# Controlling *Legionella* in Other Devices

## Purpose

Use this document to:

1. Help evaluate hazardous conditions associated with devices that use water
2. Implement *Legionella* control measures for devices that use water per ASHRAE Guideline 12-2020
3. Complement existing resources for water management programs (WMP)
4. Support environmental assessments conducted during public health investigations

**Key Points**

- **Any system or equipment containing nonsterile water can grow *Legionella.***
- **Keep all plumbed devices clean and well maintained.**

**Sediment and biofilm, temperature, water age, and disinfectant residual are the key factors that affect *Legionella* growth in devices that use water.**

## Any Device that Contains Nonsterile Water Can Grow *Legionella*

In the absence of control, *Legionella* can grow in almost any system or equipment containing nonsterile water, such as tap water, at temperatures favorable to *Legionella* growth. Devices that may grow *Legionella* in the absence of control include the following:

- All types of secondary water collection, storage, and use for recycled water, gray water, rainwater, and groundwater
- Water storage for high-demand or emergency use and expansion tanks
- Lawn sprinklers and irrigation systems
- Solar water heating systems
- Fire suppression systems
- Safety showers and eyewash stations
- Produce and recreational misters
- Evaporative air coolers
- Spray and pressure washing equipment
- Machine/metal working lubrication and coolant systems
- Dental and medical equipment (e.g., scalers, CPAP, bronchoscopes, heater-cooler units)
- Ice machines
- Humidifiers



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## Operation, Maintenance, and Control Limits

Use control methods to protect building operators, staff, and visitors from exposure to *Legionella* in devices that use nonsterile water. Certain devices that use water can generate aerosolized water droplets or otherwise present a unique risk and should have specific control measures in place to prevent exposure. These are highlighted below and are followed by general guidelines for *Legionella* control in a wide variety of devices.

### Produce and Recreational Misters

- Insulate pipes to maintain water temperatures outside the *Legionella* growth range.
- Avoid stagnation by running regularly or draining when not in use.
- If recreational misting equipment has a reservoir, drain and clean it regularly; consider using a disinfectant appropriate for the system.

### Ice Machines

- Clean regularly and replace filters per manufacturer recommendations.
- Consider routine *Legionella* testing of ice machines in settings that serve people at increased risk of Legionnaires' disease.

### Humidifiers

- Tanks on humidifiers should be emptied and cleaned daily.

### Sprinklers and Irrigation Equipment

- Operate these devices outside of normal business hours to limit bystanders' exposure.

### Dental and Medical Equipment

- Clean regularly per manufacturer recommendations.
- Use sterile water in respiratory equipment such as CPAP, heater-cooler units, and bronchoscopes.

### General Guidelines:

- Regularly clean and maintain all water system components, such as spray nozzles, sprinkler heads, and hoses.
- Ensure evaporative coolers are functioning properly with managed airflow across condensate pans.
- Store and maintain water at temperatures outside the favorable growth range for *Legionella* (77–113°F, 25–45°C); note that *Legionella* may grow at temperatures as low as 68°F (20°C).
- Keep collection basins, condensate pans, cooling coils, and other components clean and free from dirt, debris, corrosion, and biofilm.
- Flush low-flow piping runs, dead legs, and low-use fixtures regularly.
- Consider testing for *Legionella* in accordance with Routine Testing for *Legionella* (Page F1) or if indicated by a WMP.

## Remediation

**If an outbreak or illness is suspected, test in conjunction with public health in order to:**

- Confirm the presence of *Legionella* before performing remediation.
- Confirm elimination of *Legionella* after remediation activities.

If control measures are ineffective, if routine test results indicate poor *Legionella* control, or if an outbreak or illness is suspected by the authority having jurisdiction (AHJ), consider remediation options. Note: The public health AHJ determines whether there are associated illness(es) or an outbreak. Water system managers should choose a remedial treatment procedure after considering the system infrastructure, water quality parameters, and available sampling results. Certain procedures should only be undertaken in consultation with a water treatment professional. **Following a successful *Legionella* remediation procedure, recolonization of the water system is likely unless the underlying conditions supporting *Legionella* growth are addressed.**

**Table 1. *Legionella* Control Measures for Other Devices**

| Water Parameter | Control Measure | Recommendations |
|---|---|---|
| **Sediment and Biofilm** | Flushing, cleaning, and maintenance | • Clean and maintain water system components regularly in accordance with manufacturer recommendations. |
| **Temperature** | Control limits | • Store and maintain water at temperatures outside the favorable growth range for *Legionella* (77–113°F, 25–45°C);<br>» Note that *Legionella* may grow at temperatures as low as 68°F (20°C). |
| **Water Age** | Flushing and water replacement | • Flush and replace water according to manufacturer recommendations. |
| **Disinfectant Residual** | Control limits | • Consider using a disinfectant appropriate for the system and in accordance with manufacturer recommendations. |

## Resources

- Toolkit for Controlling *Legionella* in Common Sources of Exposure: https://www.cdc.gov/legionella/wmp/control-toolkit/index.html
- Toolkit: Developing a Water Management Program to Reduce *Legionella* Growth and Spread in Buildings: https://www.cdc.gov/legionella/wmp/toolkit/index.html
- *Legionella* Environmental Assessment Form: https://www.cdc.gov/legionella/downloads/legionella-environmental-assessment-p.pdf
- PreventLD Training: https://www.cdc.gov/nceh/ehs/elearn/prevent-LD-training.html
- ASHRAE Guideline 12-2020: https://www.ashrae.org/technical-resources/standards-and-guidelines/guidance-on-reducing-the-risk-of-legionella
- Reduce Risk for Water: https://www.cdc.gov/hai/prevent/environment/water.html
- Dental Unit Water Quality: https://www.cdc.gov/oralhealth/infectioncontrol/summary-infection-prevention-practices/dental-unit-water-quality.html



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