

Gravesham Borough Council

DSO Building Management

Water Hygiene Policy and Scheme of Control for Legionella Bacteria

May 2019

Document Control

Responsible Department	DSO Building Management
Author	
Consultation	Housing Management, Responsive Repairs, Asset Management, Regulatory Services, Property Services

Revision History

Date	Previous Version	Description of Revision

Index

Water Hygiene Policy

1. Introduction
2. Legionnaires' Disease Background
3. Aims and Objectives
4. Legal and Regulatory Framework
5. Roles and Responsibilities
6. Policy Review

Scheme of Control

7. Written Scheme of Control
8. Control Methodology
9. Legionella Risk Assessments
10. Cold Water Temperature Control Checks
11. Hot Water Temperature Control Checks
12. Legionella Sampling
13. General Microbiological Monitoring
14. Void Properties
15. Sheltered Accommodation & Shared Facilities
16. Zetasafe Web Based Compliance Management System
17. Record Keeping
18. Performance & Monitoring
19. Competencies and Training
20. Glossary of Terms

Abbreviations

<i>ACOP</i>	Approved Codes of Practice
<i>CHAS</i>	The Contractors Health and Safety Assessment Scheme
<i>CIBSE</i>	Chartered Institution of Building Services Engineers
<i>CFU</i>	Colony forming units
<i>COSHH</i>	Control of Substances Hazardous to Health
<i>DSO</i>	Direct Services Organisation
<i>HASAWA</i>	Health & Safety At Work Act 1974
<i>HSE</i>	Health & Safety Executive
<i>HSG</i>	Health & Safety Executive Guidance
<i>ISO</i>	International Organization for Standardization
<i>POU</i>	Point Of Use
<i>TMV</i>	Thermostatic Mixer Valve
<i>TVC</i>	Total Viable Count
<i>UKAS</i>	United Kingdom Accreditation Service

Water Hygiene Policy

1. Introduction

- 1.1 This policy sets out how Gravesham Borough Council (GBC) will comply with its duties in respect of the effective management of water systems within its Housing stock to ensure the health and safety of tenants, staff and visitors by minimising the risk posed by legionella bacteria.
- 1.2 DSO Building Management will manage all operations with regard to design and maintenance of domestic water systems, in compliance with all current and relevant legislation and guidelines. The Scheme of Control contains specific operational guidance procedures to effectively manage these requirements to provide the means from which exposure to legionella bacteria can be prevented.
- 1.3 Legionella bacteria can cause pneumonia like illnesses such as Legionellosis, therefore the risk of Legionellosis must be controlled by introducing measures which prevent the growth of legionella bacteria within water systems.
- 1.4 This policy has been prepared with the understanding and practical applications of the legal requirements in conjunction with the Approved Codes of Practice L8 (ACoP) and the Health and Safety Guidance Document HSG274 Part 2.

2. Legionnaires Disease Background

- 2.1 Legionella bacteria causes Legionellosis, a group of diseases of which 'Legionnaires' disease (a potentially fatal form of pneumonia) is the most serious, as well as less serious conditions of Pontiac fever and Lochgoilhead fever.
- 2.2 Infection occurs when small droplets (aerosols) of water containing the bacteria are inhaled, however the disease cannot be passed from person-to-person. Not everyone exposed to legionella will become ill, but some people are more susceptible to the disease including those over 50 years old, smokers and those whose immune system is impaired in some way.
- 2.3 Legionella bacterium can be found in most natural water sources such as rivers, lakes, ponds etc. Because they are so widespread in the natural environment, they may also contaminate and grow in artificial water systems such as cooling towers, hot & cold water systems and whirlpool spas.
- 2.4 Growth and exposure of Legionella bacteria within water systems will increase under certain conditions:
 - Bacteria will remain dormant at low temperatures but will grow and multiply at 20-45°C.
 - Where systems contain scale, rust, sludge, organic matter and biofilm, they will act as nutrients and a food source for the bacteria.
 - Where shower heads, spray heads and cooling towers create an aerosol.
 - Where water is stored, re-circulated, or remains stagnant in the system.

- 2.5 The risk of Legionellosis must therefore be controlled by introducing measures which prevent the growth of legionella bacteria within water systems, and where reasonably practicable avoid or remove exposure to water droplets and aerosols.

3. Aims and Objectives

3.1 DSO Building Management in liaison with all stakeholders will ensure:

- To take reasonable and practical precautions to manage and control legionella bacteria within water systems.
- To protect the people occupying and visiting GBC premises, as well as passers-by within the vicinity of the premises.
- That appropriately trained and technically competent and experienced staff will be available and resourced to adequately manage the water systems and associated legionella control.
- That appropriate Water Hygiene Risk Assessments are completed and safe working practices are identified by all contractors and sub-contractors.
- Risk Assessments are analysed to identify potential hazards and improvements are implemented to upgrade water systems to remove or reduce the risk of Legionella bacteria.
- All operatives working on water systems will be managed in accordance with this plan and will possess specific expertise and competency.
- The procedure for the control of Legionella bacteria in water systems, plant and equipment within GBC's properties shall be in accordance with the ACoP L8 and HSG274.
- All risk assessments and details of water temperature, sampling and treatment records are stored and updated on a water hygiene compliance software system (Zetasafe).
- Control measures continue to be robust and effective.
- Tenants will be provided with advice and information on good water hygiene via their tenancy handbook, safety leaflets, letters and via the GBC website.

