

How to Build a Firing Schedule for Slumping Glass

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This is Part 3 of a series on building firing schedules for glass fusing. Parts 1 and 2 addressed full-fusing small, then large pieces. This last part prepares you to slump your fused piece.

When your full fuse is complete, your glass has cooled and “rested” for a day, and you decide to slump your fused piece into a mold, you’ll want to set up a slumping schedule.

The Basic Slump Schedule set up by Bullseye for its glass is very simple, and can apply to just about any stained glass: You just heat the glass at 250° to 300° per hour until it starts to slump down into your mold, which usually occurs in the range of 1225° to 1250°F.

Starting at 1225°, you would visually check your glass every 5-10 minutes or so, to make sure it hits “bottom.” Once that happens, you’d go directly into the cool-down segments and anneal your piece. Here’s what the basic Bullseye schedule looks like. It only has four segments:

Basic Slump:

<u>Segment</u>	<u>Rate (degrees/hr)</u>	<u>To Target Temp.</u>	<u>Hold (Soak)</u>
1)	250-400°/hr	1225°-1250°	0 to 20 minutes
2)	4000°/hr (AFAP)	900°	1.00 (1 hour)
3)	100°/hr	700°	01 (1 minute)
4)	4000°/hr (AFAP)	200°	00 (no hold)
RMIII Prompt:	ALARM	enter: 9999	(turns off alarm)

RMIII= Rampmaster programmable controller III

Generally speaking, smaller pieces will start to slump around the 1230°, medium pieces will probably slump by 1240°, and most larger pieces will probably be done by 1250°. However, you might have to hold those higher temperatures a lot longer—up to 45 minutes—if you’re working with a jumbo mold or a drop-out mold with a long drop. Again, experiment to learn what temps and hold times work best within your particular kiln.

And, if you’ve added enamels, paints, or glass powders to your piece just before this stage, you might have to heat to a slightly higher temperature to make sure they process completely. Again, test smaller sample pieces first.

Lastly, I’ve drawn up a suggested schedule for larger pieces that adds in one extra ramp segment to give that extra expanse of glass time to adjust to the heat. As with the basic schedule, you’ll want to start visually checking your glass (use quick peeks) at around 1225°.

Judy's Suggested Slump Schedule for Larger Pieces:

<u>Segment</u>	<u>Rate (degrees/hr)</u>	<u>To Target Temp.</u>	<u>Hold (Soak)</u>
1)	250-300°/hr	1200°	10 minutes
2)	250°/hr	1225-1250°	3 to 10 minutes
3)	4000°/hr (AFAP)	900°	1.00 (1 hour)
4)	100°/hr	700°	01 (1 minute)
5)	4000°/hr (AFAP)	200°	00 (no hold)
RMIII Prompt:	ALARM	enter: 9999	(turns off alarm)

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Remember that you'll need to add even more slump time for larger pieces, longer drops or more complex molds. Experiment and keep good records to ensure your success!

Note: These slump temperature ranges are also closely related to temperatures involved in setting powders and in tack fusing. Refer to your manufacturer's directions and keep on experimenting to find what temps work best in your kiln.

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As always, everything in this document is given in the form of suggestions, from which you would be expected to experiment and make adjustments for your own equipment, projects and firing conditions. Remember that YOU are the one who decides when your piece is slumped perfectly, and that requires checking it visually (wearing protective glasses, of course), until you can be confident of the firing temperatures that work best in your particular kiln.

Remember to NEVER wear polyester or man-made blends if you decide to crack open your kiln: They are highly flammable and your clothing could catch on fire! Always wear denim or heavy cotton and step to the side so as to avoid the direct blast of heat from the kiln. If you have a peephole, use that instead. Always keep your wits about you, keep good records, and keep on having fun!

Judith Kiriazis is the author of this piece, which has been designed as an introductory tool for glass fusers. Individuals using this information are also expected to implement appropriate safety measures and basic common sense. Therefore, both she and Bullseye Glass disclaim any damages from use or misapplication of this information. More information available at: GlassArtTools.com and BullseyeGlass.com