



Legionnaires' Disease: Are you minimizing the risk?

Practical steps to reduce Legionella risk in building water systems

Building water systems can support the growth of *Legionella* bacteria, including domestic hot water systems, plumbing fixtures, ornamental water features, hot tubs, cooling towers and evaporative condensers. Systems that release contaminated water droplets into the air can create a potential exposure risk.

What is Legionnaires' Disease?



Legionnaires' disease is a serious and potentially fatal form of pneumonia caused by *Legionella* bacteria. The disease was named following an outbreak associated with an American Legion convention in 1976.

Older adults, smokers, people with chronic lung disease and those with weakened immune systems are particularly vulnerable. Managing conditions that allow *Legionella* to grow and spread is an essential part of building water management.

How is *Legionella* transmitted?

Legionella occurs naturally in freshwater and can enter building water systems through the incoming potable water supply. Within these systems, warm water, stagnation, biofilm, sediment and inadequate disinfectant control can allow the bacteria to multiply.

Exposure most commonly occurs when people inhale small airborne water droplets containing *Legionella*. Infection can also occur through aspiration, when contaminated water accidentally enters the lungs. The presence of *Legionella* does not automatically result in illness. Risk depends on bacterial growth, exposure conditions and the susceptibility of the person exposed.

Why Cooling Towers Require Attention?

Cooling towers continually receive makeup water to replace evaporation and other losses. If *Legionella* is present in that supply, conditions within the cooling system may allow it to multiply.

Warm temperatures, airborne debris, biological deposits and stagnant sections can contribute to growth. Cooling towers can also release water droplets into the surrounding air, making effective treatment, equipment maintenance and system cleanliness particularly important.

Minimizing the Risk!

Effective risk reduction combines water treatment, cleaning, maintenance, monitoring and corrective action.

Water treatment: Maintain microbiological, scale and corrosion control. Check biocide residuals and feed equipment; use biodispersants where needed.

Inspection and cleaning: Perform routine checks and qualified mechanical inspections. Pace's MD15161-based advisory recommends cleaning at startup and during the operating season, adjusted for site conditions.

Hyperchlorination: Plan startup hyperchlorination and additional treatment when warranted. Pace provides site-appropriate hyperchlorination services with documented readings and follow-up recommendations.

Microbiological testing: Pace's advisory recommends weekly total bacteria testing and monthly *Legionella* culture testing during operation, adjusted for site risk and applicable requirements. Total bacteria testing does not replace *Legionella* testing.

Pace's "Legionella Risk Mitigation Plan for Cooling Towers" covers:

- Site specific risk review and responsibilities
- Water treatment and routine monitoring
- Microbiological and *Legionella* testing
- Cleaning, maintenance and hyperchlorination recommendations
- Corrective action, documentation and follow-up
- Annual review and review following significant changes