

Temperature Recording Instruments and Methods in Ceramics

The whole of ceramics is ultimately based on effective firing and for this, control and achievement of required temperature is very essential. Either less or more than the temperature required to the ware, spoils the articles and thus causes damage to the industry. There are methods of finding out the temperature reached or attained in a kiln.

Traditional Method

The traditional potters in India do not use any type of instrument to find out the temperature obtained. The experienced eyes are his instrument. After all he requires a temperature of less than 900°C and he adjusts the oven firing in such a way as to complete the firing in darkness, viz. in the evening when the sun sets so that he can see the colour of the heat inside the oven. The following is the information giving approximate relation between the changing colours inside a hot kiln and the corresponding temperatures:

Just visible red	500°C	
Dark red	700°C	
Cherry red	800°C	(Over glaze, pottery oven temperature.)
Bright red	1000°C	(Biscuiting temperature.)
Bright Orange	1200°C	(Stoneware temperature.)
Silver white	1300°C	(Porcelain temperature.)

The colour inside an oven should be judged when the flames are clear and free from smoke.

Until recently when coal firing was in vogue, Japanese firemen used to tell the temperature reached by seeing the colour inside the kiln. Of course, he used to ascertain this by drawing a sample piece.