



SUGGESTED SPECIFICATIONS FOR SHOTCRETE FOR REHABILITATION OF PIPE, MANHOLES AND SIMILAR SEWER STRUCTURES

Additions to Project Specification where corrosion resistant shotcrete is needed to resist microbial induced corrosion (MIC) of sewer pipes, manholes and similar concrete structures.

Antimicrobial Additive:

- Antimicrobial additive, Con^{mic}Shield[®] shall be used to render the shotcrete 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 shotcrete mix design for wet mix shotcrete.
- For both wet and dry shotcrete, the additive shall be added into the shotcrete mix water to ensure even distribution of the additive throughout the shotcrete.
- The contractor performing the shotcrete work shall submit a letter of certification to the project owner stating that the correct amount and correct mixing procedure was followed for all antimicrobial shotcrete.
- 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 applicators.
- For rehabilitation of existing sewer structures, Con^{mic}Shield[®] solution shall be spray applied to the cleaned and prepared interior surface prior to applying shotcrete to ensure removal of all residual bacteria.
- Con^{mic}Shield[®] color identifier-indicator (CS Identifier[®]) shall be spray applied to the surface after the initial set.

Acceptance: Acceptance shall be a letter of certification from the concrete provider to the project owner stating that the correct amount and correct mixing procedure were followed for all antimicrobial concrete.

Quality Assurance: The contractor shall retain two labeled specimens from each batch. One set shall be retained by the contractor 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.

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