

Weaving Glass

Molds for Weaving

You can use any material that can be fired in the kiln. It can be vermiculite board, ceramic fiber board, cut strips of ceramic tile, ceramic molds or stainless steel molds.



Stainless steel mold strips for weaving

Preparing the Molds

Ceramic fiber paper will not stick to glass so it can be used without any coating. Other materials will need to be coated to prevent glass from sticking to the mold. You can use boron nitride or kiln paper. If you use kiln wash, apply 4 or 5 thin coats. If you use boron nitride, just 2 thin coats is enough. Remove any residue after firing and reapply for the next firing. If you use kiln paper or fiber paper, take care to cut the pieces wide enough to fold down over the sides of the mold but not so wide they get caught in the paper on an adjoining mold.

Depth Allowance

You don't want to slump so deep the cross weave pieces fit too loose but you also not deep enough to allow the cross weave pieces to fit in. The ideal depth for a mold is 2 times the thickness of the glass being slumped. For thicker glass weaves, pieces of fiber paper, bits of ceramic tile, or pieces of float glass under the

molds work well to elevate them. Some things to consider when determining mold depth:

- the extra weight of thick glass will cause it to slump quicker than thinner glass.
- The wider the span, the more easily the glass slumps.
- Transparent glass slumps quicker and at lower temperatures than opalescent glass is more resistant to slumping into narrow spans.
- The metallic coating on iridescent glass retards slumping and resists slumping into narrow spans.
- Float glass can be used to make weaves but requires higher temperatures to slump. If you use float, be careful to use only pieces from the same original sheet to be sure it's all compatible.

Spacing

The weave pattern depends as much on the space between the molds as the size of the mold. The glass will drape tightly over the mold but will remain curved where it slumps between molds.

Wide spans will slump well between the molds but narrow spans not as much – often remaining rounded like a bowl bottom. The narrower the span, the higher the temperature and longer a hold time is needed to complete the slump. The tension in glass restricts slumping over short spans. Spaces 3/4" or wider are always reliable but spaces 1/2" will not slump to more than a rounded curve. Glass will drape over shorter spaces than it will slump. If you want your design to have some narrow cross weaves, restrict them to draping over molds and not to slumping between molds.

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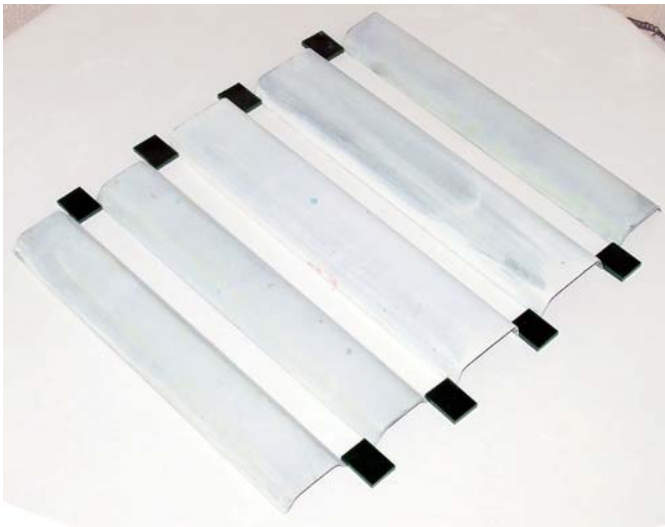
Glass will drape and slump equally well in wide spans



Glass will drape over but not slump into narrow spans

Laying Out Molds

It's important to lay the molds out parallel to each other to be sure the slumps strip fit together. An easy way to ensure the mold strips are perfectly parallel is to cut pieces of glass or cardboard to the desired space size and use them to position the weave strips.



