





Job Management Lines of Responsibility Chart

Duty Holder Vice Chancellor
[Redacted Content]







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## 6. System Temperature Requirements

The IFM contractor will ensure that systems comply with the following requirements:

- ◁ The inlet, outlet and surface water temperatures of cisterns and cold-water storage tanks should be less than 20°C. Tank temperatures should be checked during both hot and cold weather conditions.
- ◁ The temperature of calorifier and water heater contents should be maintained at 60°C. A minimum return temperature of 50°C should be achieved at all times to ensure Legionella bacteria do not multiply in the system.
- ◁ The testing of temperatures at sentinel outlets (the nearest and furthest hot and cold draw-off points on each system e.g. at sinks and hand basins, baths and showers) should be carried out every month. Hot water outlets should reach a steady 50°C minimum within one minute at a normal flow, and cold-water outlets should be less than 20°C within two minutes.
- ◁ Blended outlet temperatures of thermostatic mixing valves should be 43°C ±2°C to prevent persons being scalded. It should be proved that the hot inlet temperature is near to 60°C, or at least above 50°C.

## 7. Inspection and Maintenance

In accordance with HSG 274 part 2 appendices 2.2, a management scheme will be drawn from the identified needs of the risk assessment. Such needs will be based upon manufacturers recommendations, industry best practice and the requirements identified within SFG20. All required amends or deviations to the written scheme shall be approved by the WSMG prior to implementation implemented.

Should routine trending or analysis of the water system identify any biological presence, or should the on-going temperature monitoring indicate a loss of control then the actions and time frames identified in HSG 274 Part 2 table 2.1 (Appendix 1) are to be implemented in addition to the existing PPM regime, in agreement with instructions issued by WSMG.

The return to routine monitoring is only to be implemented on the advice of the WSMG following acceptance of remediation measures, proof of negative sampling and approval by the Duty Holder.

## 8. Flushing and Disinfection of Domestic Water Services

PD 855468:2015 provides guidance on water supply systems including the cleaning, flushing and disinfecting of domestic water systems to control microbiological growth and remove unwanted debris.

Procedures for flushing and disinfection were previously included in BS 8558:2011 (Guide to the design, installation, testing and maintenance of services supplying water for domestic use within buildings and their curtilages), but have been expanded and are now included in PD 855468:2015.

The below extracts should be read, understood, and implemented.

## 8.1. Infrequently Used Outlets

Where buildings/parts of buildings are not being used for excessive periods of time (more than 1 week) consideration should be given to implementing the following practices to limit the effects of bacteria growth within our water systems.

The daily monitoring of water systems will be in accordance with BS8558 with particular attention also given to PD 855468: Guide to the flushing and disinfection of services supplying water for domestic use within buildings and their curtilages.

Wherever possible, in addition to flushing, the variance in temperatures will be monitored to determine the frequency of outlet usage.

### 8.1.1 Isolation and Storage Reduction

- ◁ Were applicable, reduce the quantity of water in cold storage tanks.
- ◁ Turn off hot water calorifiers/dispensers and draw through hot water until water is a mains/tank temperature.
- ◁ Consult with vending machine operators for the requirement of shutdown/isolation/drain down etc. of their equipment e.g. hot and cold-water vending machines, ice makers, coffee machine etc.

another material capable of absorbing some of the force of the water against the surface of the appliance

- ◁ Review water schematics to identify the sentinel taps and record the water temperature at the tank (if applicable) and nearest and farthest outlets on both hot and cold outlets.
- ◁ Record temperature of tanks after 1, 3, 5 and 10 minutes at sentinel tap.
- ◁ If the temperatures exceed 20c report to your Technical Supervisors, flushing frequency to increase e.g. twice weekly or emptying of the tank and refilling to reduce the temperature.
- ◁ Review water schematics to identify all end of run water outlets and purge the hot, cold or the mixed water in turn for a minimum of 10 minutes or for a period of time necessary to draw water from the outlet at temperatures exhibited throughout the rest of the system.
- ◁ All other outlets to be purged individually for 5 minutes or for a period necessary to draw water from the outlet at temperatures exhibited throughout the rest of the system.
- ◁ Where showers need to be flushed, it is important to ensure that, where practicable, the showerhead is removed in order to reduce the potential of aerosol production
- ◁ Where the head is fixed, exposure to the aerosol produced must be minimised. One method that can be employed in this situation is the use of a transparent plastic bag, fixed around the showerhead, with one corner pierced to allow partial discharge of water
- ◁ All outlet locations, time & date of flushing to be recorded in water management folders.

### 8.1.3 Re-occupation of Buildings after a prolonged period of building closure

- ◁ Increase flushing of the water system to twice a week, for the 2 weeks prior to reoccupation of building.
- ◁ As near as practically possible of reoccupation, remove drain plug from hot water storage vessels and drain any murky water that might have settled till it runs clear, reinsert drain plug.
- ◁ Turn on hot water vessels and pasteurise hot water system for a period of 1 hour at 70°C (where systems can reheat and draw through to outlets, on completion return setpoints back original settings for an occupied building e.g. 60°C+ • As near as practically possible of reoccupation, reinstate tanks levels back to their normal levels.
- ◁ As near as practically possible of reoccupation disinfect and descale spray outlets.
- ◁ Consult with vending machine operators for the requirement of reinstating of their

## 8.2. Thermostatic Mixing Valves (TMV's)

- ◁ TMV's should only be installed where the risk assessment identifies a potential scalding risk, or where the location/room is designed to replicate hospital/surgery environment.
- ◁ The installation of TMV's shall be approved by the Water Safety Management Committee
- ◁ The pipe-work length from the TMV to the outlet shall be as short as possible (this must be less than two metres).
- ◁ All TMVs shall be fitted with strainers, (but only if a regular cleaning regime can be guaranteed) isolation valves and non-return valves.
- ◁ All TMVs shall be accessible (as far as reasonably practicable) and easy to clean, maintain and inspect.

