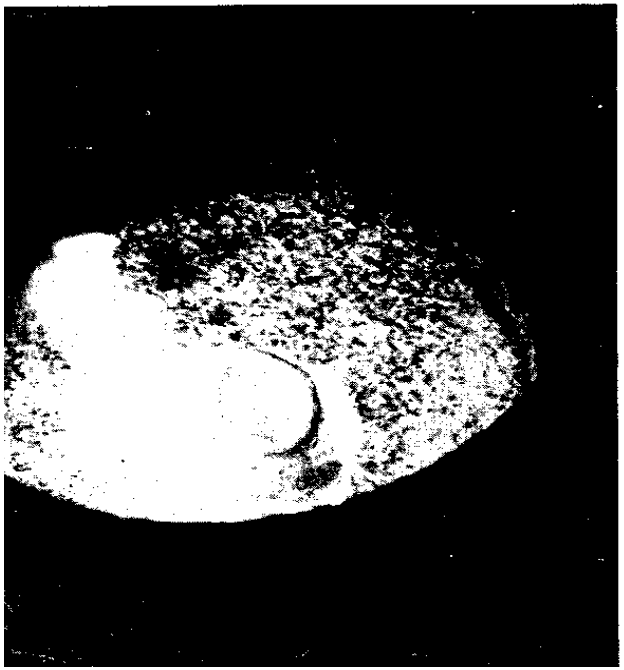
TOTAL WET FIRING

Frank Colson



This eBook provides an insight to firing pots directly off the wheelhead, or immediatly after handbuilding without drying. Nearly 100 pieces were made in a teachers workshop to explore going beyond doing raku. More as an experimental event than for practicallity, this article provides an insight for changing the thermal charteristics of clay into a Zen experience .

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Pots may be made either by hand or thrown on the wheel for wet firing. All the pots done at our workshop were hand built. Often a small pucci (a low rounded bisqued dish) was used to shape the bottom portion of a pot. This pucci then was used as a simple crude holder that could be turned likes wheel on a table surface. Coils of clay were added to the bottom portion of the pot to complete the form.

A small pucci is used to shape the bottom portion of the pot.

The individual form of each pot seemed to cause certain results during the firing process. Since clay in itself isa refractory material capable of resisting heat, it was learned that a thick wall of a pot (greater than a quarter of an inch) acted as a heat barrier for the inside of a piece during firing. This condition appeared more evident with pots that were partially closed, even when they had thin walls. Therefore, glaze on the inside of these pieces simply would not mature because of the inability of heat to penetrate the wet refactorj, wall.

This condition was even evident in 2000°F heat. When a pot was made with a wide open mouth, however, the heat of the kiln fully reached the inside of the piece, thus melting the glaze without having to go through the wall of the clay. In this manner the glaze on both outside and inside of the pot melted evenly. If the design of a pot was partially closed, it usually was better to close it completely so that it was not necessary to glaze the inside surface. However, this may be more of a

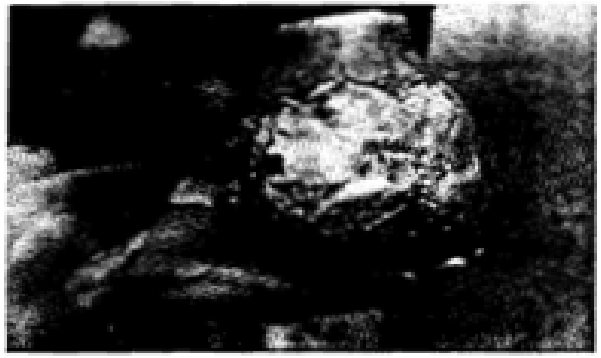
It was found, however, that when a water mixed raku glaze was used on a wet pot, the glaze spewed off of the clay body in tiny small chips when placed in the hot kiln. In order to control this firing problem, experiments were made by means of mixing dry glaze with materials other than water — materials that would be relatively unaffected by heat shock. Dry glaze was first mixed with colloidal silica, a binding liquid useö in the foundry industry. This mixture definitely prevented the spewing effect but left a form of crustation on the pot which tended to fall off or break off when the pot was handled.

Thus, the glaze did not properly fit the wet clay surface. It was then discovered that mixing pure sodium silicate with the glaze did the job. Sodium silicate, often referred to as "water glass", is normally available at drug stores. It can be acquired as a thick syrupy clear liquid. The sodium silicate was used ta mix with dry glaze. The application of the glaze onto the wet pot was done just before the pot was placed into the preheated kiln. It was best to mix a thick solution of giaze.ust enough for an individual pot.

