

Sequence of Events during Firing

The following temperatures can also be read from the lowest to the highest and are based on float. For most other glasses, temperatures will be a little lower, lead glasses considerably lower.

Some temperatures below the strain point depend on glass thickness, while those above it depend partly on the rate at which they are reached. In other words, an event occurring at 800°C in a fast firing, could happen at 750°C if soaked at the lower temperature long enough. This is an important factor, because speeding up or slowing down has other benefits depending on the circumstances of a firing.

UP indicates events in the heating up phases,
DOWN indicates events in the cooling down phases.

Degrees C

1100 UP Glass runny enough for sand casting and other manipulative techniques.

1000 UP Approximate liquidus temperature.

950 UP Glass soft enough to "rake". Un-reinforced plaster moulds no longer viable.

900 UP Viscosity now 105 poises and falling. Plaster moulds becoming very brittle.

870 UP Fine mould/mold detail complete. Devitrification more extreme.

850 UP Glass flowing. Viscosity decreasing faster. Common casting temperature.

825 UP Full fuse (depending on glass type). "Devit" more pronounced.

820 UP Fused glass nearly flat. Base relief complete. Whiting gives off CO₂.

800 UP Edges rounding. Lustre burnout begins. "Spray A" effective.

790 UP Trapped expanding air can cause bubbles under sheet glass at this temp.

770 UP Glass fused, but still "sitting up". Etched surfaces becoming transparent.

760 UP "Versacolors" fired. A soak here can prevent or obviate bubbles under glass.

750 UP Edges no longer sharp. Tin bloom stretching & "frosty". Onglazes fired.

740 UP Blasting now subtle and glossy. Potential for "devit" in float from now on.

730 UP Softening point of float. "Paradise" paints fired. Viscosity 1076 poises.

720 UP Subtle "devit" & "irid" burnoff already becoming a factor with some glasses.

715 UP Glass beginning to stretch. Tack-fired pieces adhered by now. Lustres fired.

710 UP Mould/mold "curing" starts (molecular moisture being expelled).

700 UP Blasting becoming too sheeny but still okay for certain effects.

690 UP Blasting still opaque but less "white". Low fire red enamel burnout.

680 UP Glass begins to stick to itself. Tin bloom becomes iridescent.

670 UP Blasted surface reaches more attractive "satin" quality

660 UP Most traditional paints fired. Bungs often in now, but still out for casting.

- 650 UP Blasted surface softened, evened, less "brutal". Silver stain fired.
- 625 UP "Shocking" the glass by briefly opening the kiln to preserve unstable colours.
- 610 UP Glass bending slightly, picking up texture. Viscosity approx. 1010 poises.
- 600 UP Safe above this temperature, (speed up, open door, meddle, etc.)
- 600 DOWN Common temperature for crash cooling to. Glass beginning to "freeze".
- 570 UP Low firing glass enamels fired.
- 555 DOWN. Annealing temperature of float. Bungs in. Viscosity 1013 poises.
- 550 UP Glass surface beginning to soften slightly (not visible.)
- 515 DOWN. Approximate Strain Point of float. Viscosity now 10145 poises.
- 400-535 DOWN- Critical slow cooling (down phase that overlaps annealing range.)
- 400 plus UP Many glasses now tolerate fast heating ramp rate (up phase.)
- 300-400 DOWN Medium cooling ramp rate (down phase.)
- 250-500 UP Medium rate heating (up phase.) Risk of thermal shock diminishing.
- 10-300 DOWN Fast cooling ramp rate (down phase). Cracking the kiln.
- 10-250 UP Slow rate heating (up phase.) Risk of thermal shock. Bungs often out.

Firing Schedules for Glass; the Kiln Companion, by Graham Stone, Melbourne, 2000, ISBN 0-646-39733-8, p24