

Here is the math and procedure behind our density test on sample 3 and 5.

1. Obtain a calibrated triple beam scale.
 - a. Set the scale to "0" with the immersion chain hanging from the scale and any sample holding hardware immersed in water. This way the chain and hardware are not factored in the test. At no point should the water vessel be moved during testing.
2. While leaving the chain and hardware connected, take the "dry weight" of the sample. Any and all parts of the chain and hardware that were immersed in water when calibrating the scale, must remain in the water as to not put the scale out of calibration.
3. Attach the sample to the chain, being sure to completely immerse the sample in water.
 - a. Be sure to not let the sample touch the side of the water vessel, as this may cause drag and give a false reading.
 - b. Take the "wet weight" of the sample.
4. Dry weight – Wet Weight = Difference.
5. Dry Weight / Difference = Specific Gravity
6. Specific Gravity x 62.37 (SW Constant Density) = 92.245 (the pair correlation function of SW, +/- a variance of 3)
7. It is very important that outside influences such as; ceiling fans, central air conditioning, outdoor breezes, vibrations, and any other disturbances be kept to a minimum. Something as light as breathing on the scale can affect the outcome of the test.

Example:

- Dry weight – 7.9
- Wet weight – 2.3
- Difference – 5.6
- $7.9 / 5.6 = 1.411$
- $1.411 \times 62.37 = 88.00407$
- 92.25 is the SW PCF with a variance or +/- 3 (89.25 – 95.25)
- 88.00 is a 1.25 out of spec.