4. Legal and Regulatory Framework

4.1 There is no legislation specific to Legionella, however the following regulations, Approved Codes of Practice (ACoPs), British Standards and HSE guidelines place specific duties on local authorities with regards to the control of Legionella:

- Health and Safety at Work etc. Act 1974 (HASAWA)
- Management of Health and Safety at Work Regulations 1999
- Control of Substances Hazardous to Health Regulations 2002 (COSHH)
- Water Supply (Water Fittings) Regulations 1999

- Water Supply (Water Quality) Regulations 2000
- Private Water Supplies Regulations 2011
- HSE Approved Code of Practice ACOP L8 (2013)
- HSG 274 (Part 1, 2 & 3)
- BS 8558 Water use in domestic buildings
- BS 7592 Sampling for Legionella bacteria in water systems
- BS 8580 Water Quality – Risk assessment for Legionella control
- CIBSE TM13 – 2013 Minimising the Risk of Legionnaires Disease
- The Corporate Manslaughter and Corporate Homicide Act 2007

Details of the above legislation and guidance requirements can be found in *Appendix 1*.

5. Roles & Responsibilities

5.1 The Chief Executive with assistance from Directors, Assistant Directors and Service Managers are collectively responsible for ensuring the implementation and management of the Scheme of Control for Legionella bacteria within water systems

5.2 The Chief Executive

The Chief Executive has the ultimate responsibility and accountability regarding Control of Legionella bacteria within GBC water systems at board level and is considered to be the 'Duty Holder'. The Chief Executive will ensure that all appropriate personnel are familiar with the contents of ACOP L8 and HSG274, insofar as it is relevant to their roles and responsibilities and ensure the appointment of the Legionella Responsible Person.

5.3 The Assistant Director (Operations)

The Assistant Director is responsible for service strategy and quality of services provided by DSO Building Management. The Assistant Director also has overall budget responsibility for all water hygiene servicing and maintenance programmes and ensures adequate resources are made available to both develop and implement the Scheme of Control.

5.4 The Asset Manager

The Asset Manager is responsible for procurement, and selection of the specialist Water Management Contractor to undertake water hygiene related works within Gravesham Borough Council's Housing stock. The Asset Manager is also responsible for service delivery, staff training and ensuring that the Water Hygiene Policy and Scheme of Control continue to be robust and effective.

5.5 The Compliance & Projects Manager

The Compliance & Projects Manager will undertake the duties of the Responsible Person to ensure that the systems and procedures outlined in this Scheme of Control are followed. The Manager will monitor the performance of the Water Management Contractor and ensure compliancy is achieved in all areas of the service.

In accordance with ACoP L8 and HSG 274 this will include:

- A suitable and sufficient risk assessment and supporting schematic drawing/s is

in place for each relevant GBC building

- Risk assessments and accompanying schematic drawing/s are reviewed at a maximum of five yearly frequency or earlier should there be a change to the system where updating would be required, as defined in the ACoP L8. Based on risk GBC are currently working to a two year cycle.
- A written scheme of control is fully implemented and monitored to effectively control legionella bacteria in GBC water systems.
- Taking a lead role in the implementation of the action plan in the event of a Legionella incident.
- A review of the written scheme of control annually.
- Maintaining records for a minimum of five years.
- Legionella management records are made available when requested for all properties sold.
- The appointment of the Deputy Responsible Person/s, who shall cover the Responsible Person in their absence.
- Dependent on the findings of the legionella risk assessments the frequency of subsequent risk assessments may be increased or reduced.

5.6 Surveyor (Compliance & Projects)

The Surveyor will undertake the duties of the Deputy Responsible Person for the day-to-day management of control of Legionella bacteria in GBC Housing stock, including:

- Acting as the Responsible Person in the absence of the Responsible Person.
- A review of test and inspection records to identify, prioritise and action any anomalies.
- Review risk assessments, water testing data and remedial works at monthly meetings with the Water Management Contractor.

5.7 The Water Management Contractor

Gravesham Borough Council will employ a suitably qualified consultant/contractor to act as a **nominated competent person**. Legionella consultants/contractors must comply with the following requirements:

- Membership of a recognised body such as the Legionella Control Association.
- Public Liability, Employers and Professional Indemnity insurance is in date and complies with our approved consultants/contractors requirements.

