

NYSCC @ Alfred University's

Raw Materials cookbook 2005



**See what the undergrads of the 2005 Raw Materials class
have cooked up (just for you!)**

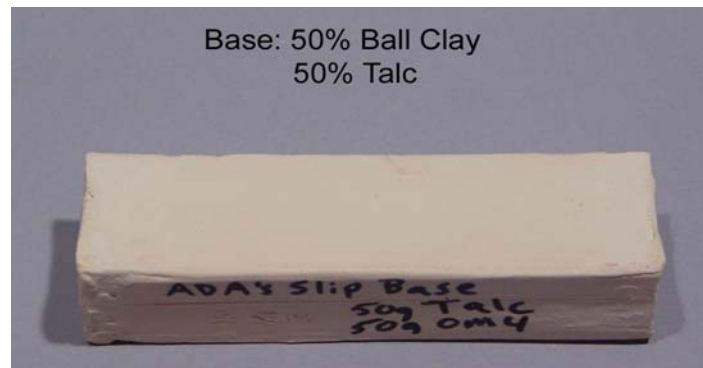
Name: Ada Van Hecke
Type: Casting
Color: Various
Texture: Smooth
Cone: 04

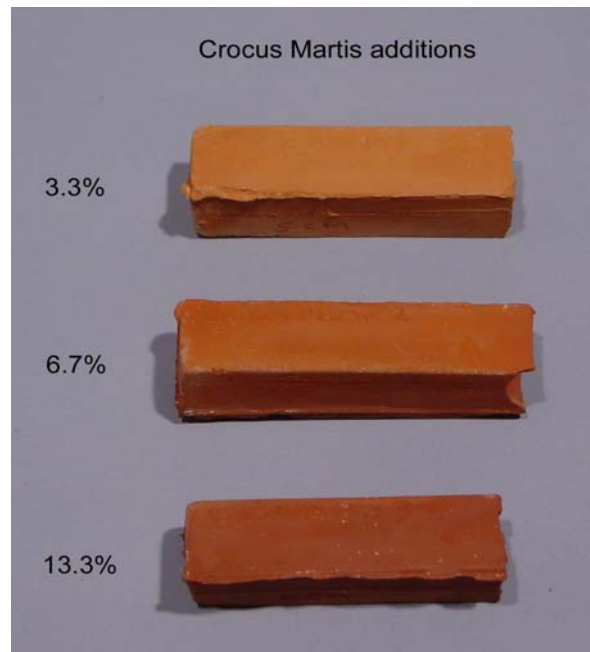
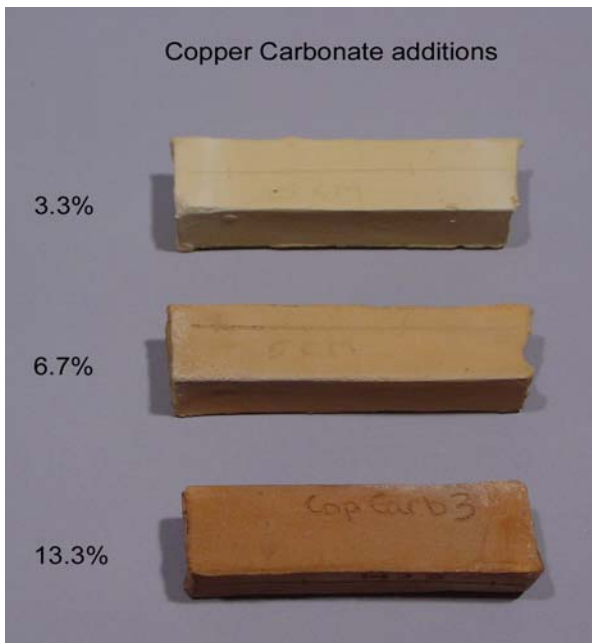
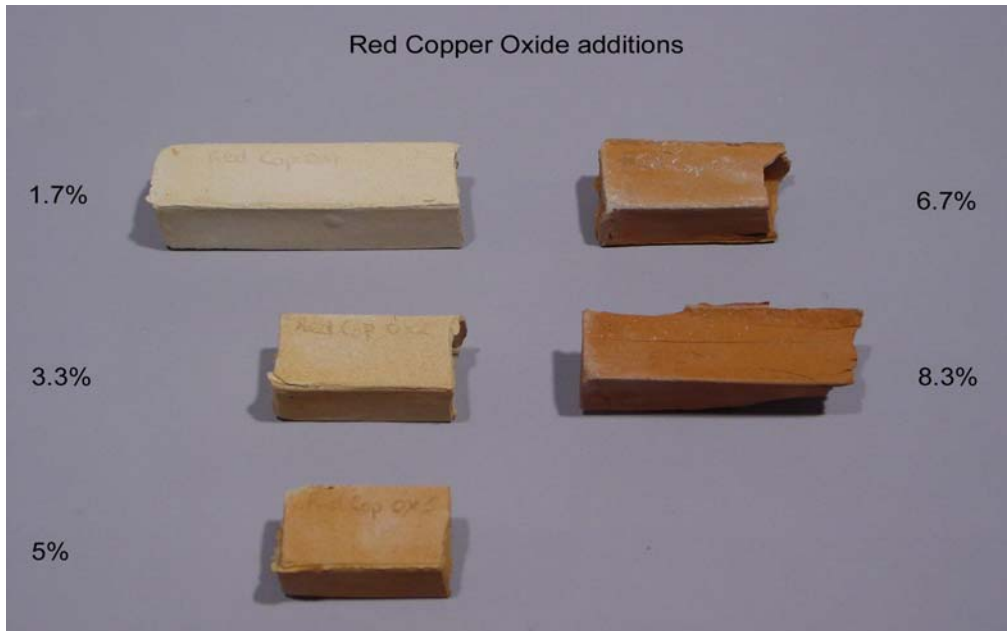
Recipe:	Talc	50
	OM-4	50
		100%
Add:	Water	45%
	Darvan	2.7%

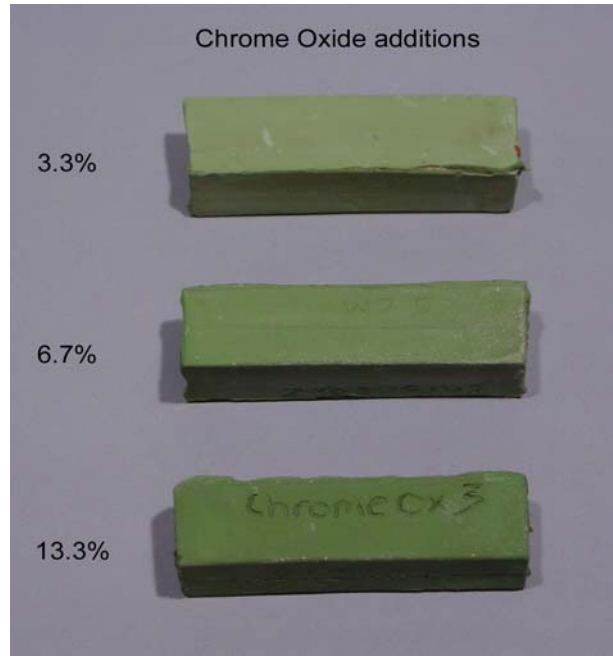
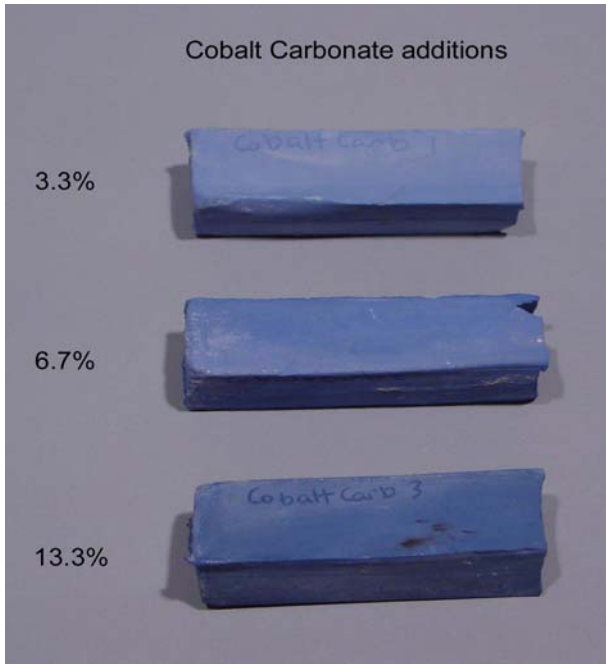
Development Process: I worked on creating a pallette of colored casting slips that would fire to C. 04. I began by defloculating a body made of equal portions of talc and OM-4 ball clay. I then selected colorants to work with, based on other tests I had done in the past, and began to add them to the casting body. As I worked I found it necessary to adjust the amount of water in the slip in order to compensate for the added colorant. If additional water was not added the slip would quickly gel and become extremely difficult to pour out of the mold. The slip would have to be agitated several times in order to get a sufficient amount of slip out of the mold. While I wanted to thin the slip down, it was important for the slip to gel slightly in order to keep the colorant in suspension. With the amounts of additional water listed below, the slip only had to be agitated slightly in order to pour out completely, significantly lessening the possibility of destroying the cast piece.

The fired pieces showed a poor color response, most likely attributed to the high content of magnesium provided by the talc; therefore my next step in the process will be to begin with a new fritted body where the talc will be eliminate. In addition to problems with color response, many of the slips had soluble salts rise to the surface on the interior of the cast pieces. To eliminate this will most likely require the addition of a small amount of barium to the body.

Base without colorants







The following additional amounts of water were required over and above the 45% needed for the base alone in order to standardize viscosity.

Colorant	Colorant %	Grams of Additional Water (100 gram batch)
Blackberry Wine Stain	0.3	0.0
Blackberry Wine Stain	1.0	0.0
Blackberry Wine Stain	3.3	5.0
Blackberry Wine Stain	6.7	6.3
Blackberry Wine Stain	10.0	7.0
Blackberry Wine Stain	13.3	7.7
Chrome Oxide	3.3	5.0
Chrome Oxide	6.7	6.3
Chrome Oxide	13.3	7.7
Cobalt Carbonate	3.3	5.0
Cobalt Carbonate	6.7	6.3
Cobalt Carbonate	13.3	7.7
Copper Carbonate	3.3	5.0
Copper Carbonate	6.7	6.3
Copper Carbonate	13.3	7.7
Crocus Martis	3.3	5.0
Crocus Martis	6.7	6.3
Crocus Martis	13.3	7.7
Red Copper Oxide	1.7	0.0
Red Copper Oxide	3.3	5.0
Red Copper Oxide	5.0	5.7
Red Copper Oxide	6.7	6.3
Red Copper Oxide	8.3	7.0

Name: Andrew Chanania
Type: Throwing
Color: Off white
Texture: Smooth
Cone: 10

Recipe: Modified V.C. body
Helmer 15
Goldart 32
Tennessee #10 20
Kona F-4 15
Alumina 8
Flint 10
100%

Add: Fireclay Fine Grog (48/00) 10
Fireclay Medium Grog (20/48) 2
Black Coarse Grog (10/20) 8

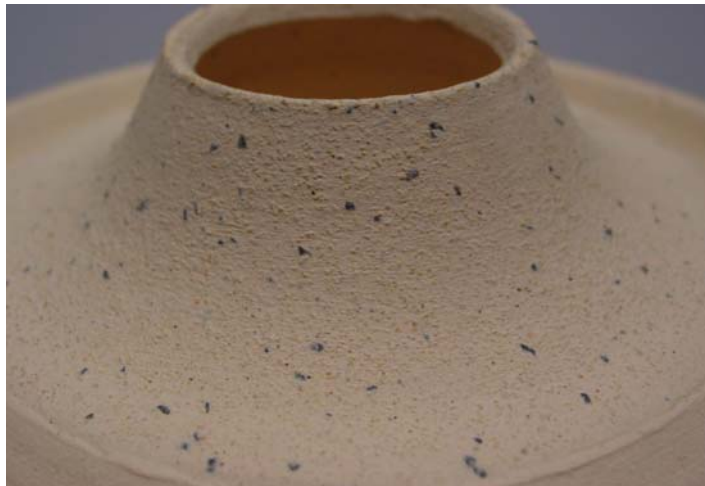
Development Process: My objective was to create a white body with large pieces of black grog. I started with Val's body:

Original V.C. body
Helmer 12
Goldart 26
Tennessee #10 16
Kona F-4 15
Hawthorn 35 mesh 20
Kona F-4 12
Alumina 6
Flint 8

I took out the Hawthorn due to its coarseness and its impurities (i.e. lack of whiteness). The Hawthorn omission made room for the grog. However, the body may be better to throw with if the Hawthorn is left in the formula. I reached the 20% grog addition because that amount of black grog (40% of the 20% total grog) I felt looked the best in the body.

The coarse grog was stained black using 10% Best Black Mason stain. To make the grog, I mixed the clay in a slurry, then added the stain. After drying the clay to a workable state, I wedged it and rolled it out in slabs about 1/2" thick. After the slabs were bone dry, I broke them up and passed them through a 10 mesh, and then a 20 mesh screen. The material between 10 and 20 mesh was fired to cone 10. I then mixed up a batch of clay and added the grog.

Upon inspection, the wood-fired piece is too dark, too brown and some revisions in the body are necessary. Also, I do not think the body is open enough and there is too large a jump from the fine clay particles to the fine grog size. Also, I would like to have a wider range of particle sizes for my personal throwing preference.





Woodfired



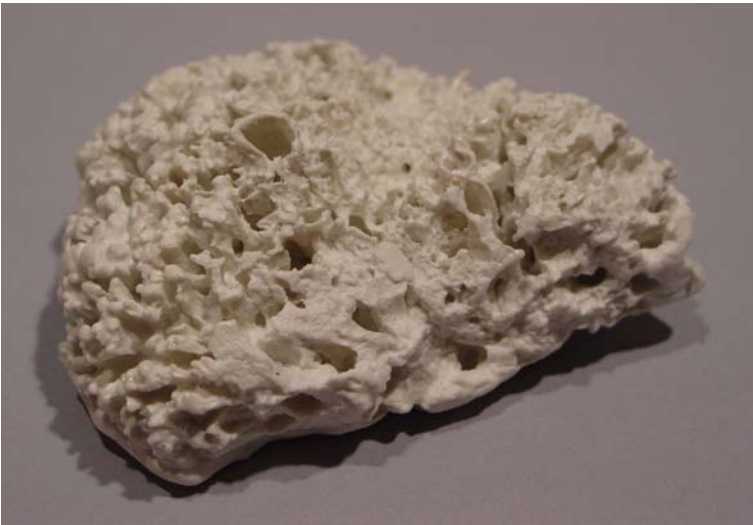
Name: Beck Ferguson
Type: Casting
Color: Off White
Texture: Smooth
Cone: Various (C. 6-10)

Recipe: ?

Development Process: My research will explore burnout bodies and organic fillers. I will be using different types of coral sponges and some manufactured sponges along with other organic matter found in nature.

Various natural sponges dipped in slip (details next page)





Reticulated plastic sponge dipped in slip



Reticulated plastic sponge dipped in thinner slip than above. Very thin network.



Thin slip detail.



Thin network allows passage of light.



Nylon bath sponge...\$1.99 at Wal-Mart



Nylon bath sponge dipped and fired



Name: Bracken Feldman
Type: Paperclay
Color: White
Texture: Smooth
Cone: 10 oxidation / reduction

Recipe: (Jeff Cole's Porcelain)
Grolleg 55
Kona F-4 35
Flint 15

Add: Macaloid 3%
Toilet paper or non-woven, white roll varies

Development Process: I first started with mixing 2600 grams of Jeff Cole. I dry mixed it first and then added the water with the Macaloid in to the mixture slowly with a hand drill. I then placed the Jeff Cole mixture under the shar with broken down toilet paper. I shared the mixture for a good 15 minutes at the speed of 650rpms any faster the mixture will overflow. The reason for choosing Jeff Coles body is because I was looking for a body that would have the best translucency.

I've tried working with a couple of batches of Jeff Cole porcelain with paper added and here's what I've found so far.

My 1st attempt: I mixed a whole roll of Toilet paper into the 2600gram batch. I didn't shar the toilet paper 1st I just broke it down in hot water. This batch of paper porcelain didn't work the paper wasn't broken down enough into the clay body and I ended up getting chunks of paper in my body. The body was very unworkable.

Next attempt:

I broke down a whole roll of toilet paper yet again. But this time I shared it for a good hour until it looked like a thick pulp. I then drained off all of the water and weighted out the roll into three different batches. Then mixed it into three 2600 gram batches with different amounts of paper.

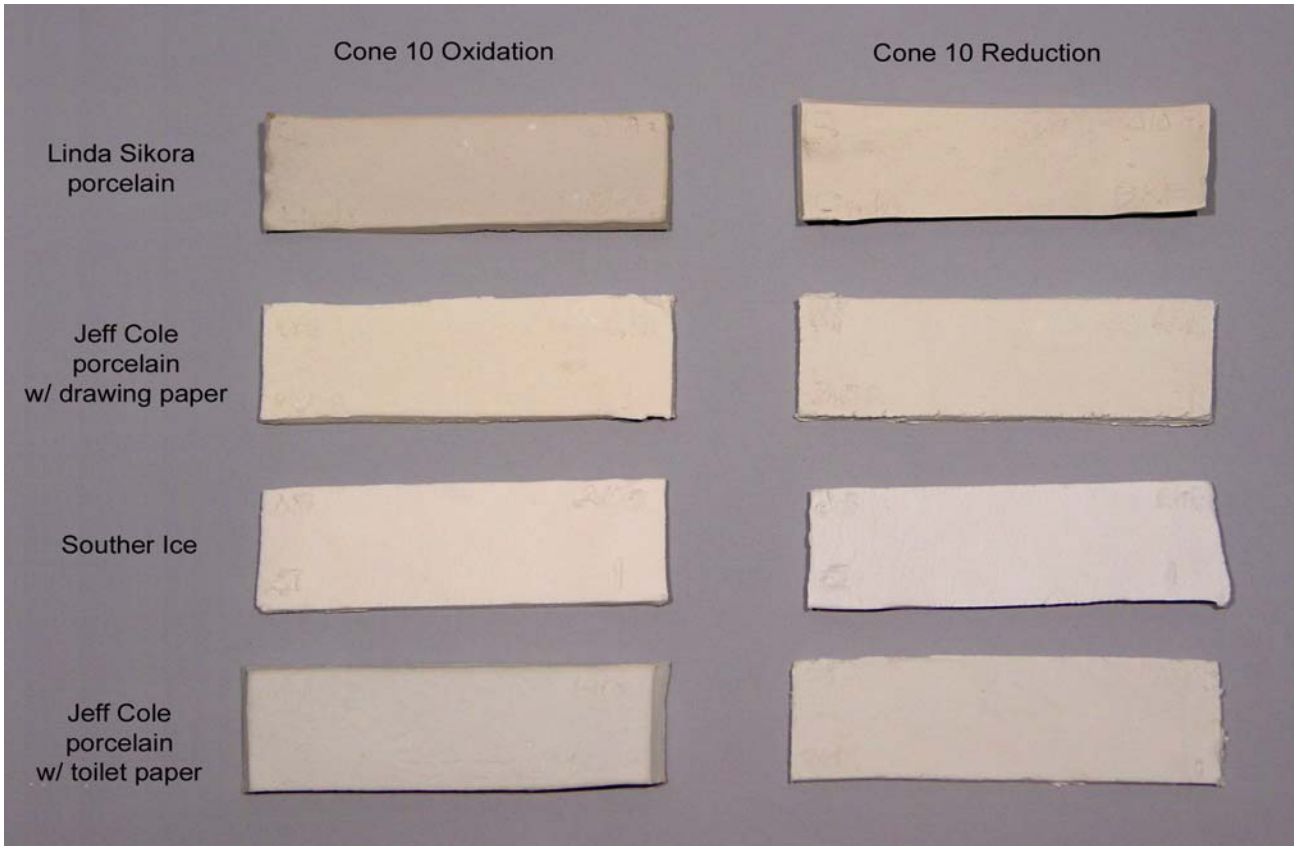
Paper amounts are after pushing paper into the sieve (wet but not dripping)

150 gm paper - was the best to work with though still hard to roll-out into coils. The paper didn't stick together

250 gm paper - was very hard t work with. Didn't stick together at all. Not even during throwing

350 gm paper - The worst all together. Unusable.

