

PORE INDEX VALUE OF AGGREGATE

1. SCOPE -

- 1.1. This method covers the procedure to be followed when testing aggregates to determine their Pore Index Value.
- 1.2. The Iowa Pore Index Test was used as a reference.

2. APPARATUS

- 2.1. Sieves - Sieves used shall conform to AASHTO M 92.
- 2.2. Containers - Containers suitable for holding aggregates without rusting.
- 2.3. Balance - A balance or scale having a capacity of not less than 5000 grams and sensitive to 1 gram.
- 2.4. Oven - An oven capable of maintaining a uniform temperature of $230 \pm 9^{\circ}\text{F}$.
- 2.5. Mechanical Shaker
- 2.6. Pore Index Apparatus - Capable of measuring the amount of water (milliliters) absorbed under 35 psi air pressure. See Illustration No. 1.

3. SAMPLE PREPARATION -

- 3.1. Field samples shall be obtained in accordance in AASHTO T2.
- 3.2. Reduce field sample by AASHTO T 248 to obtain approximately 10,000 grams of aggregate (size; passing 1 inch, retained on ½ inch shall be obtained by sieving over a 1 inch and ½ inch sieve).
- 3.3. Wash the retained aggregate until free of dust.
- 3.4. Dry the sample to a constant mass.
- 3.5. After drying, allow the sample to cool to room temperature.

4. PROCEDURE -

- 4.1. Obtain 9000 grams of prepared aggregate and place into the bowl of the Pore Index apparatus. Place lid on bowl and secure carefully. Close water inlet valve and air vent valve. Check to see if container is air tight by applying 35 psi of air pressure. The container must hold 35 psi with no noticeable drop in pressure. After pressure test, close air input valve and open air vent valve.

NOTE: A test sample mass of 4,500 grams may be used for routine testing. Multiply the Pore Index results by 2 when 4500 grams is tested. A 9000 gram sample is required for referee testing such as pass/fail decisions.

- 4.2. Open water inlet valve. Fill with water to the zero mark. Be sure pressure gage does not move above normal atmospheric pressure. (0 gage reading).
- 4.3. Close water and air vent valves immediately after filling with water to zero mark.
- 4.4. Open air input valve leading to the constant 35 psi air pressure source.
- 4.5. Record water level, R_1 in ml, at precisely one (1) minute after the air pressure was introduced.
- 4.6. Retain constant 35 psi air pressure until 14 additional minutes have elapsed. Record water level, in ml R_{15} , at this precise moment.
- 4.7. Slowly open water output valve (same as input valve) and expel water into drainage system.
- 4.8. Close air input valve and remove lid. Then remove sample.

5. CALCULATIONS -

- 5.1. Subtract one (1) minute reading (R_1) from fifteen (15) minute reading (R_{15}) and record as the Pore Index PI:

$$PI = R_{15} - R_1$$

NOTE: for 4500 gm. sample, $PI = 2 (R_{15} - R_1)$

6. PRECAUTIONS -

- 6.1. A constant air pressure of 35 psi must be maintained during the entire test.
- 6.2. Eye and face protection must be worn when air pressure is applied.

7. REPORT -

7.1. Report results to the nearest whole number.

7.2. When test results are obtained that vary significantly from the source's historical data, the test result must be verified. The unused field sample is to be tested in the same manner as the original test sample. When the original and the verification test results are reasonably close (10 or less for a 9,000 gram sample, 5 or less for a 4,500 gram sample), they are to be averaged to obtain a single reportable test result. When the variability of the two test results is beyond these limits, further investigation will be necessary. Investigation may include checking test equipment, reducing field sample to test sample practices, methods of calculations and/or obtaining an additional field sample to test.

APPROVED

DIRECTOR
DIVISION OF MATERIALS

DATE

02/21/08

APPROVED

Director
Division of Materials

DATE

3/8/04

Kentucky Method 64-623-084

Revised 3/8/0402/21/08

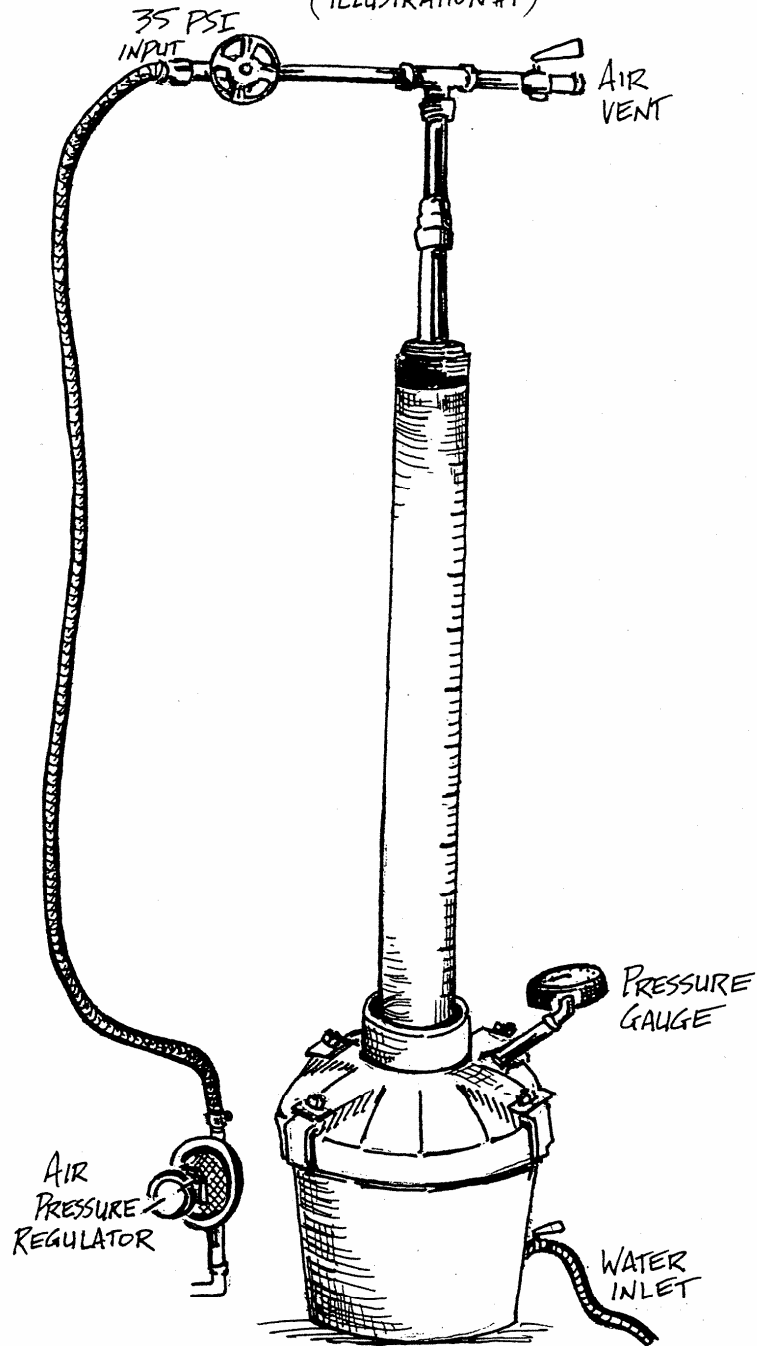
Supersedes KM 64-623-041

Dated 2/16/0403/08/04

Attachment

km623080104.doc

MODIFIED CONCRETE AIR METER
WITH SE TUBE ATTACHED
(ILLUSTRATION #1)



KM 623