

Technical Information Pamphlet No. 15

Vacuum Testing of Manholes

When the vacuum method of testing manholes is selected, the following test criteria are to be used:

1. This test method is only applicable to precast concrete manholes.
2. All lifting holes and exterior joints shall be filled and pointed with an approved non-shrinking mortar.
3. No standing water shall be allowed in the manhole excavation which may affect the accuracy of the test.
4. All pipes and other openings into the manhole shall be suitably plugged in such a manner as to prevent displacement of the plugs while the vacuum is drawn.
5. Installation and operation of vacuum equipment and indicating devices shall be in accordance with equipment specifications and instructions provided by the manufacturer.
6. The test head may be placed in the cone section of the manhole. The rim-cone joint is not usually tested.
7. A vacuum of 10 inches of mercury shall be drawn. The time for the vacuum to drop to 9 inches of mercury shall be recorded.
8. Acceptance for 4 ft. diameter manholes shall be defined as when the time to drop to 9 inches of mercury meets or exceeds the following:

<u>Manhole Depth</u>	<u>Diameter</u>	<u>Time to Drop 1" Hg</u>
10 ft. or less	4 ft.	60 seconds
10 ft. to 15 ft.	4 ft.	75 seconds
15 ft. to 25 ft.	4 ft.	90 seconds

9. For manholes 5 ft. in diameter, add an additional 15 seconds and for manholes 6 ft. in diameter, add an additional 30 seconds to the time requirements for four foot diameter manholes.
10. If the manhole fails the test, necessary repairs shall be made and the vacuum test repeated until the manhole passes the test. As an alternate method of acceptance, and only with the approval of the engineer, the failed manhole may be tested in accordance with the standard infiltration/exfiltration test and rated accordingly.

11. If the manhole joint mastic or gasket is displaced during the vacuum test, the manhole shall be disassembled and the seal replaced.