- Employees hold sufficient qualifications and maintain training records

The Nominated Competent Person shall:

- Carry out all works in accordance with the contract specification, and compliance with ACoP L8, HSG 274 and GBC's Scheme of Control.
- Carry out legionella risk assessments to identify, and assess the risk of exposure to legionella bacteria from activities and water systems on premises and any precautionary measures needed.
- Implement service and maintenance regimes to carry out works in accordance with Legionella Risk Assessments. This will include but are not limited to water temperature testing, water sampling, disinfecting and outlet de-scaling and cleaning.
- Carry out investigations and remedial works as instructed, highlighting and reporting issues of concern.
- Documenting and uploading legionella management information on to the water hygiene compliance software system (Zetasafe).
- Attend monthly data progress meetings.

6. Policy Review

- 6.1 This policy will be reviewed on an annual basis to ensure its continuing suitability, adequacy and effectiveness or as required by the introduction of new legislation or regulation that impacts on water hygiene management obligations of Gravesham Borough Council.

Scheme of Control

7. Written Scheme of Control

- 7.1 The following “written scheme” for the control of legionella is a comprehensive risk management document that clearly identifies measures required to control the risks from exposure to Legionella bacteria, and how those measures are implemented and managed so that control over water systems is achieved and remains effective.

8. Control Methodology

DSO Building Management will ensure that water systems and equipment under their control is designed, serviced (including inspection, cleaning and disinfecting) and maintained to the standard required to control Legionella bacteria within the GBC's Housing stock.

The Surveyor (Compliance & Projects) will manage the water hygiene compliance software system (Zetasafe) that incorporates the following:

- Risk Assessments for the water system
- Schematic diagrams
- Records of bacterial sampling
- Temperature control checks
- Disinfection record certificates
- Non-compliance reporting
- Recording remedial actions.

9. Legionella Risk Assessments

- 9.1 To control the risk from a range of hazardous substances including biological agents such as Legionella bacteria, DSO Building Management will ensure a suitable and sufficient risk assessment of GBC properties will include:
- All buildings with communal facilities/water supply e.g. cisterns/calorifiers/communal areas or any of these singly or in combination.
 - All buildings with shared water supply such as sheltered accommodation and blocks of flats.
 - All other buildings based on risk evaluation.
- 9.2 Competent persons appointed to carry out the risk assessment and draw up and implement precautionary measures should be members of the Legionella Control Association, have such ability, experience, instruction, information, training and resources to enable them to carry out their tasks competently and safely.

In particular, they should know the:

- Potential sources of legionella bacteria and the risks they present
- Measures to adopt, including the precautions to take to protect the people

- concerned, and their significance
- Actions to take to ensure the control measures remain effective.

9.3 As part of the risk assessment water system schematics are produced for all hot and cold water systems and identify sentinel points/outlets on block plans.

The schematics will provide details of:

- Origin of water supply
- General layout of the system e.g. pumps, control service control valves
- How the system operates
- All associated storage and header tanks
- All standby equipment
- Any parts of the system that may be out of use temporarily
- Any problem areas such as dead/blind end (a redundant length of pipe, closed at one, through which water cannot flow)

9.4 Risk Classification

GBC buildings and equipment may fall into two main risk categories, which are:

- **Inherent Risk** – Risk associated with the system/s before any control action procedures have been implemented.
- **Operational Risk** - Risk associated with the system/s after control action procedures have been implemented.

Factors to be considered in the Legionella risk assessments include; contamination, amplification, transmission, exposure and host susceptibility.

Any person using hot and cold water systems including tenants, leaseholders, staff, contractors, visitors and the general public are at risk, specifically from:

- Showers or any other equipment that may create an aerosol
- Infrequently used outlets
- Alterations to existing water systems that restrict water flow.

9.5 Risk Assessment Review

All assessments will be carried out by qualified and competent persons and updated at a frequency determined by the initial risk assessment. These will include schematics with respect to Legionella bacteria and will be held in electronic format on Zetasafe and stored for five years.

The Surveyor (Compliance & Projects) will review each risk assessment on receipt and action all recommendations.

Thereafter all risk assessments will be reviewed by the Surveyor if:

- There are changes to the water system or its use.
- There are changes to the use of the building in which the water system is installed.
- The availability of new information about risks or control measures.
- The results of checks indicating that the control measures are no longer effective.

- A case of Legionnaires Disease or Legionellosis is associated with the system.
- There are changes to key personnel.

10. Cold Water Temperature Control Checks

10.1 Temperature checks are carried out on a monthly basis for Sheltered Accommodation and communal shared facilities and six monthly for all other buildings with a shared water supply. Checks will be conducted using a calibrated digital thermometer with the appropriate surface touch or immersion probe and all results will be recorded on Zetasafe by the Water Management Contractor.

10.2 Cold Storage Tanks

Temperatures to cold water supply and storage tanks are checked during periods of high ambient temperatures (e.g. afternoons in the summer months).

Temperatures should be no greater than 20°C and checked at the furthest and nearest draw off points in the system, within 2 minutes of running the water at full flow.

A similar temperature checking regime will be undertaken during the winter months to identify the performance of cold water distribution systems and the impact of heat gained from heating systems.

Inspection will also include the general condition of the tank and ensure the stored water does not increase by more than 2°C above the incoming water supply. The plant room temperature must also be recorded.

