

REYNOLDS

Culligan

Commercial & Industrial

# Water Softening Systems



Untreated water carries an array of naturally occurring minerals like magnesium and calcium. Water is considered hard when it contains over 7 grains/gallon of these minerals. A water softener can minimize mineral deposits to increase the longevity and efficiency of pipes and fluid management equipment, decrease soap residue, effectively clean items like fabric and glassware, and cut operational costs and energy consumption.

For these reasons and more, soft water is preferable for virtually any business, including:

- Manufacturing and industrial operations
- Restaurants or food and beverage processing companies trying to keep dishes and surfaces clean
- Hotels washing large amounts of linens and providing bathing water for guests
- Schools and universities wishing to prolong the life of their pipe systems and equipment
- Medical facilities and power companies requiring high-quality water

For over 80 years, Reynolds Culligan has specialized in advanced water treatment services and products for our commercial and industrial clients. In this guide, we'll detail how these water softener systems function, the many advantages they offer, and how water softeners from Reynolds Culligan can support your business.



## How Does a Water Softener Work?

Water softeners remove minerals from water by utilizing the ion exchange process. When hard water flows into a unit's mineral tank, it passes through a bed of spherically shaped anion, or negatively charged, plastic beads. These resin beads typically consist of sodium ion-charged polystyrene. As cations, minerals like magnesium and calcium in hard water are positively charged.

Opposite charges are drawn to each other. The plastic beads' charge attracts the opposite charge of the hard water mineral ions, pulling these ions from the water and releasing their sodium ions. In this way, the beads strip water of its hardness so that, as water exits the mineral tank, it's soft water that now flows through your pipes.

## Benefits of a Water Softener

Using a water softener can improve appliance life span, energy bills, laundry and bathing, and even a person's appearance. Water softeners can help your business with:

### The absence of water stains and limescale.

Hard water will leave unpleasant water stains or a cloudy appearance on items you wash with it, such as glasses, dishes, and silverware. It can also stain windows, sinks, tubs, and toilets. Water softeners reduce the risk of limescale, which would otherwise build up and create rust, cause leaks, and potentially damage pipes and machinery.

### Longer-lasting commercial appliances that require less maintenance.

Commercial businesses are full of appliances that use water, ranging from washing machines and water heaters to simple coffee makers. The minerals in hard water can create limescale buildup in these machines, increasing maintenance needs and related costs while reducing their effectiveness. A water softener can extend the life cycle of your operation's equipment by as much as 30%.

### Lower energy and water consumption.

Calcium buildup can cause your equipment to require significantly more energy to achieve the same water heat or performance results. Using soft water instead enhances the efficiency of your heat exchange in units like water heaters, pumps, boilers, cooling towers and more while simultaneously saving you almost 25% in energy expenditures over the life span of the equipment. Also, as hard water can increase your overall water consumption to bathe or clean laundry and dishes effectively, a water softener can reduce the amount of water you use.

### An effective clean that requires less detergent and soap.

Detergents and soaps react differently to hard water than soft. Soap reacts to the calcium and other minerals in hard water and prevents you from washing things quickly or working up a sufficient lather without using even more soap. Businesses using soft water can expect to use as much as 50% less soap, which also saves on costs.

### Better-looking, softer clothes and linens.

Hard water doesn't effectively clean clothes, towels, or sheets, as it leaves a soap residue or soil buildup behind. Mineral deposits create not only an unsightly appearance like dingy whites and faded or streaked colors on fabrics, but they give your fabrics a stiff and scratchy feel. They also damage fabric materials over time, making them more vulnerable to rips and tears.

### Better skin and hair.

Soft water gives your skin and hair a healthier, softer appearance. When you shower in hard water, it's difficult to achieve a thorough rinse. You may find that your hair doesn't appear as clean, gains a straw-like appearance, or that color treatments fade faster. Minerals that hard water leaves behind as it dries absorb your natural moisturizing oils, resulting in dry, irritated skin and a flaky scalp. Hard water can also cause flare-ups in those with skin conditions like psoriasis or eczema, and it can contribute to hair loss.



