RHONDA WILLERS – Weathered Surfaces and Earthenware Handbuliding
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NCECA 2014 – Process Room Demonstration – Milwaukee, Wisconsin – "Material World"

BASICS

Clay body: Red Earthenware with Grog
Firing: Electric Kiln to Cone 03 Bisque with sig applied
Electric Kiln to Cone 04 or 03 Wash firing (if combining with glaze ware fire temp to 03)

HANDBUILING BASICS

Slab-Making Method: Pair of square dowels with grooves cut every 3/8" for smaller works and every ¾" for larger works, wire in grooves for cutting slabs OR "hand tossing" for larger forms/slabs

Drape/Hump Molds: Made using bisque clay molds (earthenware or stoneware)

PROCESS SUMMARY

1. Layout slabs: adding stamp or texture embellishments
2. Drape slabs over molds, leaving excess clay around edge to avoid an over-dry edge
    a. Hand-pat to fit mold (pattern/texture side may be against mold or reversed)
    b. Serrated rib to even out surface, if needed (flexible metal serrated rib, preference)
    c. Soft rubber rib to smooth surface (mudd tool red rib, preference)
    d. Allow to set up to soft leatherhard before removing from mold
3. Trim and treat edge of form
4. Allow to dry to bone dry
5. Apply terra sigillata (brush, spray or quickly dip)
    a. Up to three layers and some additional decorative terra sig brushwork (brushing)
6. Bisque to Cone 03 (any where between cone 02 – 04 works with my particular clay body)
7. Apply wash(es) after bisque
    a. Note: washes can be applied before bisque, they tend to combine and move the terra sig a bit, but sometimes this is desirable
8. Fire again to Cone 04 or 03 (varies depending on additional glaze ware in kiln or if thin layers of glaze are used)
9. Sand under/in water with 600 or 800 grit wet/dry sandpaper

WEATHERED SURFACES INFORMATION

TERRA SIGILLATA (SIG)

Application: Brush, Spray or VERY quickly Dip***Apply to <u>Bone Dry</u> or <u>Leather hard</u> only***May be used at all Temperature Ranges, colors vary at different temperature ranges and firing techniques. Can be applied to the bottom of pieces.*

MAKING TERRA SIGILLATAS:
Quick summary of "how to", refer to articles in reference area of this document on Terra Sigillata for greater details.

1. Mix 1 part Clay to 2 parts Water, blend well with a drill
2. Add ¼ to ½ % (of the dry weight of the clay) of a deflocculant such as Sodium Silicate or Darvan 7 with Drill
3. Allow sig to settle for 6-8 hours (heavier clay, red) to 24-48 hours (lighter clay/ball clays)
4. Siphon the middle section of the mixture, leaving the heavy sludge on the bottom

Useful Amounts To Know:

Blender Batch:
3 cups Water (800Ml): 400g dry clay + small drops of Sodium Silicate Yields: about 500g sig
5 Gal Bucket Batch:
3 1/3 gallons Water: 14 lbs. Clay + 1/4c. Sodium Silicate: Yields: 2 gal. Sig
Large Studio Batch 18 gal. trash can:
100lbs water (12 ½ gallons): 50-lb bag of dry clay + ½ to ¾ c. Sodium Silicate Yields about 7 gallons Sig.

Measure the specific gravity. Desired range of specific gravity: 1.10 – 1.20 Ideal is: 1.15

1. Use plastic cup and triple beam balance (or similar), measure 100g water (remember to tare/zero out scale with cup)
    a. Make mark on cup to indicate 100g water level
    b. Empty cup and refill with sig base to the 100g mark
    c. Weigh sig using beam/scale
        i. Goal: weight should be between 110g and 120g with 115g being ideal

TERRA SIGILLATA RECIPES:
**Colorants are given with the amount per 8oz (1cup) of liquid sig base.*

OM-4 or KT 1-4 Base Sig:
White: 1 tsp. Titanium Dioxide (this will shift warm white to yellow depending on what is applied on top)
Blue, Light: ¼ tsp. Cobalt Carbonate
Blue, Medium: 1 tsp. Cobalt Carbonate
White/Dark Pink: 1 tsp. Tin Oxide (when wash or borax over turns dark magenta to bright magenta)

Grolleg Base Sig:
Yellow: ¼ tsp. Yellow Iron Oxide + 1 tsp. Titanium Dioxide (pink alone, but yellow with glaze/wash over)
Purple, Light: 1 tsp. Crocus Martis *(Standard Ceramic, Pittsburgh-Supplier)*
Purple, Medium: 2 tsp. Crocus Martis
Green, Medium: 3 tsp. Chromium Oxide (Chrome)
Green, Light: ½ tsp. Chromium Oxide (Chrome)

Red Art Base Sig:
Red/Orange: Red Art Sig alone
Black: 2 tsp. Cobalt Carbonate

Red Art & OM-4 (or KT 1-4) Sig Mixed 50/50 wet:
Dark Blue: 1tsp Cobalt Oxide + 1 tsp. Cobalt Carbonate
Richer Yellow: 1 TBS Titanium Dioxide

WASHES-LOW FIRE
*Application: *May be applied before or after Bisque Firing* on top of terra sigillata or other materials as noted below.

Lithium Carbonate + Water (1part : 3 parts)
Use over Terra Sig, Slips and/or Stains
Produces crustier, dry surface
Color varies: ochres, greens, browns

Soda Ash + Water (1part : 3 parts)
Use over Terra Sig and/or Stains
Over Sig will add low satin sheen (similar to salt wash)
Color will shift depending on material (example: white sig turns yellow)

Salt + Water (1part : 3 parts)
Use over Terra Sig and/or Stains
Over Sig will add satin sheen (similar to soda ash wash)
Color will shift depending on material (example: white sig turns yellow)
I use Kosher salt

Borax-*powdered* + Water (1part : 3 parts)
Use over Terra Sig and/or Stains
Will add brownish/gold shiny specks-like glaze spotting

Borax – granular: Dry for sprinkling
Use with Terra Sig, Stains and Glaze
When sprinkled with some density, will create a pool of glassy brown/gold glaze or glass layer. Color changes depending on surface material below sprinkled borax.

References:

Hamer, Frank and Jane. The Potter's Dictionary of Materials and Techniques, Fifth Edition. University of Pennsylvania Press: Philadelphia, 2004.
Terra Sigillata Definition: "Historically, the name for a very fine relief-decorated earthenware with a smooth red gloss finish. The gloss is an exceptionally fine slip coating…The technique was developed in the eastern Mediterranean in the 1st century BC and its development spread with the Roman empire…A terra-sigillata slip can be made from any clay although fine clays are obviously the best."

Pinnell, Peter. *Terra sigillata and patina finishes.* Studio Potter. December 1997. Vol. 26, p18-20

Glaze & Clay Calculation Course Notes (Peter Pinnell, Instructor). University of Nebraska-Lincoln

Feel free to e-mail me: info@rhondawillers.com for additional information