Soft Water Savings

By Mike Pederson

Plugging the hidden drains of hard water Most commercial and industrial building owners and facility managers are aware of the problems caused by hard water. These can range from clogged pipes to inefficient boilers to premature hot water equipment failure. What they may not always know is the impact of hard water on the lifespan of plumbing infrastructure, energy use and the environment. By contrast, softened water provides measurable benefits by saving energy, lowering costs and protecting the planet.

Hidden Costs of Hard Water

The impact of hard water hits heavily on energy use and associated maintenance costs. Hot water heaters, boilers and plumbing equipment must be maintained to keep a commercial building running at peak performance and profitability. Hard water contains dissolved rock that accumulates on heating elements and the internal surfaces of boilers, causing scale buildup and impairing efficiency. Scale buildup reduces the equipment's ability to heat surrounding water, causing it to consume more energy, thus raising utility costs.

According to the American Society of Plumbing Engineers, ¹/₁₆ in. of scale can increase energy consumption by 11%. Similarly, the Water Quality Research Council claims that it costs 29% more to heat untreated water.

The lifespan of hardness-scaled equipment is shortened due to high failure rates and the need for expensive repairs or even costly replacements. Periodic blowdowns are often used to salvage equipment by flushing impurities to the drain, and replacement water must be added to the boiler, causing a waste of water, energy and chemicals.

Facilities like restaurants, hotels, Laundromats, car washes and others that run on hard water must use more chemicals and detergents to

Is it Time to Switch to Softer Water?

To determine whether a commercial facility requires a water softener, check the following items that apply:

- Scale buildup on equipment
- High chemical and/or detergent costs
- High utility costs
- Frequent maintenance of water-using equipment

If at least one of these items are checked, consider a new—or servicing an existing—water softener.

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Scale build up on internal surfaces of boilers caused by hard water reduces the equipment's ability to heat surrounding water, causing it to consume more energy and raise utility costs. match the cleaning results achieved when using softened water. For every grain of water hardness, detergent use increases 2% to 4% per 1,000 gal of water used. Aside from increased detergent costs, hard water means that more wastewater and impurities are transported to the sewer and ultimately the environment. Commercial businesses that want to "go green" need to get soft with their water.

Hard Savings with Soft Water

Problems associated with hard water can easily be minimized by using a water softener, which reduces the scale-forming or hardness ion calcium and magnesium. This helps prevent scale buildup and overheating of equipment using hot water.

The following are other key benefits of using soft water:

Cost Savings: Using soft water saves money on equipment replacement and service, electric and gas utilities and detergent or chemical use. In a typical commercial establishment such as a restaurant that uses hard water, for example, it costs \$810 per month to heat the water, based on \$27 per day to heat 2,900 gal of water. Water softening can save as much as 30% in energy expenses—a cost savings of \$243 per month, adding up to more than \$2,916 savings annually.

Softened water also saves detergent and chemical costs. Water softeners for example, can save up to 35% on detergent and up to 25% less downtime for equipment maintenance repairs. Finally, softer water helps extend equipment lifespan—meaning less scrap disposal.

Going "Greener": Aside from consuming less energy, soap and scrap, commercial and industrial establishments can also benefit from the option to reclaim salt and further minimize environmental waste.

Some water softeners offer a brine reclaim system that recycles a portion of regeneration salt and water. This is an environmentally friendly and cost-saving feature that helps save money by reclaiming then reusing some of the salt consumed during regeneration.

Scoping a Softening System

To begin the transition to soft water, facilities should start with a professional water analysis and site survey to determine the water hardness or other potential water problems. Commercial and industrial businesses are best served by working with a partner whose local dealers know the water conditions specific to that region.

As a qualified representative, collect and analyze a water sample to help assess whether a soft water treatment system would be beneficial to a particular business. Also conduct an audit of current water-consuming equipment to determine operating conditions and energy consumption.

If a water softener is warranted, recommend the best option to fit the unique needs of the facility. While water treatment technologies are similar among manufacturers, businesses will most likely look for a partner who offers comprehensive service plans that include regular preventive maintenance, including filter changeouts and salt delivery programs.

Soft water means hard savings. Reduced equipment replacement, maintenance, detergent usage and labor costs all add up to operational savings, a better customer experience and more repeat business, which all lead to increased revenue for the business. *wqp*

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