

Clay is one of the most satisfying and seductive materials to work with. It is made up of millions of tiny plate shaped particles. When water is present in the correct proportion these particles will slide easily over each other without breaking. When the clay body contains approximately 20% water it can be easily moulded or shaped. From the earliest times man has used the qualities of clay to form functional and decorative artefacts. We can arrange clay bodies into five general groups:

### **RAKU**

The word raku has Chinese origins and describes a specialist type of firing where the pots are taken from the kiln at red heat and quenched in combustible materials or water immediately. Normally this type of clay will be very coarse to with stand the thermal shock and will be used from 900°C approximately. Raku bodies can also be fired to higher temperatures.

### **EARTHENWARE**

The first type of clay used by man would have been locally found - red clays or terracotta. We now have buff and white bodies. The body will still be absorbent when fired and therefore need a glaze to hold liquids. The textures of the bodies can vary from smooth to coarse.

### **STONEWARE**

This type of clay fires to a much higher temperature than earthenware. It produces hard, strong pieces and therefore is good for oven to table ware and other functional pieces.

### **BONE CHINA**

A hybrid clay, first developed by Spode. Normally used as a casting slip, it contains a high proportion of calcined animal bones. Bone china fires very white, but at lower temperatures than porcelain.

### **PORCELAIN**

Another hybrid body formulated from china clay (kaolin), silica and feldspar. Porcelain originates from China and must be fired to stoneware temperatures. It is renowned for its whiteness, purity and translucency.

Nearly all the bodies we supply are especially formulated for the craft or studio potter. They are supplied as "plastic", which describes a mixed formula containing approximately 20% water. The word plastic can also be used to describe the malleability of the clay. Our clays are supplied in polythene bags, in 10kg, 12.5kg and 25kg pack sizes.

Prepared bodies are formulated for colour, texture and performance, as well as fired range. The bodies are formed to a recipe using different mixing methods and then pugged for consistency. As the clay is cut from the bag it can be formed into a ball by kneading on a clean work surface, which should be slightly absorbent. Lengthy kneading and working on a more absorbent surface is only required if the clay is too soft. When reclaiming clay it requires soaking in water, this is best carried out by first drying the clay completely. The slurry is then placed on

absorbent batts. At the right stage the clay can be removed and pugged for re-use. If a pugmill is not available it will require wedging and then kneading before use. Faulty wedging can cause splits and cracks that can occur in any part of a pot during the making process, drying or firing. Air pockets can cause splits, cracks and bloats. They are easily noticeable during throwing and if only found in small numbers can be pierced with a sharp object. The air should then be gently pressed out with the fingertips.

Ageing will dramatically improve the working qualities of any clay, therefore it is an advantage to keep a 3 - 6 month supply if space and finances allow.

There are three basic ways of making a prepared clay body:

### **SLIP HOUSE METHOD**

Normally this method uses clay as dug. The materials are placed in a large vat containing water. They are mixed, sieved to remove any foreign or coarse particles and then pumped into a "filter press". This machine squeezes the water from the clay to form filter cakes, which can then be pugged to form the final body. This method gives greater product uniformity and virtually guarantees freedom from contamination. The disadvantages are that it is more difficult to control grog content (due to settling from suspension if added during mixing). It is the best technique for smooth bodies.

### **PANMILLING METHOD**

This method is the best for mixing grogged bodies or those incorporating a high percentage of very plastic clays, such as ball clay. The materials, which must be processed, are added to a revolving pan, water is added in measured amounts. Rollers above the pan mix the materials and water to form "lumps" of clay, which can then be pugged. This method is more open to contamination from larger or extraneous particles in the final body, but generally produces better moisture control in grogged bodies.

### **MACHINE MIXING METHOD**

A method that produces very similar results to panmilling. Used in the main for the production of the 1154 Oz Crank/Raku body imported from Australia.