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COVID – 19

Recommendations for the management of building water systems at risk from Legionella due to unscheduled building closure

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Guidance document

COVID – 19:
- Recommendations for the management of building water systems at risk from Legionella due to unscheduled building closure.

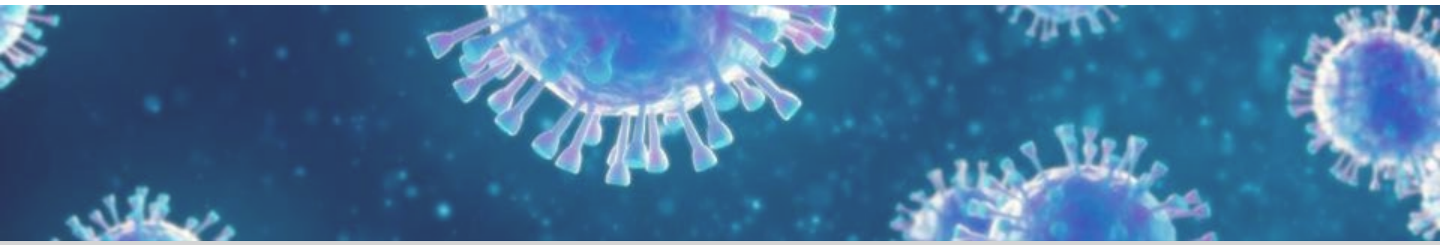
Failure to address Legionella control issues during building closures or periods of limited access may result in an increase in cases of Legionnaires Disease.

Further to advice from the Government, schools, colleges, hotels, commercial premises or manufacturing plant may be subject to closure for the foreseeable future with staff placed in enforced, or self-imposed, isolation. This is in addition to care Homes and Nursing Homes which are already in self-imposed and/or Government endorsed lock-down.

This closure of such premises can result in potential water stagnation, loss of temperature control, (particularly in cold water services) and an increased risk of microbial colonisation and subsequent proliferation. This will likely include Legionella pneumophila and other legionella species.

Consideration therefore needs to be given to the continued management of such identified 'at risk' water systems which will include, but not be limited to, the following types water using systems.

- ✓ Domestic hot and cold-water systems
- ✓ Evaporative cooling systems (including adiabatic systems with water spray)
- ✓ Humidification plant with non-steam humidification
- ✓ Process water systems utilising spray cooling or with the potential to generate aerosols.
- ✓ Manual and automated irrigation systems.
- ✓ Spa pools.
- ✓ Decorative water features with spray or aerosol generation.



Such water systems should already have a current legionella risk assessment, written control scheme and implemented management control system. However, it is more than likely that the management control system will have been written based upon the water services being in regular use by the building employees and staff.

In these unprecedented times, it is likely that the use of the water system will cease or be at best irregular and the level of risk amelioration will need to be increased.

It is also likely that such water systems will require precautionary disinfection immediately prior to re-occupation of the premises and that an increased level of risk management measures will be necessary to provide reassurance for a period of time after re-occupation.

Building closure

Where practicable, the water systems should continue to be routinely managed and monitored for:

Essential measures

- Chemical dosing systems, with particular regard to evaporative cooling systems
- Laboratory sample analysis

Recommended measures

- Domestic hot and cold-water system temperature control
- Management of supplementary water conditioning agents, for example chlorine dioxide dosing

In addition to the above control measures, extended flushing of water services installations should be implemented to elevate the water usage and thereby refresh the water in the systems and aid in reducing stagnation in the services pipework.

Isolation and draining of the water systems or interruption of hot water temperature control resulting from the switching off the primary water heating source is not recommended as a temporary management measure. Such action may lead to an increase in microbiological colonisation due to wet pockets within the pipework distribution system and an associated increase in the availability of microbial nutrients, through accelerated corrosion and the potential for the storage/circulation of water at temperatures amenable to accelerated microbiological growth.

Building reinstatement

When there is a return to normal working practices, there is likely to be a considerably increased risk of microbiological colonisation, particularly where interim risk management measures have not been implemented or continued only in part.

Evaporative cooling systems

Prior to reinstatement of cooling towers, which have been switched off during the shut-down period, the cooling/condenser system water should be drained and replaced with fresh water and the system disinfected in accordance with the guidance detailed in HSG274 Part 1. Following the certified disinfection procedure, the chemical dosing practice for system start-up must be fully implemented, in accordance with the written control scheme and closely adhered to by the contracted service provider.

On-going daily, weekly and monthly management of the cooling tower system should then continue, with enhanced monthly legionella monitoring for the first 3 to 6 months, subject to recorded analysis results.

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Domestic water systems

Prior to the commencement of normal working occupation, it is recommended that a full domestic water services chlorination should be carried out, in accordance with the guidance of PD855468. The cold-water storage tanks, water heaters and expansion vessels should be cleaned or flushed prior to the disinfection to ensure the efficacy of the treatment and subsequently monitored as required.

Alternatively, where practical and where the system design permits, the domestic hot water system should be raised in temperature to around 70˚C, and the hot water discharged through each service outlet in a controlled and safe manner to thermally disinfect the services.

Cold water services should be thoroughly flushed to refresh the water systems and reduce the temperature to below 20˚C; this is of particular importance where elevation in cold water temperatures may have risen to temperatures above 20˚C through localised warming rom the building fabric.

Following the disinfection/sterilization procedure, the on-going water quality monitoring and control measures and management of the water system should then continue, preferably with enhanced monthly legionella monitoring for the first 3 to 6 months, subject to recorded analysis results.

Particular care must be exercised for water systems serving showers and spray fittings, for example spray tap outlets and kitchen spray rinse fittings to ensure the spray heads are fully dismantled, cleaned and disinfected prior use.

Points to note:

Low water usage may result in mobilisation of system scale and particulate matter when normal operational conditions are reinstated. It is possible that blockages may be experienced in filters and strainers upstream of thermostatic mixing valves. These fittings should be cleaned and disinfected as required and the routine of filter and strainer management resumed.

It is recommended that stored cold water is "turned over" at least once during any 24-hour period to maintain a wholesome supply. This rate of exchange should be maintained, where possible, by copious flushing of both the hot and cold-water services throughout the period the building is closed.

Other risk systems

Follow the start-up procedures for the water systems as detailed in the written control scheme and as implemented by the site technical staff or engaged service provider.

NOTE:

Goodwater Account Managers are available to advise individual responsible persons and/or Dutyholders on specific actions for their premises and the best course of action to take during these exceptional times.