# Steps to Installing Your Water Softener

At Reynolds Culligan, we offer high-performance water softening solutions as well as installation services. Installing a water softener encompasses the following steps:

1

## Position the new water softener in place.

To achieve proper alignment, position the water softener so that its inlet can connect to the location's water supply, with the outlet facing toward the hot water source.

2

## Shut off the building's water supply.

To avoid major headaches during installation, shut off the incoming water supply at the main line. Additionally, make sure the water supply and electricity for your water heater are off.

3

## Drain the water pipes.

Turn on nearby faucets to drain the water still in the water supply pipes. In multi-story buildings, use faucets on the lowest level to ensure proper drainage.

4

## Cut into the building's main water supply line.

With pipe cutters, you'll now cut into the water main that leads to the building's supply line. Then, attach the inlet and outlet lines right to the main line.

5

### Measure the pipes, then cut and attach them.

Prior to connecting your water softener to any piping, measure the pipes to ensure an accurate cut for optimal fit. For copper pipes, you may need to solder fittings and nipples onto them first to prevent melting any plastic when connecting the water softener to the bypass valve. Be sure to use plumber's tape or plastic tubing to effectively seal any threads. If you wish to avoid soldering, flexible tubing is often an easier option coupled with push-to-connect fittings. Just check to see if you'll need additional adapters.

6

### Clamp your drain hose.

Clamping the drain hose and feeding it into a drainage source like a utility sink or floor drain allows the system to drain out the depleted brine solution after each regeneration cycle. Drain hoses require an air gap of 2 inches or more to keep wastewater from back-siphoning, and some local plumbing regulations mandate this.

7

### Attach an overflow tube.

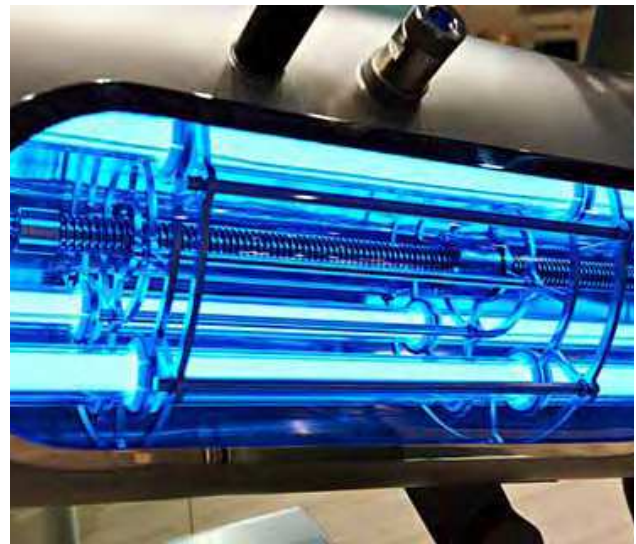
Overflow tubes further safeguard against brine tank overflow and flooding. Proper placement can vary by model and manufacturer, so it's best to reference the manufacturer's instructions for proper tube placement and to see if the tubing needs an air gap.



## Partner With Reynolds Culligan

Reynolds Culligan is a leader in cost-effective water treatment solutions for both industrial water systems and commercial water systems. We've helped hotels, restaurants, educational facilities, energy companies, and manufacturers soften their water for effective cleaning, keeping fluid management equipment running, creating a better customer experience, and reducing energy and maintenance costs.

We start by offering you a free quote for our products and services, and we also complete a water analysis for volume, flow rate, and water composition to help match the optimal system to your unique location and softening needs. In addition to installations, we're also here to help with maintenance and repair services. To learn more about your company's options for achieving softer water, [contact us](#) today.





## About Us

Reynolds Culligan Commercial Solutions brings together application engineering, innovative products, and technical service to reduce operating costs and improve customer experiences. For every use — from water that mists produce in grocery stores to

hotel washing machines — Reynolds Culligan provides customers with complete solutions that are cost-effective.

To learn more about our water treatment services, [contact us](#) today.

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*Culligan Water*



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