

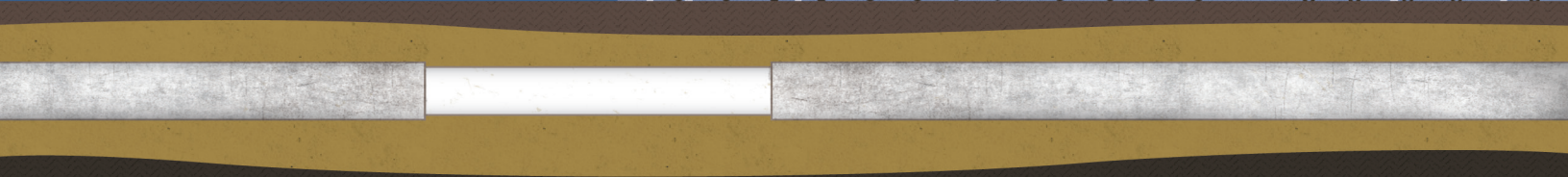


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CASE STUDY:

SLIPLINING WITH FLOWTITE® FRP IN COMPLEX SEWER REHAB PROJECT

HOLLYWOOD



THE FIRST CHOICE OF ENGINEERS



WORLDWIDE

BACKGROUND

The City of Los Angeles planned to rehabilitate a pipeline that had been in service since 1924 and was now in dire need of repair. The initial plan would have involved open-cut trenching and significant disruption to a downtown intersection, already burdened with some of the busiest traffic in L.A.

PROBLEM

This 1.5-mile-long project included a 90-degree curve section (175' long with a 110' radius) running directly under the 4th Avenue at Slauson intersection. The contract documents called for considerable traffic inconvenience during four separate phases of temporary striping and signal work, which would have meant countless unnecessary hours of delays for drivers.



THE ORIGINAL CLAY-LINED RCP SEWER

The contractor, Mladen Buntich Construction Co. Inc. (MBC), instead proposed a sliplining approach that would eliminate two of the four phases of traffic control. However, sliplining a pipe with a 90-degree bend would mean utilizing some creative engineering work and pipe sections that would be able to do the job.

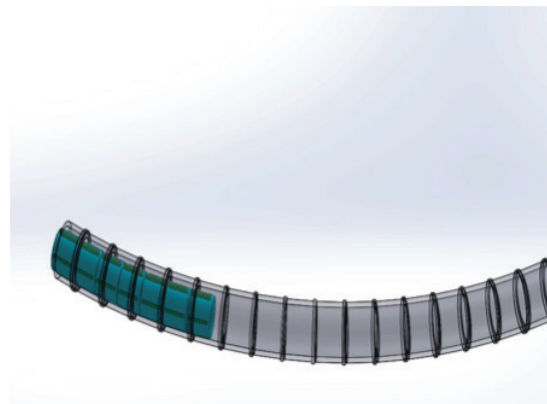
MBC chose to use a manned entry approach to create a pipe that would maintain outstanding integrity around this sharp bend. In many cases, contractors will attempt to push slipline pipe

through curved sections of old pipe, but this is difficult when navigating curves. The situation was further complicated in this case because the existing curvature and condition of the host pipe was documented years ago in “as-built” drawings. Most slipline pipes allow a deflection of no more than 3%, while many existing installations in the U.S. have curved sections with deflections of 5% or more.

After careful inspection of the existing 75" pipe, MBC found that it was pulled anywhere from three to ten inches, and each gap filled with a brick-and-mortar mix. MBC would need pipes supplied in short sections, which could be custom-fit onsite to form strong lasting liner pipe.

SOLUTION

Thompson Pipe Group – Flowtite manufactures Flowtite® FRP using the continuous mandrel winding process, which results in a pipe with good hydraulic performance, excellent mechanical properties and high corrosion resistance. This process also allows individual pipes to be produced in custom lengths. It was this ability that made Flowtite® ideal for this application. Thompson Pipe Group – Flowtite's Louisiana plant was able to produce Flowtite® in short 66"-diameter sections that would allow the contractor to create the curve.