Sodium silicate was used to mix with dry glaze.

Evaporation will cause the glaze mixture to scum over quickly if not sealed from the air; it then becomes rock-hard in a short while. If larger amounts of glaze had to be made, it was advisable to use an air-tight sealed container. The sequence in which the wet pot was processed appeared to affect the success of the piece. The primary points to keep in mind were that both the clay and glaze should be thoroughly wet, and that the heat of the kiln into which the pot was placed, should be kept high — between 1600 and 1900°F. This meant immediately after the pot was formed, the

glaze was mixed and applied with a brush; then the piece was placed directly into the kiln. If a pot had begun to harden slightly before going into the kiln, it could be sprayed with a fine film of water prior to the application of the glaze. The sodium silicate glaze solution tends to have a thick, sticky consistency which made it difficult to put an even coating on the pot. Surprisingly, however, it became even during the process of firing. The wet glaze, which sometimes began to run off of the pot, virtually froze in place once it was exposed to the heat of the kiln.



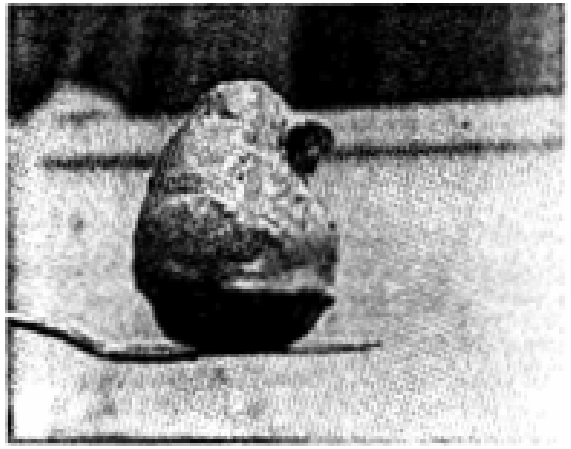
The sodium silicate glaze tends to have a thick, sticky consistency.

The pot may be sprayed with a fine film of water before placing in the kiln.

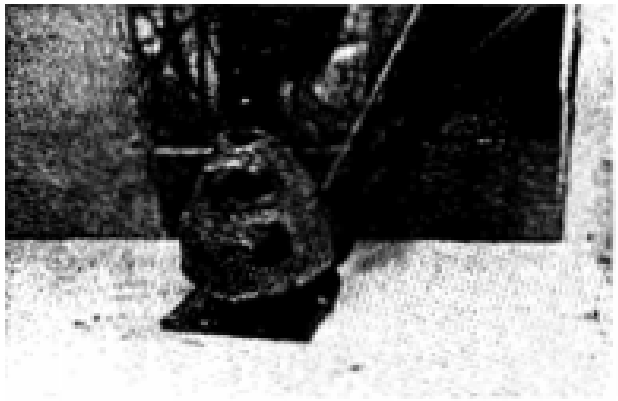
Care had to be taken to prevent loss of heat from the kiln by keeping it open for an undue period of time. However, a wet pliable pot was not the easiest thing to place into a kiln. Raku tongs cannot be used to grasp the pot by the lip. The shape of the pot predicted just how the piece might be placed into the kiln. In some cases, the wet pots were supported underneath by tongs if there was a foot, allowing the tongs to be released and withdrawn. Two devices were developed in the workshop which seemed to serve a satisfactory purpose: one, was the use of asbestos gloves to place the wet pot directly by hand into the kiln. The other was the use of a long handled barbecue spatula: the pot was placed on the spatula, the spatula placed on the floor of the kiln and then withdrawn while a pair of tongs held the pot in place with the other hand. This was quite successful for front loading kilns. For top loading kilns, the head of the long handled spatula could be bent at right angles to its handle for the same loading procedure. The spatula should be dipped in water before each pot loading in order to facilitate sliding the pot off onto the kiln shelf.

Asbestos gloved hands place the pot directly into this kiln.

Once the wet, glazed pot was inside the kiln, a watch was kept for the transformation that takes place within the next few minutes. The glaze mixture, made with sodium silicate, appeared to become extremely bubbly in the first moments; in fact, it resembled a volcanic graze. After the heat had a chance to work for awhile, however, the glaze began to smooth out and become homogenious with the surface of the pot.



A long handled barbecue spatula is used to place the pot in the kiln.



