



# Iowa Department of Transportation

## SPECIAL PROVISIONS FOR ANTIMICROBIAL ADDITIVE FOR CONCRETE STRUCTURES

Pottawattamie County  
IM-NHS-29-3(102)48--03-78

Effective Date  
December 16, 2014

THE STANDARD SPECIFICATIONS, SERIES 2012, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SPECIAL PROVISIONS AND THEY SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

### 120225.01 GENERAL.

- A. This specification covers the requirements for using a liquid additive for concrete structures where corrosion resistant concrete is needed to resist microbiologically induced corrosion (MIC).
- B. **Submittals.**
  - 1. Technical data sheet on each product used, including ASTM test results indicating the product conforms to and is suitable for its intended use per these specifications.
  - 2. Manufacturer certification that Precaster or Redi Mix supplier has been trained and approved in the handling, mixing and application of the products to be used.
  - 3. Product specific guidelines and recommendations for each product to be used.
  - 4. Mix design approval from the manufacturer of the antimicrobial additive.
- C. **Acceptance.**

Acceptance shall be a letter of certification from the precaster to the project owner stating that the correct amount and correct mixing procedure were followed for all antimicrobial concrete, as specified by the antimicrobial additive manufacturer.
- D. **Quality Assurance.**

The precaster shall retain two labeled specimens from each production run. One set shall be retained by the precaster and the other set shall be sent to the additive manufacturer or independent laboratory as directed by the engineer for verification on a random or as needed basis.

**120225.02 MATERIALS.**

- A. Antimicrobial additive shall render the concrete uninhabitable for bacteria growth.
- B. The liquid antibacterial additive shall be an EPA registered material and the registration number shall be submitted for approval prior to use in the project.
- C. The antimicrobial additive shall have successfully demonstrated prevention of MIC in sanitary sewers for ten or more years.
- D. The mix design used shall be approved by the manufacturer of the antimicrobial additive to assure the compatibility with all other admixtures, chemicals, and minerals.
- E. Grade rings used in conjunction with antibacterial additive fortified structures shall also contain the antibacterial additive.
- F. All concrete containing an antimicrobial additive shall have a colorant additive added per manufacture recommendations for visual verification.
- G. Grout for field repairs shall be as recommended and/or produced by the same manufacturer as the antibacterial additive used in the structures.

**120225.03 CONSTRUCTION.**

- A. Additive shall only be used by factory certified precast concrete plants.
- B. The additive shall be added into the concrete mix water to insure even distribution of the additive throughout the concrete mixture.
- C. The amount to be used shall be as recommended by the manufacturer of the antibacterial additive. This amount shall be included in the total water content of the concrete mix design.
- D. Repair grout may be used for filling joints, lift holes, damaged areas, setting grade rings, benches and similar. Preparation and application of grout shall be per the manufacturer's recommendations.

**120225.04 METHOD OF MEASUREMENT.**

Antimicrobial additive will not be measured for payment.

**120225.05 BASIS OF PAYMENT.**

Payment shall be included in the unit price for each manhole.