

Torch Work Celsius Annealing Guidelines 3mm-76mm Thick Solid Work

CELSIUS FIRING SCHEDULE (Ramps for work on mandrels in open air)											
HEATING			ANNEALING AND COOLING								
Step 1*			Step 2	Step 3		Step 4					
Target Temps >>			516° C			510°C		427°C		38° C	
Max Thickness in thickest dimension	Ramp (Rate /Hr)	Minimum Hold (Minutes)	Hold (Minutes)	Ramp (Rate /Hr)	Hold (Minutes)	Ramp (Rate /Hr)	Hold (Minutes)	Min Time (hours) (Steps 2, 3 & 4)			
12mm	166° C	15	30	28° C	0	166°C	0	7.6			
25mm	166° C	15	60	56° C	0	111°C	0	9.4			
38mm	166° C	15	120	28° C	0	56°C	0	15.5			
51mm	166° C	15	160	14° C	0	28°C	0	26.3			
63mm	166° C	15	200	10° C	0	20°C	0	32.1			

*This loading hold temperature works for typical bead kilns with small doors. Kilns with larger doors allow more cooling when the door is opened. In this case, use a higher Step 1 temperature (for example, 538° C) but always start Step 2, the pre-annealing soak, at 516° C.

FIRING STEP DEFINITIONS /OBJECTIVES	
Step 1	Heat glass, small pre-made components & kiln interior to the annealing point or slightly above. Hold through the loading period. If kiln is empty during heat up, heating AFAP is OK.
Step 2	Pre-annealing soak — after last piece is loaded. Equalizes temperatures throughout glass and kiln.
Step 3	Annealing ramp: slow cool through the annealing zone to below the strain point.
Step 4	Cooling ramp. Turn off at end. For work 1inch or thicker, wait to open kiln door until interior is 38°C or room temperature.