NEAR ENOUGH Is GOOD ENOUGH FOR ANYTHING BUT TERRA SIGILLATA

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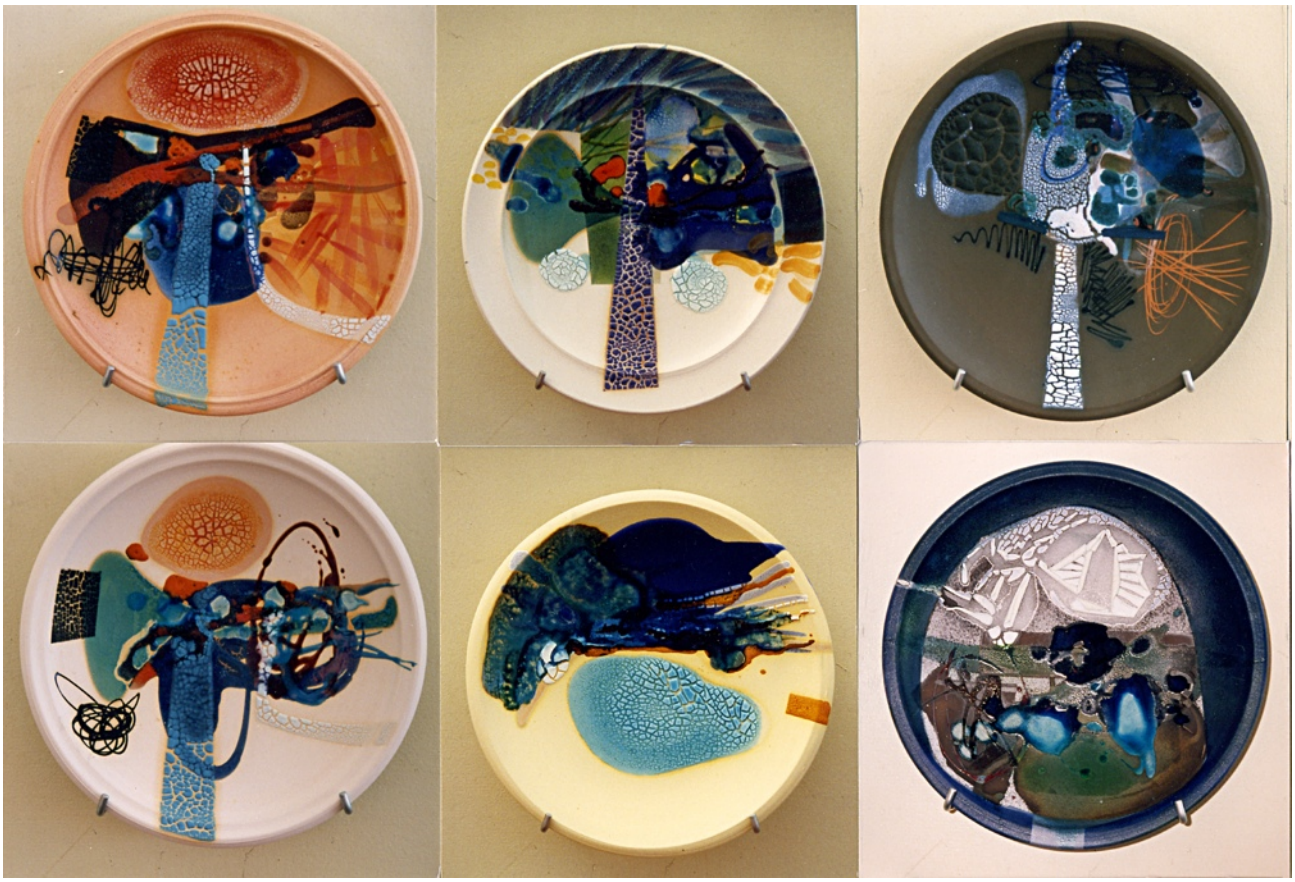
- I've never hesitated to 'round off' numbers in borrowed glaze recipes and I've never seen the point in decimal places either except as a pun. It doesn't seem to make much difference if it's five percent one way or another with the major materials. Another skill that most kiwi potters acquire, without even realising, is that of 'translating' foreign materials like Grolleg, Kentucky 0M4, Albany slip, Kona, Redart and other North American ingredients into local idiom. They find 'near enough' substitutes that usually melt if there's enough heat. Another 'near enough' technique is that of using 'tea-spoon' technology when it comes to weighing out glaze ingredients. Much experimental work can be done by mixing 50/50 or 2:1 in wet slop form in jugs.

