

Independent Guide

Where does Legionella come from?



Independent workplace compliance

Introduction

Legionella bacteria are naturally occurring in freshwater environments, and it is likely that small numbers of legionella will enter buildings via the mains supply. Legionella thrive in warm water, particularly between 20 °C-45 °C, and can multiply rapidly where the system conditions allow e.g. where corrosion or scale is present, and water is stagnant or recirculated.

Is Legionella testing a legal requirement?

There is no legal requirement to test for legionella in domestic hot and cold water systems, but it is necessary to test evaporative cooling systems for the presence of Legionella, due to the high-risk nature of cooling towers and the risk of exposure to the general population.

How to test for Legionella in water

There are a variety of methods used to test for the presence of Legionella bacteria. The most common being Culture-Based Methods. Samples (usually 1000ml) are taken from the water system by an approved contractor, using aseptic techniques and professionally analysed, preferably in a UKAS accredited laboratory. The results will be available within 2 weeks and usually distinguish between Legionella Pneumophila SG1 and other Legionella species.

Other testing methods include a Polymerase Chain Reaction (PCR) test, a molecular technique that amplifies the DNA of Legionella bacteria for rapid and sensitive detection. Equipment for this is readily available and provides fast results, however it will not distinguish between viable and non-viable bacteria. This can make it hard to determine the correct course of action in the event of a positive result and may result in unnecessary remedial work.

Who can test for Legionella?

This depends on the nature of the testing. Culture-Based Methods will require a trained individual to take the samples, and a qualified laboratory technician will carry out the analysis. Anyone can carry out PCR testing, with the right equipment. It is important that the instructions provided with the equipment are followed and ideally, basic training should be provided to the individuals.

What do you do if Legionella is detected?

Action in the event of a positive Legionella result will vary depending on the count and individual company policy. Legionella bacteria results are reported in Colony Forming Units (CFU) per millilitre (ml) sample. Guidance document HSG274 states that levels over 100 CFU/ml pose a moderate risk, increasing to high risk when the level exceeds 1,000 CFU/ml.

It is important that any spray generating outlets, such as showers or spray taps, associated with the water system where the positive result has occurred are taken out of action until remedial works can be completed. It is also important to address system conditions which may have allowed Legionella bacteria to proliferate. This could involve removing dead legs, adjusting hot water temperatures, and increasing turnover to prevent further bacterial growth.

How to treat legionella in water

To remove the Legionella contamination, flushing can be carried out, but a thermal or chemical disinfection is the most effective. Hot water systems can be pasteurised, and the water circulated to kill off any viable bacteria. Cold water systems are chemically treated, and the water pulled through the pipework to ensure all traces are removed. Evaporative cooling system will require shot dosing and potentially a full clean and chlorination to remove the bacteria.

This guide is of a general nature; specific advice can be obtained from Assurity Consulting.

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