility as long as you are buying glass from our extensive fusing range. The largest range we sell is Oceanside 96 (formerly Spectrum System 96), and this is complemented by our Wissmach 96 and Youghioghney 96 ranges.



Label your glass

Keep the labels on your glass or use a marker pen to label smaller pieces so you can easily identify if you are using compatible glass. This is especially useful if you do stained glass as it will ensure you don't mix your glass up. To check from home, all of the glass codes that are COE96 end in '-96', but if you're not sure get in touch or pop the code into the website search box to check.

But what about viscosity?

Viscosity refers to the temperature a material softens and how much it flows. This is slightly different than looking simply at the COE. While two glasses might be tested compatible to move at the same rate, the temperature at which they become soft may vary. For instance, the Wissmach 96 range had the same COE as the Oceanside 96 range, but the Wissmach glasses have a lower viscosity than the Oceanside glasses. But that doesn't mean they can't be used together. You just have to tweak your firing program so that the ramp up and cool down segments are slow enough for the Wissmach glass to reach a similar viscosity to the Oceanside glass.

Can compatibility ever be guaranteed?

Not completely. There are factors that could mean you take the glass out of its compatible range such as taking it to temperatures above 900°C. When considering compatibility, it's useful to know that COE and viscosity are both important factors. But if you're using all COE96 fusing glass, you're very unlikely to encounter any issues.

Can I get away with a little bit of incompatible frit or stringers?

The safe answer is no. In reality, the answer is sometimes. Using a tiny amount of material that is moving at a different rate to the bulk of the piece is occasionally not significant enough to show a level of stress that would show under filters or that would produce cracking. It's a risk that we don't recommend taking.

Can I test the compatibility of a piece I've already fused?

You can test for stress with polarisation filters. Put one over a light source, the glass in-between and the other filter at 90 degrees over the top. Stress will show up as a milky white halo around the affected areas.

