

Eco-Friendly Practices

Conserve Water at the Source: Repair and Protect Pipes from Leaks

By Larry Gillanders, Co-founder, Ace DuraFlo Systems



Mr. Gillanders

We have seen it all over the Internet and the news stations: California is facing its fourth year in a drought, and it is affecting every resident and every business in the state. The economic and financial consequences could be disastrous if water conservation strategies are not implemented immediately, and the state has promptly mandated that everyone do so. This drought and the scramble to cut water usage, (some Californian cities have been ordered to decrease water usage 35 percent), sheds light on water conservation as a whole.

Hopefully, the flood of news regarding this historic drought is making other professionals and homeowners in other states ask themselves, "What can I do to reduce water usage?" The reality is that this is a wake-up call for every U.S. business to design and enforce water conservation practices. Just because a drought isn't affecting your business's geographic area right now, does not mean that your business should continue its water use worry-free.

The hotel industry is one of the country's biggest users of clean water, out of all types of commercial and institutional facilities, according to the U.S. Environmental Protection Agency. Unsurprisingly, most water is used for bathrooms, laundry, landscaping and kitchens. This is the perfect opportunity to take heed of the moment and reduce your property's water usage.

The Solution

There are many, frequently-talked about concepts available for hotels, motels and resorts to cut their water usage, which includes switching to low-volume plumbing fixtures, reducing the amount of laundry that is washed, tearing out thirsty shrubbery, turning off the air conditioning in vacant rooms and only using dry carpet cleaning methods. But those ideas would probably involve purchasing new equipment, retraining employees or increasing employee hours, all of which are extremely inconvenient, and they may not save your hotel a substantial amount of wasted water.

For instance, you can pay a plumber to install low-volume plumbing fixtures in all of the rooms' bathrooms, but if your hotel has a pool, day spa or restaurant, then the effectiveness of the low-volume plumbing fixtures could be moot.

One of the most effective, cost-efficient and least disruptive water conservation strategy is preventing pipe leaks and extending the pipes' useful lives by applying an epoxy coating technology (pipe lining) to the pipe systems. A significant additional benefit to preventing water loss is the associated prevention of stopping leaks that can result in damage to property and lost room revenue.

Sometimes the pipe systems' welfare on a property can be out of sight, out of mind. Even if there is a hotel engineer on staff to apply Band-Aid-type fixes to noticeable pipe leaks, is he routinely cleaning and checking the health of every inch of all mechanical pipe systems? How quickly we forget that all parts and systems in a building have a lifespan – from the concrete foundation to the roof.

There are many factors that go into estimating how long a particular pipe system will run efficiently until it experiences failures, like corrosion or pinhole leaks. These factors include: The location of the pipe system, the environment surrounding the exterior of the pipe system, the piping's material, the fluid pressure velocity, overall usage and the corrosiveness of the types of fluid or gas inside the pipes. Pipe systems can start to fail after two years or after 70 years, but most often, I would say a building's piping often lasts around 15-20 years.



Leaking pipes is one of the leading sources of water loss. It's estimated that anywhere from 1/5 to 1/6 of the United States' clean water is lost due to leaking pipes - a sickening statistic. This results in approximately 6 billion gallons of water being wasted per day, according to the American Water Works Association.

Hotels and motels use an average of 21,537 gallons of water per day. One broken water distribution line in a hotel would waste approximately 21,600 gallons of water from just one day – that is as much water that is used to supply a hotel for an entire day. One broken water distribution pipe that goes unnoticed for one week will have wasted more than 151,000 gallons of water. Overlooked leaking pipes are not only wasteful and hazardous, but they will cost the property tens of thousands of dollars per year.

History and Current State of Pipe Lining

Pipe lining for the in-place rehabilitation of domestic water pipe systems was first developed in Europe and Japan in the 1970s. This new method to repair pipes came as an alternative to the traditional pipe replacement. Also known as repiping, these types of projects are expensive, destructive, disruptive, time-consuming and create a lot of waste for landfills. Pipe lining quickly became an innovative process that is preferred to repiping and captured international interest. The U.S. experimented with epoxy coatings in the 1980s, and by the 1990s, minimally invasive pipe lining techniques had become a growing industry with different patents, procedures and companies. Today, pipe lining is a time-proven, internationally-accepted repair and renovation method to aging or failing pipe systems, especially pipes that are difficult to access or are located within the structure of a building.

