

SUGGESTED MANHOLE FRAME SEAL SPECIFICATION

(New Construction w/Internal Seal)

PART 1 GENERAL

1.01 SCOPE

This specification includes the materials and procedures required for the internal sealing of the entire chimney area of all new sanitary manholes, as shown on the attached drawings.

1.02 WORK REQUIRED

- A. An internal flexible rubber frame seal and where necessary, a interlocking extension or extensions, meeting the requirements of this section, shall be used to seal the entire chimney of all sanitary manholes included in this project. The seal and extension or extensions shall extend from the frame casting down to the top of the manhole cone.

1.03 DEFINITIONS

- A. Chimney - The cylindrical variable height portion of the manhole structure used to support and adjust the finished grade of the manhole frame. The chimney extends from the top of the cone to the base of the manhole frame.
- B. Cone - That portion of the manhole structure which slopes upward and inward from the barrel of the manhole to the required chimney or frame diameter.

1.04 SYSTEM DESCRIPTION

- A. Design Requirements - The manhole frame seal shall be designed to prevent leakage of water through the above described portions of the manhole throughout a 50 year design life. The seal shall also be designed so that it can be installed in manholes where the diameters of the frame and chimney differ by up to 20%.
- B. Performance Requirements - The frame seal shall be capable of repeated vertical movement of not less than 2 inches and/or repeated horizontal movement of not less than 1/2 inch after installation and throughout its design life.

1.05 SUBMITTALS

- A. Test Report - A test report from an approved testing agency, showing that the seal meets the performance requirements of Section 1.04 B, shall be provided by each frame seal manufacturer or supplier. The report shall include the results of the following test performed on a test unit on which the frame seal is attached. The test unit shall consist of a watertight base unit, at least 1 unsealed grade ring or brick course and a differentially moveable, unsealed, manhole frame. The Engineer reserves the right to observe the testing.

1. The manhole frame shall be raised 2 inches and moved laterally 1/2 inch. The frame shall be held in this position for a minimum of 100 hours, after which it is returned to its normal position.
2. The same test unit is then placed in a water tank filled to just below the top of the frame. The frame shall then be raised 2 inches and lowered back down through a minimum 30 cycles. The frame is then raised 2 inches and held in that position while the frame is moved laterally 1/2 inch. The frame is then returned to its normal position to complete the test.

The seal shall remain in place and watertight throughout the duration of the test. Any displacement, dislodgement or leakage of the seal shall be cause for failure. Any seal that fails the test may be reworked and retested.