



**ROBERT GORDON  
UNIVERSITY ABERDEEN**

# Legionella & Water Hygiene



<b>Approved by</b>	Head of OHES		
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1	Creation of Policy	January 2023

# LEGIONELLA & WATER HYGIENE POLICY

## 1. Purpose

The purpose of this policy is to provide an effective framework for the control of risk from exposure to legionella bacteria (the causative agent of legionellosis, including Legionnaires' disease) within water systems under the control of Robert Gordon University.

The Legionella Management Plan comprises the Policy (this document) and a separate procedures document detailing operational guidance.

## 2. Overview

This document sets out how the University will identify and manage the risks of exposure to legionella bacteria.

## 3. Relevant Legislation & Guidance

- Health & Safety at Work Act 1974
- The Management of Health & Safety at Work Regulations 2006
- The Control of Substances Hazardous to Health Regulations (COSHH) 2002
- The Construction (Design and Management) regulations 2015
- Legionnaires Disease. The Control of legionella bacteria in water systems Approved Code of Practice (ACoP) and Guidance L8 (Fourth Edition)
- HSE274 Parts 1, 2 and 4
- Control of legionella bacteria in water systems – Audit checklists

N.B. There are specific water quality and hygiene regulations that apply to mains-fed water storage and supply systems which should be considered when implementing this policy.

#### 4. Introduction

Legionella bacteria, the causative organism for Legionnaires' disease is widespread in the natural environment and is commonly found in natural waters such as rivers and ponds. It does not usually cause a problem to human health.

However, problems can arise when water is used within the built environment, specifically in man-made systems where water temperature can become warm enough to encourage the growth of Legionella bacteria and may contaminate, proliferate and grow in other water systems within offices, hotels, and universities.

- Cooling Towers
- Hot & cold-water services
- Air-conditioning systems
- Water used for domestic purposes (taps and showers)
- Gyms and changing rooms.
- Water fountains

The bacteria thrive at temperatures between 20 degrees C and 45 degrees C if the conditions are right, e.g., if a supply of nutrients is present such as rust, scale, algae, sediment, and other bacteria. Legionella bacteria are killed by high temperatures.

Legionnaires disease is a rare, but severe form of pneumonia and is caused by breathing in small droplets of water contaminated by the bacteria. The disease cannot be passed from one person to another. Everyone is potentially susceptible to the infection, but some people are at higher risk e.g., those over 45 years of age, smokers, heavy drinkers, those suffering from respiratory or kidney disease, and people whose immune system is impaired.

If water droplets are created and dispersed into the atmosphere, then people in the vicinity **may** be at risk of inhaling the bacteria. To eliminate or reduce the risk, control measures must be in place to prevent the proliferation of the organism in water systems and to minimise the generation of water droplets and aerosols.



## 5. Legal Requirements:

Compliance with L8 ensures compliance with duties under the Health & Safety at Work Act 1972 and the Control of Substances Hazardous to Health Regulations (COSHH) 2002.

The specific requirements for the control of legionella bacteria in the workplace are provided in “The Prevention or Control of Legionellosis, Approved Code of Practice L8” (ISBN 978 0 7176 1722 2), published by the Health & Safety Executive.

The principal requirements include:

- Identifying and assessing sources of risk
- Preparing a written scheme (course of action) for preventing or controlling the risk
- Implementing and managing the scheme – appointing a person to be managerially responsible, often referred to as the ‘responsible person’.
- Maintaining records and checking that what’s being done is effective.
- Providing training for persons with delegated responsibilities

ACoP L8 is approved by / and contains guidance issued by the Health & Safety Commission, with the consent of the Secretary of State. It gives practical advice on how to comply with the law. It states, that if you follow the advice, you will be doing enough to comply with the law in respect of those specific matters on which the Code gives advice.

You may use alternative methods to those set out in the Code to comply with the law. However, the Code has a special legal status. If you are prosecuted for a breach of health and safety law and it is proven that you **did not** follow the relevant provisions of the Code, you will show that you have complied with the law in some other way, or a Court will find you at fault.

Health & Safety inspectors seek to ensure compliance with the law and may refer to this guidance as illustrating good practice and as such, RGU commit to follow this guidance across the portfolio.

### **5.1 L8 applies to:**

- Hot and cold-water systems
- Plant of systems containing water likely to exceed 20°C, which may release aerosols during routine operation or maintenance.
- Spa pools
- Cooling towers
- Evaporative condensers
- Other plant and systems containing water that can create and increase the risk of legionella during operation or maintenance e.g., wave tank/flow monitoring systems etc.

## **6. Principal Objectives of the Policy:**

The Policy Statement sets out the arrangements for controlling legionella in the University's water systems, plant, and specialist equipment in accordance with ACoP L8.

The principal objectives of the legionella and water hygiene policy are:

- Safeguard anyone who may be affected by legionella or similar bacteria within or close to any RGU owned/managed premises.
- To ensure an effective management system is in place.
- To prevent cross-contamination between mechanical plant, user equipment, hot and cold water, and wholesome water supplies within the University premises.

