

PROJECT OVERVIEW

DC Water engineering had identified a route along Kingle Road in Washington, D.C., where the sewer pipe was in need of rehabilitation. Though the pipe diameter was below the threshold for standard application parameters for a spray lining, the client specified the use of a geopolymer for the manhole rehabilitation portion.

The 72" (1830mm) diameter manholes to be repaired were brick and had suffered deterioration, resulting in cracked and missing mortar, leaks and water infiltration, and several were in structural distress.

Inland Pipe Rehab was selected as the contractor for the CIPP portion of the pipe repair and applying the GeoSpray geopolymer material.

SOLUTION

The GeoSpray geopolymer was specified for several reasons:

- Superior microbial-induced corrosion resistance experienced in sanitary sewer environments compared to OPC materials
- Proven field performance in manhole rehabilitation without cracking that can be experienced with CAC products
- Superior flexural and tensile properties
- Reduced time for surface preparation and compared to epoxy or polyurethane-based solutions

The GeoSpray mortar was applied using a vertical centrifugal spinning system. Voids in the brick manholes were first repaired with a hydraulic cement. Where necessary, a chemical grout was first injected to stop any running water infiltration through the voids. A 1" (25mm) thick application was applied to create a structural repair.

RESULTS

The project was completed on time and within budget.

PROJECT DETAILS

Location: Washington, D.C., USA

Application: Municipal Pipe and Manhole Rehabilitation

Client: DC Water

Installation: March 2017

Installer: Inland Pipe Rehab, LLC



Like-new manhole and bench after GeoSpray mortar application.



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GEO SPRAY[®]

Geopolymer Mortar



CASE STUDY: Washington, D.C. Manhole Rehabilitation



Completed manhole.



Manhole prior to spraying.



Start of GeoSpray mortar application.



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