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Managing Legionella

With many buildings taken temporarily out of use during the Coronavirus outbreak, SOCOTEC's Water Treatment & Equipment team explain the processes required to manage inactive water systems to prevent the outbreak of Legionella bacteria.

Following the outbreak of Covid-19 across the UK and Government guidance to remain at home, a large percentage of sites and buildings have closed or have limited occupancy.

When a building is taken temporarily out of use (mothballing), it is important to manage the system to ensure microbial growth, including Legionella, is controlled. Mothballing is a compromise between bacterial control, water use and potential degradation of the system.

Following mothballing, the system must be recommissioned as if it is a new build before coming back into use.

The following advice note provides guidance based on [HSE Technical Guidance HSG274 Part 2](#) and [British Standard document PD855468:2015](#).

Small and Simple Water Systems

These types of systems are defined by HSG274 Part 2 as those that are mains fed with local point of use hot water systems (combination boilers and units with a capacity of 15 litres or less), such as dwellings or small offices.

Additionally, SOCOTEC defines these as buildings with less than 10 rooms with water present.

Mothballing for less than 30 days

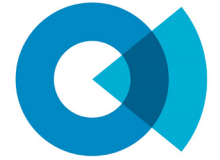
- › If practical, flush every hot and cold-water outlet (including attached equipment such as dishwashers) on a weekly basis, keeping records of completion
- › If it is not practical to flush, follow the guidance for 30 days or more below.

Recommissioning

- › Check water temperatures are compliant with HSG274 Part 2 at all outlets
- › Re-occupy as normal
- › Complete permit to open form for each building – see appendix 1.

Mothballing for 30 days or more or where flushing is not practical

- › Drain the domestic water systems and leave drained, or
- › Lock down the building and leave the system filled with water
- › Place signs in the building stating that anyone who enters during lock down should not use the water systems



Recommissioning

- › As close to occupancy as possible, flush every hot and cold outlet (including attached equipment such as dishwashers) for at least five minutes
- › It is recommended that those carrying out flushing minimise aerosol release or wear appropriate PPE
- › Check hot and cold-water temperatures are compliant with HSG274 Part 2 at all outlets
- › Complete permit to open form for each building.

Large and Complex Water Systems

Large and complex water systems are those with 10 or more rooms with water and those with cold water tanks, stored hot water units greater than 15 litres and showers/spray taps.

Decommissioning

- › Undertake weekly flushing of all outlets, if possible
- › If weekly flushing is not possible, lock down the building and leave the system filled with water to prevent issues that can occur with drying out, such as biofilm build-up, failure of tank joints or corrosion of pipework
- › Place signs in the building stating that anyone who enters during lockdown should not use the water systems.

Recommissioning

- › As close to occupancy as possible, undertake a disinfection of the hot and cold-water systems, including cold water tanks and hot water units in accordance with HSG274 Part 2 and PD855468:2015
- › Disinfection chemicals must be drawn to all outlets, with sentinel point checks undertaken to confirm the required level has been achieved throughout the system
- › If chemical disinfection of the hot water system is not possible, undertake a thermal disinfection
- › Disinfect shower heads and spray outlets
- › Flush all outlets to ensure full turnover of the system and emptying and refilling of cold-water tanks with fresh water
- › It is recommended that those carrying out any flushing during disinfection minimise aerosol release or wear appropriate PPE
- › Reinstate hot and cold-water systems and check water temperatures are compliant with HSG274 Part 2 at all outlets
- › Flush all outlets weekly until occupancy; if a phased occupancy, those outlets not in use must be flushed weekly
- › Put in place a sampling plan and take water samples at least 48 hours after disinfection for the following analysis:
 - Potable water tanks and outlets – Coliform, E.coli and TVC at 22°C and 37°C
 - All systems - Legionella bacteria. Take samples from tanks, hot water units and representative outlets as defined by sampling plan, including incoming mains
 - Complete permit to open form for each building.

HOW CAN SOCOTEC HELP?

SOCOTEC has many years' experience working in [Legionella management and control](#), as well as water hygiene, and can offer advice and support accordingly. We are a leading provider of Legionella and Water Hygiene consultancy; our Legionella risk assessments have been UKAS accredited to ISO 17020 since 2015, providing reassurance that our work is traceable, impartial and independent. All water hygiene risk assessors undergo an extensive training and auditing process, which includes internal audits and external independent audits by UKAS, as well as re-inspections.

For further advice on managing water systems during mothballing and subsequent recommissioning, please [contact us](#).