With the help of the Internet making it extremely easy to spread knowledge and experience, an increasing number of Northern American property managers and engineers are learning about pipe lining and requesting these services each year. Las Vegas is a large, hospitality-based city that it is embracing epoxy coatings to prevent leaks and other failures in the hotels' mechanical systems. Pipe lining has become the ideal pipe repair solution for the city "that never sleeps." This is because in-place, minimally invasive pipe lining processes are applied using existing access points, which prevents the need for destruction and the project takes a fraction of the time of a traditional repipe.



There are different pipe lining companies that manufacture or use their own epoxies, as well as different methods for application. For example, ACE DuraFlo's ePIPE epoxy coating process has the fastest cure (dry) time in the North American pipe lining industry, at two hours. Different pipe lining companies have different specialties and offer a variety of flexibility, such as: some can provide temporary water while the service is being performed or the project can be worked on during the property's slow days/hours. Epoxy liners for potable water applications must meet industry standards, including plumbing code approvals for adhesion and durability, and of course, they must be approved as safe for contact with drinking water for their intended purpose, so make sure to check for these things when choosing a pipe lining company. While various application approaches exist, most epoxy coating processes include these basic steps:

- Pipe system evaluation and diagnosis
- Planning, mapping and setup
- Draining the pipes and drying them with compressed air
- Introducing an abrasive agent to the pipe system (sanding)
- Applying the epoxy to the pipe system (via compressed air)
- Evaluation, re-assembly and testing of the pipe system

As I explained earlier, pipes do not last as long as you would hope, especially pipes that are used as often as the water pipes in a hotel. Galvanized potable water systems can experience water discoloration, low water flow and leaching of contaminants. Copper potable water systems can experience corrosion, pitting, low water flow and destructive pinhole leaks. Effective pipe lining technology slows the effects of these problems and is proven to be cost-effective. After an epoxy pipe coating has been installed in a hotel's domestic water system, the pipes' useful lives are greatly extended, leaks are prevented and depending on the type of pipe, can improve water quality.

Be Proactive

It is easy to recognize the many benefits of pipe lining, especially when compared to a repipe. (It could be as simple as getting a bid from a repiping plumber and comparing the cost and project timeframe to a pipe lining bid.) But even though more and more professionals are open to utilizing pipe lining, it is mostly called upon and applied for disaster-relief. Once a pipe system has experienced several pinhole leaks and the property has endured several Band-Aid-type repipe fixes (which take the water system out of commission, as well as the rooms and hallways where the pipes are located), then the professionals managing the property look for a long-term fix.

The mindset needs to change from reactive to proactive. Who says that you should wait for your pipes to start leaking (causing damage, mold, higher water bills and loss of room revenue) when there is a proven, affordable solution to prevent leaks? Epoxy coatings create exceptional leak protection. The strong epoxy liner prevents the water in the pipes from interacting with the pipe material, thereby preventing chemical reactions which cause corrosion, rusty water and pinhole leaks. Hotel managers, maintenance professionals and engineers can't continue to be shortsighted when planning maintenance upgrades.

Compare your building's health to your health. Pipes are the blood vessels for buildings. They are strategically hidden, traveling throughout the interior of every hotel, with most of them ending at the "heart" of the system, the mechanical room. Just like the circulatory system in a body, when there are leaks or clogs in this system, it can create devastating consequences for the entire building. Imagine you are middle-aged and your doctor told you that you have two choices: your arteries can be evaluated for clogs or you can wait until you have so many clogged arteries that you have a heart attack. In this scenario, we all would make the same choice. So why would you make a different decision for your hotel, when the effects of pipe system failure can be just as detrimental and even more expensive? It is better to be proactive than reactive when taking care of your body, and also while taking care of a building.

Pipe lining is so innovative that different types of relining technologies have been created for all types of pipe systems. Pipe systems in a hotel, motel or resort that will benefit from an epoxy coating application:

- Bathroom potable water system
- Restaurant potable water system
- Laundry room potable water system
- Ice machine potable water system
- Pool and jacuzzi water system
- Ballroom/meeting spaces water system
- Day spa water system
- Decorative fountain water system
- Landscaping water system
- HVAC system
- Fire suppression system
- Cooling towers

As one of the country's biggest users of clean water out of commercial and institutional facilities, the hospitality industry needs to step up its efforts to conserve water. Before your hotel, motel or resort goes through tedious changes to normal hotel procedures, rehabilitate the piping systems with a pipe lining technology, prevent wasted water at the source and protect your property from water damage.

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



The Hotel Business Review is a weekly journal of best practices in hotel management and operations and is available at www.hotelexecutive.com. HotelExecutive.com retains the copyright to the articles published in the Hotel Business Review.

Articles cannot be republished without prior written consent by HotelExecutive.com.

© 2015 Cummins Communications