

Got Deteriorating Asbestos Cement Water Mains?

Proven CIPP technology can solve the problem

BY MICHAEL DAVISON

Asbestos has come to be one of the most feared words and materials in the world. Yet, in the 1940s, 1950s and 1960s, more than 600,000 miles of asbestos cement— also called transite — used for its light weight, corrosion resistance, rigidity, ease of handling and installation was installed to handle water throughout the United States. Applications included potable water mains, storm drains and sanitary sewers.

Projected to have a 50- to 70-year life expectancy, decaying AC pipes today are a major source of asbestos in drinking water and pose even greater threats when they are removed or repaired. It is the 12 to 15 percent of chrysotile asbestos fibers added to the Portland cement for strength and corrosion resistance that causes the health hazards. So what are municipalities and public works entities to do?

Most states do not require public or private utilities or municipalities to remove and replace AC pipe. But, the increasing incidence of decaying pipes in residential areas that should be considered for removal or rehabilitated by pipe bursting or pipe reaming, are subject to strict and costly EPA and/or other supervisory bodies and regulations. Major downsides to this are both the high costs and, naturally, safety concerns.

Health hazards associated with asbestos cement pipes, when asbestos fibers are inhaled, can be caused by breaking, cutting, drilling, filing, scraping, surface



Aqua-Pipe is a structural liner that is designed and manufactured with mechanical properties exceeding all specifications and meeting drinking water requirements.

cleaning, sanding or even dismantling. Thus, the reasons for national agencies to step in when using the above ways to replace or repair this type of pipe.

There is good news that solutions exist today – and that is cured-in-place-pipe lining (CIPP), a trenchless rehabilitation process that can and does present a low-cost solution in situations where AC pipe can be rehabilitated. To date, several projects, among them one in Alaska and numerous new ones pending across the United States, have demonstrated that CIPP is a viable alternative to other methods, and, as compared to structurally relining cast iron piping, offers even greater savings. Best of all, this is without the attendant costs, strictures and safeguards imposed by the EPA.

Are There Any Options?

Alternative solutions to rehabilitate asbestos cement pipe to control dust and fiber release require wet methods. These include water with surfactants, thickened substances, wet sponges, material softening agents, liquid adhesives or wet wiping, plus the proper handling of nearby water, piping and soil.

To accomplish this safely and cost-effectively, current CIPP processes renovate water mains by lining the walls of existing water mains with a hardened synthetic polymer tube and cured using hot water. It has been successfully applied to thousands of miles of cast iron and other metal water mains with a 99.99 percent degree of success. Recently, there has been a growing number of projects and interest concerning

rehabilitation of AC pipes. Such interest is especially prompted by the fact that it presents a huge solution as well as a major cost saver.

Prior to initial work in the Carolinas and Alaska, and now with a growing number of projects in the works across the United States, structural CIPP relining is being viewed as an optimum “interim” solution. I say this facetiously in that by saying interim, this CIPP process can extend the life of the water main by 50 years or more. Obvious drawbacks of other removal or rehabilitation methods, other than huge potential costs, include meeting regulatory requirements.

Ongoing studies have shown that the possible health risks in AC drinking water pipes are technically difficult to measure. These studies have concluded, however, that there might be potential exposure to asbestos in the water through inhalation of aerosol fibers that might become trapped on clothes when washed and then emitted into the atmosphere.

Here is the bottom line why there is great potential for rehabilitating the 600,000 miles of AC water mains: the Aqua-Pipe® CIPP process exposes into the environment far less asbestos than legislation requires. For instance, the EPA requires that no more than 260 lb or 60 sq ft or 35 cu ft of asbestos cement can be exposed or removed. In terms of CIPP, this means as much as 8,000 ft of AC pipe can be relined in any given location. Explained in other terms, since small pits and no trenches have to be dug at each end of the section to be repaired, in a single rehabilitation project, as many as 40 pits or shafts can be dug without deep regulatory involvement or costs. While regulatory bodies have to be notified, the CIPP process can be accomplished without incurring huge costs and conforming to strict constraints.

By scoring the AC pipes rather than cutting them, and thus causing minimal, if any, asbestos emission, one such differentiation of dealing with AC vs. cast iron pipes, both the small amount of water or piping and soil around the pipes possibly having asbestos is carefully removed, filtered and disposed of according to regulatory guidelines. Personnel from one or more trenchless technology firms are currently engaged with laboratories conducting airborne fiber testing to determine what, if any, additional steps or procedures need to be taken to ensure the safety of asbestos cement water main pipe rehabilitation and repair.

Reasons For The Need Or Desire To Procrastinate May Be Over

Thus, it is no longer necessary for municipalities or utilities to avoid or prolong rehabilitating AC pipes, but rather to embrace current technology successfully being applied to cast iron pipes to restore residual breaks and leaks and renewing structural capacity. As noted previously, costs as compared other methods are far less; trenchless technologies offer faster and less disruptive solutions (the time factor from start to finish may be as little as five weeks); post-lining reinstatements of service connections are all done from within the pipe; and the linings not only give an additional 50-plus years of life to the water mains, but are also certified by NSF to NSF/ANSI Standard 61.

Regulatory bodies strongly encourage customers of municipal and private water companies to learn more about their drinking water, and when they do – for instance, the EPA requires all community water systems to deliver an annual water quality report to their customers on or before July 1 of each year. But, prior to inevitable growing ranks of citizen complaints or further regulatory constraints or strictures, it would be advisable for those responsible for drinking water installations and repair to

not only take steps to repair or rehabilitate deteriorating AC piping, but look into proven technologies now being successfully and cost-effectively applied to cast iron pipes.

At the risk of being redundant, miles and miles of asbestos cement pipe either **has** or will reach the end of their useful lives. Most repair or replacement techniques are not a truly option, and those responsible should not only be aware of the situation, but also act to resolve it.

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As published in Pipe Relining Guide 2014 of Trenchless Technology – Special Supplement, pages 26 and 27