

## Using the Correct Penetrometer Constant with your Mercury Porosimeter

When performing mercury porosimetry analyses, it is important to use the correct penetrometer constant. The penetrometer stem holds the quantity of mercury that will be forced into the pores of the sample during the run. Since the exact pore volume that has been filled at each pressure reading is needed, it is necessary to know the change in the electrical capacitance as a result of the volume of mercury entering or leaving the stem.

This capacitance is measured in picofarads. A full capillary in a 1.100-cc penetrometer measures a total of about 50.855 picofarads of capacitance, decreasing linearly to 0.000 picofarads when the last droplet of mercury is forced out.

The computer in the instrument uses the penetrometer constant to change the basic capacitance readings into actual pore volume readings according to the entered penetrometer data. Every penetrometer is shipped with a label affixed to its bowl. On this label is printed the constant as well as the serial number for that penetrometer. Be sure to record this penetrometer serial number and its measured constant in a log for future use in penetrometer properties files.

When creating the penetrometer properties file, locate the serial number of the penetrometer you will be using with this file and enter the value for its constant in the **Constant** field.