10.3 Cold Water Distribution

Temperatures are taken at sentinel taps (typically those nearest to and furthest from the cold tank, but may also include other key locations on long branches to zones or floor levels). These outlets should be below 20°C within two minutes of running the cold tap. Checks are taken on a representative selection of other points on a rotational basis to confirm they are below 20°C to create a temperature profile.

11. Hot Water Temperature Control Checks

11.1 Calorifiers (Heat Exchangers)

Outgoing water from the calorifier should be at least 60°C, and water returning to the calorifier should be at least 50°C.

Internal inspections of all calorifiers and hot water storage vessels will be performed annually. Where internal inspection is not possible, borescope inspections should be performed.

As a last resort, drain valves on each vessel should be purged in lieu of internal or borescope inspection. The colour of the drain water may give an indication of the internal conditions. The colour will therefore be recorded as part of the assessment documentation. Consideration should be given to investigate prior to commencement of the legionella risk assessment to assess the ability to coincide internal inspections with drain valve flushing's during planned maintenance tasks.

11.2 Hot Water Distribution

For non-circulating domestic type systems temperatures are taken on a monthly basis at sentinel points (nearest outlet, furthest outlet and long branches to outlets) to confirm they are at a minimum 50°C within one minute of running the outlet.

- **Non-Circulating Hot water systems:** - temperature checks are taken from a selection of points where accessible on a rotational basis to confirm they are at a minimum of 50°C to create a temperature profile.
- **Circulating Hot water systems:** - temperatures are taken on a monthly basis at return legs of principal loops (sentinel points) to confirm they are at a minimum of 50°C. Temperature recordings are taken on a quarterly basis on return leg pipe surfaces of subordinate loops or alternatively the temperature of water from the last outlet on each loop is greater than 50°C within one minute of running the outlet.

All outlet temperatures will be checked at least once a year in the communal areas and recorded on Zetasafe.

11.3 Thermostatic mixer valves (TMVs)

Where TMVs are installed, they should be serviced and any strainers cleaned and disinfected annually.

Where fitted, the hot water input temperatures to thermostatic mixer valves should be at least 50°C within a minute of running the water, and the input cold water should be a maximum of 20°C after running for two minutes. Outlets with TMV's should be monitored on a sentinel basis as detailed above.

12. **Legionella Sampling**

- 12.1 Random sampling is not advocated by the HSE. Sampling should only be structured based on the findings of the legionella risk assessment, or if there is cause for concern that control limits are not being met using the temperature/inspection control strategy. Legionella sampling will be undertaken by a specialist Water Management Contractor for analysis by an accredited UKAS laboratory with the current ISO standard methods for the detection and enumeration of Legionella included within the scope of accreditation.
- 12.2 The appointed Water Management Contractor shall ensure all legionella analysis results are emailed with the appropriate urgency to the Compliance & Projects Manager. The Compliance and Projects Manager as the Responsible Person shall ensure all sampling analysis results and follow up actions are uploaded to the Zetasafe by the Contractor.
- 12.3 Legionella sampling should only be undertaken if recommended by the legionella risk assessment. Any legionella detection above the control limits shall be compared with the current condition levels supplied by the local water supplier and may trigger cleaning, disinfection and a review of the system and control methods- see Action Level Guidance below.

Hot & Cold Water Systems Legionella Sampling

Action Level	Criteria sample Cfu/litre	Action	Action On
	Up to and including 100 CFU/litre	No action required	No action required
1	More than 100 up to and including 1000 CFU/ litre	<p>Either:</p> <p>(a) If only one or two samples are positive, system should be resampled. If a similar count is found again, a review of the control measures and risk assessment should be carried out to identify any remedial actions</p> <p>(b) If the majority of samples are positive, the system may be colonised, albeit at a low level, with legionella. Disinfection of the system should be undertaken but an immediate review of control measures and risk assessment should be carried out to identify any other remedial action required.</p>	Appointed Specialist Water Management Contractor & GBC Responsible/ Deputy Responsible Persons
2	More than 1000 CFU/litre	The system should be resampled and an immediate review of the control measures and risk assessment carried out to identify any remedial actions, including disinfection of the system.	Appointed Specialist Water Management Contractor & GBC Responsible/ Deputy Responsible Persons
3	Any legionella pneumophila serogroup – 1 result reading greater than detected levels of 1000 cfu/litre	The system should be fully isolated, drained and disinfected before returning to service. Where multiple serogroups have been isolated, if one of the groups is SG1 the combined count will be treated as if it was a total SG1 count.	Appointed Specialist Water Management Contractor

After completion of actions as indicated above, the system must be tested by sampling to ensure that, the actions taken have resulted in a significant reduction of legionella levels.

13. General Microbiological Monitoring

13.1 Where the systems are cold water tank fed, the cisterns should be sampled for microbiological monitoring for total viable count (TVC), E Coli, and Coliforms six monthly. This is not part of the legionella control strategy but does confirm the quality of the sites drinking water.