- So near enough is good enough, until, it comes to TERRA SIGILLATA.



Sigilatta is used as the base colour on these textured wall pieces

•TerraSigilatta means 'earth seal'. Quite simply it's a slip; a mixture of water and clay where the particles of clay are separated into large and small and the larger, heavier particles thrown away. There are many theories on the best ways of making it and most imply that 'there's nothing to it' while at the same time sounding really dogmatic. On and off for three years of trial and error with dozens of clays, I too have had to become very exact about the method I find best.

- This is the gist: Mix clay and water and a deflocculant; let the mixture settle; pour or syphon off the top layer, to use. Discard the bottom layer.

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- **Now consider the details:**

- Water: Rainwater, or distilled, or filtered water must be used and at least twice as much water as clay more for finer clays.

- Clay: Use very dry powder and weigh the amount carefully. They say any clays can be used and rough dug local clays are highly recommended. Refined clays like china clay or porcelain do not work as easily. Iron-bearing yellow clays perform well and give good colour. My favourites are SC8O and Abbotis Red.

- Deflocculants: These are alkali which are added in very crucial amounts. Gram scales are a must! Using several deflocculants is better than one on its own. Here is a list:
  Calgon water softener, sodium silicate, soda ash, Epsom salts, caustic soda, sodium bicarbonate, sodium hydroxide, washing soda.

- The mixing container: A glass jug or cylinder is definitely the most useful because you can see the sediment and other layers easily after settling.

- The method: Mix the correct amount of clay and water thoroughly in the container. Add the deflocculants and mix thoroughly. What happens is that the electrical charges in the clay particles are neutralised and the particles separate, the larger heavier ones falling rapidly to a sediment at the bottom. The very fine particles float around in the water and stay suspended. This is the 'Sigillata'. Watch the surface of the mixture as you stir in the deflocculants it exhibits a 'marbling' effect very much like you get when stirring aluminium paint (remember?). This is a positive sign that the mixture is working well.
- Settling: Within 10 minutes there should be a dense heavy sediment at the bottom of the container. Leave it overnight
  it seems to take several hours to deposit all the heavy particles then pour or syphon off everything except the heavy sediment, which is thrown away. Let the mixture stand again to settle, then syphon off again. And then again. I find myself dipping a dry greenware shard in early to see how it looks.

- Application: The slip should have a slightly sticky, slippery feel on the fingers. The consistency is usually quite thin, but it can be thickened by evaporation. It can be applied to dry greenware by brush or by spraying. When dry it should look shiny and this quality can be enhanced by very light buffing with a clean cotton cloth. A small amount of baby oil on the cloth may help to get a good shine.

- Firing: A normal biscuit firing to 970^0C is necessary to seal the slip onto the clay surface. Hotter temperatures tend to lose the characteristic shine of terra sigillata.

- Cheating: Three ways of enhancing the shine can be employed.
  1. Mix some borax frit into the slip and ball-mill the mixture for a few hours.
  2. Spray a very thin watery mix of water and borax frit on top of the sigillata surface before firing.
  3. Polish the fired surface with oil.

- Colour: I have successfully used iron oxide, black stain, yellow stain, yellow ochre, rutile and tin oxide to colour the sigillata. I add small amounts to the slip, having first ground the oxides very hard in a pestle and mortar, as they tend to be heavy and sink to the bottom. Another way is to keep the container constantly agitated while the slip is being applied. I think some of the American Mason stains are very fine, but of course not readily available in New Zealand.

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Here are my two recipes:

Water	5 litre
SC8O clay	2OOOgm
Calgon	lgm
Caustic soda	lgm

Water	5 litres
Abotts Red	2OOOgm
Calgon	lgm
Caustic soda	lgm

- Having said all that, I do know people who make terra sigillata without any fuss. Helen P had success first time after verbal instructions on the phone, and 'Sigillata' George simply grabs a jugful of wheel slops, adds a few drops of sodium silicate and jiggles the mixture with a little stick he never fails!

- If you want to read more about terra sigilatta, here are some good references:
  Super-Refined Terra Sigillata - Vince Pitelka web link
  http://ceramic-materials.com/cermat/education/274.html
  Books -
  Lowfire Ceramics: Susan Wechsler
  Clay and Glazes for the Potter, page 294: Daniel Rhodes
  Studio Potter Magazine, June 1983, page 21: Val Cushing
  Primitive Pottery, page 62: Hal Riegger
  Raw Glazing, page 55: Denis Parks
  Ceramics Monthly, February 1988, page 22: Richard Zakin
  Ceramic Spectrum, page 161: Robin Hopper