

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., scalars, CPAP, bronchoscopes, heater-cooler units)
- Ice machines
- Humidifiers



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 Mistors

- 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.

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

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.

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	<ul style="list-style-type: none"> • Clean and maintain water system components regularly in accordance with manufacturer recommendations.
Temperature	Control limits	<ul style="list-style-type: none"> • Store and maintain water at temperatures outside the favorable growth range for <i>Legionella</i> (77–113°F, 25–45°C); <ul style="list-style-type: none"> ▶ Note that <i>Legionella</i> may grow at temperatures as low as 68°F (20°C).
Water Age	Flushing and water replacement	<ul style="list-style-type: none"> • Flush and replace water according to manufacturer recommendations.
Disinfectant Residual	Control limits	<ul style="list-style-type: none"> • 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.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>