

AELAB Soil Permeameter TPST-55

I. Application and instructions of penetrameter

This instrument can be used to measure the permeability of clayey soil under variable water head.

II. Structure and performance of penetrameter

The instrument is mainly composed of upper cover, base, socket, ring knife, permeable stone, screw, etc Water supply equipment is not attached to this instrument



III. Main specifications of osmometer,

Sample size	φ 61.8mm, height: 40mm (30cm ²)
Overall dimension of the instrument	φ 118 (excluding the nozzle) is about 155mm high, and the net weight of the instrument is about 5kg.

IV. Operation steps of osmometer

1. Prepare samples according to sd128-012-84 of Ministry of water and electricity, or refer to jtj051-93 specification for highway geotechnical test t013-93
2. Put the permeable stone and sealing ring into the base, apply a layer of Vaseline on the inner wall of the sleeve, put the soil sample ring knife, scrape off the excess vaseline and put it on the base.
3. Put on the sealing ring, water permeable stone, upper cover, and tighten the screw to prevent water and air leakage.
4. Connect the inlet pipe mouth with the water supply device, and connect the water and exhaust to level the instrument,
5. Under the action of water head no more than 200cm, it can be set for a certain time, and the measurement can be started after there is water escaping from the outlet pipe.
6. During the test, flush the water head pipe to the required height, then close the pipe clamp and start the stopwatch. At the same time, measure and record the initial water head H₁. After time t, measure and record the end. The same is the water temperature during the test and at the end,
7. Calculate (variable head) permeability coefficient according to the formula;

$$KT=2.3\log$$

Where: a - cross section area of variable head pipe, square centimeter

L ---- penetration diameter, equal to the height of the sample. centimeter

H₁ ---- water head at the beginning, CM

H₂ -- water head at termination, CM

V. Precautions for penetrameter:

1. The rubber pipe at the outlet pipe of the upper cover is not easy to be sleeved to the root, and more than 6mm shall be reserved to prevent it from being pressed against the sleeve,
2. Clean and dry the sealing ring after each use. The sealing ring should be kept with talcum powder
3. The earth cutting ring knife shall be kept properly to prevent the blade from damage. This instrument is made in imitation of the Jima permeameter. The inner diameter of this instrument is φ 100 + 0.22mm. It can be used to measure the permeability of sand soil and non cohesive soil with a small amount of gravel under constant water head.