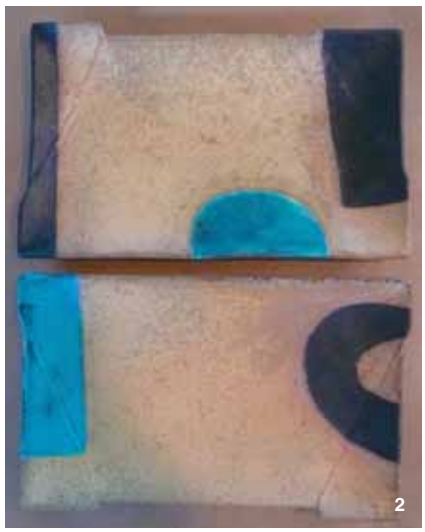
34 ARTICLE

cone 04 clay & glaze

The variegated surfaces that Mark Pharis achieves at cone 04 are the result of layering slip, terra sigillatas and glazes, and applying these using a variety of techniques from dipping to brushing and spraying.



1 Four plates, ram-pressed earthenware, various glazes, including Wood Ash Base with 6% MS 6600 Best Black. **2** Platters, various glazes including Wood Ash Base plus 6% MS 6600 Best Black and Wood Ash Base plus 2% copper carbonate. **3** Pitcher, various glazes including JGS glaze plus 0.5% chrome oxide over Low-Temperature White Slip next to Tan Terra Sigillata plus 0.5% yellow ochre. **4** Surface detail showing JGS glaze plus 1% chrome oxide next to Newman Red Terra Sigillata sprayed over Low-Temperature White Slip plus 3% lithium carbonate. The terra sigillata was sprayed on while the slip was still wet. All pieces were fired to cone 04.

EARTHENWARE CLAY BODY (1–4)

Cone 04

Talc	3.5 %
Mica	3.5
Nepheline Syenite	3.5
OM 4 Ball Clay	9.0
Cedar Heights RedArt	53.7
Newman Red Clay	26.8
	100.0 %
Add: Sand	3.5 %
Yellow Ochre	1.8 %
Barium Carbonate	0.7 %
Bentonite	1.8 %

The barium carbonate is added to reduce scumming on the surface of the fired clay body.

LOW-TEMPERATURE WHITE SLIP (3,4)

Cone 04

Gerstley Borate	16.7 %
Nepheline Syenite	16.7
OM4 Ball Clay	33.3
Silica	33.3
	100.0 %
Add: Bentonite	1.9 %

I use this slip over bisque ware and under glazes. I also use it under various terra sigillatas with the addition of 3% lithium carbonate to the wet slip.

WOOD ASH BASE (1, 2)

Cone 04

Lithium Carbonate	8.8 %
Whiting	4.8
Wood Ash	37.6
Ferro Frit 3124	18.6
Custer Feldspar	15.1
EPK Kaolin	15.1
	100.0 %
Add: Bentonite	2.0 %
For Black	
Add: Masons Stain 6600	6.0 %
For Turquoise	
Add: Copper Carbonate	2.0 %

NEWMAN RED TERRA SIGILLATA (4)

Cone 04–01

Carbondale Red Clay	1 part
Newman Red Clay	1 part
6 Tile Kaolin	1 part
XX Sagger Clay	1 part

I use 2.5 gallons of water, and add 3–4 tablespoons of sodium silicate, mix well, then add enough clay to get to the consistency of 2% milk. Let the mixture settle for 24 hours, then decant the water off of the top. After 24 more hours, siphon off the water again. Next siphon off the middle layer into a separate container. This middle layer is the terra sigillata.

TAN TERRA SIGILLATA (3)

Cone 04–01

XX Saggar Clay	1 part
water	2.5 gallons

Follow instructions for Newman Red Terra Sigillata.

JGS (3, 4)

Cone 04

Bone Ash	7.5 %
Lithium Carbonate	20.4
Whiting	24.7
EPK Kaolin	8.7
Silica	38.7
	100.0 %
Add: Bentonite	7.5 %

I brush this over white slip. It's a good base to use with a variety of colorants. The high lithium content makes application fussy—too thick and it shivers, too thin and the glaze has no body and colors are thin.

Greens

Add: Chrome Oxide .0.5–1.6%

Navy Blue

Add: Mason Stain 6356 or 6383 .. 4.0 %

Black

Add: Masons Stain 6600 6.5 %

Pink

Add: Tin Oxide 6.5 %

The pink will only appear if there is chrome in the kiln to interact with the tin oxide.