Where water is mains fed TVC is not necessary unless taste, odour or discoloured water problems are identified.

14. Void Properties

14.1 As part of the HSE's recommendations and best practise, it is important that water is not allowed to stagnate within the water system and so there should be careful management of properties left vacant for extended periods. As a general principle, outlets on hot and cold water systems should be used at least once a week to maintain a degree of water flow and minimise the chances of stagnation.

14.2 To manage the risks during non-occupancy, a suitable flushing regime will be implemented or other measures considered, such as draining the system down. The system should be drained down if it's to remain vacant for long periods or if there are expected long spells of high temperatures.

During void works DSO Building Management will:

- Remove the shower head and disinfect or replace with new prior to the tenant moving in.
- Remove dead/blind ends where identified in the plumbing system.
- Remove thermostatic mixer valves (TMVs) which have not been installed by GBC.
- Check to ensure cold water storage tanks are complete with covers and replace where missing or damaged.
- Ensure water outlets are run at least weekly. Where this cannot be achieved the system will be drained down.

When properties are returned to Housing Management they will be responsible and:

- Continue with the weekly flushing regime.
- Where it is likely the property will remain vacant for a long period of time, Housing Management will request DSO Building Management to drain down the system using the job scheduling system, and avoid weekly flushing.
- On re-occupation Housing Management will issue advice to the new tenant via the handbook to flush the system before first use.

14.3 To ensure we manage the risks throughout the period a void property is un-occupied, evidence of any actions taken should be recorded by the relevant department by uploading notes to the job scheduling system and including details of officer name, date of flushing/drain down etc.

15. Sheltered Accommodation & Shared Facilities

15.1 Legionella bacteria will begin to multiply if left undisturbed in stagnant water in communal shared facilities. To maintain compliance with ACoP L8 Control of Legionella Bacteria in Water System, Scheme Managers will:

- Ensure a flushing of outlets regime is carried out during periods of little use and non-occupancy within residence buildings/rooms unoccupied for greater than seven days
- Ensure all flushing record information is recorded and updated.
- Ensure that no modifications/alterations or additions to water systems are carried out without the approval of the Compliance and Projects Manager.
- Report any modifications seen to the Compliance and Projects Manager.

16. Zetasafe Web Based Compliance Management System

16.1 This is an electronic system of data storage which allows data entry at the time of inspection. The system is operated by the Water Management Contractor and the Surveyor (Compliance & Projects). All water temperature, sampling and treatment monitoring non-compliances are highlighted using a traffic light system.

Compliance Parameters:

GREEN

- All green results will have fallen within the compliance parameters.

AMBER

- Hot water at sentinel points, 48°C to less than 50°C within one minute.
- Domestic hot water secondary flow, 58°C to less than 60°C.
- Domestic hot water secondary return, 48°C to less than 50°C
- The rationale behind the hot water Amber parameters is to allow a tolerance through periods of high demand during the recovery period of the hot water storage.
- Cold Water temperatures at sentinel points above 20°C to above 23°C within two minutes.
- The rationale for this is the growth rate of legionella at these temperatures is known to be very slow.

RED

- Hot water sentinel points, below 48°C within one minute.
- Domestic hot water storage, below 58°C.
- Domestic hot water return, below 48°C
- Cold water temperatures at sentinel points above 23°C within two minutes.

- Cold water storage above 23°C.

16.2 The Zetasafe software generates an out of parameter specification against any Amber and Red result, if any asset generates more than two consecutive Amber reports, it is elevated to Red status.

All individual assets are barcoded and results are required to be uploaded by PDA on to the Zetasafe web based system by the appointed Water Management Contractor as the testing is undertaken.

16.3 The Surveyor (Compliance & Surveyor) is required on a continuous daily basis to review, assess, prioritise and coordinate remedial actions identified from any compliance failures (Red)

Zetasafe Test Parameter Set Points

Asset Type	Task	Test Level Green	Test Level Amber	Test Level Red
Annual Cold Outlet	Temperature test	Meet the given legislation	Above 20°C and below 23°C	Above 23°C
Annual Hot Outlet	Temperature test	Meet the given legislation	48°C to below 50°C and above 62°C	Less than 48°C
Annual Outlet	Cold outlet temperature test	Meet the given legislation	Above 20°C and below 23°C	Above 23°C
	Hot outlet temperature test	Meet the given legislation	48°C to below 50°C and above 62°C	Less than 48°C
Sentinel Cold Outlet	Temperature test	Meet the given legislation	Above 20°C and below 23°C	Above 23°C
Sentinel Hot Outlet	Temperature test	Meet the given legislation	48°C to below 50°C and above 62°C	Less than 48°C
Sentinel Outlet	Cold outlet temperature test	Meet the given legislation	Above 20°C and below 23°C	Above 23°C
	Hot outlet temperature test	Meet the given legislation	48°C to below 50°C and above 62°C	Less than 48°C
Quarterly Sentinel Point	HWS subordinate return loop Temp	Meet the given legislation	48°C to below 50°C	Above 60°C
Calorifier (With Return)	Flow temperature test	Meet the given legislation	58°C to below 60°C and above 65°C	Below 58°C
	Return temperature test	Meet the given legislation	48°C to below 50°C and above 60°C	Set point not appointed
Calorifier (With no return)	Flow temperature test	Meet the given legislation	58°C to below 60°C and above 65°C	Below 58°C
Cold Water Storage Tank	Stored temperature	Meet the given legislation	Above 20°C to 23°C	Above 25°C
	Inlet temperature	Meet the given legislation	Above 20°C to 23°C	Above 23°C
	Temperature differential	Meet the given legislation	Set point not appointed	Above 2°C
	Tank room space temperature	Meet the given legislation	Above 20°C to below 30°C	Above 30°C
Kitchen Sink	Cold outlet temperature test	Meet the given legislation	Above 20°C and below 23°C	Above 23°C