A pair of tongshold the pot in place while the spatula is withdrawn.

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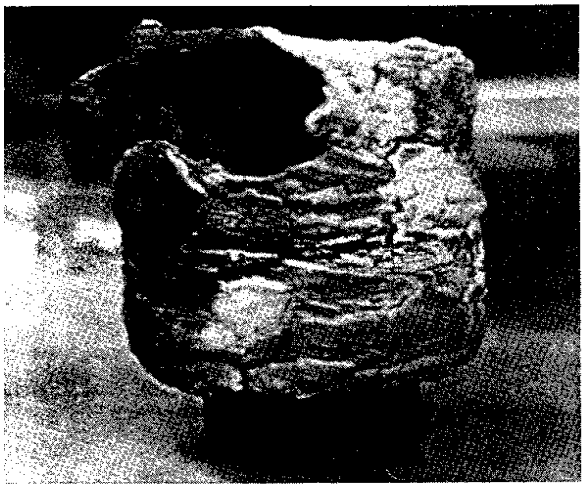
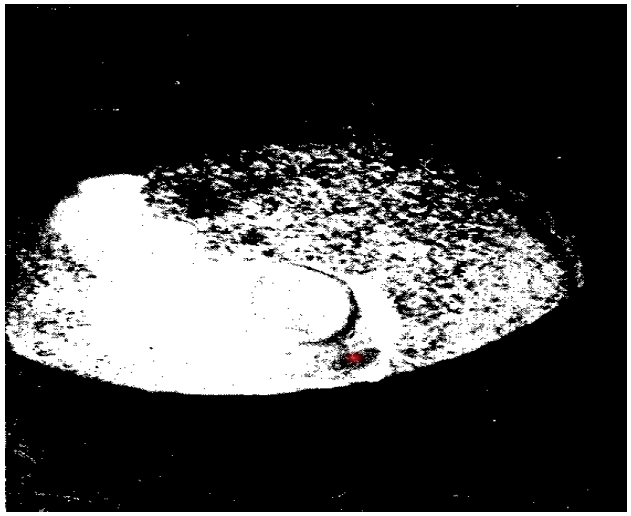
In he final stages it appeared much like any raku glaze with a slick shiny surface. When this stage was reached, the pot was then withdrawn from the kiln. For this removal, a conventional raku method was used – that of grasping the lip of the piece with a pair of tongs. The total duration of the firing cycle was in the area of eight to fifteen minutes. Naturally, if the kiln was cool (below 1600°F) and the glaze used was for a higher maturing temperature, the firing cycle was elongated. As mentioned before, the hotter the kiln is at the time the wet pot is inserted, the better is the chance for success in the entire process.



Materials other than sodium silicate mixed with the glaze created a crustation effect on the pot.



The pot is smoke reduced in a metal can of wood shavings.

The sodium silicate olaze became homogeneous with the not.

The not is air cooled after the reduction process

The final effect was a smooth shiny glaze on the pot.

After the pot had been withdrawn from the kiln it could be smoke reduced in a metal can of wood shavings or leaves in the same manner raku pieces are finished. It proved best, however, to let the pot air-cool after the reduction process had been completed. Air cooling appears to give the pot a greater mechanical strength than plunging it in water, On several occasions when wet fired pots were plunged in water after coming out of the kiln, the pieces were quite weak, in some cases even crumbling. It appears that the water shock treatment is not suitable for wet firing pots because the clay body composition is not made up of a heavily grogged material like raku, but rather with II- ben which function in a different manner in this process.

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Wet firing then, can be a very spontaneous approach to working with clay and fire. The visual result of a wet fired piece is different than that of other kinds of pottery, yet the technique allows an individual to experience the entire cycle of the transformation of clay from a soft pliable material to a solid permanent substance in a matter of a few short minutes. As in any technique using clay, it is better to have happy results rather than disappointing ones. It is for this reason that some controls should be used in this process. Success depends upon controlling the tape and thickness of the pot, the composition of the clay body, the heat of the kiln along with the wetness of the clay and glaze, and finally, the process of air cooling after reduction treatment. In our workshop, pieces which were wet fired ranged in shape and size up to the dimensions of sixteen inches by sixteen inches, so the technique proved workable. What can be developed from this point forward depends largely upon the individual potter who uses this approach as an experimental experience.

note the **crustation effect** on the smaller pot while the larger pot is smooth and shiny from the sodium silicate glaze.

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