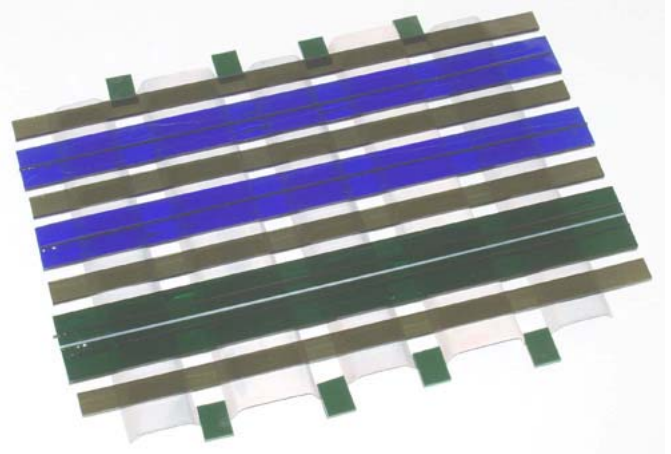
Mold strips positioned with glass pieces as spacers

If you want to slump over a short span (3/4" or less) you might consider make the space slightly wider than the cross weave piece you plan to use.

Placing Glass on Molds

Set the glass strips on the molds to be slumped to start and end with matching overhang on each end. Be careful to leave at least 1/8" between each strip of glass to ensure they don't fuse together.

Remember to remove the cardboard or glass spacers before firing.



Glass strips positioned on kiln washed mold strips ready to fire

Slumping the Strips

SEGMENT (min)	RAMP	TEMP	HOLD
1	400F (200C)	1000F (515C)	20
2	900F (500C)	1350F (730C)	30 *
3	FULL	960F (515C)	30
4	400F (200C)	300F (150C)	0

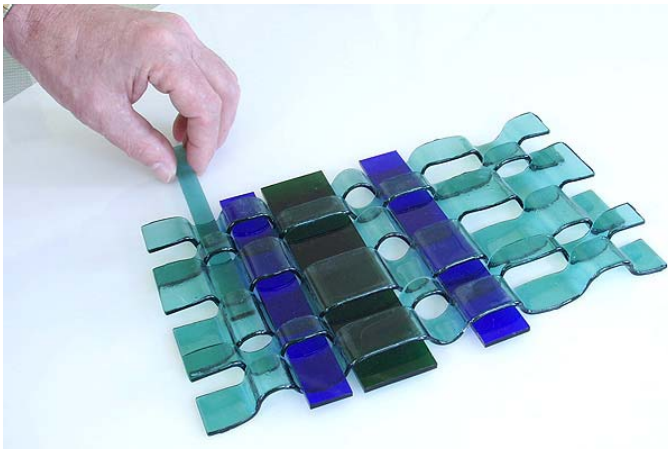
- For spaces 3/4" or less increase to 40 minutes
- For spaces 1/2" or less, increase to 45 minutes

This firing schedule is for COE 96 glass. For COE 90 glass add 20°F to all temperatures. For clear float or architectural glass add 50°F.

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Making the Weave

After slumping the mold weave strips, set them out alternating one up and one down and insert the cross strips through each slumped strip. It's a good idea to cut a test piece of glass or cardboard to check to see if it fits before cutting out all your glass cross strips.



Fitting the cross pieces into the slumped strips.

NOTE: the narrow spans didn't slump fully flat but remained curved. This will require reducing the originally designed size of cross weaves.

If the slumped space isn't as wide as you planned, you can either cut the cross weave piece a little smaller than originally planned or instead use 2mm thin glass or noodles and stringers

Firing to Tack Fuse

SEGMENT (min)	RAMP	TEMP	HOLD
1	350F (175C)	1000F (515C)	20
2	900F (500C)	1350F (730C)	15
3	FULL	960F (515C)	60
4	400F (200C)	300F (150C)	0

The slower ramp speed in segment 1 is to compensate for any air spaces between the glass pieces retarding heat transference between the pieces of glass.