## **7. Duty Holders and Responsibilities:**

The control and management of legionella in hot and cold-water systems is a corporate responsibility and the role of the Statutory Duty Holder rests with the Director of Estates & Property Services (Estates).

L8 allows the Duty Holder to obtain assistance from a competent service provider and RGU has, through its' Hard FM provider engaged a specialist water hygiene contractor in this regard.

### **7.1 Division of Responsibilities:**

Estates are responsible for the safety and supply of hot and cold water to the outlets, i.e., taps, showers, etc, and isolation points for water-using equipment.

Individual schools and departments are responsible for ensuring the safe use of the se water supplies within the areas under their control and as stakeholders, share the responsibility with Estates in the prevention of legionella proliferation and cross-contamination of water systems.

The Governance and Compliance Department will audit as appropriate.

### **7.2 Estates & Property Services:**

Estates have responsibility for the design, installation, and ongoing management and maintenance of the hot and cold-water systems across the RGU portfolio and shall appoint a Responsible Person (RP) and Deputy Responsible Person(s) (DPR) as appropriate.

The RP / DRP's are charged with implementing a written scheme to control legionella within domestic hot and cold-water systems across the University portfolio. The RP/ DRP will monitor and review the effectiveness of the scheme with regular audits.

The main duties of the RP / DRP are to:

- Identify and assess the source of risk e.g., legionella, cross contamination.
- Review Risk Assessments in areas where significant changes occur with a full review every two years.
- Review Risk Assessments and action on any recommendations highlighted within
- Prepare a scheme or course of action for preventing or controlling the risk.
- Implement and manage the scheme.

- Keep records and check that what has been done is effective.
- Liaise with individual Schools / Departments and Accommodation RPs to aid and provide guidance.
- Identify training for persons with delegated responsibilities.

## **8. Legionella Risk Assessment:**

Estates will take the lead role in carrying out legionella risk assessments for all hot and cold-water building services distribution systems across the RGU portfolio and organise risk assessments for departmental water using equipment connected to the building's domestic hot and cold-water distribution systems.

## **9. Design, monitoring, and maintenance of hot and cold-water systems:**

### **9.1 Estates are responsible for:**

- That the design of hot and cold-water systems within the buildings complies with all relevant legislation
- Ensuring that employed Contractors and in-house staff comply with the written scheme / all aspects of L8.
- Monitoring the temperature of hot and cold-water supplies in all RGU buildings for which it has direct responsibility and carrying out remedial repairs if required.
- Facilitating appropriate safety training course for all those with responsibilities for compliance with this Policy, including individual Schools Responsible Persons (see below)
- Endeavouring to ensure full compliance with all aspects of L8.

### **9.2 Schools and departments are responsible for:**

Individual schools and departments also have duties under this policy. Schools are responsible for the ongoing management of the use of departmental water-using equipment within the areas that come under their control.



Such systems may include but are not limited to wash hand basins, showers, sinks, humidifiers, autoclaves, catering equipment, pot wash spray flexible hoses, lathes, power wash spray lances, irrigation systems, hose pipes, greenhouse misters – in summary, management of all outlets and departmental water using equipment that is connected to the building domestic hot and cold water distribution systems.

### 9.3 Schools and Departments Responsible Person:

Each school and department must appoint a Responsible Person (RP) who shall be responsible for water hygiene associated with water-using equipment or systems (departmental equipment/operations/ standard operating procedures).

It may also be necessary to appoint deputy RPs for each sub-division or functional unit. It is the responsibility of the Dean of School / Head of Department to make such appointments, as appropriate. If a particular risk has been identified, the RP should ensure that suitable actions are taken to remove the risk or implement effective measures to control the risk.

The names of all School / Department RP's and deputy RPs should be provided to the Estates and Property Services and Governance and Compliance Departments.

The school or department will carry out, or where relevant, ensure the deputy RP's carry out the following:

- Identify infrequently used outlets.
- Organise and carry out flushing of infrequently used outlets and maintain records.
- Identify and schedule all departmental water-using equipment.
- Seek competent advice.
- Liaise with Estates RP / DRP and Governance and Compliance
- Attend organised training for persons with delegated responsibilities.
- Attend regular water hygiene meetings organised by the Estates RP

## 10. Specialist school and departmental systems or equipment:

Where schools and departments possess and operate specialist water systems or equipment that are completely independent of the domestic hot and cold-water building distribution supplies, i.e., not connected to the building services infrastructure although require water supplies and therefore may still present a potential legionella exposure risk, then the department must take on the responsibilities of the Duty Holder. School or Department RP should contact Estates and Property Services or Governance and Compliance for guidance.

### 10.1 Risk Assessment:

Schools and departments are responsible for notifying Estates of any / all water-using equipment, systems, or activities under their control. All school and departmental equipment permanently connected to the domestic hot and cold wholesome water (mains cold water) supplies must be identified, and risk assessed.

The Estates RP will arrange for such risk assessments to be conducted. The Estates RP will discuss the results of the risk assessment and any remedial actions/control measures required to be implemented with the school RP.

Specialist advice is available and departments requiring assistance in fulfilling their duties should contact Estates and Property Services / Governance and Compliance.