Various bodies tested



Name: Catherine Hagerty
Type: Tape Cast Overglaze
Color: Black
Texture: Smooth
Cone: 04

Recipe: Varies (see below)

Development Process: The purpose of this research was to make ceramic tape out of an overglaze and to then transfer it onto a pre-fired glazed surface. CS

ATG #190 VAR4 (underlying white matt glaze)

Recipe:	Nepheline Syenite	8.03
	Spodumene	38.47
	Wollastonite	23.11
	Flint	15.87
	Frit 3124	14.52

Add:	Veegum	2%
	Zircopax	5%

Tiles with cone 04 white mat glaze (ATG #190 VAR4) before firing.



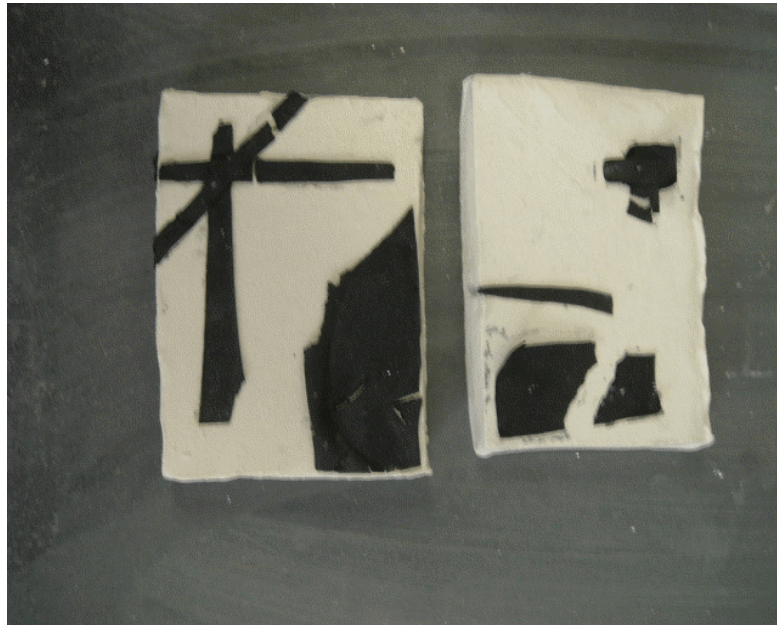
OG #1 (OG=Overglaze)

Recipe:	3124	45
	EPK	10
	Stain (Mason Best Black)	45
Add:	Elmer's/Glycerin (80/20 ratio?)	100%

Overglaze tape cast shown with 50 % glue /glycerin content.



Tiles after being fired with tape at 50% glue/glycerin content.

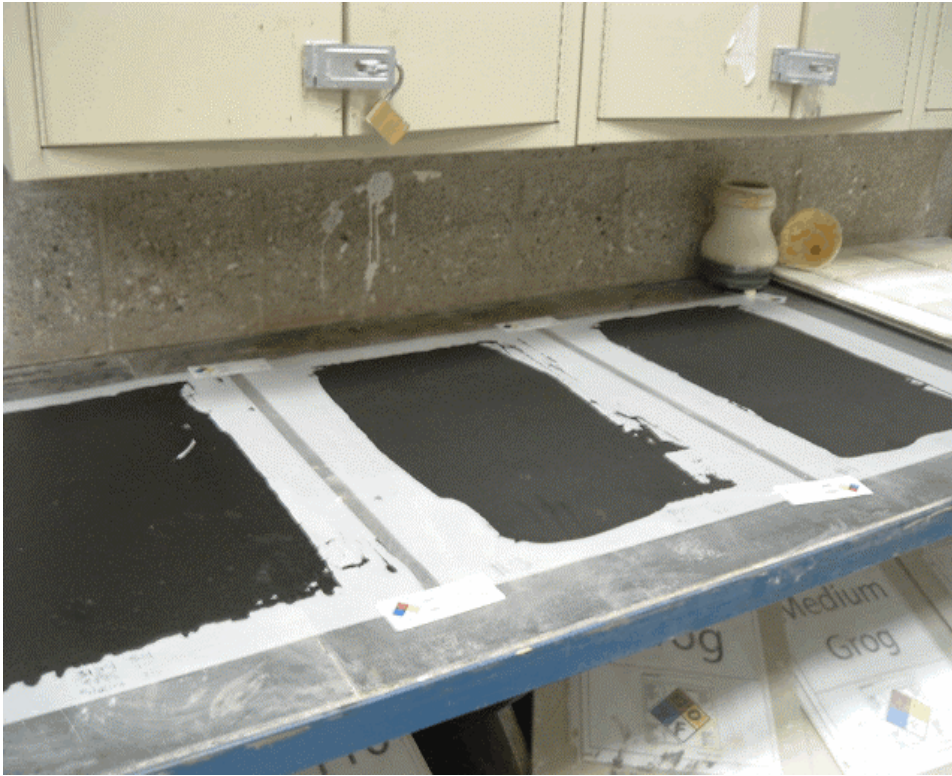


Tiles after being fired with tape at 60% glue/glycerin content.

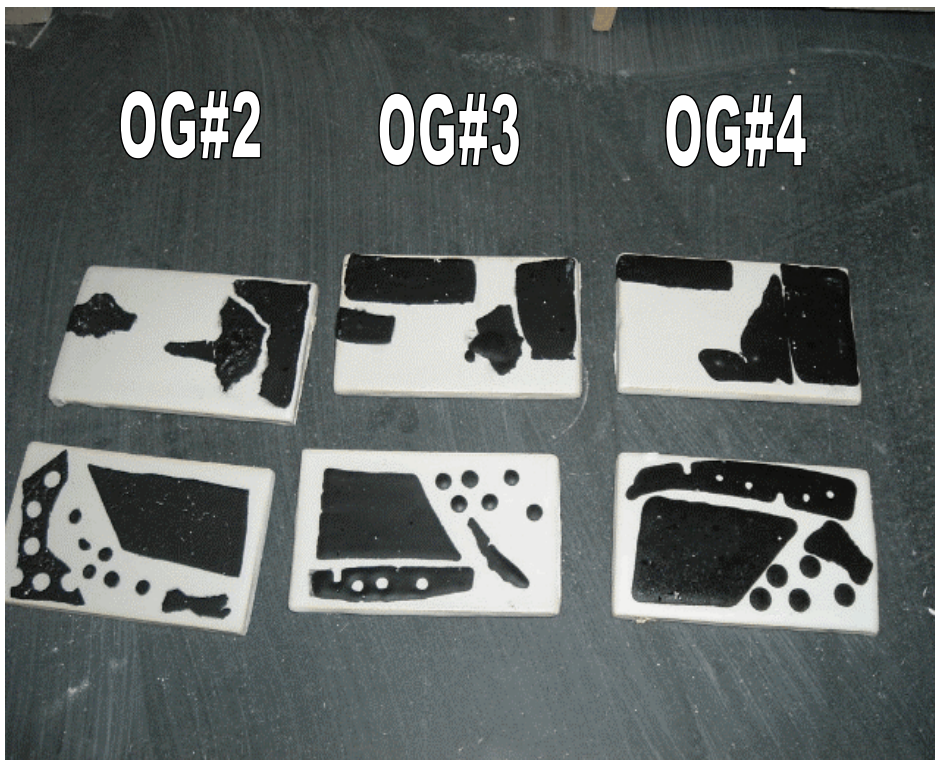


OG #2		
Recipe:	3124	54
	EPK	10
	Stain (Mason Best Black)	36
Add:	Elmer's/Glycerin (80/20 ratio?)	100%
OG #3		
Recipe:	3124	63
	EPK	10
	Stain (Mason Best Black)	27
Add:	Elmer's/Glycerin (80/20 ratio?)	100%
OG #4		
Recipe:	3124	72
	EPK	10
	Stain (Mason Best Black)	18
Add:	Elmer's/Glycerin (80/20 ratio?)	100%

Overglaze tape cast #'s 2, 3 and 4, all with 50% glue/glycerin content.



Tiles after being fired with tape at 50% glue/glycerin content and in number order 2, 3 and 4.



From the above tests, OG#3 seems to have greatest potential as an overglaze. Many defects exist in these samples due to inconsistent mixing and uneven thickness during casting. We will have to work on getting the coatings more uniformly even and on making the tape thickness much thinner (i.e. >.5 millimeters). CS

Name: Corinne Gretch
Type: Tape Casting
Color: Various
Texture: Smooth
Cone: 10

Recipe: See below

Development Process: I began with these two recipes:

Pinnell Clear glaze

Custer Feldspar	25%
Flint	35%
Whiting	20%
Grolleg China Clay	20%

Porcelain #3 from Val's book (page 34)

Tile #6 Kaolin	30%
EPK	25%
C&C	5%
Kona F4	20%
Flint	10%
Pyrax	10%

In creating a two layer tape, first I cast a layer of the glaze beginning with a batch of 116% and 100% ratio Elmer's glue to dry mix. This was allowed to dry over night before I cast a layer of the porcelain over the glaze using the same ratio of Elmer's glue to dry mix. For each of these recipes I added 12% of the amount of Elmer's glue of glycerin. Here are the recipes for my first 2 batches:

100% batch

150 grams dry mix
150 grams Elmer's glue
18 grams glycerin

116% batch

150 grams dry mix
175 grams Elmer's glue
20 grams glycerin

I observed that both of these batches were difficult to get thoroughly wet mixed and there were many small chunks in the cast sheet. When dried it was easily cut with an Exacto knife but broke, chipped and tore very easily. I found it best to cut a general shape with scissors or the Exacto knife and then shave it down to shape with the Exacto knife. If heat was applied to the tape it was more easily shaped, however these two batches broke and cracked when bent. Pieces could be connected by wetting them and sticking them together, but when fired the glaze adhesive was not enough to hold the pieces together.

Also the porcelain was so thin and the glaze too heavy then the pieces all slumped. Pieces that were pressed into wet clay stayed in place better than pieces stick to bisque ware. Shrinkage was 12-13%.

Two-layer tape: Pinnell's clear cast over Porcelain #3



To improve the tapes workability I tried two more batches, one of 135% and one 150% ratio of Elmer's glue to dry powder continuing to add 12% glycerin. Here are the recipes for the next two batches:

135% batch

150 grams dry mix
200 grams Elmer's glue
24 grams glycerin

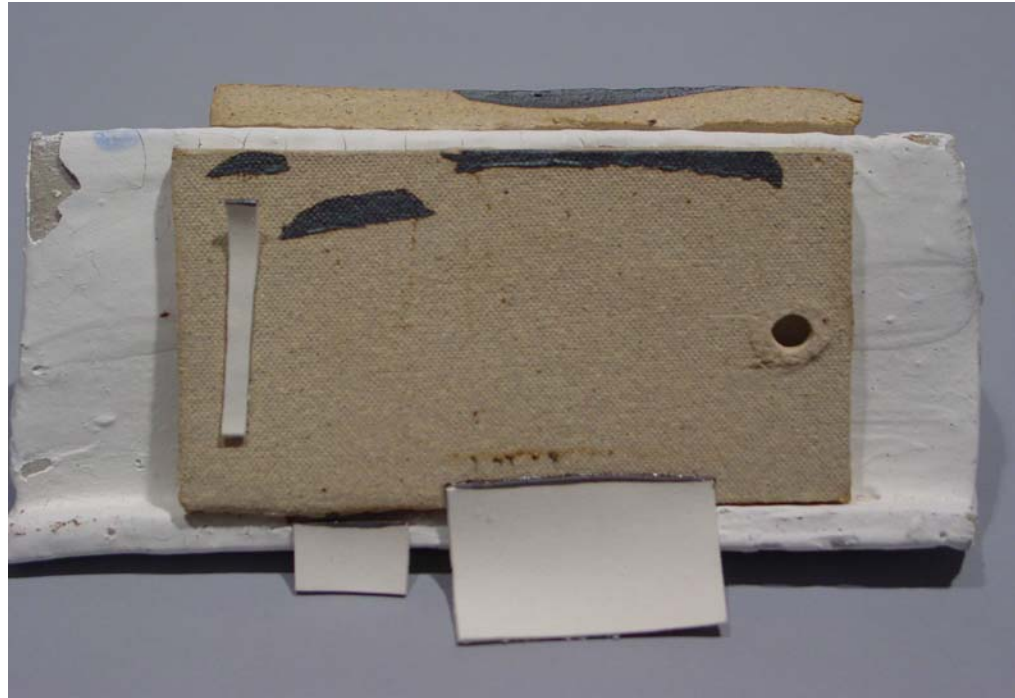
150% batch

150 grams dry mix
225 grams Elmer's glue
27 grams glycerin

These two batches turned out to be much more workable. They cut easily, were less likely to rip or chip, bent easily, and formed around a three dimensional form. The heat from my hand was enough to shape the pieces. I did a few different tests including a geometric form test where I built a box with 5 separate pieces, leaving an open top. The pieces were connected by wetting them and sticking them together. When fired these forms collapsed. I think that the glue melted out and the pieces fell over before the glaze was melted enough to hold the pieces together. I also did a test to see how a piece would stand up on its own. A one inch strip of tape was bent into a bell shapes curve, standing about 2 inches high, the ends were stuck to a test tile, and the edges were marked with iron oxide to measure slipping. When fired, although the edges did not slip, the stress on the upper most point of the curve caused the piece to break and slump over.

Another test was done to measure slipping on a vertical surface. Three pieces, a large square (1.5inches), a small square (.5inch), and a thin strip vertically orientated were stuck to a vertical test tile and the edges were marked with iron oxide. Upon firing most of the pieces had slipped all the way to the bottom of the test tile with the exception of one of the thin strips which held its position. Shrinkage was 15-16%. I chose to continue working with 135% batch.

Vertical test

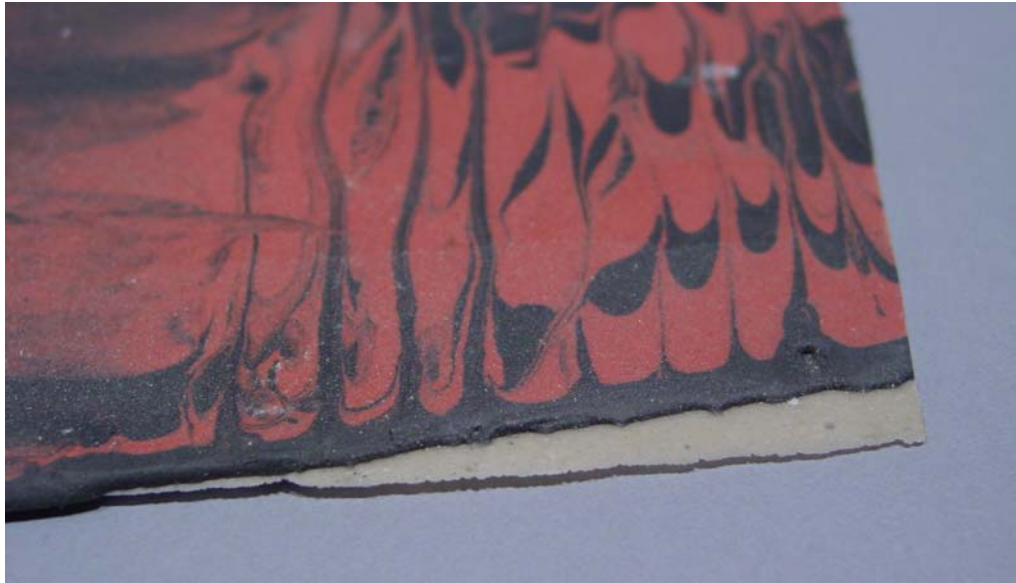


Next I used stains, Mason Best Black and a new red (Mason Dark Red), to experiment with color in the porcelain layer of the tape. I began with the first layer of the clear glaze. To the second layer of porcelain, 135% batch, I added 10% stain in two separate batches, one red, one black. I then cast the red layer, drizzled on a little black and marbled it with a fork, and vice versa. This technique worked well however the fork created a few weak spot in the tape where it took away too much clay. I then experimented with attaching the pieces using another wet mixed glaze. I used Mamo Tan Matte applied underneath the pieces to adhere them to the stoneware and also the method of wetting the piece and sticking it to the tile then applying glaze over this. Both ways were successful in keeping the tape in place on the horizontal test tile and showed potential aesthetically too. I had much less success when I tried to use these methods for a vertical surface. Some pieces stayed in place, some moved slightly, but for the most part the tape pieces slid off the pot.

Mamo Tan Matte underneath (Tan color); Mason Best Black and Mason Dark Red overtop



Glaze/Stain interface is clearly visible here



Applied design using tape (150% batch using Porcelain #3) on pre-bisqued vessel. Bird design was glazed over after application. Squiggly lines were left unglazed



A few extra notes and thoughts:

The longer this tape is left out in the air, the less workable it is. Even after a few days to a week one can notice the difference. Ideally the tape should be made right before it will be used.

Perhaps the layer of glaze intended to be an adhesive is less effective than using a wet glaze to adhere a single layer of porcelain to a piece. The extra layer of glaze seems to add too much weight and therefore causing the piece to slip down or off the vertical surface.

Name: Jackie Rines & Devon Sparks
 Type: Handbuilding
 Color: Various
 Texture: Various
 Cone: 04/6
 Recipe: Various (see below)



Development Process: Our goal this semester was to develop a pallet of colored clay at cone 04 and 6. To do this we used four different clay bodies that had different fluxes, and tested numerous levels of added oxides and combinations to each body. The Fluxes affected the color greatly because of their different chemical makeup's. We chose oxides instead of Mason Stains because they are more cost efficient.

