



Designation: C1701/C1701M – 09

Standard Test Method for Infiltration Rate of In Place Pervious Concrete¹

This standard is issued under the fixed designation C1701/C1701M; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This test method covers the determination of the field water infiltration rate of in place pervious concrete.

1.2 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

1.4 The text of this standard references notes that provide explanatory material. These notes shall not be considered as requirements of the standard.

2. Referenced Documents

2.1 *ASTM Standards:*²

C125 Terminology Relating to Concrete and Concrete Aggregates
<https://www.astm.org/catalog/standards/sist/7e40ca16-774->
C920 Specification for Elastomeric Joint Sealants

2.2 *Other Standards*

Federal Specification A-A-3110 (TT-P-1536A) Plumbing Fixture Setting Compound³

3. Terminology

3.1 *Definitions:*

3.1.1 The terms used in this test method are defined in Terminology **C125**.

¹ This test method is under the jurisdiction of ASTM Committee **C09** on Concrete and Concrete Aggregates and is the direct responsibility of Subcommittee **C09.49** on Pervious Concrete.

Current edition approved Aug. 1, 2009. Published September 2009. DOI: 10.1520/C1701_C1701M-09.

² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ <http://www.everyspec.com>

4. Summary of Test Method

4.1 An infiltration ring is temporarily sealed to the surface of a pervious pavement. After prewetting the test location, a given mass of water is introduced into the ring and the time for the water to infiltrate the pavement is recorded. The infiltration rate is calculated in accordance with **9.1**.

5. Significance and Use

5.1 Tests performed at the same location across a span of years may be used to detect a reduction of infiltration rate of the pervious concrete, thereby identifying the need for remediation.

5.2 The infiltration rate obtained by this method is valid only for the localized area of the pavement where the test is conducted. To determine the infiltration rate of the entire pervious pavement multiple locations must be tested and the results averaged.

5.3 The field infiltration rate is typically established by the design engineer of record and is a function of the design precipitation event.

5.4 This test method does not measure the influence on in-place infiltration rate due to sealing of voids near the bottom of the pervious concrete slab. Visual inspection of concrete cores is the best approach for determining sealing of voids near the bottom of the pervious concrete slab.

6. Apparatus

6.1 *Infiltration Ring*—A cylindrical ring, open at both ends (See **Fig. 1**). The ring shall be watertight, sufficiently rigid to retain its form when filled with water, and shall have a diameter of 300 ± 10 mm [12.0 ± 0.5 in.] with a minimum height of 50 mm [2.0 in.]. The bottom edge of the ring shall be even. The inner surface of the ring shall be marked or scored with two lines at a distance of 10 and 15 mm [0.40 and 0.60 in.] from the bottom of the ring. Measure and record the inner diameter of the ring to the nearest 1 mm [0.05 in.].

NOTE 1—Ring materials that have been found to be suitable include steel, aluminum, rigid plastic, and PVC.

6.2 *Balance*—A balance or scale accurate to 10 g [0.02 lb].

6.3 *Container*—A cylindrical container typically made of plastic having a volume of at least 20 L [5 gal], and from which water may be easily poured at a controlled rate into the infiltration ring.