

Eco-Friendly Practices

Lead in Your Hotel's Drinking Water

By Larry Gillanders, Co-founder, Ace DuraFlo Systems



Mr. Gillanders

The lead leaching problem in America is more complex and widespread than most general news organizations would make you think. Lead pipes are found worldwide, as well as throughout the United States, especially in some of our oldest cities. Thousands of years ago, lead became a choice material for water pipes, because it's found in many regions, it's malleable and it's extremely durable. Now, many countries are left with lead supply pipes that release dangerous amounts of lead into the water. When consumed, lead can cause serious adverse health effects, especially for children, and can even be fatal.

The American Water Association estimated in 2016 that there are 6.5 million lead service pipes still in use in the United States, which are found running from the city water main to homes and buildings. However, it's very important to stress that lead leaching does not only occur solely as a result of lead pipes – a water supply system may also contain several types of lead contributors, all which can release toxic levels of lead. This information is key. In other words, you are incorrect if you have been thinking: My hotel's pipes are copper or galvanized steel, so my hotel is safe from dangerous lead levels. The problem does not start and end with the underground service pipes bringing water to your property.

Post ePIPE Lining Results in Providence:
Lead leaching less than 1 ppb when tested internally



Lead contributors include lead solder (copper pipes often have lead solder), galvanized steel pipes and copper alloy fittings like brass fittings. Lead solder was commonly used until about 1986, favored by plumbers for its ease of application. Galvanized pipes are known to attract lead particulates. Brass fittings until recently contained high lead content in their make-up. Lead service lines (LSLs) are often found delivering water to buildings completed before 1950, galvanized steel pipes were commonly included in buildings constructed before the 1960s and copper pipes were commonly installed in buildings between the 1960s and 1990s. Still, no matter when your hotel was built, it's important to find out exactly what types of water supply pipes lay within it, as well as what type and the extent of the use of lead contributors are found in the water supply systems.

A Bad Reaction

Lead is released into drinking water through corrosion. When water interacts with lead or lead contributors, it causes a chemical reaction that dissolves the metal and releases lead. Water with high acidity or low levels of minerals is particularly known to accelerate lead leaching.

Lead leaching is a world-wide problem with most countries adopting World Health Organization recommended cut off levels for lead at 10 µg/l (ppb), whereas the U.S. presently remains at 15 µg/l (ppb). In addition to this tighter health standard being adopted by most countries, you will also find that other industrialized countries are steps ahead of the U.S. using advanced rehabilitation technologies to bring lead leaching into compliance. The United Kingdom, for example, has been utilizing epoxy coating technologies, such as the patented ePIPE® process, for years to rehabilitate aged pipes, while also preventing copper and lead leaching.

Unfortunately for most of the U.S., these types of technologies are still going through trials before widespread municipal usage, even though they have been proven to work. Some pipe lining technologies have been used in conjunction with LSL remediation projects for more progressive cities that seek more innovative solutions other than traditional repipes. But it looks as though many U.S. cities still hang onto the oldest plumbing service in the book - tearing out a pipe and replacing it with another pipe which are bound to have issues, as well.

While the municipalities deal with the mains and branch lines, you're left to not only take care of the pipes inside your hotel but you are liable for the quality of the water when tested at the tap. Here are some important steps you should consider pursuing:

- Check with your hotel's insurance provider in regards to any lead exclusions in your properties insurance. The truth is that your hotel can be held accountable for lead release in your building's water. It is your duty to protect your guests, especially those who are most vulnerable, like children and pregnant women.

- Find out what types of pipes and what lead contributors make up your hotel's hot and cold water system. Make sure this information is documented and easily available for staff.
- Replace all lead/bronze/brass fittings, fixtures and faucets with lead-free versions.
- Get your hotel's water tested at the tap. While, many water testing facilities will tell you the result they will not conduct a survey of lead contributors and assist you in getting your lead levels lowered. A first-of-its-kind program, LeadSmart®, a turnkey lead testing and remedy service, provides on-site lead testing (lead levels are available minutes after testing), lead contributor education and offers a non-invasive remedy, concluding with the issuance of a Certificate of Compliance that your building's water conforms to U.S. EPA guidelines for lead (Pb). Sampling and testing services are backed by an industry first Errors and Insurance program.
- Consider your options and know that an investment for a long-term solution is the smartest, safest approach. You'll need to make sure the pipes are repaired in such a way that they will prevent dangerous levels of lead (and other contaminants, such as copper and rust) from leaching into the water.

