Specific Gravity Hydrometers

Recently, we had to find another source for our hydrometers. We searched high and low and far and wide through websites that had literal hundreds of different types of hydrometers. The one we found presents the scale in a slightly different manner and that has led to some confusion for our customers. We would like to clear up the confusion.

First, a brief explanation as to what a hydrometer does. The instrument measures the density of a liquid relative to water. In the case of glazes they are between a ratio of 1.4 to 1 and 1.6 to 1 with water being 1. Or put another way glazes are between 40 and 60 % more dense than water. All glazes vary around these parameters and there is no precise measurement that is optimum for all glazes. Adjustments are made by adding and subtracting water to the glaze. An individual glaze's optimum reading may also vary slightly determined by bisque temperature, method of application, and variations in firing temperatures from one artist to another. However, if these other variables are kept constant it is possible through trial and error to determine an optimum reading (consistency) for a glaze and to reproduce that consistency over and over again.

We also have some recommendations as to how to use the hydrometer. In a bucket of glaze drop the hydrometer form a few inches above the surface. When it comes to rest slightly shake the outside of the bucket. The hydrometer will rise or fall slightly. When it stops, record the reading. For very thick glazes a quick dip into water before taking the reading may make it a little easier to read. Keep a careful record of readings and firing results. Duplicate your method each time you test and you will quickly determine and optimum consistency for each glaze.

The confusion we discussed above has come about because our new hydrometer is scaled a little differently but the measurements are the same. The old scale read 40, 50, 60 with increments between that would make a reading of 40, 41, 42, 43....49, 50, 51, ...59, 60, 61, 62 etc. The new scale is 1.400, 1.500, and 1.600. This display actually acknowledges what the scale is measuring, that is a ration of the liquid to water. The new scale has twice as many increments between 1.400 and 1.600 achieving a level of precision not really necessary for glazes. Please see the interpretation on the next page.

As you can see the 40, 50, 60 of the old scale correspond to the 1.400, 1.500, and 1.600 of the new scale. The large 50 between 1.400, 1.500, and 1.600 are 1.450 and 1.550 and correspond to 45 and 55 on the old scale.

Hopefully, this explanation will help you reinterpret your old readings onto the new scale. We are sorry for the disruption but some things are beyond our contol.

New Scale

Old Scale

Let's expand the scale to see what it is:

Here are some corresponding readings