The recipes were:

A		B		C		D	
grolleg	25	grolleg	25	grolleg	25	grolleg	25
tile 6	20	tile 6	20	tile 6	20	tile 6	20
C&C	15	C&C	15	C&C	15	C&C	15
frit 3110	40	frit 3124	40	frit 3195	40	talca	40
total	100	total	100	total	100	total	100

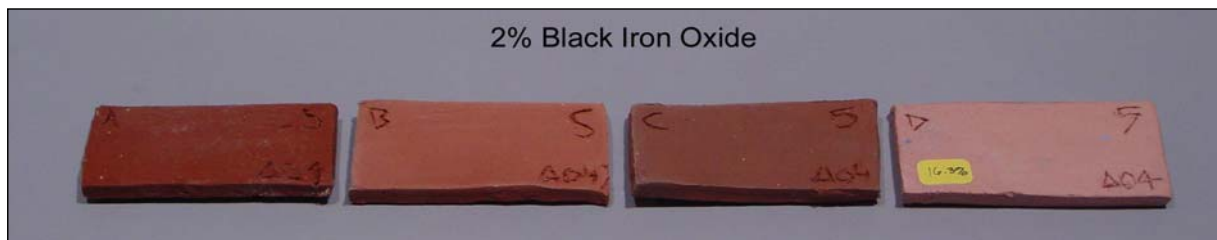
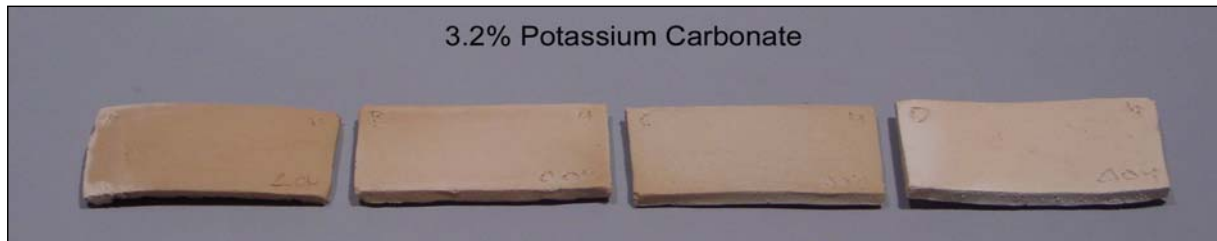
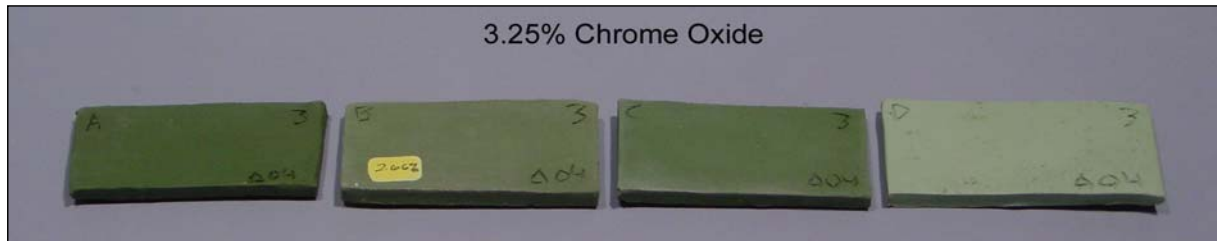
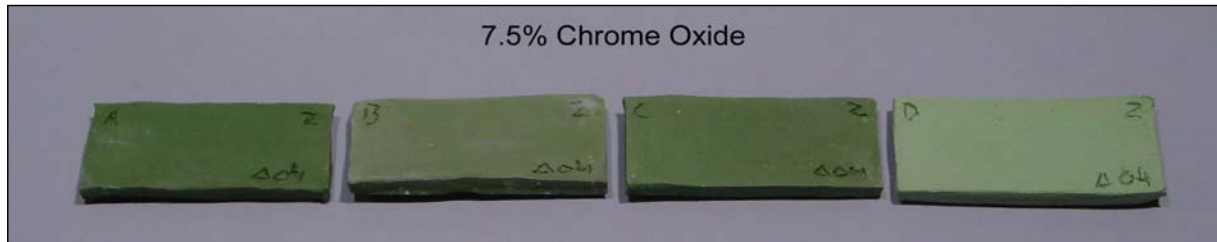
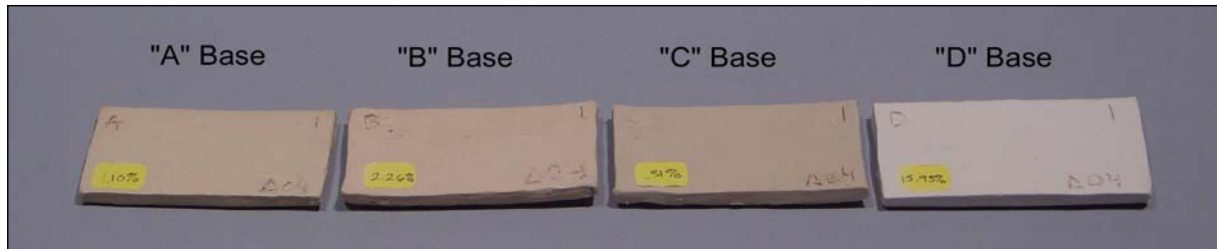
On our first run we experimented with different levels of red iron oxide, chrome oxide, manganese, yellow ochre, and cobalt oxide. (see poster board for results and numbers) We chose initial levels based on recommendations from James Chappell's book *The Potter's Complete Book of Clay and Glazes*, a good reference if you are interested in doing this yourself.

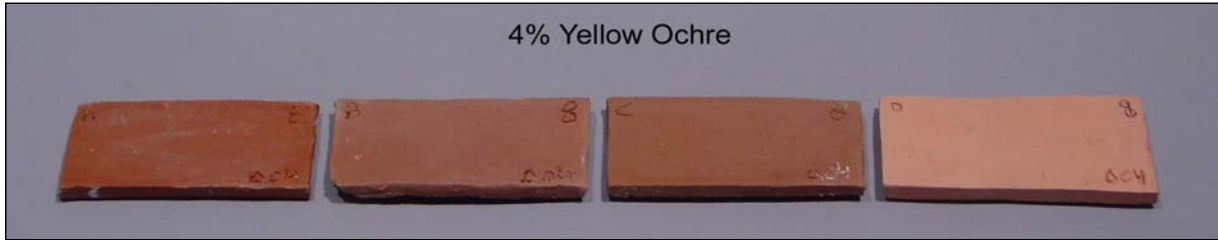
In the second run of tests we adjusted the oxide levels in some of the bodies depending on how well the first results came out.

Our results in both runs were interesting. The 04 tiles range from dark to light, but in general are not as bold as some of the results in cone 6. Some cone 6 tests bloated or melted, but some tiles were really rich in color. Some color burned out in the kiln at both temperatures. We also tested compatibility because the pallet could only be achieved with the use of multiple bodies. We had no compatibility problems on a small scale.

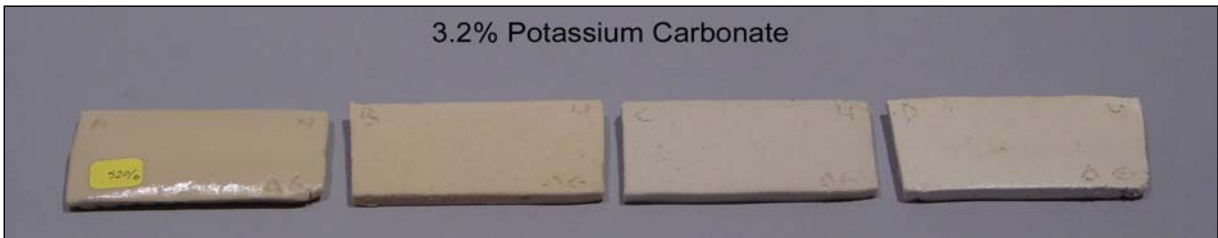
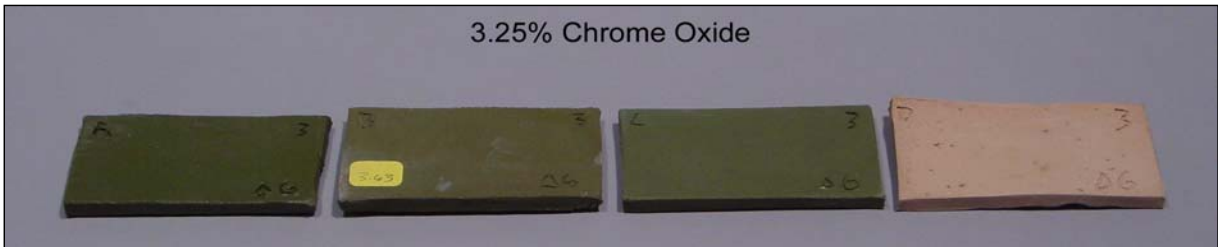
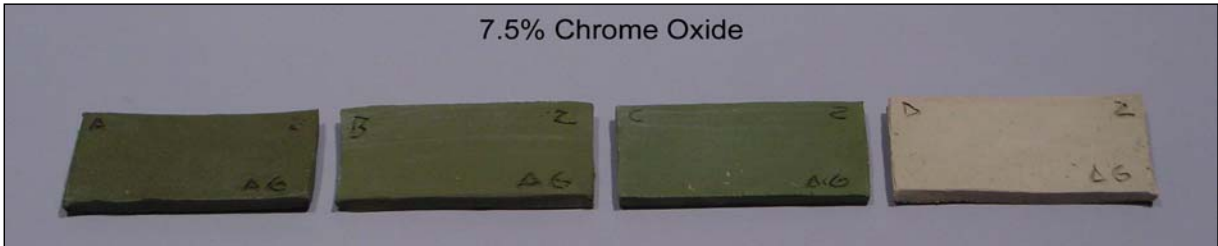
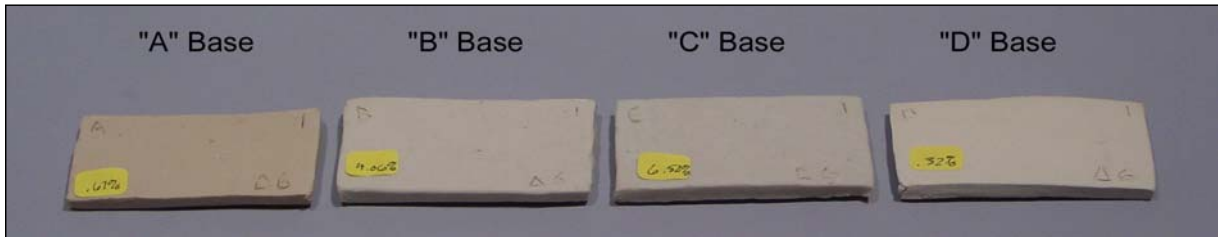
The combination of oxides can be explored extensively to achieve a wide range of color. We will probably also start experimenting with mason stains once our pallet is refined enough to know what few desired colors or highlights we would like and are difficult to achieve using oxides.

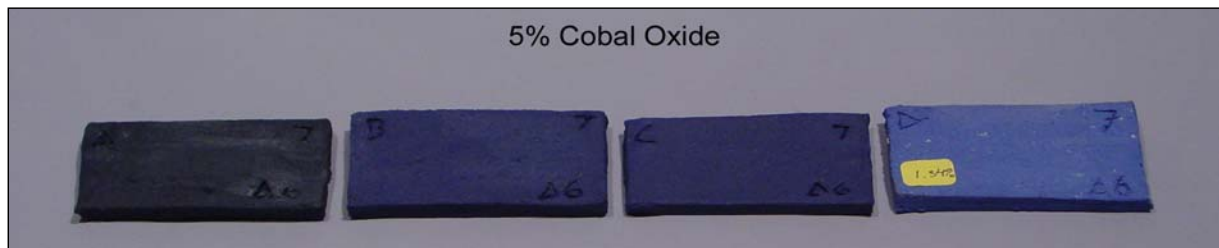
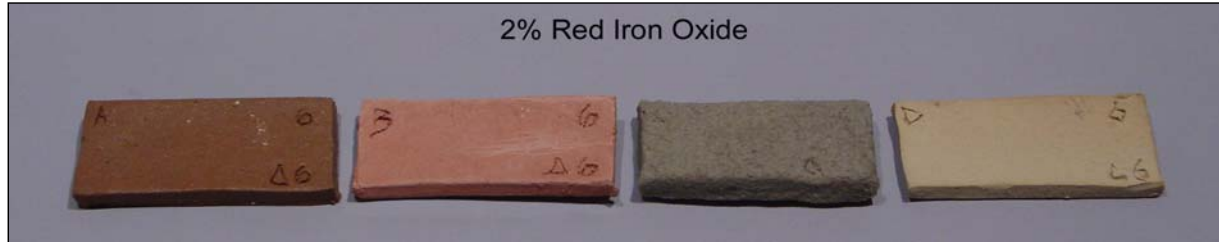
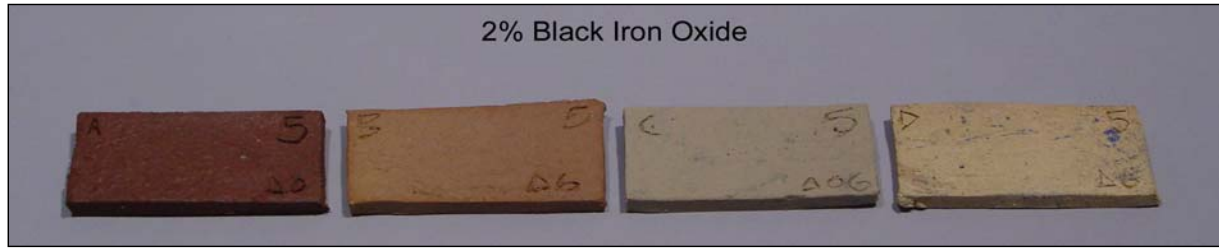
Cone 04 Series



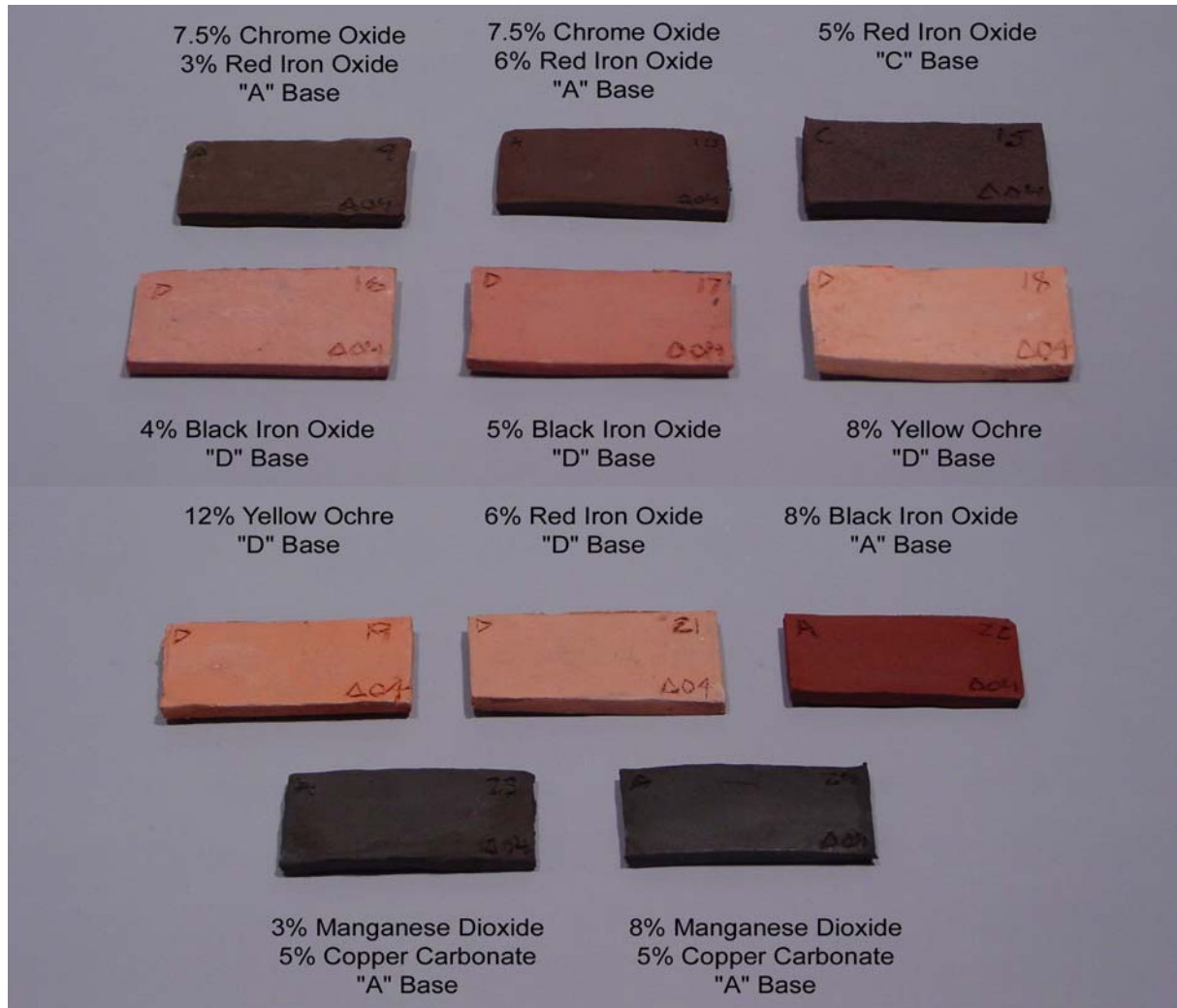


Cone 6 Series

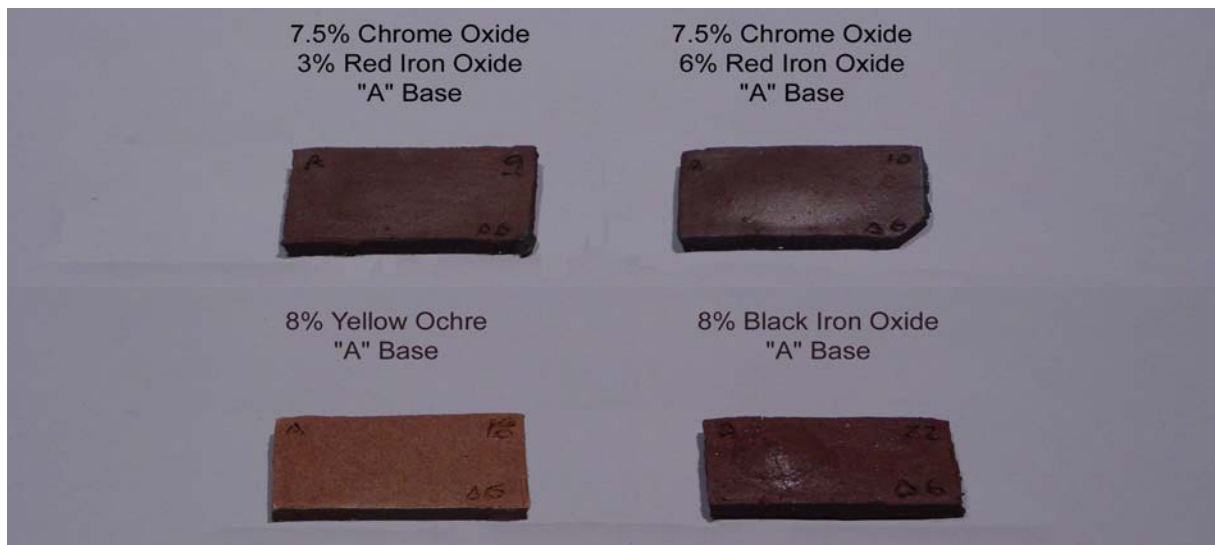




Second Cone 04 Series

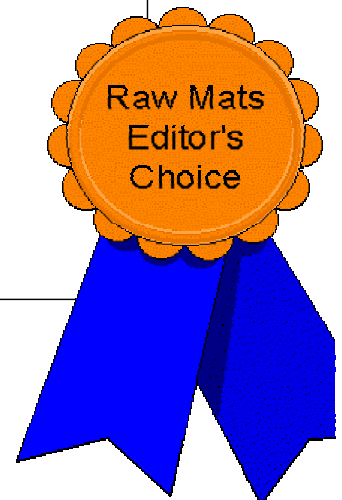


Second Cone 6 Series





2% Red Iron Oxide
"C" Base
Cone 6



Name: Elisavet Papatheodorou & Diogo Shin
Type: Handbuilding
Color: Black
Texture: Smooth
Cone: 04

Recipe:	Redart	37.5
	Laguna Blackbird Substitute	37.5
	OM-4	25
		100%

Add:	Mason Chrome Free Black #6616	10
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Development Process: Our labs were carried out with the goal of formulating a low-temperature black hand-building clay body. Our method included triaxial tests, line blends, and building samples. We have succeeded in developing a black, fine particle-body. However, the formula needs several more modifications to be viable as a building body.