The Best Solution for Your Hotel, Guests, Water and Budget

An EPA-funded report was recently released by the Water Research Foundation (called "Evaluation of Lead Service Line Lining and Coating Technologies," March 2017), which found epoxy lining and epoxy coating technologies to "effectively reduce or eliminate the release of lead."

Widespread water samplings were conducted on lead service lines (LSLs), where water samples were taken for the measurement of lead before and after application of ePIPE's epoxy coating.

The Water Research Foundation reported: "Three currently available lining or coating technologies can effectively reduce or eliminate release of lead from LSLs, are expected to have a long service life, and can potentially result in significant cost savings and other benefits relative to LSL replacement, depending on site-specific conditions." This study reveals that pipe lining technologies, more specifically, epoxy coating technologies, are the path forward. They are a proven-effective, beneficial alternative to repipes, whether it's for lead service lines outside or pipes within your hotel's walls. By utilizing in-place methods, these barrier coatings are applied directly to existing access points, such as fixtures, preventing the need to open up walls, ceilings or floors (unless an access point needs to be made). This additionally makes epoxy coatings the least disruptive option, it prevents the need to shut down a hotel's operations, as well minimizes tearing into the fabric of your facility.

Benefits of appropriately-approved epoxy coating applications for pressurized water and gas pipe systems, as opposed to traditional repipes:

- Little to no operations disruption
- Little to no destruction (limited destruction is only if access points need to be made)
- Faster project turnaround time
- Cost-effective
- No messy, loud, dangerous construction site
- The work can easily be hidden from guests
- Environmentally-friendly process due to limited waste
- Extended lifespan of pipes
- Improved flow and water quality

There are many benefits to this type of pipe restoration technology. Epoxy coatings can also prevent other common problems, such as pinhole leaks, rusty water, copper leaching and the growth of legionella bacteria.



Different pipe lining manufacturers create different epoxies and application procedures with their own unique benefits. For example, ACE DuraFlo's patented ePIPE® epoxy coating process has the fastest cure time, at as little as 90 minutes, in the small diameter pipe lining industry, while it is also the sole epoxy to have a multiple U.S. and International patents for its ability to reduce lead leaching to much lower than the World Health Organization's (WHO) cut-off levels at 10ppb, as well as the U.S. EPA's cut-off levels at 15ppb.

More Than Just a Quick Fix

Although epoxy coating technologies should be greatly considered for lead leaching remediation, education needs to be a part of the process. The first and only lead detecting, education, recommendation and certification program available in the United States is a new program called LeadSmart®. This unique program is completed by certified installers, who first use an on-site EPA-approved water testing system to independently test water at the tap. Within minutes, detailed data about lead levels in the water are provided to the customer. If unsafe lead levels are detected, a thorough review of the property's water supply pipe system is conducted to find the presence of lead

contributors.

Next, professional recommendations are made in accordance to the property's unique lead contributor situation. ePIPE is often seen as the ideal remedy, since it is applied in-place and has the many benefits of pipe lining technologies. Once a solution to reduce lead leaching is put in place, another on-site water test is performed. When lead levels are tested in compliance to the current EPA guidelines, the building owner or property manager is provided a LeadSmart Certificate of Compliance and the building is added to the LeadSmart property database. Rest assured, the LeadSmart sampling and testing services are backed by a \$1 million Errors and Omissions insurance program, which is an industry-first.

Action and education must go hand-in-hand to control the lead leaching problem from the city mains to our faucets. That means that building engineers, maintenance directors and property managers have to take a deeper look into their plumbing systems. Luckily, there are businesses and programs that will assist hotels like yours to ensure its delivering safe, healthy water to its guests.

Larry Gillanders is the co-founder of ACE DuraFlo® Systems, LLC, the developer of patented ePIPE® technologies, which is a world leader in the small diameter pipe lining industry. He is also the CEO of Pipe Restoration Technologies, LLC, and its subsidiaries, which are the businesses that install the pipe lining technologies across North America. He has developed multi-lingual international technical programs for ePIPE, and is the Director of Pipe Restoration Services in the United Kingdom and Director of ePIPE Espana in Spain. Mr. Gillanders can be contacted at 1-800-359-6369 or pr@aceduraflo.com



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