

Legionella

If a building has been closed due to coronavirus pandemic it is likely that the water system has had no throughput, and combined with the warm weather we have experienced this Spring, legionella bacteria may have grown in the system and pose a serious risk to health.

Legionella bacteria thrive in certain conditions and there is a greater risk of its growth in water pipes, taps, tanks and shower heads when buildings have low occupancy or have been shut completely for some time.

You should note that re-opening of a building that has stood idle without addressing the safety of its water system is unacceptable and likely to be in breach of the law. The information given here is a guide, in particular for the management of small buildings, however if you are considering the re-opening of a larger building you are advised to seek further advice and use the references given at the end of this information sheet.

Legionnaires Disease

Legionnaires' disease is a form of pneumonia contracted by breathing in air contaminated with legionella bacteria, and which can cause death.

Everyone is susceptible to the infection but the risk increases with age, or if a person is a heavy smoker or drinker, or if they have underlying health conditions.

Symptoms you should be aware of include fever, loss of appetite, headache, tiredness, severe muscular aches, dry cough, breathlessness and confusion.

Re-Opening of a building

The work required to be carried out on a buildings water system will vary depending on the size of the building.

Size of building	Treatment which may be required	Time needed to allow work
Small and simple structure	Flushing	2-3 days
Large, more complex layout	Chlorination of the cold water storage tank, sampling of water to be laboratory tested for Legionella, disinfection of outlets such as shower heads	2-3 weeks

For small and simple buildings flushing alone may be sufficient, but for larger buildings some form of disinfection may be needed and a longer time should be allowed in order to carry out the necessary works before the building is ready to be used.

Preferred conditions for Legionella bacterial growth

- Water temperature in pipework and tanks of 20°C- 40°C
- Stagnant water
- Nutrients for growth in the system e.g. rust, sludge, sediment, scale, organic matter and biofilms

The warm conditions this Spring may have created the ideal conditions for the growth of legionella bacteria in the water system and only small amounts of nutrients are needed for growth.

The Health and Safety Executive state in HSG274 Part 2 that a low risk system is:

- In a building without people especially “at risk” from legionella bacteria
- where daily water usage is inevitable and sufficient to turn over the entire system
- where cold water comes directly from a wholesome mains supply to stored water tanks
- where hot water is fed from instantaneous heaters or low storage volume water heaters (supplying outlets at 50°C)
- where the only outlets are toilets and hand wash basins (no showers)

If you determine that you have a low risk system and the building is small and simple you should carry out the flushing procedure as follows:

Flushing Procedure 2-3 days before re-opening a building

1. Raise the temperature of the calorifier/hot water storage vessels to 60°C
2. Open all outlets (taps, showers etc) and run the water to drain until the temperature at the outlet stabilises and is comparable to the supply water temperature
*CAUTION- minimise exposure to any legionella bacteria in the form of aerosol in the air by removing any shower heads and covering spray taps with a clean cloth. If you cannot remove a spray head place a clean plastic bag over the fixed outlet and cut the corner of the bag to allow the water to escape without forming aerosols.
3. Document your assessment of the legionella risk and what actions you have taken in a diary, logbook for future reference

Where you have a more complex building and water system you should consider the following procedure:

Chlorination etc 2-3 weeks before re-opening a building

1. Conduct a building chlorination especially where cold water storage tanks are in place. The volume of stored water will have become stagnant and may have raised in temperature (>20°C)
2. Consider Legionella sampling to confirm if bacteria exists, this allows time for action prior to the building opening. Samples should be taken 2-7 days after disinfection
3. If you carry out quarterly showerhead or other spray head cleaning and disinfection and this was due during the closure, carry this out
4. Repeat disinfection and extensive cleaning flushing may be required to clear any contamination so time must be allowed for these procedures
5. Document your assessment of the legionella risk and what actions you have taken in a diary, logbook for future reference

Legislation and guidance:

Health and Safety at Work etc Act 1974

Management of Health and Safety at Work Regulations 1999

Control of Substances Hazardous to Health Regulations 2002

Approved Code of Practice L8 4th Edition

HSG 274 Parts 1-3

Information available at: www.hse.gov.uk/legionnaires/index.htm