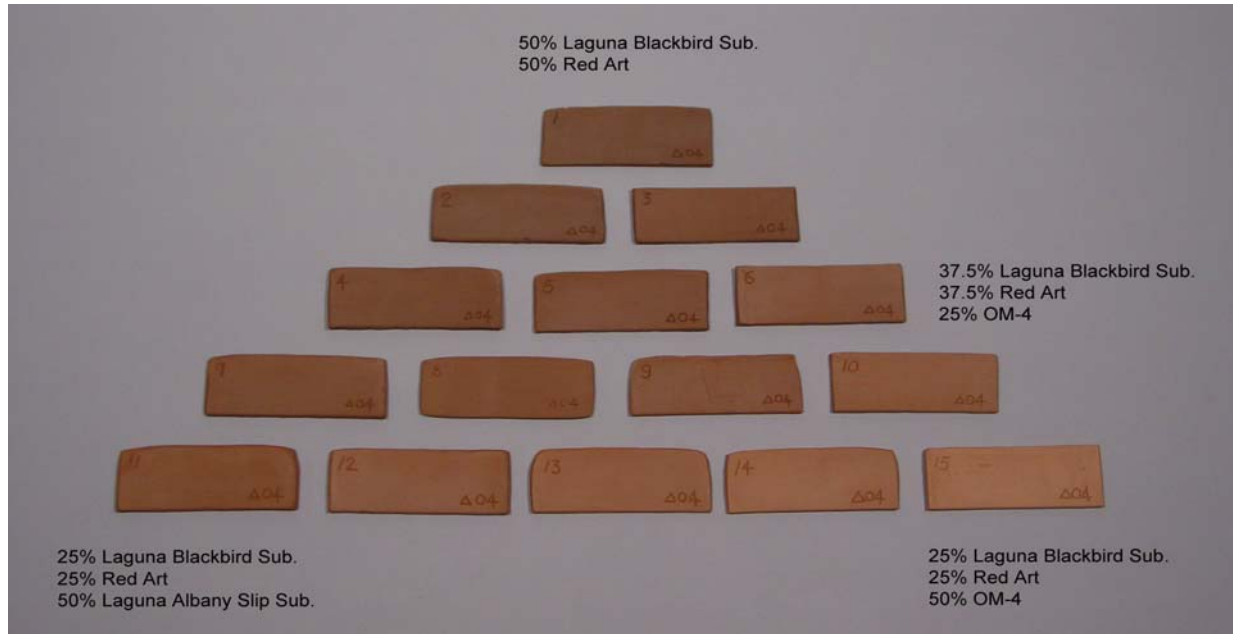
The body is mature and vitreous at cone 04. It has a smooth, buttery surface; Without the stain, it is a dark brown. The Chrome Free stain makes the truest black in this body at this temperature. We also suggest testing the body in reduction, where it might attain a true black with little or no commercial stain.

Although we have a good solution as far as color, surface, and temperature are concerned, the body lacks workability. We would compare the workability of the body to that of porcelain-- although the particles are fine and the clay has a nice consistency, it lacks the ability to stretch and mold, and cracks and breaks easily. The body barely holds its own weight and cannot hold up vertically. To be a good building body, some non-plastic fillers must be added to improve green strength and prevent slumping. We suggest adding fine, medium, and course grog to the body, in a percentage of fifteen to twenty-five percent. Paper or fibers would also increase the green strength. Also, as the body is vitreous at cone 04, it may need something to decrease the melting temperature. We may try 5-10% kyanite as this is dark and refractory.



15% additions of stain. C.C.
from the top: Best Black, Cobalt
Free Black, and Chrome Free
Black

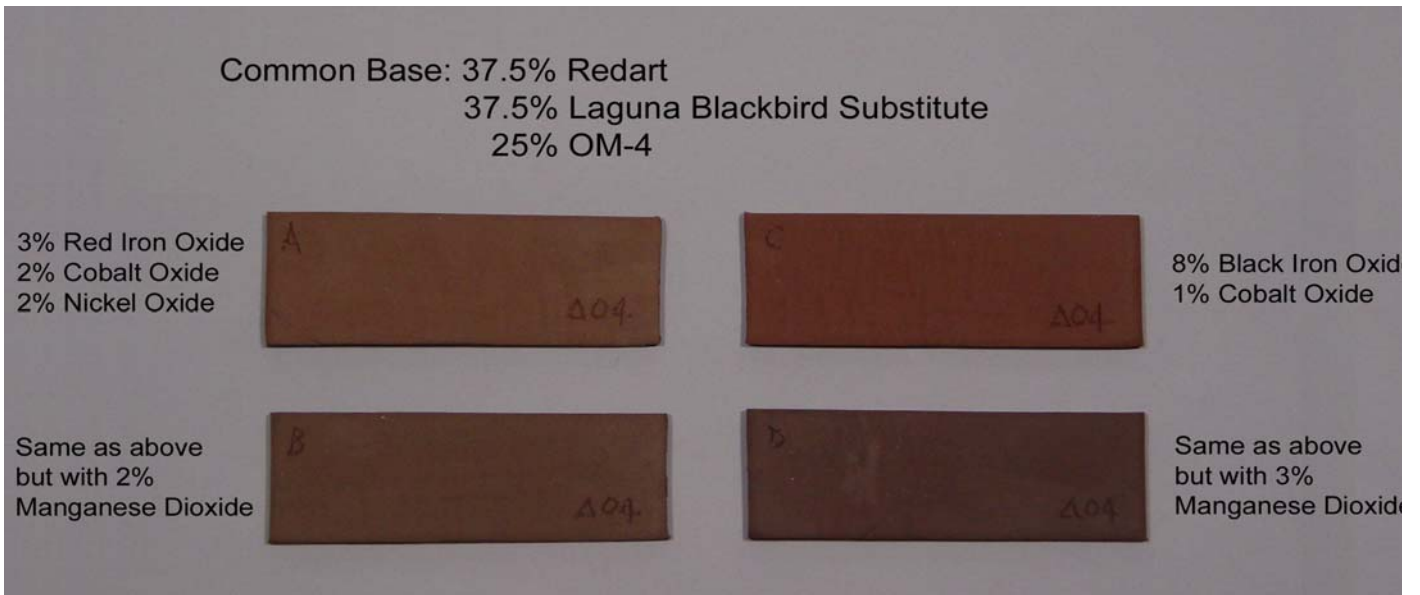
Triaxial blend of clays



Additions of commercial stains



Additions of oxides



Handbuilt using base body + 10% Mason Chrome Free Black #6616. This piece was underfired, which accounts for the dark brown color. Firing closer to maturity (cone 04) would have brought it closer to black.



Name: Jennifer Jewett
Type: Casting
Color: Off White
Texture: Smooth
Cone: ?

Recipe: ?

Development Process: My objective is to work with slips to determine which ones are better for the the burnout process. I will be experimenting with a paper porcelain slip, and porcelain slip to obtain a body that has minor shrinkage but also strength so that I can cast objects that won't allow shrinkage

I am going to use organic object like sponges, string, and things from nature; pretty much anything that burns and doesn't let off toxic fumes. Also my firing temperatures are going to be cone 04 and cone 6

Banana dipped in slip and fired

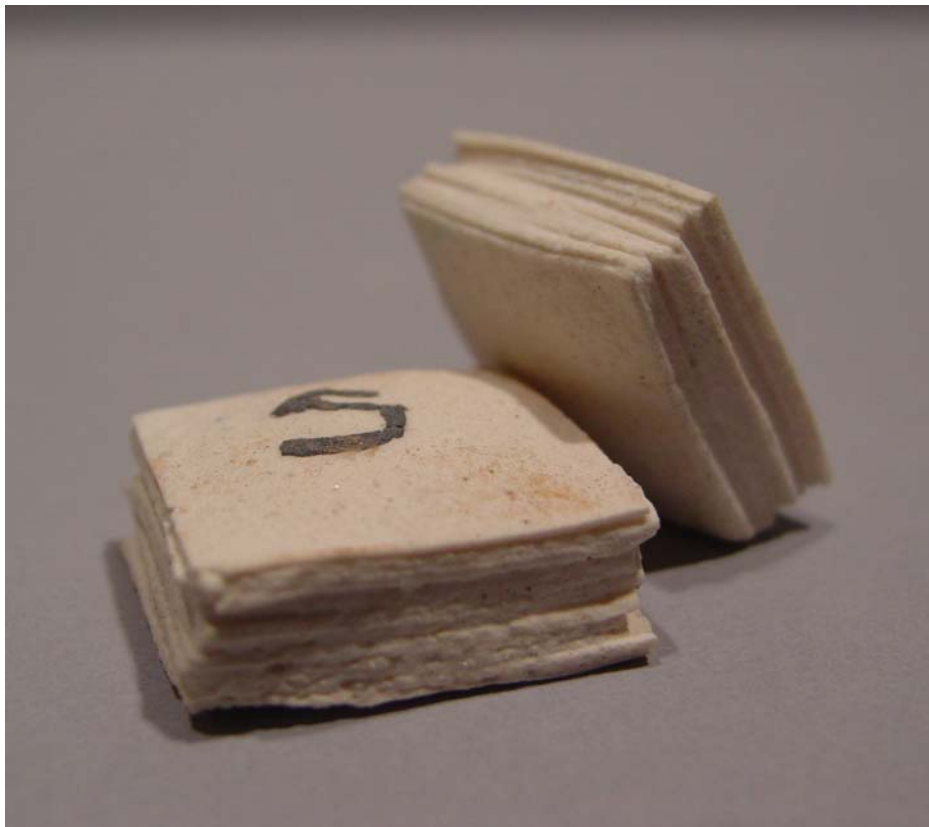


Name: Jessica Fitzgibbon
Type: Tape Casting
Color: Various
Texture: Smooth
Cone: 10

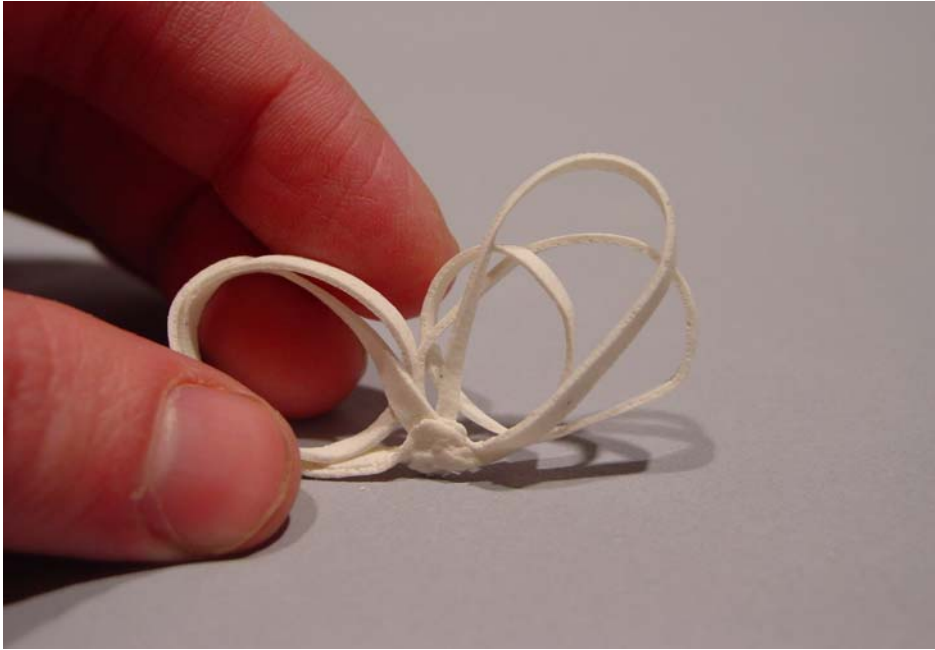
Recipe: ?

Development Process: I am interested in testing sculptural possibilities through the use of tape casting and applied wire. I plan to test the material capability of holding shape by relying on the wire to support the structure. Wire will be embedded, adhered by pressure or will be sewn.

Tape: Laminated and fired



Fired ribbons of tape



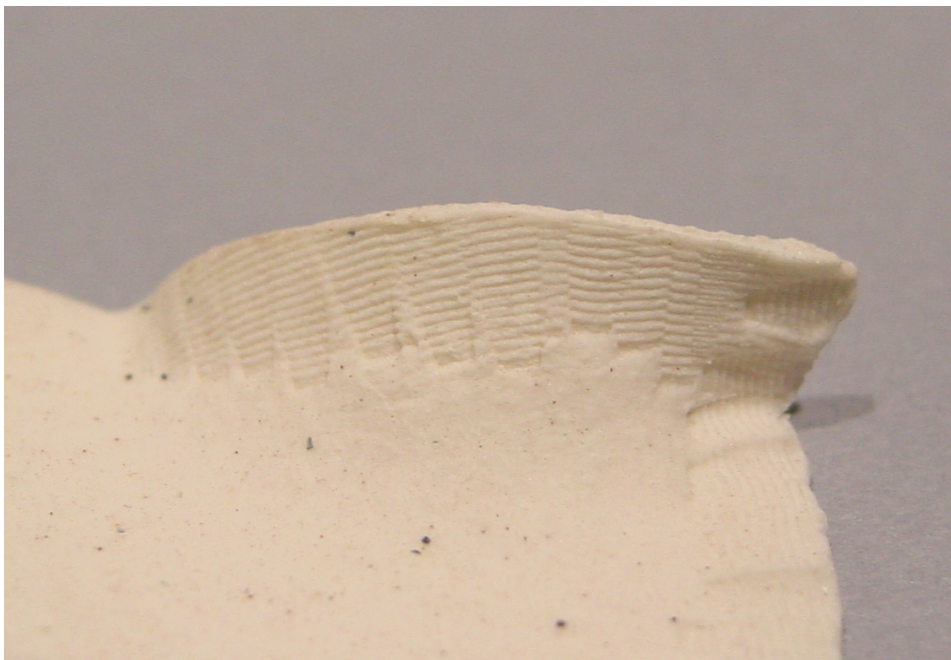
Despite being underfired, the tape is quite translucent



Ceramic perogie



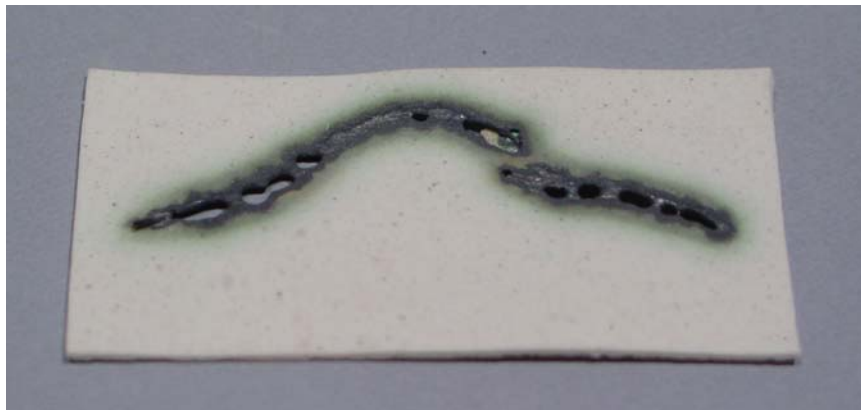
Sides of perogie were moistened and crimped with pliers to create a good seal. Plier marks are clearly visible.



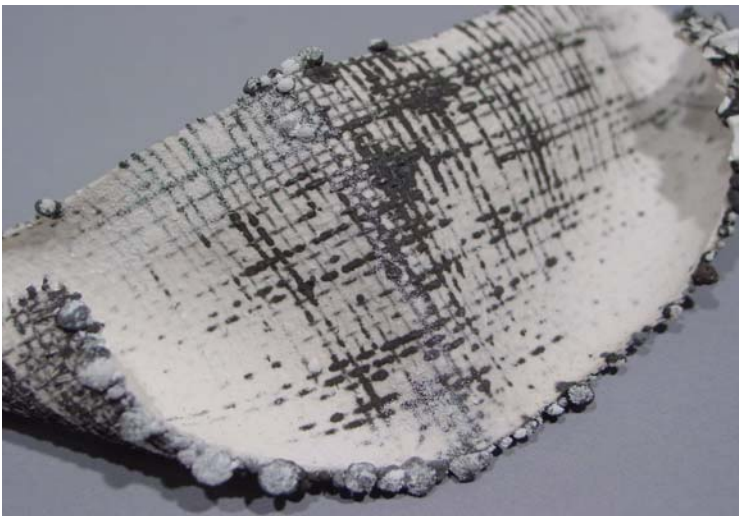
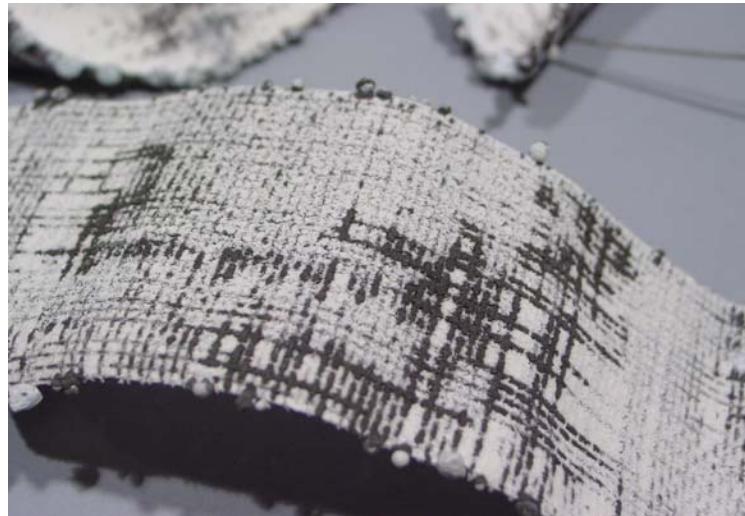
Fired porcelain tape with copper wire embedded right after casting



Copper wire fumes during firing giving soft green halo effects. It also eats through the porcelain tape.



Fired tape: Hardware cloth embedded into ceramic tape immediately after casting.



Name: Josh Araujo
Type: Handbuilding
Color: Grey
Texture: Porous
Cone: 04

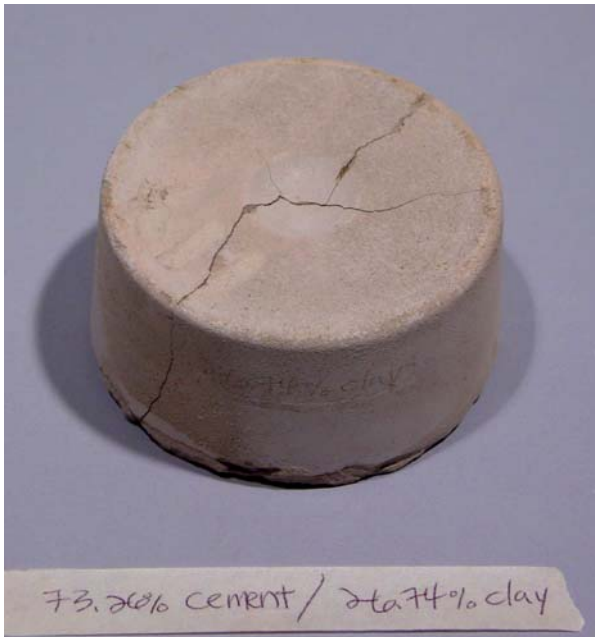
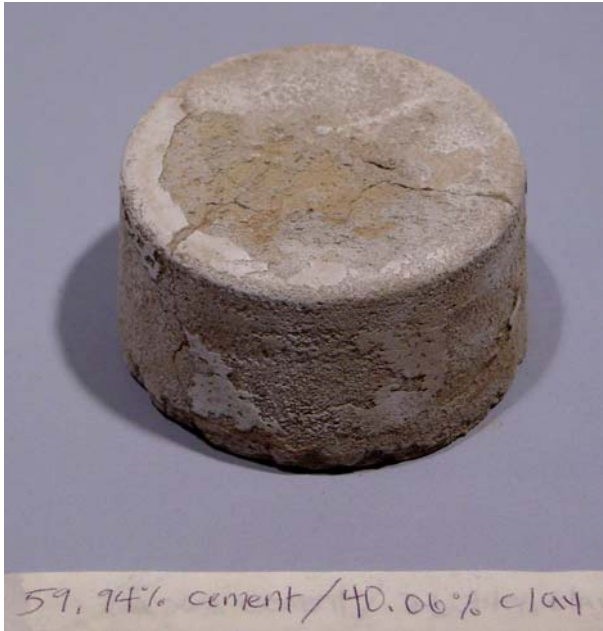
Recipe: Lumnite Varies
Clay ? Varies

Add:

Development Process: The purpose of this project was to see what happens when Lumnite cement is added to a clay body. CS



Cement additions



Name: Megan Thompson
Type: Handbuilding
Color: Various
Texture: Smooth
Cone: 10

Recipe: Base
Grolleg 30
Tile-6 25
C&C ball 5
Kona F-4 20
Flint 10
Pyrax 10
100%

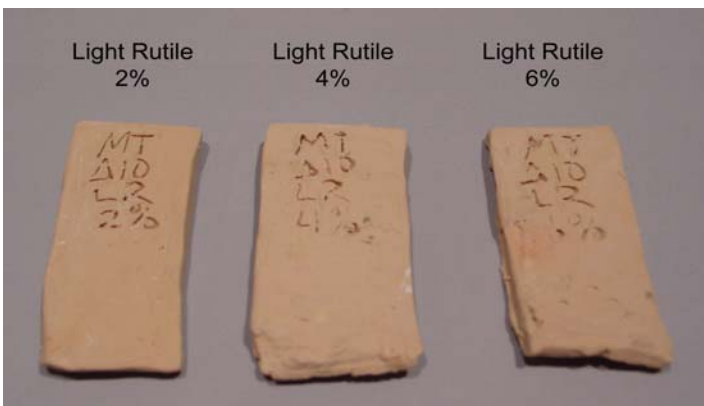
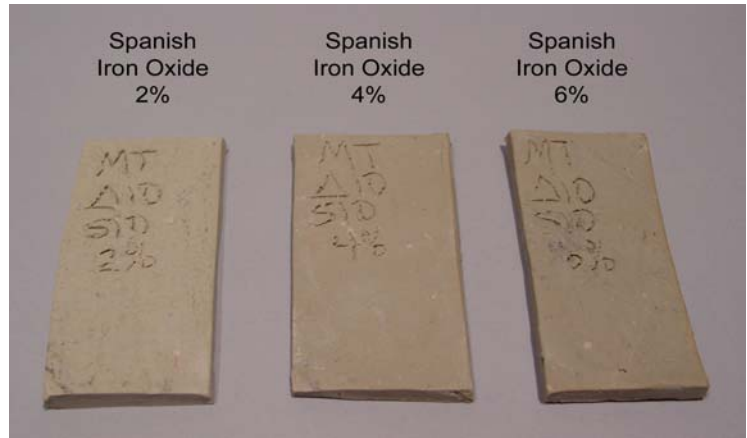
Add: Vee Gum 1
Oxides varies

Development Process: For my final project I created a palette of cone 10 colored porcelains using approximately ten different oxides in different percentages and combinations with each other. Once my palette was established I began testing their reactions to each other through different techniques such as laminating and marbling clay in thrown pieces.

