

FABCERAM 45

Fabceram 45 is the most useful machinable ceramic. It has 2 different states that it can be used. When it is received it is a solid dark gray ceramic that can be machined into any shape and can be used as a high temperature non-conductive material that most solders etc. won't adhere too. The second state is post firing to a light beige where it develops high hardness and temperature properties as other fully fired Ceramics. Fully fired it is harder than tungsten carbide and takes temperatures up to 1900°F. It can be used for all manner of kiln and oven fixturing as well as wear parts and guides. This material has been used the electronics processing, kiln furniture, glass molds, some plastic and rubber molds. It has also been used for abrasion resistance and also where abrasive products are handled. When ground to high accuracy it's hardness and rigidity makes it excellent for positioning and guides of all types.

There is a phase change that takes place during firing which involves approximately a 2% increase in volume. Because of this there is a design limit to the thickness of the pieces for firing of 1/4" this is usually not a problem because of the fired materials exceptional strength the thin sections are strong. This thickness is easily obtained by relieving the unused surfaces of the part. Part accuracies of better than 0.005" can only be obtained by diamond grinding after firing. Part design must take into account the 2% expansion. The unfired Fabceram 45 is easily machined with conventional tools though carbide will be better.

HOTTEC WILL QUOTE AND PRODUCE PARTS FROM Fabceram 45

Fabceram 45 is fired in air in a conventional kiln. It is recommended that the parts be held at 170°F to drive off most moisture for 1 or 2 hours. Then it should be brought up to and held at 700° F for 1 hour where any organics are driven off and oxidized. Then raised to approximately 1100 °F for 1 hr. where the first phase change begins. We recommend it to be raised to 2100°F at a rate of 100°F per hour. Thick sections or broad areas need to be supported as during firing the material gets a stiff jelly like consistency where it may droop at the highest temperature. Once the temperature is reached usually a cooling can be accomplished by shutting off the elements and allowing the oven to cool down to below 700 °F where the door can be opened and rapidly cooled to room temperature. Fully fired the material will have a beige or pink color and will not be scratched by a file.

HOTTEC CAN SUPPLY AN ECONOMICAL FRONT LOAD OVEN

SIZE INCH	\$EA.	QTY 5
1/2X6X6	42	35

1X6X6	60	50
1/2X12X12	119	100
1X12X12	199	180
½X6 ROD	20	18
1X12 ROD	63	57
3X12 ROD	190	170