



**PIMA COUNTY  
WASTEWATER MANAGEMENT DEPARTMENT  
DIRECTIVE**

Directive: ENG2006-15

Effective Date: December 31, 2006

**Revision 1**

**Effective Date: September 24, 2007**

**Changes: Backwater Valve removed from the requirements**

**SUBJECT: Manhole Interior Coating Requirements**

**STATEMENT OF PURPOSE**

Unprotected concrete manholes on sewer pipe of 18" diameter and greater and at force main discharge locations are at risk for exposure to hydrogen sulfide gas and acid corrosion. PCWMD desires to protect the useful life of such public assets by coating the "at-risk" concrete surfaces (see Standard Details WWM A-2.22, WWM A-3.5.a. and WWM A-3.8.a), while also considering worker and system safety, and economies of scale. Coatings are to be applied per COT/Pima County Standard Specifications for Public Improvements (Section 509 Sanitary Manholes-2.09 Coatings). This Directive defines when manhole coatings are required at the time of construction, and when it is prudent to postpone coating until a system-wide coating rehabilitation program can perform the work in a more effective and efficient manner.

**GENERAL PROVISIONS**

1. The installation or full reconstruction of concrete manholes over sewer pipe 18" diameter and greater shall include interior coating during construction. All new manholes constructed within 200 feet of the new installation, which are open to gas migration from the large-diameter sewer, shall also be coated during construction.
2. The tapping of an existing manhole over a sewer pipe 18" diameter and greater, with an 8" sewer or smaller shall be excluded from coating at the time of connection, as well as the coating of new manholes within 200 feet of the connection.
3. All force main discharge connections shall require coating of the receiving manhole during construction/connection.
4. Coatings shall be applied to all exposed interior surfaces, and if full by-pass flow management is required for the connection, the invert shall also be coated at the time of by-pass. The requirement for coating shall not dictate flow management requirements.
5. Reasonable means and methods shall be used to avoid the entry of foreign matter into the public sewer. Wood platforms with fine-mesh drain screens on the bench, or flow-through plugs are acceptable options. All means and methods to protect workers over an active sewer shall be incorporated into the safety plan.
6. A coating bond shall be required for the acceptance of the manhole. The bonding period for the application of manhole interior coatings (labor and materials) from the Prime Contractor is three (3) years. Due to the limits on available bonding terms, the Contractor may supply a two-year bond, followed by a one-year bond. The product warranty requirement remains at five (5) years. It shall be the responsibility of PCWMD to conduct an inspection of the coating and request any necessary corrections from the bonded firm prior to expiration of the bond.

AUTHORITY

Arizona State Regulations, Pima County Ordinances and other enabling legislation, which affect the collection, conveyance, treatment, and control of sanitary sewage.

PROCEDURE

The design engineer is responsible for ensuring that all coating requirements are noted on the sewer improvement plan or private development plan, and that coatings required at the time of construction are clearly identified. Regardless of the design engineer's notations or lack thereof, the coatings shall still be required per this Directive. This Directive is in full effect on the effective date.

PROCEDURAL RESPONSIBILITY

The Manager of Sanitary Engineering of Pima County Wastewater Management, and/or designated representative(s), is responsible for the enforcement of this Directive and the associated Standards.

**RECOMMEND**



Eric Wieduwilt, P.E.  
Manager of Sanitary Engineering

**CONCUR**



Mike Bunch  
Deputy Director- Planning/Engineering

**APPROVED**

 FOR

Michael Gritzuk, P.E.  
Director- Pima County Wastewater Management



Date