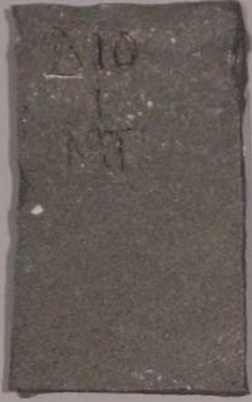
My process involved laminating, or alternating, the white clay body with one of the colored clays until I created the amount of clay I wished to throw with. The throwing process only took approximately two or three pulls before I was forced to finish so that I would not disrupt the colored "swirl" too much. But it was after the piece was trimmed that the colors really came alive.

After the pieces were fired I tested certain glazes on them. Since the pieces were never bisqued (it was simply fired to temperature) they didn't take glaze very easily. The areas that the clear glaze had shown up on really made the colors pop while the other areas were quite muted.

Through trial and error and learning 'what not to do' I learned a great deal about color and oxides and feel that I through this project I became aware of how to apply the knowledge of raw materials to my work.



8% Black Iron Oxide
3% Manganese Dioxide
1% Cobalt Oxide



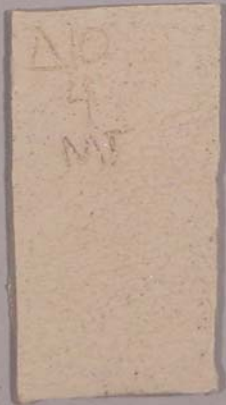
2.5% Cobalt Oxide



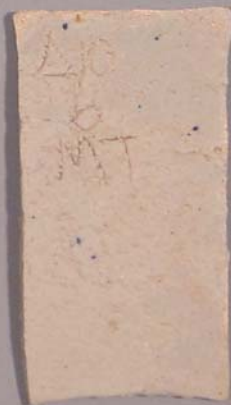
7.5% Cobalt Oxide



2% Yellow Ochre



3.2% Pearl Ash



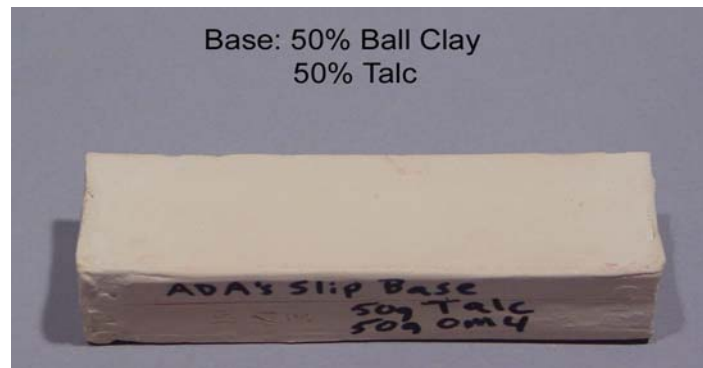
Name: Ada Van Hecke
Type: Casting
Color: Various
Texture: Smooth
Cone: 04

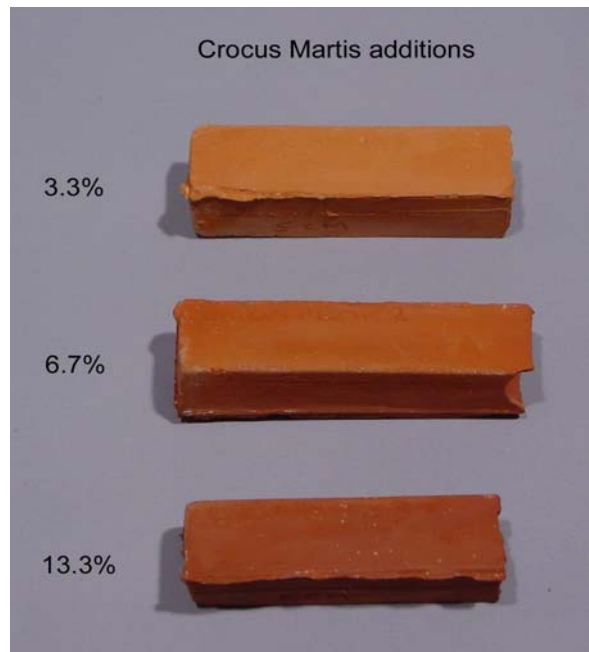
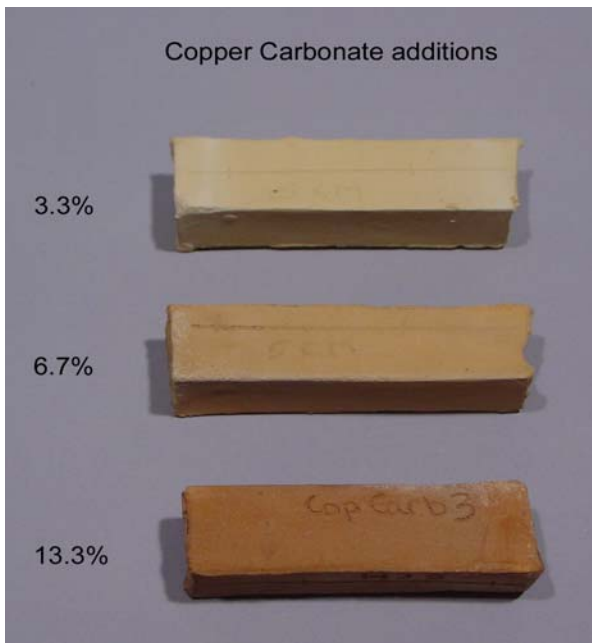
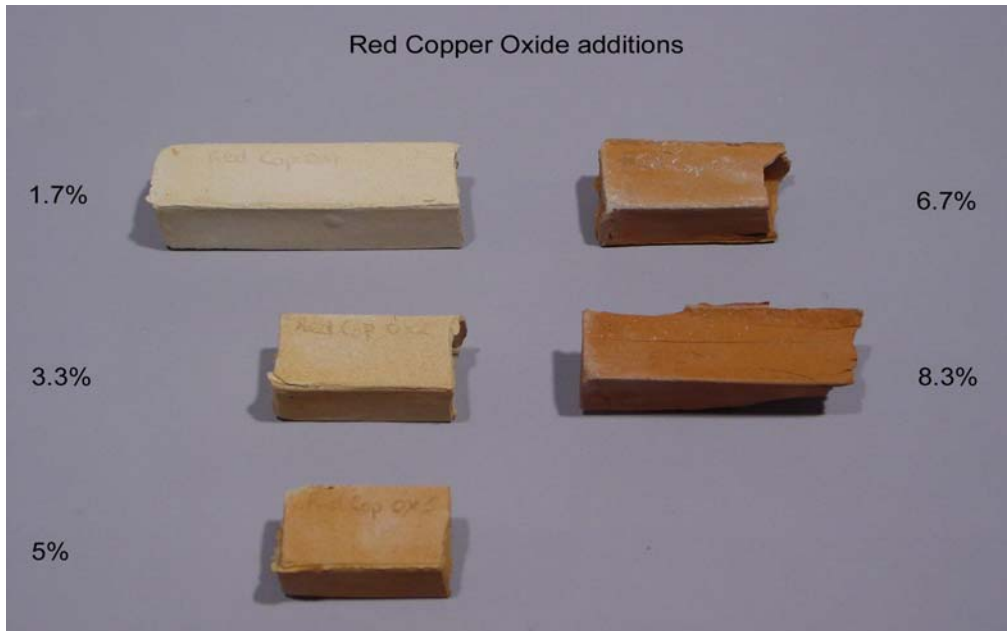
Recipe:	Talc	50
	OM-4	50
		100%
Add:	Water	45%
	Darvan	2.7%

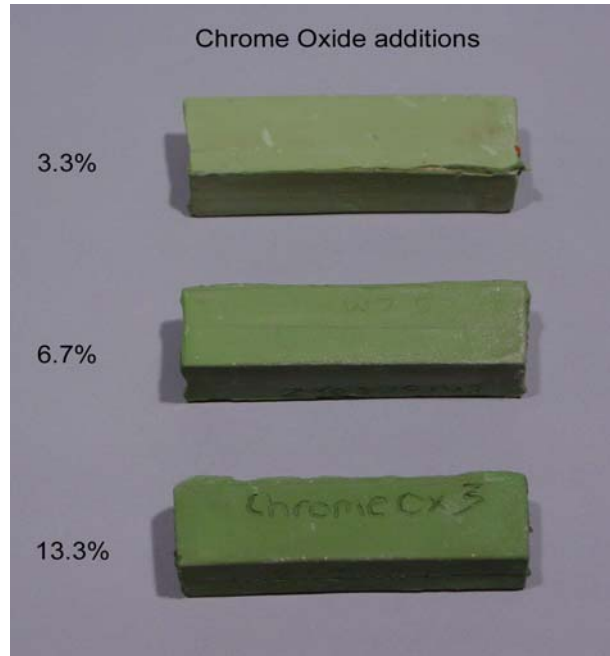
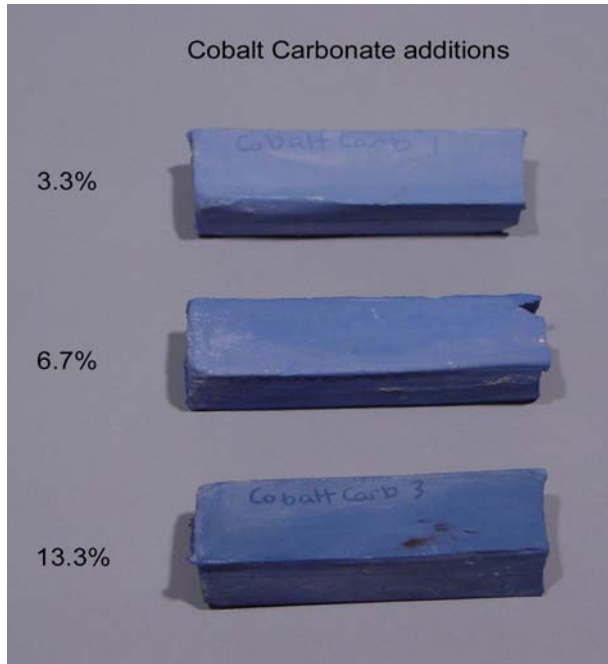
Development Process: I worked on creating a pallette of colored casting slips that would fire to C. 04. I began by defloculating a body made of equal portions of talc and OM-4 ball clay. I then selected colorants to work with, based on other tests I had done in the past, and began to add them to the casting body. As I worked I found it necessary to adjust the amount of water in the slip in order to compensate for the added colorant. If additional water was not added the slip would quickly gel and become extremely difficult to pour out of the mold. The slip would have to be agitated several times in order to get a sufficient amount of slip out of the mold. While I wanted to thin the slip down, it was important for the slip to gel slightly in order to keep the colorant in suspension. With the amounts of additional water listed below, the slip only had to be agitated slightly in order to pour out completely, significantly lessening the possibility of destroying the cast piece.

The fired pieces showed a poor color response, most likely attributed to the high content of magnesium provided by the talc; therefore my next step in the process will be to begin with a new fritted body where the talc will be eliminate. In addition to problems with color response, many of the slips had soluble salts rise to the surface on the interior of the cast pieces. To eliminate this will most likely require the addition of a small amount of barium to the body.

Base without colorants







The following additional amounts of water were required over and above the 45% needed for the base alone in order to standardize viscosity.

Colorant	Colorant %	Grams of Additional Water (100 gram batch)
Blackberry Wine Stain	0.3	0.0
Blackberry Wine Stain	1.0	0.0
Blackberry Wine Stain	3.3	5.0
Blackberry Wine Stain	6.7	6.3
Blackberry Wine Stain	10.0	7.0
Blackberry Wine Stain	13.3	7.7
Chrome Oxide	3.3	5.0
Chrome Oxide	6.7	6.3
Chrome Oxide	13.3	7.7
Cobalt Carbonate	3.3	5.0
Cobalt Carbonate	6.7	6.3
Cobalt Carbonate	13.3	7.7
Copper Carbonate	3.3	5.0
Copper Carbonate	6.7	6.3
Copper Carbonate	13.3	7.7
Crocus Martis	3.3	5.0
Crocus Martis	6.7	6.3
Crocus Martis	13.3	7.7
Red Copper Oxide	1.7	0.0
Red Copper Oxide	3.3	5.0
Red Copper Oxide	5.0	5.7
Red Copper Oxide	6.7	6.3
Red Copper Oxide	8.3	7.0

Name: Andrew Chanania
 Type: Throwing
 Color: Off white
 Texture: Smooth
 Cone: 10

Recipe:	Modified V.C. body	
	Helmer	15
	Goldart	32
	Tennessee #10	20
	Kona F-4	15
	Alumina	8
	Flint	10
		100%
Add:	Fireclay Fine Grog (48/00)	10
	Fireclay Medium Grog (20/48)	2
	Black Coarse Grog (10/20)	8

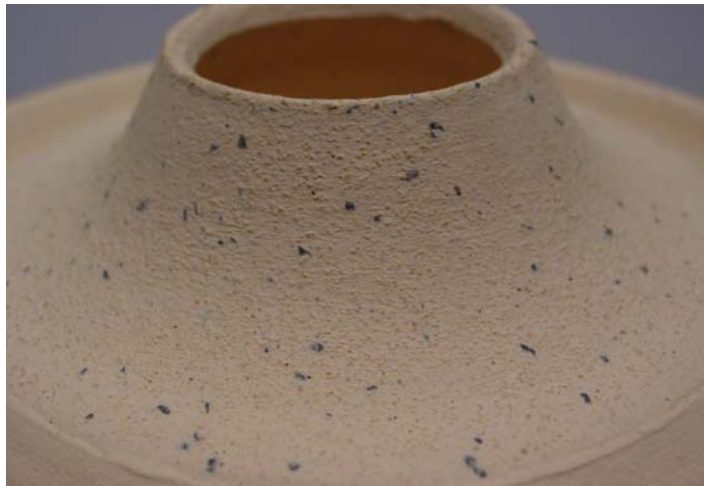
Development Process: My objective was to create a white body with large pieces of black grog. I started with Val's body:

Original V.C. body	
Helmer	12
Goldart	26
Tennessee #10	16
Kona F-4	15
Hawthorn 35 mesh	20
Kona F-4	12
Alumina	6
Flint	8

I took out the Hawthorn due to its coarseness and its impurities (i.e. lack of whiteness). The Hawthorn omission made room for the grog. However, the body may be better to throw with if the Hawthorn is left in the formula. I reached the 20% grog addition because that amount of black grog (40% of the 20% total grog) I felt looked the best in the body.

The coarse grog was stained black using 10% Best Black Mason stain. To make the grog, I mixed the clay in a slurry, then added the stain. After drying the clay to a workable state, I wedged it and rolled it out in slabs about 1/2" thick. After the slabs were bone dry, I broke them up and passed them through a 10 mesh, and then a 20 mesh screen. The material between 10 and 20 mesh was fired to cone 10. I then mixed up a batch of clay and added the grog.

Upon inspection, the wood-fired piece is too dark, too brown and some revisions in the body are necessary. Also, I do not think the body is open enough and there is too large a jump from the fine clay particles to the fine grog size. Also, I would like to have a wider range of particle sizes for my personal throwing preference.





Woodfired



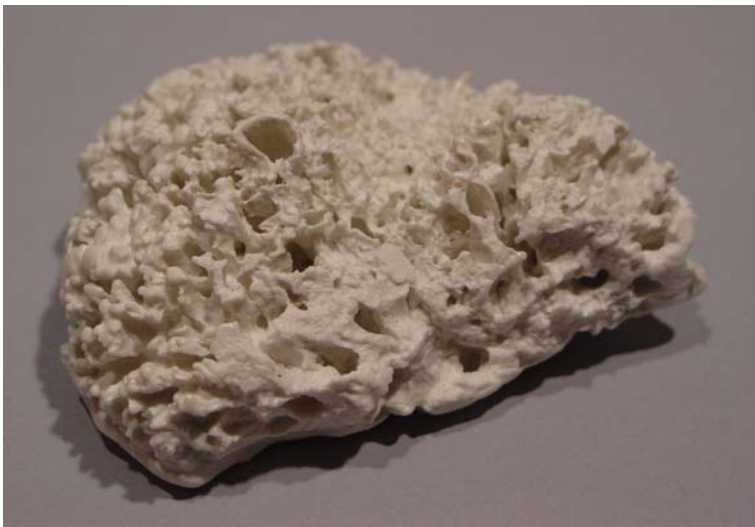
Name: Beck Ferguson
Type: Casting
Color: Off White
Texture: Smooth
Cone: Various (C. 6-10)

Recipe: ?

Development Process: My research will explore burnout bodies and organic fillers. I will be using different types of coral sponges and some manufactured sponges along with other organic matter found in nature.

Various natural sponges dipped in slip (details next page)





Reticulated plastic sponge dipped in slip



Reticulated plastic sponge dipped in thinner slip than above. Very thin network.



Thin slip detail.



Thin network allows passage of light.



Nylon bath sponge...\$1.99 at Wal-Mart



Nylon bath sponge dipped and fired



Name: Bracken Feldman
Type: Paperclay
Color: White
Texture: Smooth
Cone: 10 oxidation / reduction

Recipe: (Jeff Cole's Porcelain)

Grolleg	55
Kona F-4	35
Flint	15

Add: Macaloid 3%
Toilet paper or non-woven, white roll varies

Development Process: I first started with mixing 2600 grams of Jeff Cole. I dry mixed it first and then added the water with the Macaloid in to the mixture slowly with a hand drill. I then placed the Jeff Cole mixture under the shar with broken down toilet paper. I shared the mixture for a good 15 minutes at the speed of 650rpms any faster the mixture will overflow. The reason for choosing Jeff Coles body is because I was looking for a body that would have the best translucency.