## 9. Record Keeping

The IFM Responsible Person will ensure that:

- ◁ Adequate information and up to date records are kept available covering all of the tests, inspections, maintenance and remedial work undertaken on all systems. It is essential to be able to demonstrate that the risk assessment is being complied with, that any deficiencies have been corrected and adequate cross-referencing exists between the various documents.
- ◁ Suitable logbooks must be maintained to show that precautionary measures and treatments, monitoring results, service reports and remedial work is logged, dated and signed by the person who carried out the work.
- ◁ Every 3 months the logbooks are checked to ensure they are being completed properly and signed to this effect in the master logbook
- ◁ All legionella positive samples are recorded on the UofG Accident and incident reporting system, uploading the initial sample report, detailing the remediations undertaken and then uploading any follow up sample reports.

## 10. Sustainability Issues

There is a conflict between the Legionella requirements to flush outlets, WC's and drains regularly and the need to conserve water and energy (particularly with hot water). Care should be taken to minimise the amount of water being flushed away by allowing a reasonable flow from the taps etc. (not full flow) and by staying close by to turn off the outlets in a timely manner. Other considerations are to remove little used outlets completely to minimise the loss of water and heat, and the operative's time.

## 11. Further guidance

This Policy covers the basic requirements for the control of Legionella bacteria at the University of Greenwich.

For a fuller account the following legislation and code of practice should be referred to:

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disease – the control of Legionella bacteria in water systems" and Technical Guidance HSG274, Parts 2 and 3.



◁ WRAS (Water Regulations Advisory Scheme).

While all water fittings and associated materials must by law conform with the



## Appendix (1) HSG 274 Part 2 Table 2.1 Checklist for hot & cold-water systems

When using temperature as a control regime, alongside routine monitoring and inspection, the checks in Table 2.1 should also be carried out and remedial action taken where necessary.

Service	Action to take	Frequency	Responsible for the task
Calorifiers	Inspect calorifier internally by removing the inspection hatch or using a boroscope and clean by draining the vessel. The frequency of inspection and cleaning should be subject to the findings and increased or decreased based on conditions recorded	Annually, or as indicated by the rate of fouling	
	Where there is no inspection hatch, purge any debris in the base of the calorifier to a suitable drain Collect the initial flush from the base of hot water heaters to inspect clarity, quantity of debris, and temperature	Annually, but may be increased as indicated by the risk assessment or result of inspection findings	
	Check calorifier flow temperatures (thermostat settings should modulate as close to 60 °C as practicable without going below 60 °C) Check calorifier return temperatures (not below 50 °C, in healthcare premises not below 55 °C)	Monthly	
Hot water services	For non-circulating systems: take temperatures at sentinel points (nearest outlet, furthest outlet and long branches to outlets) to confirm they are at a minimum of 50 °C within one minute (55 °C in healthcare premises)  For circulating systems: take temperatures at return legs of principal loops (sentinel points) to confirm they are at a minimum of 50 °C (55 °C in healthcare premises). Temperature measurements may be taken on the surface of metallic pETQqser.(rem)-7(en)22(t)-9(	Monthly	



	<p>the temperature at the outlet stabilises and is comparable to supply water and purge to drain</p> <p>Regularly use the outlets to minimise the risk from microbial growth in the peripheral parts of the water system, sustain and log this procedure once started</p> <p>For high risk populations, e.g. healthcare and care homes, more frequent flushing may be required as indicated by the risk assessment</p>		
<p>TMVs</p> <p>Expansion vessels</p>	<p>Risk-assess whether the TMV fitting is required, and if not, remove</p> <p>Where needed, inspect, clean, descale and disinfect any strainers or filters associated with TMVs</p> <p>To maintain protection against scald risk, TMVs require regular routine maintenance carried out by competent persons in accordance with the manufacturer's instructions. There is further information in paragraphs 2.152– 2.168</p> <p>Where practical, flush through and purge to drain. Bladders should be changed according to the manufacturer's guidelines or as indicated by the risk assessment</p>	<p>Annually or on a frequency defined by the risk assessment, taking account of any manufacturer's recommendations</p> <p>Monthly–six monthly, as indicated by the risk assessment 583.17</p>	

## Appendix (2) Acceptance of Legionella Code of Practice

FAO: Estates and Facilities Directorate

### Acceptance of Legionella Code of Practice

I have received a copy of UofG's Legionella Code of Practice and will comply with all requirements within.

This document will be forwarded to colleagues within the company/department as appropriate.

Please tick the box below that is most applicable to your role at UoG.

- I will ensure all my directly employed operatives and sub-contractors engaged on domestic water system installations; alterations or extensions to existing systems have a working knowledge of the Water Supply (Water Fittings) Regulations (as amended 2021) and are a member of an approved scheme as detailed in (S) 9.3 of this policy.
- On all projects where I am appointed as a Project Manager, I will ensure all contractors engaged on domestic water system installations; alterations or extensions to existing systems have a working knowledge of the Water Supply (Water Fittings) Regulations (as amended 2021) and are a member of an approved scheme as detailed in (S) 9.3 of this policy.
- I have understood the requirements referenced within this code of practice. However, I do not undertake works to the domestic water systems nor design such works and am signing purely to evidence receipt.

Signed \_\_\_\_\_

Name (Print) \_\_\_\_\_

Company/Department \_\_\_\_\_

Date \_\_\_\_\_