

The Emergence and Benefits of Pipe Lining

/ BY ALYSCIA SUTCH

For years homeowners, property managers and municipalities have resorted to traditional pipe replacement methods to fix their cracking, leaking and root-intruded pipes. The process to dig up and replace the pipes is not only time consuming, but the renovation costs can be expensive, especially in a situation where pipes are located behind finished walls, underneath tiled flooring or below landscaped lawns.

A traditional re-pipe consists of demolition of whatever is covering the pipe. If the pipes were located in the ground, the system would be shut down, followed by the concrete foundation being dug up by excavators and removed, along with any fill. The pipes would then be removed and discarded. The new pipes would then be installed, tested and the fill would be delivered. Once complete and after much downtime, the pipes are operational. Contractors would then need to repair the landscape and portions of the building that were destroyed during the re-pipe.

Trenchless pipe lining technologies are not new. Some of the technologies have been used for decades, passing the test of time. For example, starting in the late 1980s, all of the U.S. Navy's Aircraft Carriers' collection, hold and transfer pipe systems have been lined with blown-in epoxy coatings.

Most facilities built prior to the 1970s have sewer lines composed of cast iron and clay. The most common problem in these lines is cracking at the joints, root intrusion and the bottom of the pipe rusting out; this can ultimately be a result of, or lead to, root intrusion. Root intrusion in sewer pipe systems is reported to cause 50% of all sewer blockages. Traditional care for root intrusion is rarely a long-term fix. With the pipe lining method, roots can be removed and a liner can be pulled into place, creating a structurally sound pipe within the existing pipe. Other common problems include calcification in sewer lines and ground movement.

Today, the most effective and growing solution for failing pipe systems both inside and outside of buildings is pipe lining technology. Liners are pulled into place inside the pipe systems without destruction and can protect the pipes from many types of common failures, including debris buildup, corrosion, leaks and root intrusion. This is all done without the need for excavation. Most importantly, pipe liners protect the carried contents from mixing with the metals within the pipes, which can result in decomposition or lead leaching into drinking water. Not only are potable water lines and drain lines being rehabilitated, but the technology to retrofit vertical applications, roof drains and mechanical systems, including fire suppression and HVAC systems, is available.

Pipe lining technology requires no digging or destruction and is the most affective, long-term solution for failing pipe systems located both inside and outside of buildings. Pipe lining is an optimal solution



Pouring epoxy during the pipe lining process.

to increase flow, eliminate root intrusion and prevent leaks. It can hold up to the structural strength of a new pipe without the costly digging and replacement repairs.

If you aren't familiar with how pipe lining works, it begins with mapping the internal plumbing system and camera inspection of drain and sewer lines. A plan is implemented to minimize disruption and afford the most efficient timeline for work completion. Depending on the lining method to be used, pipes may be drained and/or air-dried. After testing for leaks, the pipes are prepared for cleaning. The next step involves removing roots and calcite in order to return the pipe to its original functioning diameter. Removal methods may include jetting the lines or the use of pneumatic tools. Cast pipe may require additional preparation if there is significant corrosion or missing sections of pipe. Existing access points are used to pull an epoxy-saturated felt liner into the host pipe. This lining method provides the ability to line multiple 45° and 90° angles, as well as the option of lining specific sections of pipe without lining the entire length. Once complete, a final leak test and camera inspection is performed and the system is now a smooth, joint-less pipe within the existing host pipe.

With alternatives to traditional pipe replacement available, it is no wonder that many homeowners, property managers and municipalities are turning to trenchless pipe lining to rehabilitate their pipe systems. Whether you're a plumbing or mechanical company looking to expand your business or a homeowner looking to fix your pipes without destruction, there are many options available that are worth looking into. **DP**

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