

FLEX-SEAL UTILITY SEALANT®

Technical Specification Internal Manhole Adjustment Ring Sealing System

1.1 Scope of Work

The work covered by this item includes but is not limited to furnishing all labor, equipment, materials and supervision, and performing all work necessary to seal the manhole as specified herein. The work under this item includes the installation of Flex-Seal Utility Sealant internal manhole adjustment ring sealing system and accessories to the manhole through the frame joint area and the area above the manhole cone, including all extensions to the chimney area, as manufactured by Sealing Systems Inc., 23230 W. Thomess Blvd. Loretto, MN. 55357 or an approved equal.

1.2 Area of Work

The work shall be performed in manholes as directed by the Owner's representative. The manhole sealing work will require an internal adjustment ring seal to be installed. The internal manhole sealing system may be required to be installed in manholes without easements. The manhole adjustment ring seal shall be installed after the manhole has been relined or if relining is not specified ring sealing shall be one of the first items of work and shall begin no later than _____. The work shall progress continually until complete. Work on this shall be done during warm and dry weather as per the manufacturer's recommendation.

1.3 Internal Manhole Seals

(A) SEALS- manhole seal shall be designed to prevent leakage of water into the manhole through the frame joint area and the area above the manhole cone including all extensions to the chimney area. Extensions shall include but is not limited to lifting rings, brick and/or block material that may have been used to achieve grade. The seal shall remain flexible allowing for the repeated vertical or horizontal movements of the frame due to frost lift, ground movement or the thermal movement of pavements. The final liner material shall be made no less than 160 mils. of corrosion resistant aromatic flexible urethane resin coating to be applied to the inside wall of the entire chimney area as described above. Mil thickness may vary depending on the local climate. The contractor should contact the manufacture for thickness recommendations. The product shall have a minimum elongation of 800% and a hardness (Durometer) of 75. Final liner shall have a minimum tensile and adhesion strengths of 1150 psi and 175 lb. /in. respectively. The manhole sealing system shall conform to the physical requirements of ASTM D- 412. The sealing system shall line the interior of the adjustment area from the cone/top of the manhole and onto the inside of the casting. **The manhole seal shall cover a minimum of 12 vertical inches or a minimum of 1 kit per manhole. Additional kits can be used if excessive riser rings are present.**

(B) INSTALLATION - All loose and protruding mortar and brick that would interfere with the seal's performance shall be removed. Any lips for gravel pan supports shall be cut off flush with casting. Profiling cement, shall conform to requirements of the manufacture. Any profiling cement work will require the contractor to contact the sealant manufacture to determine in writing the proper time required for the cement to completely cure prior to installing this item. Preparation of surface should include sandblasting and pressure washing or use of a water blasting machine that delivers the water with a sandblaster attachment in a steady stream at a minimum of 3500 psi. Active leaks (infiltration) must be corrected by a method approved by the Engineer prior to installing an Internal Manhole Seal. After water sandblasting, pressure wash the entire area remove any loose sand that may have been deposited. The substrate surface must be free of sand, loose debris, latencies, dust, oil, grease or chemical contamination. A blower or torch may be required to completely dry the substrate surface or as recommended by manufacture. Flex-Seal Utility Sealant or approved equal may require the proper mixing of agents, as recommended by the manufacture's instructions. Ensure casting and structure surfaces are clean and dry where the primer is intended to adhere. After allowing for proper drying of primer to occur, sealant may be applied by brush as evenly as possible over the entire chimney area, that includes the frame joint area and the area above the manhole cone including all extensions to the chimney area. The contractor is to furnish the Engineer (2) mirrors with extension handles that can be used to inspect sealant application to areas underneath frame without entry of manhole. These items will become the property of the owner upon completion and at no additional cost of this item. Cost for these items shall be included in the bid items for internal manhole sealing work.

1.4 Training/Manufacture's Certification

The manufacture must in writing certify that each of the contractor's representatives are approved to install Flex-Seal Utility Sealant or approved equal for this item. The training shall be included in the bid items for internal manhole seals. **Contact the manufacture representative D.A. Van Dam & Associates (888-818-0016) for pricing and certification.** After certification, each crew member certified will be supplied with a certification wallet card for easy verification of certification by inspectors.

1.5 Submittals

The contractor shall submit shop drawings in accordance with the General Contract Conditions. The manufacture's specifications for the materials and method for proposed installation of this item shall be submitted to the Engineer for the approval before internal sealing work commences.

1.6 Measurements and Payment

The work specified under this item shall be paid for the unit price bid per manhole depending on the depth of each seal applied. The depth of each seal will be recorded as the distance from the manhole frame joint to the top joint of the manhole cone for which final liner material is to be applied. Fractional measurement will be rounded down to the nearest whole number as reported in inches (example; payment for seal depth of 12-3/4 inches will be included with 12 inch distances). Payment will include all labor, material and sealant system accessories for this item. Payment for seals reported to be greater then 12 inches will be paid according to Pay Item No. _____. Payment under Item Nos. _____ and _____ shall constitute payment in full for installing Internal Manhole Seals by this method.