	Hot outlet temperature test	Meet the given legislation	48°C to below 50°C and above 62°C	Below 48°C
Mains water	Temperature test	Meet the given legislation	Above 20°C to 23°C	Above 23°C
Mixer basin (non-thermostatic)	Cold outlet temperature test	Meet the given legislation	Above 20°C to 23°C	Above 23°C
	Hot outlet temperature test	Meet the given legislation	48°C to below 50°C and above 62°C	Set point not appointed
Sentinel TMV outlet	Cold inlet temperature test	Meet the given legislation	Above 20°C to 23°C	Above 23°C
	Hot inlet temperature test	Meet the given legislation	48°C to below 50°C	Below 48°C
	Mixed outlet temperature test	Meet the given legislation	Set point not appointed	Below 37°C and above
Annual TMV outlet	Cold inlet temperature test	Meet the given legislation	Above 20°C to 23°C	Above 23°C
	Hot inlet temperature test	Meet the given legislation	48°C to below 50°C	Below 48°C
	Mixed outlet temperature test	Meet the given legislation	Set point not appointed	Below 37°C and above
POU water heater	Hot outlet temperature test	Meet the given legislation	45°C to below 50°C and above 62°C	Below 45°C

16.4 Specific Non-compliance is assessed by the Surveyor (Compliance & Projects) on a weekly basis and prioritised and actioned accordingly.

Water Temperature

Defect	Action	Response
Stored hot water below 60°C or hot water outlets below 50°C	Determine reason for low Temperature, and instigate remedial actions as appropriate	1 week
Cold water 20°C or below within 2 mins of running or within 2°C of the building incoming supply temperature	Determine reason for high temperature Action such as weekly flushing, tank lagging, tank volume reduction, pipework lagging etc. may be required	1 week

Tanks & Calorifiers

Defect	Action	Response
Cold water tank requires cleaning & disinfection following inspection	Raise GBC Remedial works order with the Water Management Contractor/DSO	1 week
Calorifier requires de-scale following inspection	Raise GBC Remedial works order with the Water Management Contractor/DSO	1 month

17. Record Keeping

17.1 The Duty Holder shall ensure that appropriate records are kept, including details of:

- The persons responsible for conducting the risk assessment, managing and implementing the written scheme
- The significant findings of the risk assessment
- The written scheme of inspection and details of its implementation
- The results of any monitoring, inspection, test or checks carried out, and the dates completed.
- The operational state of the system, i.e. in use/not in use

Records of the above shall be retained throughout the period for which they remain current and for at least two years. Records kept in accordance with monitoring shall be retained for at least five years.

17.2 The following types of records are kept:

Record	Retention Period	Responsibility
This procedures document	Throughout the period for which they remain current and for at least two further years.	GBC Appointed Responsible/Deputy Responsible Persons
Risk assessments & schematic drawings		
Risk minimisation scheme and details of its implementation		
Monitoring, inspection, water analysis, water treatment, cleaning & disinfection records and results including details of the state of operation of the system	At least five years	Appointed Specialist Water Management Contractor GBC Appointed Responsible/Deputy Responsible Persons
Duty Holders, Appointed Responsible/Deputy Responsible Persons	At least five years	GBC Appointed Responsible/Deputy Responsible Persons
Training – GBC Appointed Responsible/Deputy Responsible Persons, Department Managers, Technicians and trade staff	At least five years	GBC Appointed Responsible/Deputy Responsible Persons
Annual independent legionella management audits	At least five years	GBC Appointed Responsible/Deputy Responsible Persons
Quarterly Water Services Management Work Plan reviews	At least five years	Appointed Specialist Water Management Contractor GBC Appointed Responsible/Deputy Responsible Persons

Ongoing action recommendations in Legionella Risk Assessments/Reviews/Audits	At least five years	Appointed Specialist Water Management Contractor GBC Appointed Responsible/Deputy Responsible Persons
Calibration of test equipment	At least five years	Appointed Specialist Water Management Contractor GBC Appointed Responsible/Deputy Responsible Persons

18. Performance & Monitoring

- 18.1 Performance of the Water Management Contractor will be monitored at monthly contract meetings to ensure the control of Legionella within water systems remains effective. The Contractor will provide full details of recorded key performance indicators against targets for specified servicing and maintenance as stated in their contract.

