

CASE STUDY



FEATURING



PROJECT SNAPSHOT

Project Location

- 420 4th St., Seattle, WA

Description

- Weekend, emergency repair. CIPP lining of 40' leaking and blocked lateral extending from building.

Contact

- James Tryon
Project Manager, Vortex Services
jtryon@vortexcompanies.com

PRODUCT INFORMATION

Base Resin

- QB 31 — Quad-Cure 100% Solids Base Resin

Hardener

- QX 3160
- Gel Time: 60 min.
- Work Time: 75 min

Mixing Ratio

- 3:1 — 3 parts QB31 to 1 part QX3160

ASTM Testing

- ASTM D695 Compressive Strength - 5500 psi
- ASTM D638 Tensile Strength - 4597 psi
- ASTM D38 Tensile Elongation - 5.1%
- ASTM D790 Flexural Strength - 10,159 psi
- ASTM D790 Flexural Modulus - 339,289 psi

QUAD-CURE® LINING SYSTEM, FEATURING CIPP LINER AND RESIN, USED FOR EMERGENCY LATERAL REPAIR BELOW SEATTLE SIDEWALK

Flexible Liner and Quick Curing Epoxy Resin Eliminate Need to Dig Up Sidewalk, Avoid Buried Utility Disruption

SOLUTION

Quad-Cure® CIPP Resin and Lining Recommended to Fully Rehabilitate the Lateral

After the roots had been cut and removed from the 40' long 6" diameter lateral, the Vortex Services crew inserted a pre-saturated the non-woven Quad-Cure liner and resin system to reline the lateral. The non-woven liner was specified so it could navigate the tee without causing harm to the calibration or the cleanout. Specifically, the Quad-Cure 31 base resin and 3160 hardener were used to give the crew the work time needed in this unique situation. In this case



With limited access due to the trees and sidewalk, the lateral and main could only be replaced by the Quad-Cure® CIPP method.



Quad-Cure® 3100 resin system being mixed prior to wet out of the liner.



SOLUTION (CONTINUED)

Quad-Cure 3160 allows for a 75 minute work time for each shot. It also cures extremely well using the traditional water cure method and met the CIPP performance specifications as required by the city of Seattle.

Vortex Services conducted two 20 shots over the weekend and was able to immediately return the lateral line to service after the calibration tubes were removed and post video inspection verified the liner was properly cured and in place.

MORE ABOUT THE QUAD-CURE® LINING SYSTEM

Quad-Cure 31 is a 100% solids epoxy CIPP resin system developed to meet all specifications for a fully structural Cured-In-Place Pipe (CIPP) liner and conforms to ASTM F1216. When combined with Quad-Cure Hardeners, it will achieve a fully cross-linked system for a high quality, long-term pipe relining solution.

It is important to note that Quad-Cure resins and hardeners are specifically designed for CIPP applications and has not been modified from another industry resin in attempt to fit the complex environmental, design and performance needs required in underground rehabilitation industry.



CIPP liner preparation prior to insertion into the lateral.