

City of Houston: 72" CIPP and EcoCast Restoration

Owner: City of Houston



Situation

The City of Houston's internal structure showed signs of advanced corrosion. BRH-Garver construction – a contractor with the City of Houston's Public Works Department was assigned to remove a failing reinforced concrete pipe. During the removal process, BRH-Garver discovered areas of corrosion within the concrete pipe. Through a CCTV inspection, the corrosion on the 72 in. x 58.5 mm liner buried between 30 ft. to 50 ft. deep under Aldine Road in Northeast Houston was confirmed.

Solution

In July 2015, Inland Pipe Rehabilitation was chosen for the project. The preferred method was to use a cured-in-place pipe (CIPP) corrosion-resistant lining. Due to its non-disruptive nature, CIPP is generally considered a "green" technology and is the most widely specified form of trenchless pipeline rehabilitation. The initial scope included the cleaning and rehabilitation of approximately 4,202 LF of pipe using CIPP technology to provide a long-term solution at an affordable cost to taxpayers. In May 2016, IPR started its installation of the CIPP. The CIPP installation took 9,000 hours to complete using two six-man crews working day and night shifts.

One major challenge was the truck access to the remaining 1,216 LF of the pipe. The pipe was located within an underdeveloped, wooded area and large, heavy trucks required for CIPP installation became inaccessible. Instead, IPR proposed using EcoCast, a high-strength fiber-reinforced geopolymer lining system. A six-man crew spray-applied the custom formulated geopolymer, called GeoSpray® mortar to a thickness of 2 inches, which formed a crystalline structure providing a lower porosity and surface durability.

Conclusion

IPR was able to thoroughly restore the integrity of the sanitary trunk sewer, completing the rehabilitation on time and within budget over a seven-month period. The City of Houston recognizes the significant cost benefits of the rehabilitated pipelines. The city plans to use IPR's solutions and services for future projects to come.

Location

Houston, Texas

Installation Date

May 2016

Scope

2,986 LF of 72" CIPP
1,216 LF of 72" EcoCast

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72" CIPP Liner Resin Impregnation Process



72" CIPP Liner Wet Out Process



72" CIPP Inversion Process



CIPP Installation Site