

The Kiln Corner

How to Get the Longest Life Out of Your Kiln's Heating Elements

by Arnold Howard

Though I work for Paragon Industries, L.P., the information in this column applies to all brands of glass kilns. Feel free to send questions for this column no matter what brand of kiln you own.

Can I replace my kiln's element pins with steel pins?

No. Element pins made from the wrong wire can melt and burn out a heating element at the point of contact. Please do not substitute an element pin with wire from a hardware store. Buy the pins only from a glass distributor or from your kiln manufacturer.

Recently someone told me about an element that burned out where an element pin touched it. The element pins in his kiln fell apart with light pressure. Element pins should last longer than the elements, because electricity does not flow through the pins. Since his pins were corroded, they were undoubtedly made of the wrong wire.

You have written that slow cooling could reduce the life of the heating element. Would this apply to the schedule I am following for wax burnout, which uses a Full rate for cooling?

No. Since the cooling segment has a Full rate, the elements will stay turned off during that segment. During a Full rate, the controller will try to reach the target temperature as fast as possible, and it does that during a cooling segment by turning off the elements.

You have also written that high firing adds wear to the heating elements. Is 1350°F considered high firing? And is it apt to add wear to the elements?

Firing to 2200°F and higher wears the elements faster than firing to low temperatures, such as 1350°F. At 1350°F, your elements will last a very long time. By kiln standards, that is considered a low temperature.

I'm considering buying a new kiln. How do I test the element coils?

Find the wiring diagram for the kiln you are looking at. It should include the ohm readings for the elements. If you cannot find the diagram online, call the kiln manufacturer for the ohm readings.

Test the elements with an ohmmeter. Ohm readings that are 10 percent higher than the specifications listed on the wiring diagram indicate worn elements. The higher the readings, the more wear on the elements. The ohmmeter, however, could give a false reading if it is out of adjustment, so the best way to test the elements is to actually fire the kiln.

What pointers do you have for getting the longest life out of heating elements?

- Long holds add wear to the elements. Use only as much hold time as you actually need.



The earlier lid element grooves required pins. When replacing a pin, add a small amount of Pyrolite to the pin shaft. This helps to prevent the pin from falling out later.



You can test the elements with an ohmmeter. This test is especially useful when considering buying a used kiln that you cannot plug in and fire before purchasing.

- Contact with foreign materials such as glass, kiln wash, and glass separator can ruin an element. Do not coat the kiln walls, lid, or roof with kiln wash or glass separator. The coating can flake off into an element groove and burn out an element.
- Occasionally vacuum the element grooves.
- Repair bulging sidewall elements. Elements that bulge out of a sidewall groove are susceptible to breakage, since elements eventually become brittle.

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Arnold Howard writes instruction manuals and advertisements for Paragon Industries, L.P. His hobbies are glass fusing and karate. He also enjoys studying history and watching classic movies. You can reach Arnold at ahoward@paragonweb.com with questions for future columns. Visit www.paragonweb.com to sign up for his kiln newsletter.

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