MITERED JOINTS TO CREATE THE BEND

After a thorough survey of the existing curvature and condition of the host pipe, MBC was able to design a list of mitered sections that would allow for the joint deflection and fit within

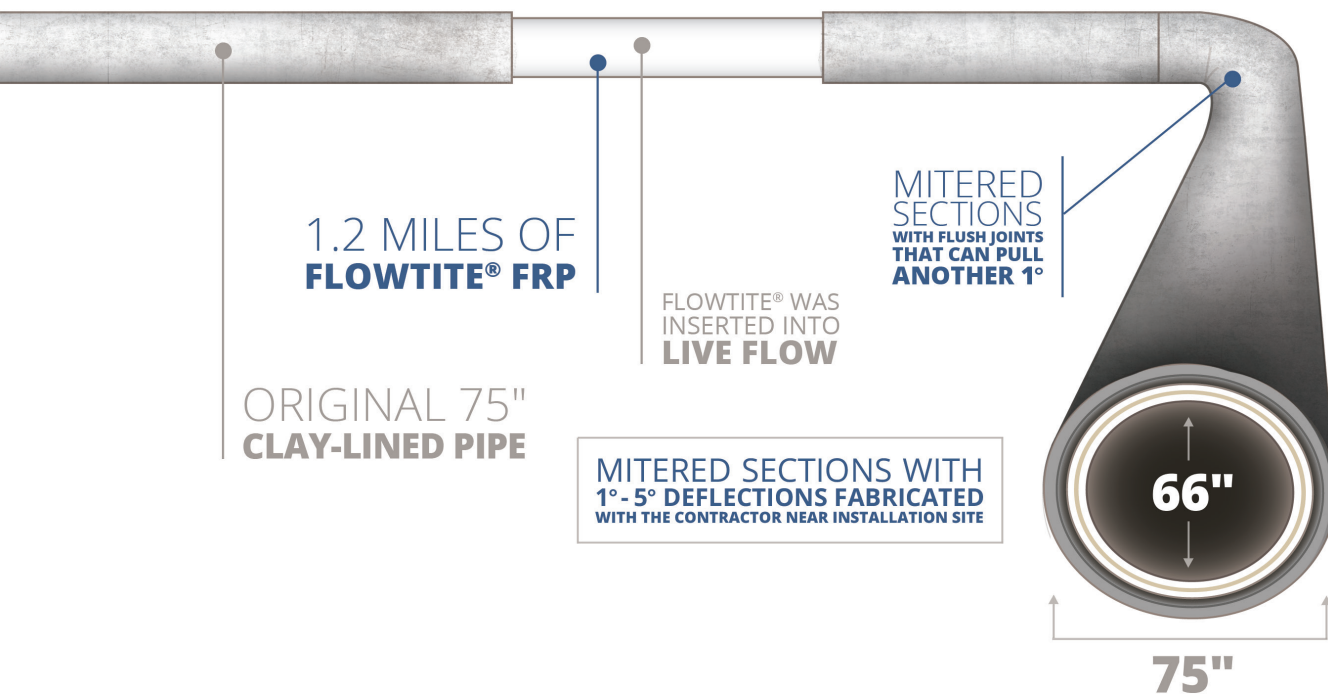


COMPLETING THE INSTALLATION

the existing brick and clay-lined RCP pipe. Each pipe section was mitered at the contractor's fabrication yard and each customized section was then carried and installed in place. The joints were carefully positioned and moved into place with crowbars and hydraulic jacks. Once in place, the joints were blocked into position and grouted.

Thompson Pipe Group – Flowtite provided MBC with detailed instructions and assistance to

laminate the custom-made mitered sections, which minimized the number of required joints to push together in the pipeline. The raw materials for the laminate were chosen to match the material used to manufacture the new pipe.



OUTCOME

Thanks to the close cooperation between MBC and Thompson Pipe Group – Flowtite, the 200-foot curve section of this 6,000-foot rehabilitation project was successfully achieved with a minimum of traffic disruption and inconvenience. The resulting sliplined sewer pipe, including the 90-degree bend at this busy downtown intersection, is now performing better than ever. The use of maintenance-free Flowtite® FRP also means the city will see substantial savings on future operating costs.

