

# The Kiln Corner— Electrical Basics

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.*

## **What is the difference between 220 and 240 volts?**

In North America, 220 volts is not an actual voltage. It is a label used on appliances that can run on either 208 or 240 volts. If your electrical system is rated at 240 volts and the actual voltage is 220, then you have low voltage, which will slow down a 240 volt kiln.

## **Can a 240 volt kiln fire on 208 volts?**

A 240 volt kiln will fire slower on 208 volts. In fact, that kiln may never reach its rated temperature. Before buying a kiln, check the voltage of your firing room with a voltmeter. Call an electrician if you need help testing the voltage.

It is easy to assume that you have 240 volts, because in the United States we have been brought up on 240 volts at home. But many strip malls, schools, and industrial buildings have 208 volts. Voltage can even vary within the same building. Another reason for confusion between 240 and 208 is that the wall outlets are the same. **Should I follow the electrician's advice if he suggests a circuit size that differs from your recommendation?**

It is perfectly okay if an electrician disagrees with the kiln manufacturer's recommendation as long as he wants to install a heavier wire gauge than the recommended specifications and he knows what he's doing. The problem is that some electricians feel that a lighter wire gauge will be adequate for a particular breaker. Also, if a local code contradicts the kiln manufacturer's recommendation, you should follow the local code.

## **Is it okay to use aluminum wire in an electric circuit used for a kiln?**

During the mid-1970s, there was a copper shortage, so aluminum wiring was installed in thousands of homes. In some cases, the aluminum was improperly connected to terminals designed for copper. This resulted in loose connections, overheating, and fires. People reported smelling burning wire insulation in their homes. Though aluminum wiring may be adequate when installed properly, copper wire is a better conductor. Please stick with copper.



*Photo by Chance Agrella*

## **I live in an older house that has ungrounded 120 volt outlets. Will that affect a digital controller?**

Yes. A digital kiln needs a circuit with a safety grounding wire. This helps the controller to dissipate random electrical "noise" that might otherwise adversely affect the controller.

## **I am going to fire a 120-volt kiln and a small air conditioner in a garage that has only one circuit. Any advice?**

Your kiln should have its own circuit. If both the kiln and air conditioner fire at the same time on the same circuit, the breaker will trip. If you will have only one circuit in the garage, you will have to run the air conditioner and the kiln one at a time.

## **Is it okay to plug a kiln into a ceiling outlet?**

Most lighting circuits have 14-gauge wire, often extended over long distances from the breaker or fuse box. The ceiling outlet will probably have reduced voltage. That is why we don't recommend it. Also, we recommend that you avoid plugging a kiln into an extension cord, which introduces two additional connections between the kiln and wall outlet that can overheat.

**GPQ**

*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 e-mail Arnold at [ahoward@paragonweb.com](mailto:ahoward@paragonweb.com) with questions for future columns. You can also sign up for his kiln newsletter at [www.paragonweb.com](http://www.paragonweb.com).*

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