



Concrete Pocket Penetrometer

## General Information

Lightweight, spring-reaction type concrete penetrometer for field and lab evaluation of the initial set of concrete mortar, based on ASTM C403. Penetration plunger has a 1/20 sq. in. tip area. Plunger is steadily pushed into the mortar to a 1 in. depth, as indicated on the shaft, at periodic time intervals. Penetrometer's calibrated range is 0-700psi. Resistance in psi is indicated on the scale. The term "initial set" is the semi-hardened, partially hydrated condition of the concrete beyond which it can no longer be worked. The point of initial set is reached when the penetration value is 500psi. Meets ASTM C780.

The H-4134 Concrete Mortar Penetrometer is used for field and laboratory evaluations of the initial set of concrete mortars. The Penetrometer can also be used on light-weight concrete, special roof mixes and concrete additives.

"initial set" of concrete is reached when the penetration resistance is 500 psi (3,448 kPa). "Initial set" is the semi-hardened, partially hydrated condition of the concrete beyond which it can no longer be worked or consolidated by vibration. The test involves forcing the Penetrometer's shaft into the mortar to a depth of 1" (25.4 mm) at constant rate and time intervals. The resistance in psi is shown on the Penetrometer's direct-reading scale.

The 38-2695 (CT-421A) Concrete Mortar Penetrometer incorporates the following features:

- Direct-reading scale from 0 to 700 psi
- Indicator sleeve which holds reading until released
- Lightweight, pocket-size design
- Convenient belt-loop style, canvas carrying case

## Test Procedure

- A. Holding the sleeve of the penetrometer, slide the indicator ring towards the sleeve until the ring touches the sleeve.
- B. Positioning the shaft at right angles to the concrete mortar surface, force the shaft into the mortar to the 1" (25.4 mm) depth mark, scribed on the shaft.
- C. Pull out the penetrometer and take the reading on the scale at the low-reading edge of the indicator ring.
- D. Before doing another test, slide the indicator ring to the sleeve edge.
- E. Take several readings and calculate the average value in psi or kPa if desired.

**NOTE:** Immediately after each penetration test, clean the shaft by wiping off the wet mortar with a piece of cloth.

## Specifications:

Shaft Needle:	Steel 1/20 sq. in. in surface area
Range:	0 to 700 psi
Scale:	Direct-reading; indicator sleeve holds reading until released
Dimensions:	3/4" (19mm) dia. x 7" (178mm) long
Carrying Case:	Canvas, with belt-loop
Weight:	Net 8 oz. (227g)

**Foot for H-4134 Penetrometer— H-4134F (Sold Separately)** For use with masonry mortars to determine board life and initial consistency. Method can be used as a basis for acceptance of mortars. Stainless steel disk, 2.70" (68.58mm) dia. Meets ASTM C780.



## **Warranty**

Humboldt Mfg. Co. warrants its products to be free from defects in material or workmanship. The exclusive remedy for this warranty is Humboldt Mfg. Co., factory replacement of any part or parts of such product, for the warranty of this product please refer to Humboldt Mfg. Co. catalog on Terms and Conditions of Sale. The purchaser is responsible for the transportation charges. Humboldt Mfg. Co. shall not be responsible under this warranty if the goods have been improperly maintained, installed, operated or the goods have been altered or modified so as to adversely affect the operation, use performance or durability or so as to change their intended use. The Humboldt Mfg. Co. liability under the warranty contained in this clause is limited to the repair or replacement of defective goods and making good, defective workmanship.

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