Take special care to avoid firing too hot. If you fuse the weave strip together at too high a temperature you will lose a lot of the texture that gives glass weaves their interesting appeal.

Slumping

Place the now tack fused weave into a slumping mold and fire in the kiln:

SEGMENT (min)	RAMP	TEMP	HOLD
1	300F (150C)	1000F (515C)	20
2	900F (500C)	1250F (675C)	20
3	FULL	960F (515C)	60
4	400F (200C)	300F (150C)	0

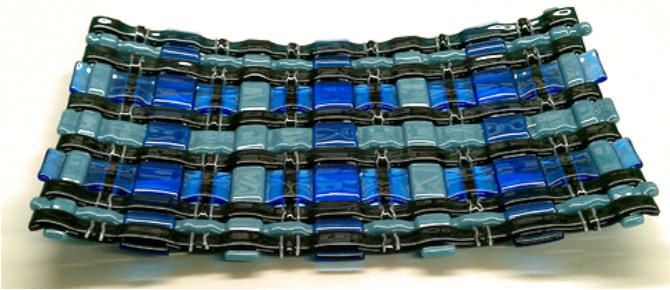
The slower ramp speed in segment 1 is to compensate for any air spaces between the glass pieces retarding heat transference between the pieces of glass.

Experiment to Enhance

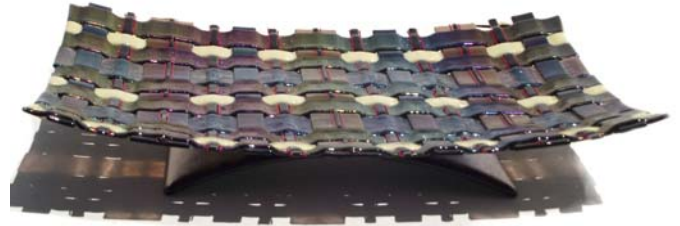
If you have some extra space on top of or beside the inserted cross strips, you can add extra detail to your project by inserting strips of noodles or stringers on top of or alongside the cross strips.

If you add stringers and noodles onto cross weave strips, program a slightly slower ramp speed up and down to allow for the extra thickness of glass. Don't just allow for extra thickness but also for the way any air between pieces of glass will act as insulation and retard heat transfer from one piece of glass to another.

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White stringers set on either side of black noodles used as cross strips.



Black noodles & red stringers on top of cross strips.

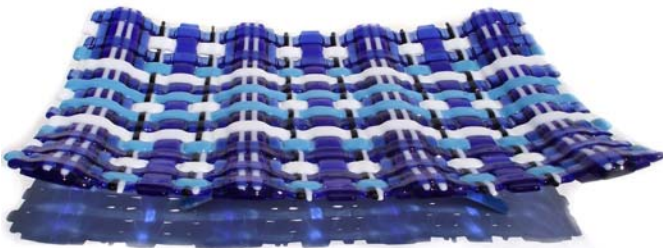
Photo shows weave tray sitting on a curved stand.



Black & white noodles set on top of cross strips.

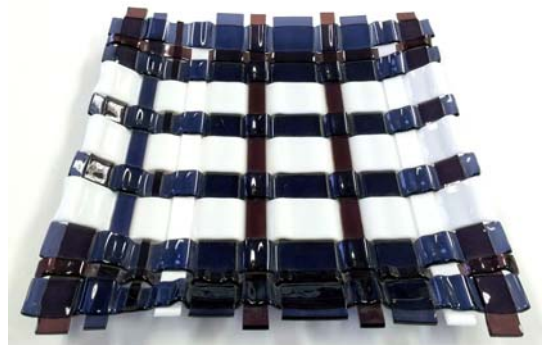


Tartan pattern weave with different size strips.



*Black & white noodles on top of wide cross strips.
Black & white noodles used as narrow cross strips.*

Photo shows weave tray sitting on a curved stand.



*Simple weave with 2 different size slumped strips
and 2 different size cross strips*