

SECTION 02603

COATINGS FOR NEW MANHOLES AND WASTEWATER STRUCTURES

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. This specification covers the materials and application of an epoxy filler-surfacer, a fast setting cementitious substrate resurfacer, an epoxy primer/sealer, a corrosion-resistant elastomeric polyurethane lining, and an elastomeric fiber reinforced urethane chimney seal for protection of municipal wastewater manholes and wet wells subject to water infiltration, corrosion and erosion.
- B. All products required to complete this application shall be in accordance with manufacturer's recommendations, specifications and installation requirements must be adhered to.
- C. The products detailed in this specification shall be used to protect new concrete manholes, steel rings and covers, wet wells, lift stations and other wastewater concrete infrastructure involved in municipal wastewater collection and treatment.
- D. The scope of work shall include the following:
 - 1. Surface preparation in accordance with Part 3.0 of this specification.
 - 2. Filling of all voids and bug holes with an epoxy filler-surfacer or a cementitious substrate resurfacer.
 - 3. Grouting of joints and around pipes with a fast setting cementitious substrate resurfacer.
 - 4. Application of a 4.0 mil epoxy primer/sealer.
 - 5. Application of a 50.0 mil thick elastomeric polyurethane corrosion/erosion resistant barrier.
 - 6. Sealing of chimney area in manholes to stop infiltration at frame and grade ring juncture.
- E. The following new wastewater structures shall be coated in accordance with specification 02603:
 - 1. All wetwells.
 - 2. All manholes receiving forcemain discharge.
 - 3. All manholes immediately upstream of wetwells.
 - 4. All drop manholes.

PART 2 PRODUCTS

2.01 MATERIALS

- A. The epoxy filler-surfacer shall be the Sauereisen F-121 Substrate Resurfacer for sealing and filling porous and irregular cementitious surfaces, or approved equal.
- B. The fast setting cementitious grout for the joints shall be the Sauereisen F-121 Substrate Resurfacer, or approved equal.
- C. The epoxy primer/sealer shall be the Carboline Phenoline 311 epoxy primer, or approved equal.
- D. The chemical-resistant elastomeric polyurethane lining shall be the Carboline Reactamine 760, or approved equal. The linings shall be a solvent, VOC and HAPS free polyurethane system designed specifically for protection of concrete in municipal wastewater collection and treatment systems. All polyurethane systems must have proven successful applications in the wastewater industry.
- E. In manholes, upon completion of cementitious and/or elastomeric polyurethane lining systems on the interior walls, an elastomeric lining composed of fiber reinforced, asphalt modified urethane shall be applied to the interior of the chimney area from the top of the manhole lid frame and down past the grade ring. The elastomeric lining shall be the Sauereisen F-88 Chimney Seal, or approved equal.

PART 3 EXECUTION

3.01 AREA PREPARATION

- A. Temperature of Working Area - Optimum temperature for handling and applying the materials is 60-80°F. Store material within the 60°F to 80°F range for 48 hours prior to use. At material temperatures below 60°F, the application becomes more difficult and curing is retarded. At temperatures above 85°F material working time is reduced.
- B. Application of epoxy and polyurethane products in direct sunlight and/or with rising surface temperatures may result in blistering of the materials due to expansion of entrapped air or moisture in the concrete.
- C. Concrete surfaces that have been in direct sunlight must be shaded for 24 hours prior to application and remain shaded until the initial set has taken place. When the surface temperatures are rising, it may be necessary to postpone the application or apply during the cooler evening hours.
- D. All structures to receive specified products must be properly designed and capable of withstanding imposed loads. Steel surfaces must be abrasive blasted in accordance with SSPC-SP6 Commercial Blast Cleaning. Concrete surfaces must be abrasive blasted in accordance with SSPC-SP13 Surface Preparation of Concrete to remove all laitance, loose or damaged concrete, oils greases,

chemical contaminants and previously applied coatings or sealers. Suitably prepared concrete should have a uniform surface texture resembling coarse sand paper. The blasting abrasive shall be a low free silica product such as Dupont Starblast.

3.02 APPLICATION

- A. All specified products must be installed in strict accordance with installation instructions detailed on manufacturer's product data sheets and other pertinent data, which shall be included as submittal data.
- B. All specified products must be installed by qualified and trained applicators in accordance with this specification.
- C. All structures shall be coated prior to being installed in ground. The joints shall be coated upon installation.

3.03 CONTRACTOR PRE-QUALIFICATION

All CONTRACTORS must obtain written documentation from manufacturer that they are qualified to install the specified products required in this specification and submit this written confirmation to the Town engineer.

3.04 CLEAN-UP

Consult product data sheets for all information pertaining to clean-up of specified products.

3.05 SETTING/CURING

Setting and curing of specified products shall be in strict accordance with instructions detailed on manufacturer's product data sheets.

3.06 SHELF LIFE

Consult manufacturer for specific details on shelf life and provide documentation that all products are within the shelf life limitations specified by the manufacturer.

3.07 CAUTION

Conform to all warnings on product Material Safety Data Sheets and consult container label caution statements for any hazards in handling these products.

END OF SECTION