



Designation: C 1103 – 03

Standard Practice for Joint Acceptance Testing of Installed Precast Concrete Pipe Sewer Lines¹

This standard is issued under the fixed designation C 1103; 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 practice covers procedures for testing the joints of installed precast concrete pipe sewer lines, when using either air or water under low pressure to demonstrate the integrity of the joint and the construction procedures. This practice is used for testing 27-in. and larger diameter precast concrete sewer lines utilizing rubber gasket sealed joints.

NOTE 1—The user of this test method is advised that methods described herein may also be used as a preliminary test to enable the manufacturer or installer to demonstrate the condition of sewer pipe prior to delivery.

1.2 A complete metric companion to Practice C 1103 has been developed—C 1103M; therefore, no metric equivalents are presented in this practice.

NOTE 2—The owner shall specify the following: who will conduct, observe, and furnish labor, material, and measuring devices and pay for the tests; who is responsible for determining local ground conditions; and whether an air or water test is to be used.

NOTE 3—The user of this practice is advised that test criteria presented in this practice are similar to those in general use. Pipe 24-in. diameter and smaller shall be accepted by infiltration or exfiltration testing utilizing Practice C 969 or by low pressure air testing utilizing Practice C 924. Pipe greater than 24-in. diameter shall be accepted by infiltration or exfiltration testing utilizing C 969.

NOTE 4—The user of this practice is advised that no correlation has been found between air loss and water leakage.

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.* Specific precautions are given in Section 6.

2. Referenced Documents

2.1 ASTM Standards:²

¹ This practice is under the jurisdiction of ASTM Committee C13 on Concrete Pipe and is the direct responsibility of Subcommittee C13.09 on Methods of Test. Current edition approved November 1, 2003. Published January 2004. Originally approved in 1989. Last previous edition approved in 2002 as C 1103–02.

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.

C 822 Terminology Relating to Concrete Pipe and Related Products

C 924 Practice for Testing Concrete Pipe Sewer Lines by Low-Pressure Air Test Method

C 969 Practice for Infiltration and Exfiltration Acceptance Testing of Installed Precast Concrete Pipe Sewer Lines

3. Terminology

3.1 *Definitions*—For definitions of terms relating to concrete pipe, see Terminology C 822.

4. Summary of Practice

4.1 The joint in the sewer line to be tested is covered on the inside of the pipe by a ring with two end element sealing tubes. Air or water, at low pressure, is introduced through a connection on the ring into the annular space between the ring and joint. The amount of air, or water, loss is used to determine the acceptability of the installed sewer line.

5. Significance and Use

5.1 This is not a routine test. The values recorded are applicable only to the sewer being tested and at the time of testing.

6. Safety Precautions

6.1 The use of compressed air is dangerous if a sewer line is not prepared properly and proper procedures are not followed.

6.2 It is imperative that all pressures be relieved completely before the test apparatus is loosened for removal.

6.3 Pressurizing lines for the two end element sealing tubes shall be separate from the lines for pressurizing the void volume created by the joint test apparatus. The pressures required to seal the end element tubes shall be as specified by the apparatus manufacturer, and are greater than the pressure required to test the joint. The line for pressurizing the void volume shall include a 6-psi pressure relief device to reduce hazards and avoid overpressurization.

7. Preparation of the Sewer Joint

7.1 Check the size of access openings to ensure that the test apparatus will fit in the sewer line.