Glass Campus

Introduction to Claywork

Types of Clay

Low Fire (Earthenware) kiln fired from 1850 – 1950 F
Earthenware clay is not waterproof. Any liquids in an earthenware container will seep through the clay. This clay is popular for flower pots and is also the most commonly used to make ceramic molds for glass casting and shaping.

Mid Range (Stoneware) kiln fired from 2150 – 2250 F
When fully fired Stoneware clay is waterproof and heat resistant. It can be used to make containers to hold liquids and can be used in ovens and microwaves.

High Fire (Porcelain) kiln fired from 2300 – 2400F
Porcelain clay is used mostly for art pieces.

Coloured Clay

Clay comes in a wide variety of colours ranging from pure white to black and assorted tints of ivory, brown and red.

Ceramic Stages

Raw clay – moist clay - usually in a block.

Leather – clay that has been formed to the desired shape and allowed to partially dry to the consistency of leather. At this stage it can still be carved and have elements added to it.

Greenware – clay that has been formed to the desired shape and allowed to fully dry ready to be fired in the kiln.

Bisque – clay that has been fired to become vitrified.

Ceramic – bisque fired clay that has had a coating of glaze applied and fired to produce finished ceramic. Glaze can be applied by brush, by dipping or sprayed on.

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Cones & Controllers

Before electronic controllers were introduced for pottery kilns, artisans used pyrometric cones to turn the kiln off when it reached the desired temperature. Pyrometric cones are engineered to soften at a prescribed temperature. A cone was set into a device attached to the kiln called a “kiln sitter” that held it against a spring-loaded arm. When the kiln temperature reached the desired temperature the cone softened and the kiln sitter turned the kiln off. The introduction of electronic controllers ended the need to use cones but some artisans still use “witness cones” to confirm whether or not the kiln had accurately fired to the correct temperature.

Compatibility

The same issues of compatibility that apply to mixing different glass apply the same to clay. Earthenware clay cannot be mixed with Stoneware clay and Stoneware clay cannot be mixed with Porcelain. Compatibility issues also apply to what glaze is used. Ceramic glazes are formulated for a specific type of clay.

Firing Schedules

Firing Temperature for clay is much higher than for glass. Like glass, clay is fired in stages at different temperatures but the temperature change for clay is the opposite as for glass. Where glass is fired first to a higher temperature with subsequent firings done at progressively lower temperatures, clay is fired first to bisque then fired to glaze at a higher temperature.

Heatwork

The same time + temperature = heatwork that applies to kiln firing glass apply equally to firing clay. Every extra minute of hold time at top temperature will apply the same extra heatwork as 1° F higher temperature.