I've tried working with a couple of batches of Jeff Cole porcelain with paper added and here's what I've found so far.

My 1st attempt: I mixed a whole roll of Toilet paper into the 2600gram batch. I didn't shar the toilet paper 1st I just broke it down in hot water. This batch of paper porcelain didn't work the paper wasn't broken down enough into the clay body and I ended up getting chunks of paper in my body. The body was very unworkable.

Next attempt:

I broke down a whole roll of toilet paper yet again. But this time I shared it for a good hour until it looked like a thick pulp. I then drained off all of the water and weighted out the roll into three different batches. Then mixed it into three 2600 gram batches with different amounts of paper.

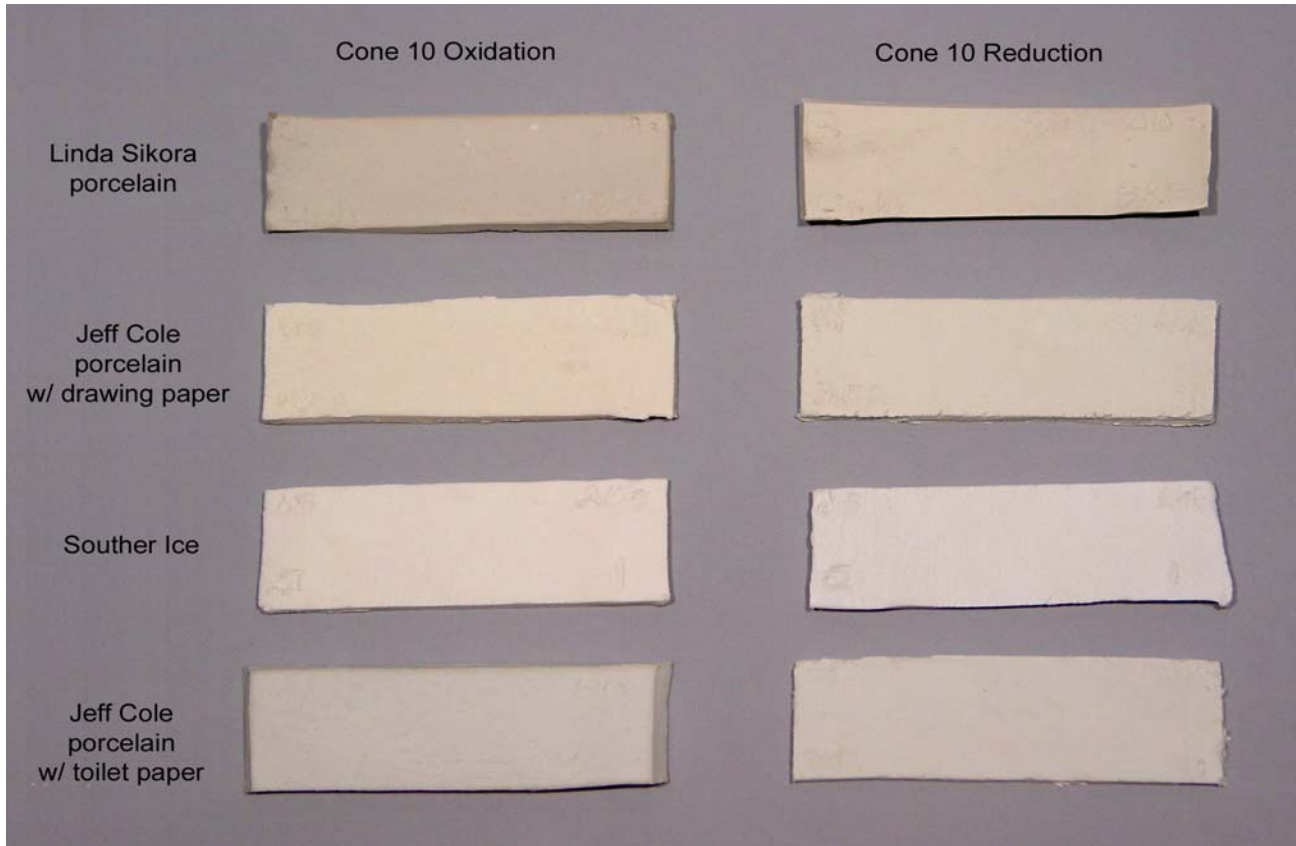
Paper amounts are after pushing paper into the sieve (wet but not dripping)

150 gm paper - was the best to work with though still hard to roll-out into coils. The paper didn't stick together

250 gm paper - was very hard t work with. Didn't stick together at all. Not even during throwing

350 gm paper - The worst all together. Unusable.

Various bodies tested



Name: Catherine Hagerty
Type: Tape Cast Overglaze
Color: Black
Texture: Smooth
Cone: 04

Recipe: Varies (see below)

Development Process: The purpose of this research was to make ceramic tape out of an overglaze and to then transfer it onto a pre-fired glazed surface. CS

ATG #190 VAR4 (underlying white matt glaze)
Recipe: Nepheline Syenite 8.03
Spodumene 38.47
Wollastonite 23.11
Flint 15.87
Frit 3124 14.52

Add: Veegum 2%
Zircopax 5%

Tiles with cone 04 white mat glaze (ATG #190 VAR4) before firing.



OG #1 (OG=Overglaze)

Recipe:	3124	45
	EPK	10
	Stain (Mason Best Black)	45
Add:	Elmer's/Glycerin (80/20 ratio?)	100%

Overglaze tape cast shown with 50 % glue /glycerin content.



Tiles after being fired with tape at 50% glue/glycerin content.

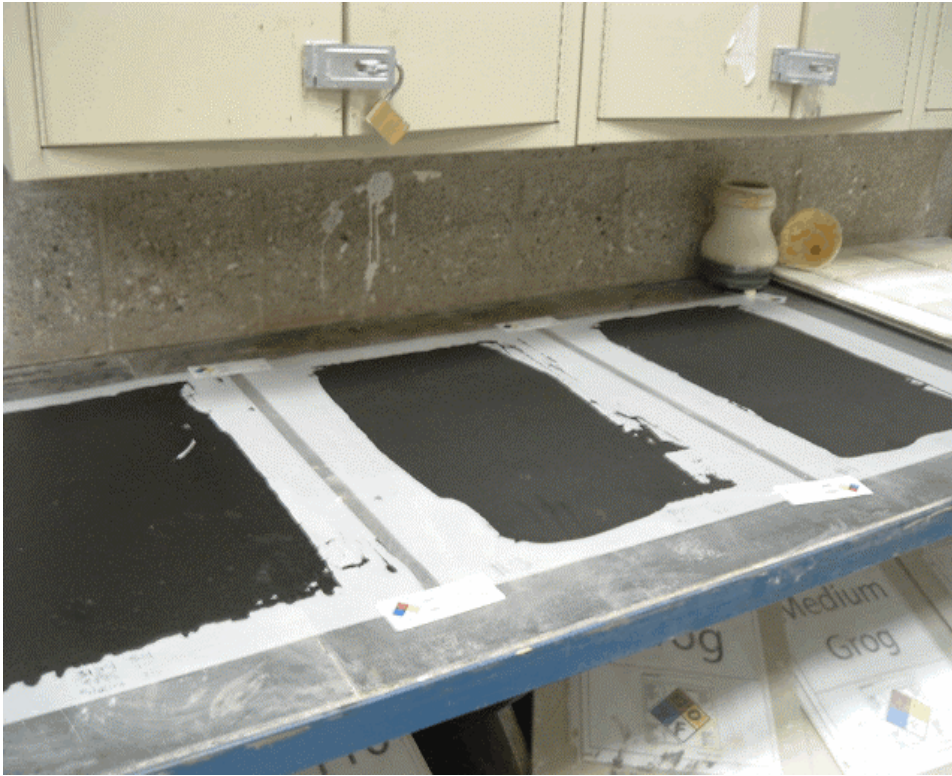


Tiles after being fired with tape at 60% glue/glycerin content.

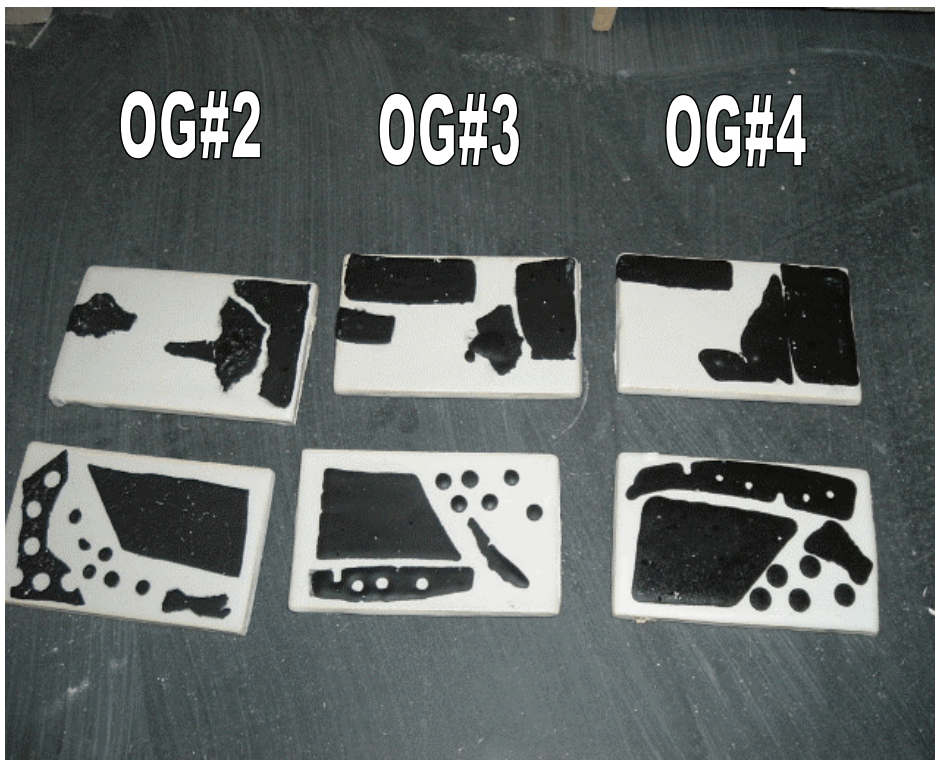


OG #2		
Recipe:	3124	54
	EPK	10
	Stain (Mason Best Black)	36
Add:	Elmer's/Glycerin (80/20 ratio?)	100%
OG #3		
Recipe:	3124	63
	EPK	10
	Stain (Mason Best Black)	27
Add:	Elmer's/Glycerin (80/20 ratio?)	100%
OG #4		
Recipe:	3124	72
	EPK	10
	Stain (Mason Best Black)	18
Add:	Elmer's/Glycerin (80/20 ratio?)	100%

Overglaze tape cast #'s 2, 3 and 4, all with 50% glue/glycerin content.



Tiles after being fired with tape at 50% glue/glycerin content and in number order 2, 3 and 4.



From the above tests, OG#3 seems to have greatest potential as an overglaze. Many defects exist in these samples due to inconsistent mixing and uneven thickness during casting. We will have to work on getting the coatings more uniformly even and on making the tape thickness much thinner (i.e. >.5 millimeters). CS

Name: Corinne Gretch
Type: Tape Casting
Color: Various
Texture: Smooth
Cone: 10

Recipe: See below

Development Process: I began with these two recipes:

Pinnell Clear glaze

Custer Feldspar	25%
Flint	35%
Whiting	20%
Grolleg China Clay	20%

Porcelain #3 from Val's book (page 34)

Tile #6 Kaolin	30%
EPK	25%
C&C	5%
Kona F4	20%
Flint	10%
Pyrax	10%

In creating a two layer tape, first I cast a layer of the glaze beginning with a batch of 116% and 100% ratio Elmer's glue to dry mix. This was allowed to dry over night before I cast a layer of the porcelain over the glaze using the same ratio of Elmer's glue to dry mix. For each of these recipes I added 12% of the amount of Elmer's glue of glycerin. Here are the recipes for my first 2 batches:

100% batch

150 grams dry mix
150 grams Elmer's glue
18 grams glycerin

116% batch

150 grams dry mix
175 grams Elmer's glue
20 grams glycerin

I observed that both of these batches were difficult to get thoroughly wet mixed and there were many small chunks in the cast sheet. When dried it was easily cut with an Exacto knife but broke, chipped and tore very easily. I found it best to cut a general shape with scissors or the Exacto knife and then shave it down to shape with the Exacto knife. If heat was applied to the tape it was more easily shaped, however these two batches broke and cracked when bent. Pieces could be connected by wetting them and sticking them together, but when fired the glaze adhesive was not enough to hold the pieces together.

Also the porcelain was so thin and the glaze too heavy then the pieces all slumped. Pieces that were pressed into wet clay stayed in place better than pieces stick to bisque ware. Shrinkage was 12-13%.

Two-layer tape: Pinnell's clear cast over Porcelain #3



To improve the tapes workability I tried two more batches, one of 135% and one 150% ratio of Elmer's glue to dry powder continuing to add 12% glycerin. Here are the recipes for the next two batches:

135% batch

150 grams dry mix
200 grams Elmer's glue
24 grams glycerin

150% batch

150 grams dry mix
225 grams Elmer's glue
27 grams glycerin

These two batches turned out to be much more workable. They cut easily, were less likely to rip or chip, bent easily, and formed around a three dimensional form. The heat from my hand was enough to shape the pieces. I did a few different tests including a geometric form test where I built a box with 5 separate pieces, leaving an open top. The pieces were connected by wetting them and sticking them together. When fired these forms collapsed. I think that the glue melted out and the pieces fell over before the glaze was melted enough to hold the pieces together. I also did a test to see how a piece would stand up on its own. A one inch strip of tape was bent into a bell shapes curve, standing about 2 inches high, the ends were stuck to a test tile, and the edges were marked with iron oxide to measure slipping. When fired, although the edges did not slip, the stress on the upper most point of the curve caused the piece to break and slump over.

Another test was done to measure slipping on a vertical surface. Three pieces, a large square (1.5inches), a small square (.5inch), and a thin strip vertically orientated were stuck to a vertical test tile and the edges were marked with iron oxide. Upon firing most of the pieces had slipped all the way to the bottom of the test tile with the exception of one of the thin strips which held its position. Shrinkage was 15-16%. I chose to continue working with 135% batch.

Vertical test

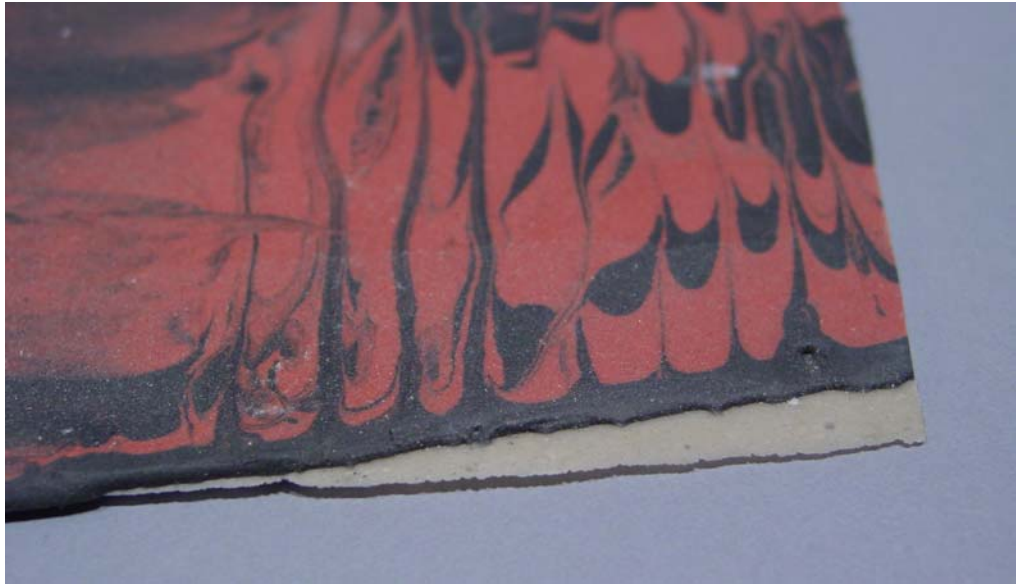


Next I used stains, Mason Best Black and a new red (Mason Dark Red), to experiment with color in the porcelain layer of the tape. I began with the first layer of the clear glaze. To the second layer of porcelain, 135% batch, I added 10% stain in two separate batches, one red, one black. I then cast the red layer, drizzled on a little black and marbled it with a fork, and vice versa. This technique worked well however the fork created a few weak spot in the tape where it took away too much clay. I then experimented with attaching the pieces using another wet mixed glaze. I used Mamo Tan Matte applied underneath the pieces to adhere them to the stoneware and also the method of wetting the piece and sticking it to the tile then applying glaze over this. Both ways were successful in keeping the tape in place on the horizontal test tile and showed potential aesthetically too. I had much less success when I tried to use these methods for a vertical surface. Some pieces stayed in place, some moved slightly, but for the most part the tape pieces slid off the pot.

Mamo Tan Matte underneath (Tan color); Mason Best Black and Mason Dark Red overtop



Glaze/Stain interface is clearly visible here



Applied design using tape (150% batch using Porcelain #3) on pre-bisqued vessel. Bird design was glazed over after application. Squiggly lines were left unglazed



A few extra notes and thoughts:

The longer this tape is left out in the air, the less workable it is. Even after a few days to a week one can notice the difference. Ideally the tape should be made right before it will be used.

Perhaps the layer of glaze intended to be an adhesive is less effective than using a wet glaze to adhere a single layer of porcelain to a piece. The extra layer of glaze seems to add too much weight and therefore causing the piece to slip down or off the vertical surface.

Name: Jackie Rines & Devon Sparks
 Type: Handbuilding
 Color: Various
 Texture: Various
 Cone: 04/6
 Recipe: Various (see below)



Development Process: Our goal this semester was to develop a pallet of colored clay at cone 04 and 6. To do this we used four different clay bodies that had different fluxes, and tested numerous levels of added oxides and combinations to each body. The Fluxes affected the color greatly because of their different chemical makeup's. We chose oxides instead of Mason Stains because they are more cost efficient.

