

Kiln Choice

PERIODIC vs. CONTINUOUS

Ceramic products are generally fired by one of two methods: **PERIODIC** or **CONTINUOUS**. The kiln design choice usually centers on the firing conditions required and the desired industrial production output. A **CONTINUOUS** industrial kiln is a tunnel kiln that is fired 24/7 and is used for high production. **PERIODIC** industrial kilns are stationary and most generally within a single chamber. The chamber is first heated and then cooled according to a pre-determined time and temperature cycle. Periodic kilns offer broad flexibility in the time-temperature cycles; thus, these types are well suited for widely varying product sizes and firing conditions. Being a sealed chamber during the firing cycle, a periodic kiln offers excellent atmosphere control when needed. Usually the **PERIODIC** industrial kiln type is most cost effective for low production quantities, or when production can be started and stopped easily.

UPDRAFT vs. DOWNDRAFT

The Periodic fired kilns are generally an updraft or a down draft. Updraft or downdraft describes the direction of flow to exit gases from the kiln chamber. Updrafts are generally thought to enhance an oxidation atmosphere that is most effectively used to fire bisque ware or sculptural forms. Downdraft kilns are generally considered to enhance a reducing atmosphere.

INSPIRATING vs. ASPIRATING

There are two burner types:

INSPIRATING BURNER creates a vortex and is called a VENTURI burner. The burner starts wide then narrows and returns to the wide position. These burners respond to the pressure of fuel (oz.- lbs.) and do not require electricity. This burner is applied in areas where electrical service is questioned. Inspiring burners are commonly used in auto carburetors, science lab Bunsen Burners and the common Alfred Burner for kilns. Industrial burner companies (North American and Johnson) manufacture large to small venture type burners.

ASPIRATING BURNER is a burner in which combustion air enters with high velocity and is drawn over the orifice, creating a negative static pressure and there by sucking fuel into the stream of air is mixed before igniting at the retention tip. Auxiliary blower/electricity is required. Generally used where power is reliable and is restored easily.