19. Competencies and Training

19.1 DSO Building Management

- The Asset Manager will arrange training for DSO Building Management front line staff on Legionella Awareness with refresher training every three years.

19.2 Water Management Contractor

- Member of approved legionella management body e.g. the Legionella Control Association, Water Management Society, Construction Line, CHAS
- Be a financially sound and proven established business in providing legionella management & control services
- Employ competent management and field staff-evidenced.
- Provide internally structured legionella control competency auditing from management through to field operatives

19.3 Legionella Risk Assessors

- Member of approved legionella management body e.g. the Legionella Control association for the applicable systems being surveyed and assessed
- Can demonstrate that they have specialist knowledge of legionella bacteria, relevant water treatment and water systems to be assessed
- Can demonstrate they are competent to carry out legionella risk assessments for the systems being assessed, measurements and sampling.

20. Glossary of Terms

ACoP - means Approved Code of Practice and Guidance. An ACoP is issued by the Health and Safety Executive and gives guidance on how to comply with the regulations to which it applies. Following an ACoP is not mandatory, but in a court of law failure to adopt the advice in an ACoP will be regarded as having failed to comply with the law.

Biofilm – Is a community of bacteria and other micro-organisms, embedded in a protective layer with entrained debris, attached to a surface.

Responsible/Competent Person – Is someone who has sufficient training, experience, knowledge and other personal qualities which are needed to undertake a job safely. Competence is dependent on the needs of the situation and the nature of the risks involved.

Calorifier - means an apparatus used for the transfer of heat to water in a vessel, the source of heat being contained within a pipe or coil immersed in the water.

Dead legs – Pipes leading to a fitting through which water only passes when there is a draw-off from the fitting.

Dead End/Blind End – A length of pipe closed at one end through which no water passes.

Duty Holder – The individual with the legal responsibility to ensure that health and safety is managed effectively.

NOTE 1: The duty holder is the employer where the risk is from their undertakings to their staff or others, the self-employed person where the risk is from undertaking to themselves or others, or the person in control of the premises where the risk is present from the systems in the building (e.g. a landlord who remains responsible for the maintenance of the systems). See ACOP L8 para 23.

NOTE 2: In most cases there will only be one duty holder, but in cases of shared accommodation there could be a shared responsibility. The duty holder cannot delegate this duty, but can delegate managerial responsibility to the Responsible Person.

Legionella bacteria - Is a ubiquitous aquatic organism found in all fresh water.

Legionellosis – Is a collective term used to describe a number of infections caused by Legionella bacteria. These infections include ‘Legionnaires’ Disease, Pontiac Fever, Lochgoilhead Fever etc.

Legionnaires’ disease – Is an infection of the lungs which principally affects those who are susceptible due to age, illness, diabetes, reduced immunity, smoking, alcohol consumption, etc. It can cause serious illness and in some circumstances, may be fatal.

Pneumophila serogroup 1- Specific type of pneumonia related to Legionellosis.

Pre-flush samples – Is collected immediately after a tap, or outlet is opened, the pre-flush sample represents water held within the outlet.

Post-flush Samples - is collected after the tap, or outlet has been disinfected and water has been run to waste for a prescribed length of time, this sample represents the quality of the water supplied to the tap outlet.

Responsible Person –who has appointed responsibility under the authority of the duty holder for ensuring that the organisation's responsibilities for the control of legionella are met and that all individuals and organisations assigned to carry out tasks in the preventative scheme are competent. They should have sufficient authority competence and knowledge of the installation to ensure all operational procedures are carried out effectively in a timely way.

Risk Assessment – Identifies and assess the risk from exposure to legionella from work activities and water sources in premises and determines any necessary precautionary measures.

Written Scheme of Control – Is a written document (this document) in paper or electronic format which identifies the measures for preventing or controlling identified and assessed risks.

ZetaSafe® - is a web based compliance solution for accurately and efficiently capturing, analysing and communicating data obtained from the routine testing of assets in field. Made originally to provide an electronic legionella logbook system. Tests and schedules can be created for virtually any type of asset.

Appendix 1 - Relevant Legislation, Guidance and Standards

Health and Safety at Work Act 1974 (HASAWA)

There are two sections of the Health and Safety at Work, etc. Act 1974 particularly relevant to this policy:

- *Section 2 (1)*

“It shall be the duty of every employer to ensure, so far as is reasonably practicable, the health, safety and welfare at work of all his employees.”

This is supported by specific reference to maintaining the workplace in a condition such that it is safe, and does not put employees at risk.

- *Section 3 (1)*

“It shall be the duty of every employer to conduct his undertaking in such a way so as to ensure, so far as is reasonably practicable, that persons not in his employment, who may be affected thereby, are not thereby exposed to risks to their health or safety”

Gravesham Borough Council, in the context of this policy therefore, shall (so far as is reasonably practicable) ensure its housing stock and third parties or premises (its business activity) does not cause harm to its tenants.

