

NORTHCOTE POTTERY SUPPLIES
TECHNICAL TIPS AND PRODUCT INFORMATION #36

BISQUE FIRING PROCEDURES

BISQUE FIRING (all clays have this firing)

- Historically this is a 1000°C firing, but current practice is moving towards firing to 1100°C to improve the glaze fit for earthenware glazes and maximize the durability of earthenware tableware.
- The first firing for all clay (bisque firing) is very slow and conservative so as to harden the clay and change it into a ceramic (fired) material that won't dissolve in water – you must have achieved at least 600°C for this to happen.
- Bisque firing is generally done at approximately 50-100°C per hour depending on (1) the size of the forms (2) the thickness of the forms (3) the amount of joins in the forms (4) the assured dryness (moisture content) of the forms.
- **THE FIRING PROGRAM SHOULD SUIT THE WORST PIECE OF POTTERY IN THAT FIRING – NEVER CREATE A PROGRAM TO SUIT THE BEST PIECE OR THE AVERAGE OF ALL THE PIECES TO BE FIRED.**
- In a bisque firing, the pottery items do not soften and attach themselves to each other – **YOU CAN PACK THE KILN WITH PIECES OF POTTERY TOUCHING EACH OTHER** without any worry.
- When packing, don't stack too much pottery on top of other items or against the walls of the kiln.
- Don't put too much 'thickness' of clay together (i.e. lots of tiles touching each other) in the kiln as it will be difficult for the heat from the kiln to permeate the thick stack of clay, and could cause cracking due to uneven heating.
- If you don't have enough work to fill a kiln, make sure you still put kiln shelves into the kiln – just pack the space with lots of gaps between work. **DO NOT PACK A KILN THAT HAS ONLY A FEW PIECES OF WORK SITTING ON THE FLOOR OF THE KILN, AND THE REST OF THE KILN EMPTY** – it won't fire evenly.
- NB the heat radiating from electric kiln elements wants to travel upwards in the kiln (because hot air rises), therefore the bottom of an electric kiln is often cooler than the top. When packing an electric kiln, make the first shelf sit approx. 10cm from the base of the kiln – this will allow heat to permeate the lower areas so they aren't cooler than the top.
- When packing a kiln load of tiles, **DO NOT HAVE SHELVES LESS THAN 5cm APART**. Tightly packed shelves that are too close together do not allow the heat to permeate the stack and results in **UNDERFIRING OR UNEVEN FIRING**. Overly tight packing can also cause **OVERFIRING** problems during the final stages of a firing because the shelves/tiles are so closely packed together that they **HOLD** their heat at top temperature, and give the firing the equivalent of a long soaking time.

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