Fusing with Wissmach Glass

Fusing with Wissmach glass is not only beautiful but very easy to do. Several naysayers claim that Wissmach glass is not compatible to fuse, but I have found that it is indeed compatible. Wissmach glass has been tested, and the Coefficiency of Expansion (COE) is 94. Therefore, a person can fuse this glass not only to itself but also fuse it to any of the Wismach glass line, which includes English Muffle, Corella Classic, Mystic, opaques, and cathedrals. This does not include Wissmach's mottled line.

Test fusing should be completed prior to beginning the project, because the color that is seen from the sheet may not be what is seen after the fusing process. There will be some color changes during the fusing process, but it is not really dramatic. I have been fusing Wismach glass for several years and have been very satisfied with the outcome. When fusing Bullseye, Uroboros, Easy Fuse, System 96, or others, there will always be some color change within the fusing process.

One other thing I would like to convey is that one must use an antidivitrification agent in the fusing process. I personally use "Super Spray." I have had fantastic success with this product and have seen no signs of devitrification after its application. If this spray or some other antidevitrificition spray is not used, the outcome will be disappointing. Prior to firing, I spray all of my top pieces of glass with "Super Spray." I do not allow time for this application to dry prior to its placement in the kiln. Normally, pieces that are put in the kiln should be dry. However, cracking of the fused piece has not been a problem when using this process.

I fire all of my Wissmach Glass at the same temperature to keep it as simple as possible. My experience with Wissmach is that it is one of the easiest to fuse. My ramp times, hold times, and ending temps are all the same. I ramp at 600°F to 700°F per hour all the way through the fusing process.

I begin at 600°F to 700°F per hour to 1200°F. At that point, I soak at this temperature for approximately 20 to 25 minutes. Of course, this depends on the size of the item you are fusing. It may have to soak longer if the piece is larger than six inches square. The reason for soaking at this temperature is to allow the glass to settle on itself to reduce air bubbles.

After the 1200°F soaking, I continue to ramp 600°F to 700°F per hour to 1450°F to 1475°F. The normal full-fuse temperature is typically 1500°F. I like to fuse at less than 1500°F and allow the glass to stay at the 1450°F to 1475°F for more time, which gives me more control over the outcome of my firing.

I like to see round, smooth edges on my finished product, but it is very easy to leave the glass in the kiln for too long. Overfiring causes glass edges to develop sharp points and uneven edges. If this happens, however, all is not lost. Just grind the edges and fire-polish the piece. But I hate to do things twice!

After peeking into the kiln and determining that the pieces are the way you want them, flash the kiln for 10 seconds, close the lid, and come back to it the next day.

by Jeff Vail

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Slumping with Wissmach Glass

Firing Schedules

1. The first ramp is at 350°F per hour to 500°F with a hold of 10 minutes. This is the first critical step. If the glass is going to crack, it usually happens at this step if the rise in temperature is too fast.

2. The next ramp is at 350°F to 400°F per hour to 1000°F with a hold for 10 minutes. This allows the glass to stabilize and condition to the heat.

3. The next ramp is at 450°F per hour to 1150°F with a 20- to 25-minute hold. This stage allows the glass to become tacky or start to move, and it ensures that the mold form is beginning to take shape.

4. The next ramp is generally 450°F per hour to 1355°F to 1365°F for about 15 minutes for transparents. If you are using opaques and iridescents, then the process temperature is around 1285°F to 1295°F for the same time. The big difference with the iridescents is that you should ***never*** use a devitrification spray. This will burn off the iridescence.

5. At this point, the kiln must be vented and "crashed down" to and stabilized at 1000°F to 1050°F. This stops the glass from moving and helps to put a glossy finish on the glass. It is important to not "crash" the kiln down past 1000°F. Be sure that the kiln is closed and the peepholes are plugged at 1000°F. During this ramp, the kiln should be programmed to a rate of 9999°F per hour to 960°F. (This program allows the kiln to reach 960°F as quickly as possible.)

6. When the kiln reaches 960°F, it must remain there for a minimum of 40 to 50 minutes for a single thickness of glass. For two or more thicknesses, add an additional 10 to 15 minutes for each layer.

7. The final ramp is at 180°F per hour to 800°F with a 10 to 15 minute hold.

At this point, the kiln should shut off. Do not open the kiln until the temperature is under 150°F, at which point you can open the kiln. The glass is still too hot to handle, but this will allow the kiln to reach room temperature a little quicker.

The 960°F temperature is the Wissmach "anneal" temperature that we have found, and the 800°F is a good, all-around, "stress relieving" temperature.

The key to good warm glass is testing, testing, testing. Wissmach works well with the Wissmach family of glass and sometimes with other glasses. Testing will always provide the best results.

by Millard and Linda Kirk

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