The recipes were:

A		B		C		D	
grolleg	25	grolleg	25	grolleg	25	grolleg	25
tile 6	20	tile 6	20	tile 6	20	tile 6	20
C&C	15	C&C	15	C&C	15	C&C	15
frit 3110	40	frit 3124	40	frit 3195	40	talc	40
total	100	total	100	total	100	total	100

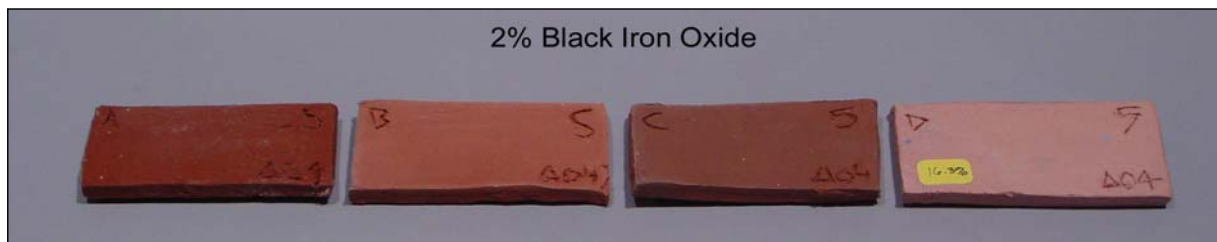
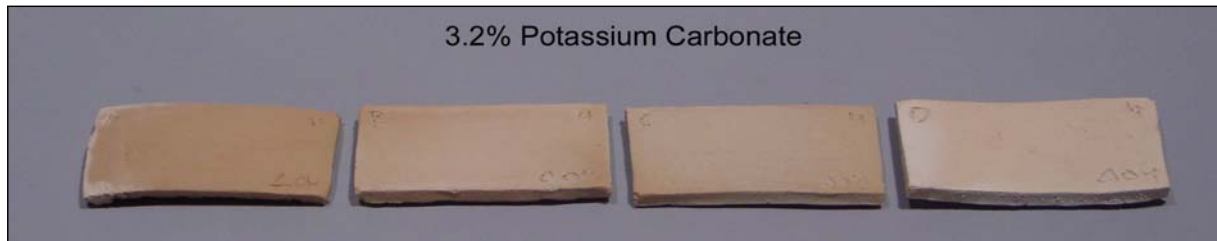
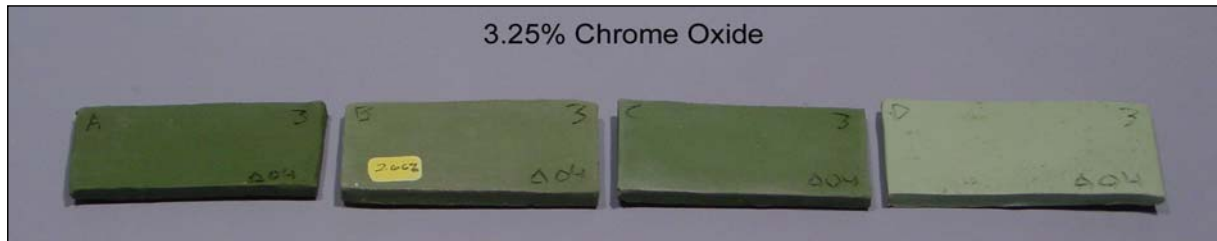
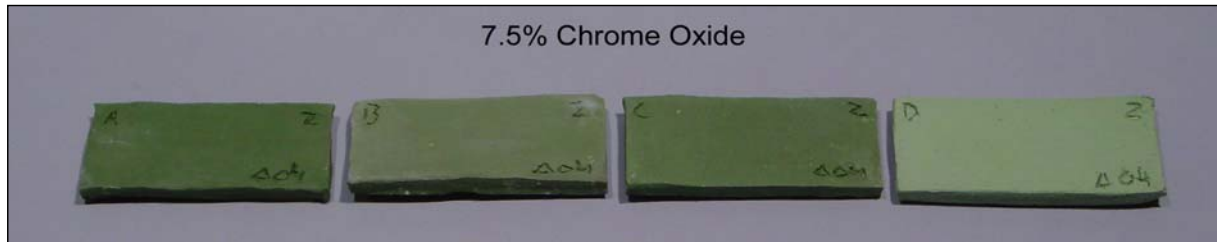
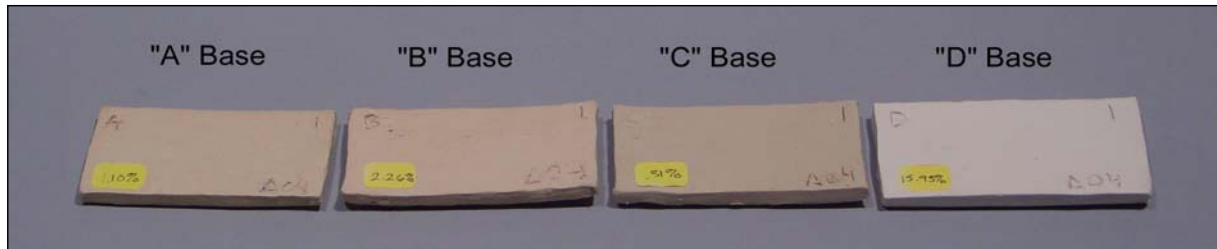
On our first run we experimented with different levels of red iron oxide, chrome oxide, manganese, yellow ochre, and cobalt oxide. (see poster board for results and numbers) We chose initial levels based on recommendations from James Chappell's book *The Potter's Complete Book of Clay and Glazes*, a good reference if you are interested in doing this yourself.

In the second run of tests we adjusted the oxide levels in some of the bodies depending on how well the first results came out.

Our results in both runs were interesting. The 04 tiles range from dark to light, but in general are not as bold as some of the results in cone 6. Some cone 6 tests bloated or melted, but some tiles were really rich in color. Some color burned out in the kiln at both temperatures. We also tested compatibility because the pallet could only be achieved with the use of multiple bodies. We had no compatibility problems on a small scale.

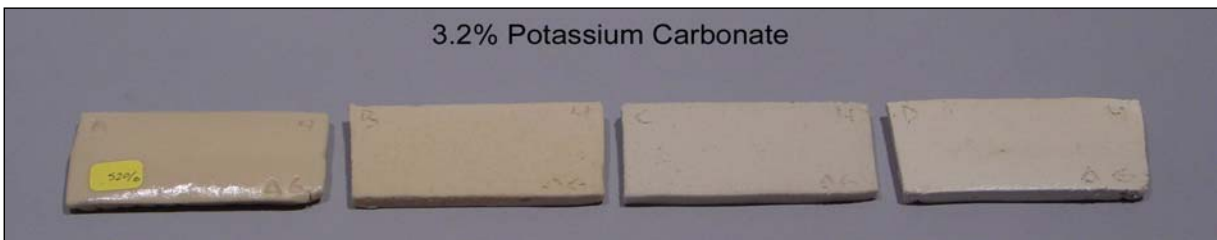
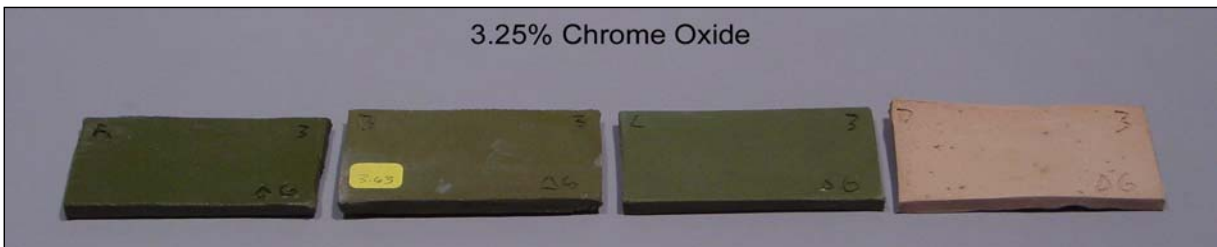
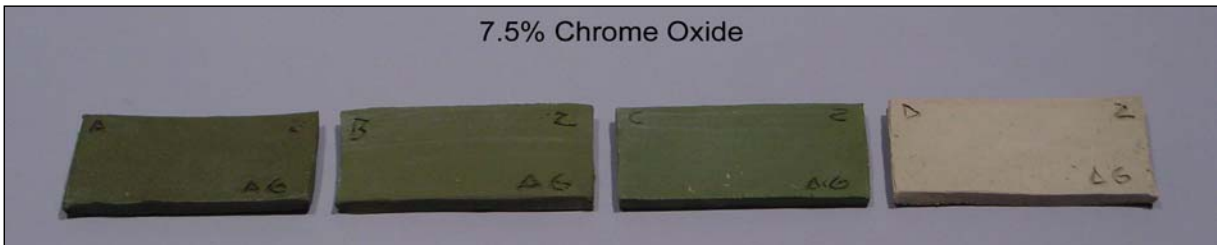
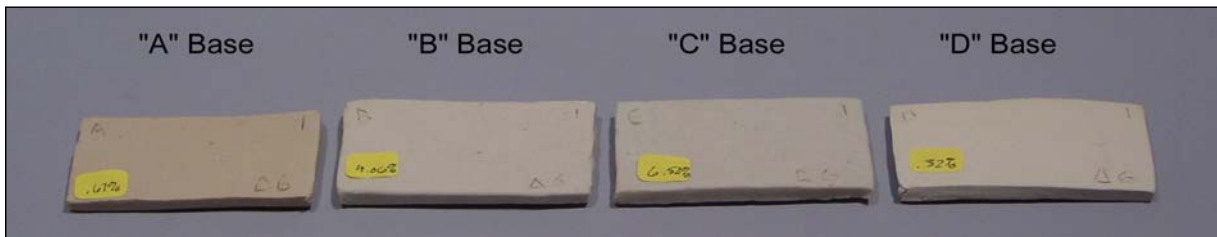
The combination of oxides can be explored extensively to achieve a wide range of color. We will probably also start experimenting with mason stains once our pallet is refined enough to know what few desired colors or highlights we would like and are difficult to achieve using oxides.

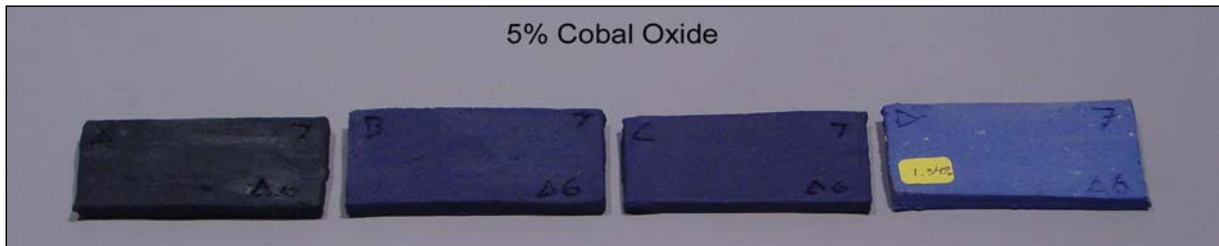
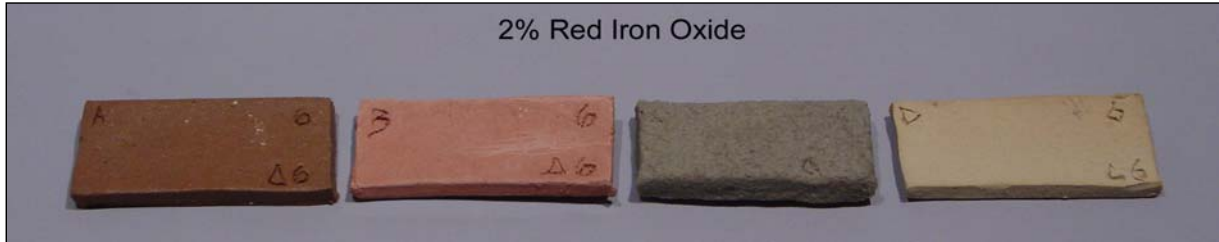
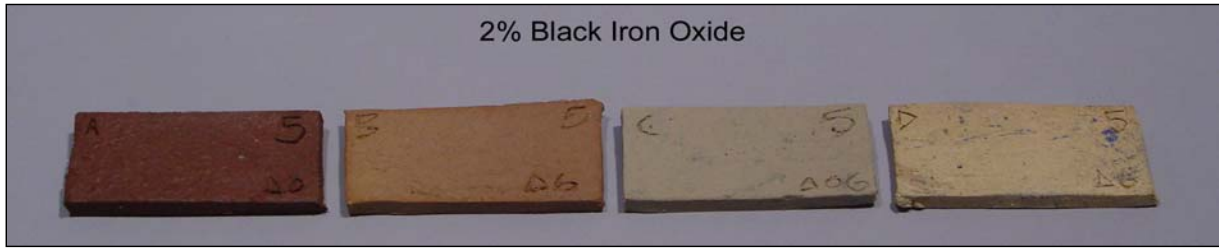
Cone 04 Series



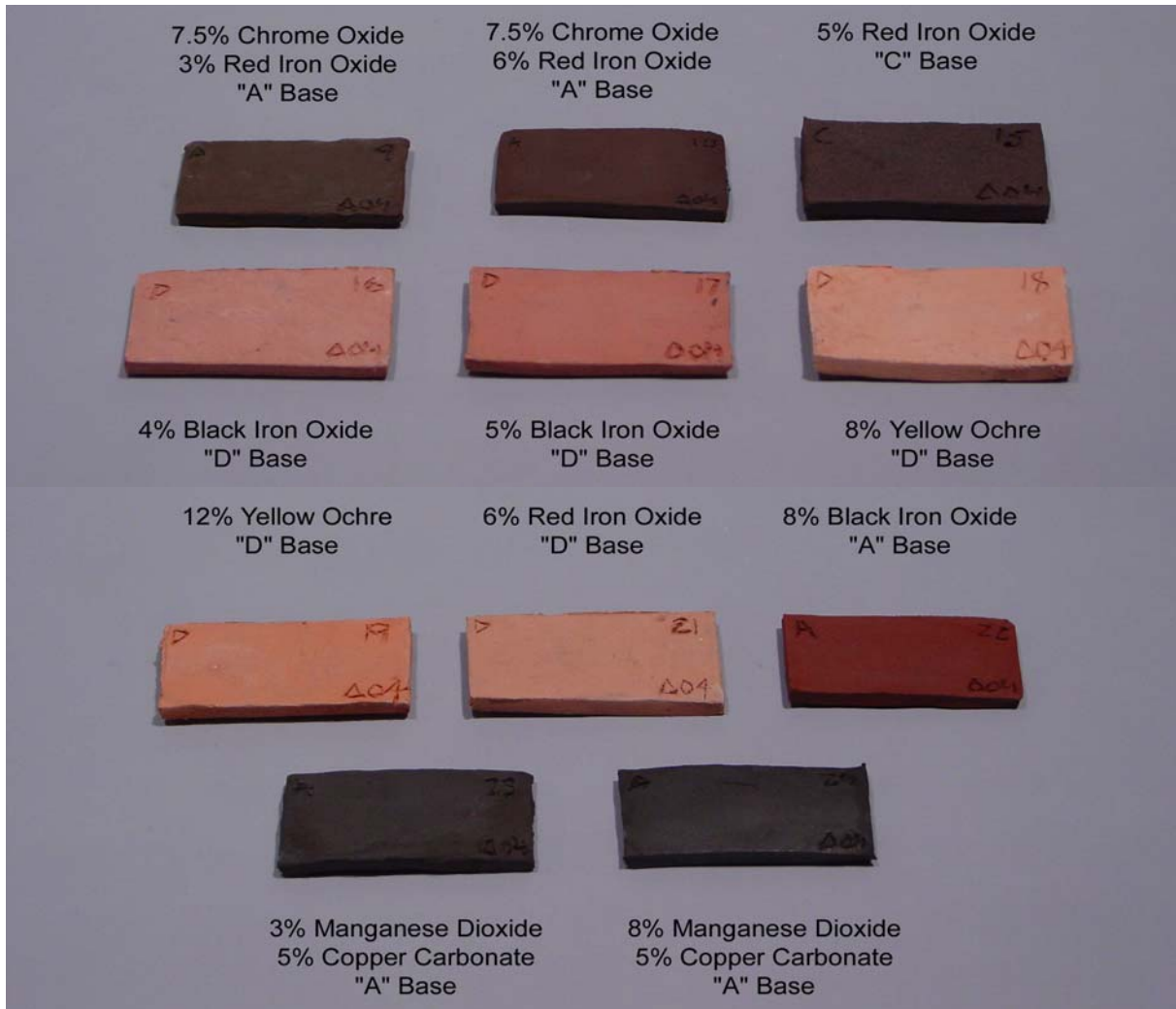


Cone 6 Series





Second Cone 04 Series

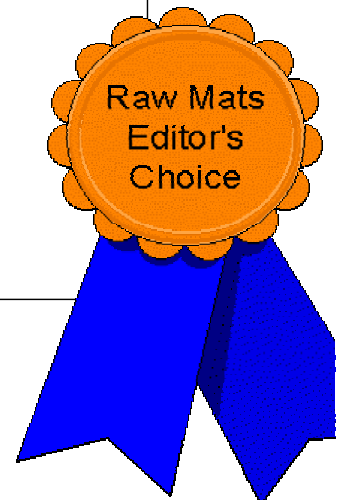


Second Cone 6 Series





2% Red Iron Oxide
"C" Base
Cone 6



Name: Elisavet Papatheodorou & Diogo Shin
Type: Handbuilding
Color: Black
Texture: Smooth
Cone: 04

Recipe: Redart 37.5
Laguna Blackbird Substitute 37.5
OM-4 25
100%

Add: Mason Chrome Free 10
Black #6616

Development Process: Our labs were carried out with the goal of formulating a low-temperature black hand-building clay body. Our method included triaxial tests, line blends, and building samples. We have succeeded in developing a black, fine particle-body. However, the formula needs several more modifications to be viable as a building body.

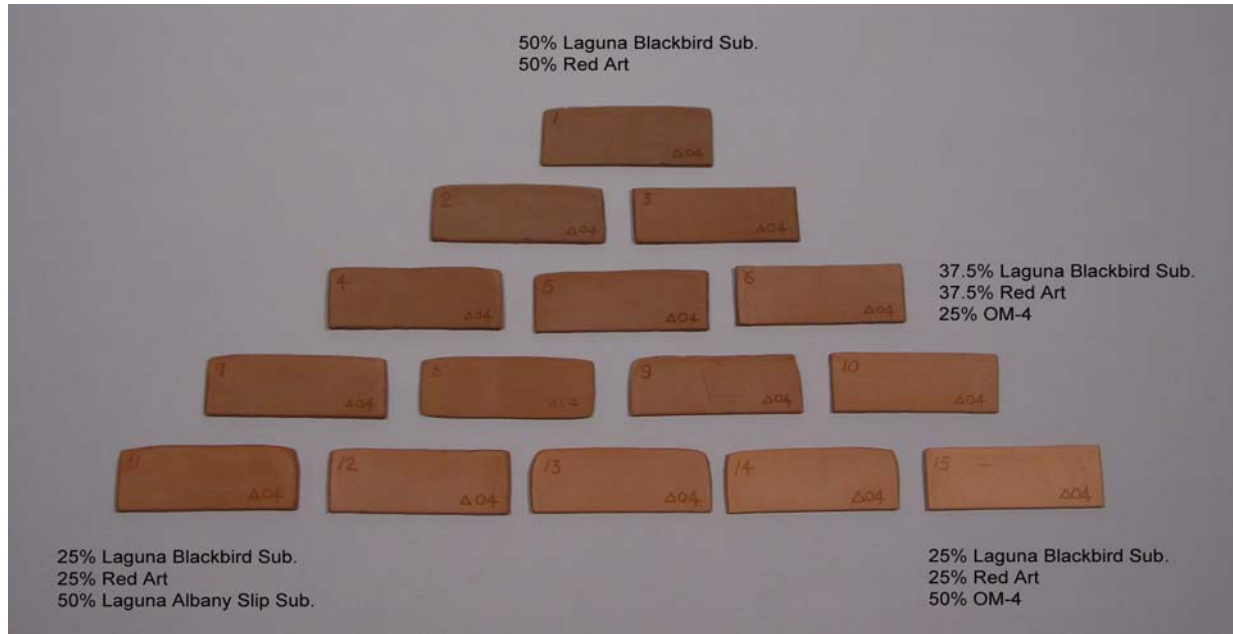
The body is mature and vitreous at cone 04. It has a smooth, buttery surface; Without the stain, it is a dark brown. The Chrome Free stain makes the truest black in this body at this temperature. We also suggest testing the body in reduction, where it might attain a true black with little or no commercial stain.

Although we have a good solution as far as color, surface, and temperature are concerned, the body lacks workability. We would compare the workability of the body to that of porcelain-- although the particles are fine and the clay has a nice consistency, it lacks the ability to stretch and mold, and cracks and breaks easily. The body barely holds its own weight and cannot hold up vertically. To be a good building body, some non-plastic fillers must be added to improve green strength and prevent slumping. We suggest adding fine, medium, and course grog to the body, in a percentage of fifteen to twenty-five percent. Paper or fibers would also increase the green strength. Also, as the body is vitreous at cone 04, it may need something to decrease the melting temperature. We may try 5-10% kyanite as this is dark and refractory.



