

THE FUNCTION OF A FURNACE AND KILN USED IN CERAMIC AND OTHER INDUSTRIES

There are so many definitions for Kiln and Furnace. Actually kilns are an integral part of the manufacture of all ceramics, which require heat treatment, often at high temperature. The distinction of a Kiln and a Furnace is often done on the basis of user industry than on the design of the device. Generally the term *kiln* is used when referring to high temperature treatment of non-metallic materials such as in the ceramic, cement (cement rotary kiln), lime (lime kiln) industries etc. When melting is involved the term *furnace* is used as in steel manufacture (Blast Furnace, Basic Oxygen Furnace, Ladle Furnace), glass industries (Glass Melting Tank Furnace) etc.

As a practical working definition, it has been proposed to restrict the term Furnace (or Kiln) to an industrial appliance, constructed to heat a material through a cycle involving temperatures exceeding 400^oC. This

temperature has been chosen in order to exclude a large number of industrial process in which steam is used as a medium of transferring heat. It is essential that the heat released in the space of the furnace should be so utilized that the maximum heat economy is effected. A good working furnace must therefore -

>> have very good control of temperature.

>> require a minimum amount of fuel or other energy sources and other auxiliary materials.

>> require minimum capital and maintenance costs.

It is felt that a greater use of thermodynamics in furnace design can lead to more accurate and closer way of thinking about such problems as those of preheat, utilization of waste heat, recirculation of the flue gases and different qualities of energy sources, etc.

Source: <http://viewforyou.blogspot.in/2009/06/function-of-furnace-and-kiln-used-in.html>