

Floating Straw Hydrometer

to measure the Specific Gravity of a Pottery Glaze.

What You Need:

- A McDonald's drinking straw
- A dab of silicone sealant
- A 4-gram scrap of lead (or a nail or a bolt ... but about 4 grams)
- A waterproof felt-tip pen to write marks on the straw.

The idea is to fix the little weight inside one end of the straw, sealed in with silicone sealant. Then you can float the straw upright in the glaze, and the numbers on the straw will show the "specific gravity" of the fluid. Floating in pure water, the straw should sink to the mark 1.0, meaning that 1 millilitre of the liquid by volume would be 1 gram by weight. If the straw sinks to the mark 1.4 in your glaze, that means 1 millilitre of glaze weighs 1.4 grams.... and so on.

If you don't have scales suitable for measuring in grams, you can just guess. A 5 cent coin weighs about 3.5 grams, if that helps. A scrap of sheet lead just over 1 millimetre thick, and about 15mm x 20 mm in size, is about right. Just roll it up into a little cylinder and fix it into the end of the straw with silicone. Whatever little object you use, it must go completely into the straw (no bits sticking out) and the end of the straw should be closed completely by the sealant. Leave the top of the straw open if you wish, but don't get liquid inside the straw later when in use.

Float the newly made hydrometer straw in water. It should sink a bit over half way, and float upright. Make a mark at the water level. Now dry the straw and line it up with this chart, so the bottom end of the straw is on the bottom line, and the mark you've made on the straw is against the chart line marked 1.0

The sloping cross-lines on the chart show where to mark the other numbers, 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7

A value of 1.3 to 1.5 is typical for most pottery glazes. The exact value probably matters less than being able to get it the same next time, every time.