Management of Health and Safety at Work Regulations 1999

In general terms, Gravesham Borough Council must:

- Assess the risk to Health and Safety of all employees and to anyone who may be affected as a result of work undertaken.
- Endeavour to provide comprehensive information, instruction, training and supervision with the aim of ensuring, so far as is reasonably practicable, the health and safety at work of every employee or person so affected.
- Assess the risk of all work activities.
- Record risk assessments on their database
- For any new work activity, risk assessments should be carried out by the appropriate party but in all cases the assessments are to be held jointly and reviewed annually for any changes in legislation.
- Have a competent person to advise in respect of these regulations such as a Health and Safety Advisor.

Control of Substances Hazardous to Health Regulations 2002 (COSHH)

Apply to substances that are hazardous to health including biological agents which may cause infection, allergy, and toxicity or otherwise create a hazard to human health.

The regulations place specific responsibilities on employers, self-employed persons and employees. The regulations require a “suitable and sufficient” assessment to be made of the risks and measures necessary to control substances hazardous to health arising from work. Employers are also required to maintain the control measures to provide information, instruction and training in relation to the risks and control measures; to monitor exposure of the employees to the substances and (where relevant) organise a health surveillance program.

<p>Water Supply (Water Fittings) Regulations 1999</p>
<p>With guidance from Water Regulations Advisory Scheme (WRAS) – provides an explanation of the water fittings regulations. Part of the WRAS guidance is provided in the Water Fittings and Material Directory which has information on materials which have been tested microbiologically and chemically and have been found to be appropriate for use with water systems.</p>
<p>Water Supply (Water Quality) Regulations 2000</p>
<p>Provides water suppliers with statutory limits on water quality with information on sampling, testing and monitoring frequency.</p>
<p>Private Water Supplies Regulations 2011</p>
<p>Provides private water suppliers with statutory limits on water quality with information on sampling, testing and monitoring frequency.</p>
<p>HSE Approved Code of Practice ACOP L8 (2013)</p>
<p>The Health & Safety Executives Approved Code of Practice ACOP L8 – “Legionnaires’ disease: The control of legionella bacteria in water systems” provides guidelines for those with responsibility for the control of legionella in water systems. This includes dutyholders, employers, those in control of premises including landlords and those with health and safety responsibilities for others.</p>
<p>HSG 274 (Part 1, 2 & 3)</p>
<p>This guidance is for dutyholders, which includes employers, those in control of premises and those with health and safety responsibilities for others, to help them comply with their legal duties. These include identifying and assessing sources of risk, preparing a scheme to prevent or control risk, implementing, managing and monitoring precautions, keeping records of precautions and appointing a manager responsible for others.</p> <p>The guidance gives practical advice on the legal requirements of the Health and Safety at Work etc Act 1974, the Control of Substances Hazardous to Health Regulations 2002 concerning the risk from exposure to legionella and guidance on compliance with the relevant parts of the Management of Health and Safety at Work Regulations 1999.</p> <p>The guidance is in three parts:</p> <p>HSG 274 (Part 1) ~ Provides technical guidance on ‘The control of legionella bacteria in evaporative cooling systems’</p> <p>HSG 274 (Part 2) ~ Provides technical guidance on ‘The control of legionella bacteria in hot & cold water systems’</p> <p>HSG 274 (Part 3) ~ Provides technical guidance on ‘The control of legionella bacteria in other risk systems’</p>

<p>BS 8558:2015 – Water use in domestic buildings</p>
<p>The British Standard provides complementary guidance to BS EN 806 (Specification for installations inside buildings conveying water for human consumption. Operation and maintenance) and offers detailed guidance on the design, installation, testing, operation and maintenance of services supplying water for domestic use within buildings and their curtilages .</p>
<p>BS 7592:2008 – Sampling for Legionella bacteria in water systems</p>
<p>BS 7592 gives recommendations and guidance on the <u>sampling of water</u> and related materials. It involves testing for the presence of legionella. It applies to sampling artificial water systems and gives methods for sampling of biofilms and sediments that might be present in water systems.</p>
<p>BS8580:2019 Water Quality – risk assessment for Legionella control – Code of Practice</p>
<p>Provides recommendations for risk assessment for legionella control in artificial water systems, covering the preparations, desktop appraisal, site visit/survey, reporting and review.</p>
<p>CIBSE TM13 – 2013 Minimising the Risk of Legionnaires Disease</p>
<p>These Technical Memoranda set <u>out to give guidance</u> on the <u>appropriate design</u>, installation, commissioning, operation and maintenance procedures necessary to minimise the risk of infection by Legionella from water systems within a building.</p>
<p>The Corporate Manslaughter and Corporate Homicide Act 2007</p>
<p>Under The Corporate Manslaughter and Corporate Homicide Act 2007 companies and organisations can be found guilty of corporate manslaughter as a result of serious management failures resulting in a gross breach of a duty of care.</p>