15% additions of stain. C.C.
from the top: Best Black, Cobalt
Free Black, and Chrome Free
Black

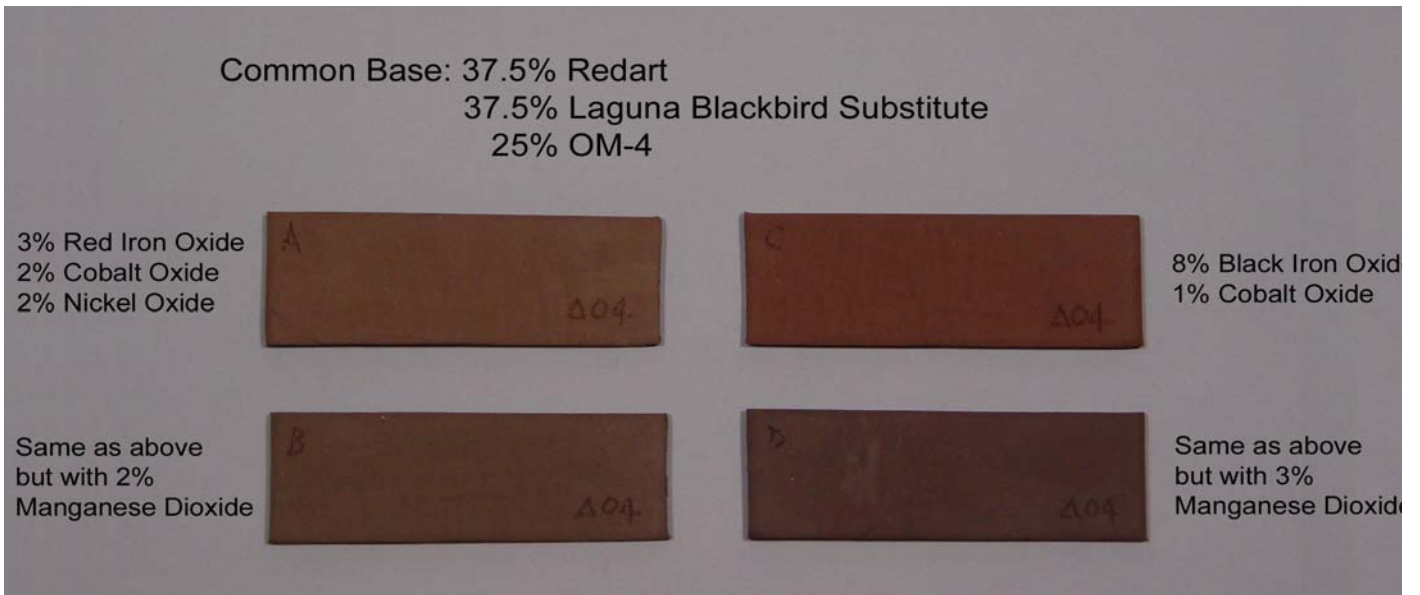
Triaxial blend of clays



Additions of commercial stains



Additions of oxides



Handbuilt using base body + 10% Mason Chrome Free Black #6616. This piece was underfired, which accounts for the dark brown color. Firing closer to maturity (cone 04) would have brought it closer to black.



Name: Jennifer Jewett
Type: Casting
Color: Off White
Texture: Smooth
Cone: ?

Recipe: ?

Development Process: My objective is to work with slips to determine which ones are better for the the burnout process. I will be experimenting with a paper porcelain slip, and porcelain slip to obtain a body that has minor shrinkage but also strength so that I can cast objects that won't allow shrinkage

I am going to use organic object like sponges, string, and things from nature; pretty much anything that burns and doesn't let off toxic fumes. Also my firing temperatures are going to be cone 04 and cone 6

Banana dipped in slip and fired

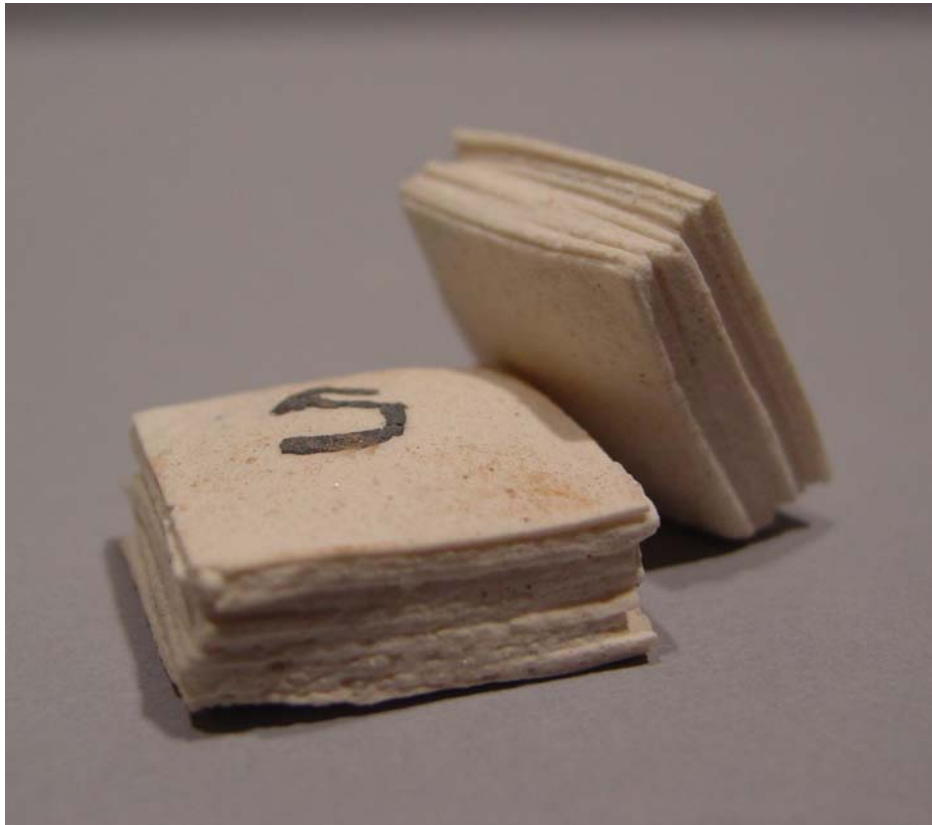


Name: Jessica Fitzgibbon
Type: Tape Casting
Color: Various
Texture: Smooth
Cone: 10

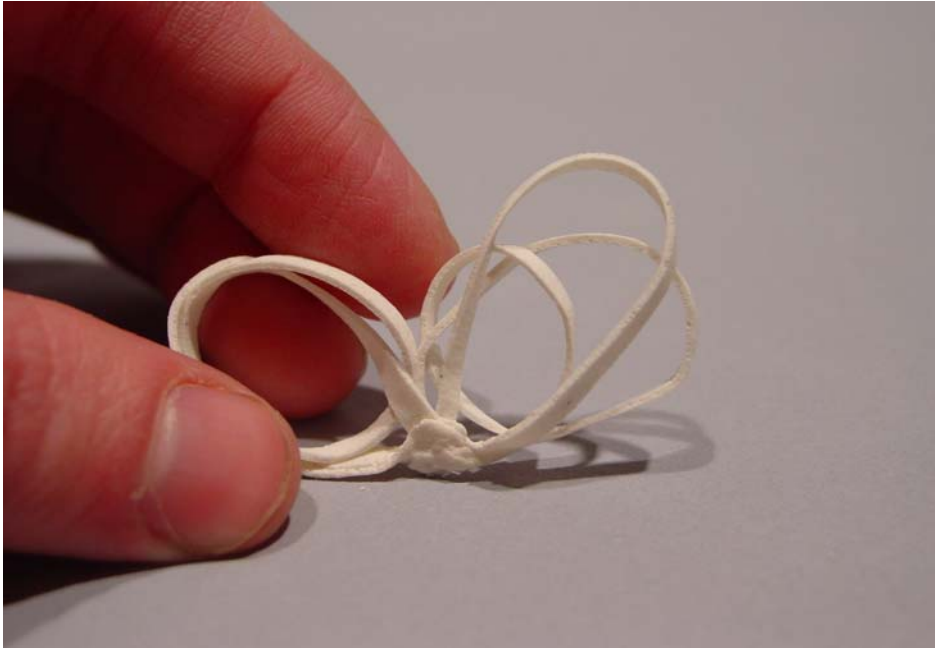
Recipe: ?

Development Process: I am interested in testing sculptural possibilities through the use of tape casting and applied wire. I plan to test the material capability of holding shape by relying on the wire to support the structure. Wire will be embedded, adhered by pressure or will be sewn.

Tape: Laminated and fired



Fired ribbons of tape



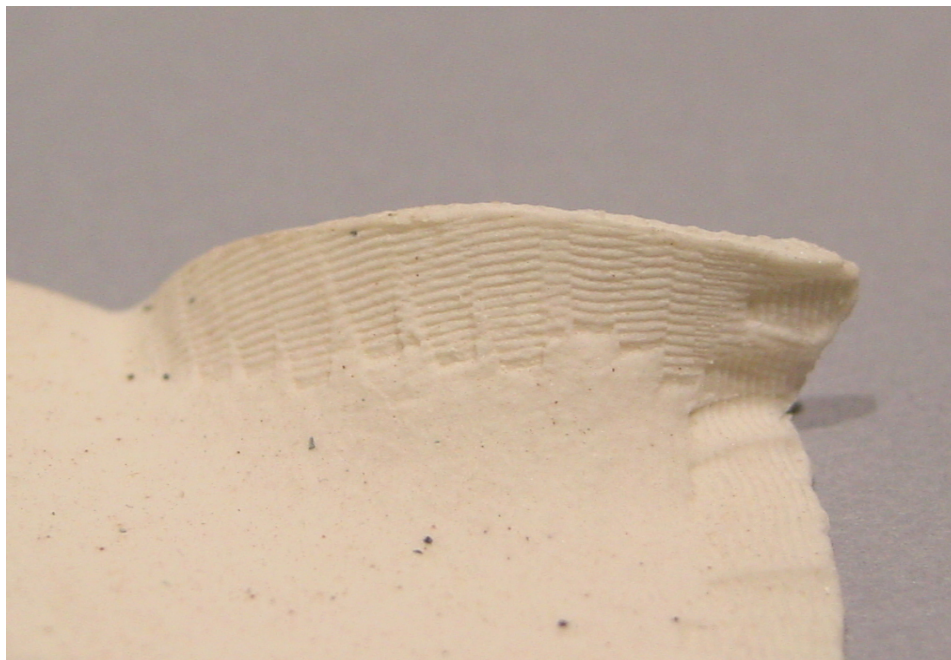
Despite being underfired, the tape is quite translucent



Ceramic perogie



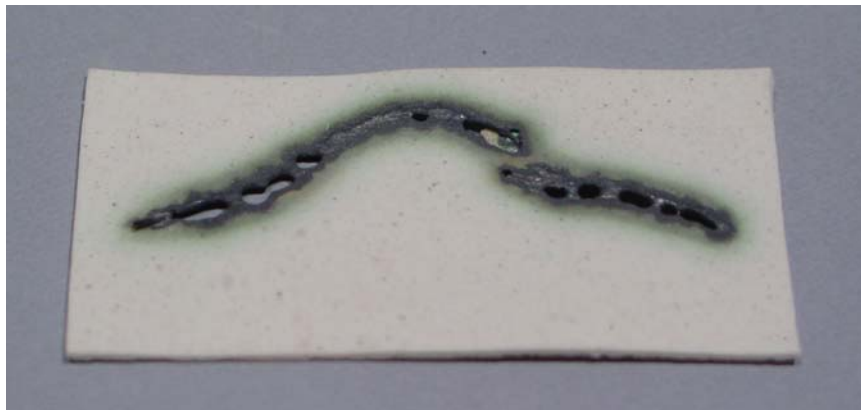
Sides of perogie were moistened and crimped with pliers to create a good seal. Plier marks are clearly visible.



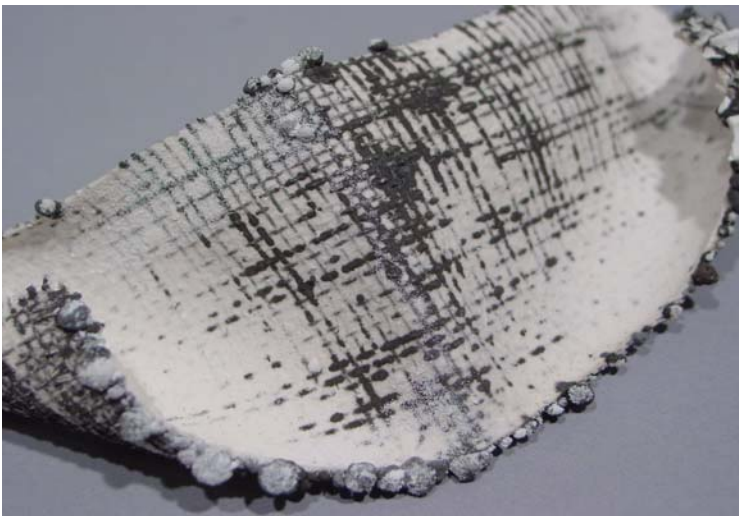
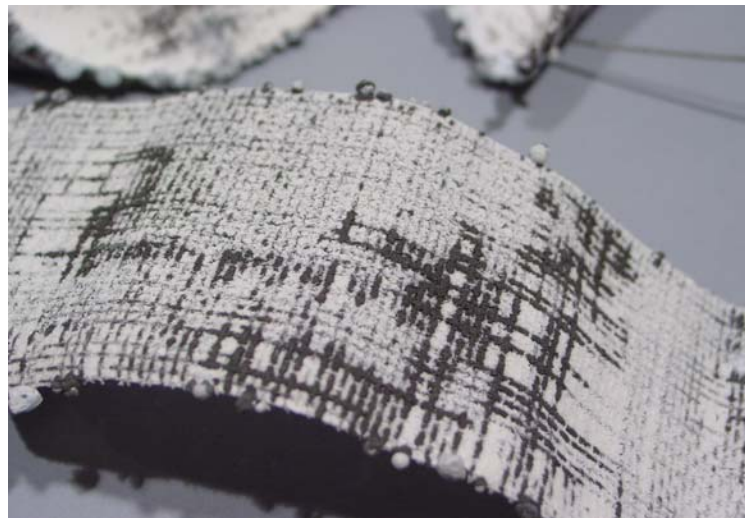
Fired porcelain tape with copper wire embedded right after casting



Copper wire fumes during firing giving soft green halo effects. It also eats through the porcelain tape.



Fired tape: Hardware cloth embedded into ceramic tape immediately after casting.



Name: Josh Araujo
Type: Handbuilding
Color: Grey
Texture: Porous
Cone: 04

Recipe: Lumnite Varies
Clay ? Varies

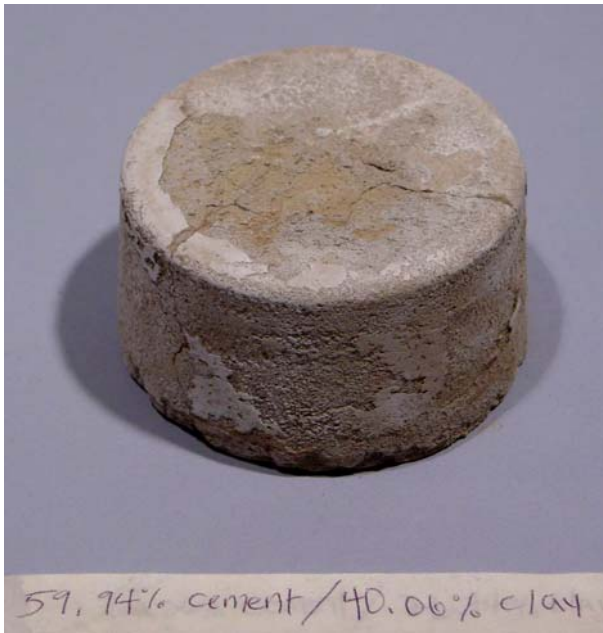
Add:

Development Process: The purpose of this project was to see what happens when Lumnite cement is added to a clay body. CS



Unfired clay/Lumnite combo. Burnished surface is due to casting in a smooth plastic container (burnish disappears during firing).

Cement additions



Name: Megan Thompson
Type: Handbuilding
Color: Various
Texture: Smooth
Cone: 10

Recipe: Base
Grolleg 30
Tile-6 25
C&C ball 5
Kona F-4 20
Flint 10
Pyrax 10
100%

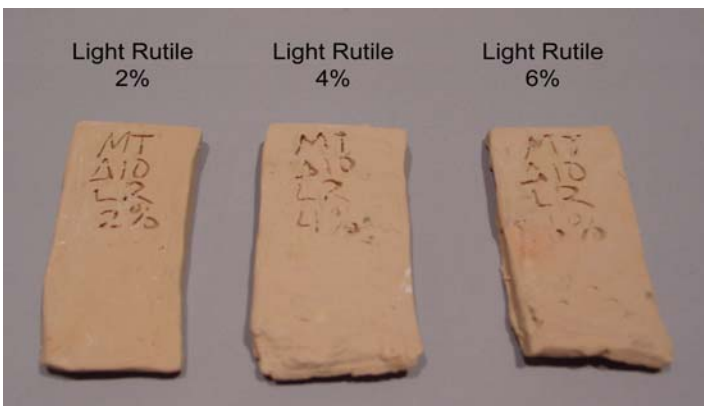
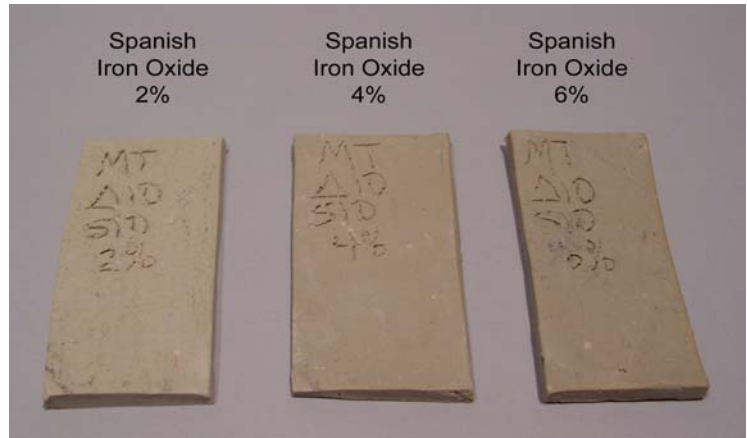
Add: Vee Gum 1
Oxides varies

Development Process: For my final project I created a palette of cone 10 colored porcelains using approximately ten different oxides in different percentages and combinations with each other. Once my palette was established I began testing their reactions to each other through different techniques such as laminating and marbling clay in thrown pieces.

My process involved laminating, or alternating, the white clay body with one of the colored clays until I created the amount of clay I wished to throw with. The throwing process only took approximately two or three pulls before I was forced to finish so that I would not disrupt the colored "swirl" too much. But it was after the piece was trimmed that the colors really came alive.

After the pieces were fired I tested certain glazes on them. Since the pieces were never bisqued (it was simply fired to temperature) they didn't take glaze very easily. The areas that the clear glaze had shown up on really made the colors pop while the other areas were quite muted.

Through trial and error and learning 'what not to do' I learned a great deal about color and oxides and feel that I through this project I became aware of how to apply the knowledge of raw materials to my work.



8% Black Iron Oxide
3% Manganese Dioxide
1% Cobalt Oxide



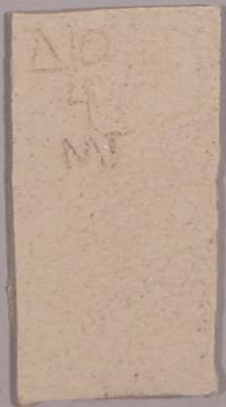
2.5% Cobalt Oxide



7.5% Cobalt Oxide



2% Yellow Ochre



3.2% Pearl Ash

