



SUGGESTED SPECIFICATIONS FOR PRECAST CONCRETE PIPE AND MANHOLES

Additions to ASTM C76 Standard Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe and ASTM C 478 Standard Specification for Precast Reinforced Concrete Manhole Sections where corrosion resistant concrete is needed to resist microbiologically induced corrosion (MIC) of concrete pipe and manholes in sanitary sewers.

Antimicrobial Additive:

- Antimicrobial additive, Con^{mic}Shield[®], shall be used to render the concrete uninhabitable for bacteria growth.
- 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.
- 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.
- The additive shall be added into the concrete mix water to insure even distribution of the additive throughout the concrete mixture.
- The antibacterial additive shall have successfully demonstrated prevention of MIC in sanitary sewers for ten or more years.
- The antibacterial shall be used by factory certified precast concrete plants.

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.

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 CONSHIELD Technologies, Inc. or independent laboratory as directed by the engineer for verification on a random or as needed basis.

Field Repairs: Field repairs to the precast concrete shall be made using Con^{mic}Shield[®] Joint Set Grout pre-portioned and factory packaged that requires the addition of no other components. This repair grout may be used for filling joints, lift holes, damaged areas, benches and similar.

Product Surface Marking: The name of the antimicrobial additive shall be plainly stenciled on the exterior and interior of each piece. The contractor shall spray CS IDENTIFIER[™], green colored sealer, onto the interior surface after installing.

Note: Con^{mic}Shield[®], liquid antimicrobial additive is available from CONSHIELD Technologies, Inc. EPA Registration 75174-2-47000; Phone: **(877) 543-2094**