## 11. Emergency Procedures:

In the event that, during routine monitoring and maintenance of hot and cold water systems and related equipment, legionella bacteria of a concentration level likely to be hazardous to health (100CFU - 1000CFU and > 1000CFU) and any systems likely to provide a medium for the spread of infection (e.g. water aerosol spraying equipment) are discovered, then Estates and Property Services and Governance and Compliance are to be notified **immediately** prior to any shutdown of systems and / or equipment.

[estates-helpdesk@rgu.ac.uk](mailto:estates-helpdesk@rgu.ac.uk)

## 12. Control of Legionella:

The broad requirements of L8 for controlling legionella bacteria in water systems are:

- Appointment of a responsible person (in a managerial rather than technical grade)
- Formal legionella risk assessment with suitable and sufficient documentation of findings, including schematic drawings detailing the water system.
- Ongoing review and assessment of legionella exposure risk
- Development of a risk minimisation programme, a prioritised action plan and a mechanism for escalating remedial work where risk assessment and monitoring data indicate a risk.
- Implantation and management of the programme
- Development of formal procedures for inspection, maintenance, and disinfection of water systems
- Training of staff
- Maintaining suitable records

## 13. Risk Assessments:

Water risk assessments should be reviewed at least biannually and when they may no longer be valid. For example, when significant changes are made to the use of the building or significant changes are made to the water services infrastructure within the building.

Estates are responsible for the maintenance, monitoring, treatment, cleaning, and disinfection of hot and cold-water systems according to the guidance set out in L8 and the risk assessment for each system should detail these arrangements.

Where risk assessment identifies a significant risk, Estates and Property Services, in conjunction with Governance and Compliance, shall arrange for the system to be disinfected immediately, either thermally or by chemical means. The system will then be monitored to ensure the efficacy of the treatment regime. If necessary, the regime will be modified until the risk of exposure to legionella is reduced to acceptable limits.

#### 14. Hot and cold-water Services:

Water services systems must comply with the Scottish Water Byelaws (2004) BS EN806 parts 1-5, BS 8558 (2001), and any subsequent amendments to these documents.

##### 14.1 Estates will ensure that:

- Only competent contractors are engaged for maintenance, repair, or replacement programmes and only approved materials are used.
- Cold water storage is minimised to avoid stagnation occurring within the storage tank(s)
- Suitable measures are in place to protect cold-water storage tanks from heat gain and dust ingress.
- Tank-fed cold-water distribution systems deliver cold water to the outlet at  $\leq 20$  degrees C.
- Storage calorifiers and recirculating hot water systems store hot water at a minimum temperature of 60 degrees C and deliver hot water of at least  $\geq 50$  degrees C at sentinel and representative outlets.
- Regular monitoring and recording of these temperatures.
- Where thermostatic mixing valves (TVMs) are installed, these are sited as close as possible to the point of use. (N.B. Generally, TVMs should not serve multiple outlets)
- All domestic hot and cold-water outlets e.g., taps, showers, drip cups, trigger-operated spray guns, hose pipes, etc must be used regularly: at least on a weekly basis to prevent potential stagnation of the water supply.
- Drinking water chillers are regularly serviced and maintained by the University's drinking water chiller service provider with records retained on site.

#### 14.2 Schools and departments must:

- Identify to Estates any outlets that are used intermittently, or which are under-used and immediately report any faults or problems found with the domestic hot and cold-water system.
- Outlets identified by the Accommodation / School or Department RP as being under-used, are classified under L8 as 'infrequently used outlets.
- Accommodation / School RP / or Departmental DRP will ensure all infrequently used outlets are being flushed to drain for at least five minutes once a week and records of flushing are kept on file.

Flushing of infrequently used outlets is an extremely labour-intensive activity and consideration should be given to the permanent removal of the infrequently used outlet if considered appropriate.

Departmental managers must also appraise Estates of any significant change of use within their department that may adversely impact the legionella control programme and therefore necessitate a re-risk assessment of the installation.

Individual schools are responsible for the health and safety of all staff and students within their areas of control, this includes the safe management of plant and equipment to include, but not restricted to:

#### Laboratory showerheads/drench showers / Departmental eye wash stations:

- Laboratory showerheads/drench showers should be flushed and purged to drain on a weekly basis.
- The flushing exercise must ensure aerosols are not being created and only carried out by trained personnel.
- Detailed records must be kept on file.

### Humidifiers and spray-types air washers:

- The University's policy has been to replace these with steam humidifiers. Schools and departments who continue to operate such equipment should notify Estates and Property Services / Governance and Compliance with comprehensive details of any equipment still in use.
- Existing spray humidifiers and spray air washers must be regularly inspected, cleaned, disinfected, and maintained by the school or department.
- There are currently no ultrasonic humidifiers under the control of estates. Installation of such equipment is discouraged since it introduces a potential risk of legionella exposure, demanding rigorous inspection and maintenance.
- Where schools or departments continue to use ultrasonic humidifiers as part of their experimental equipment, then it is their responsibility to arrange for inspection and maintenance, to clean and disinfect all wetted parts six-monthly, with a sampling of the ultrasonic mist for the total viable count (TVC) at three monthly intervals.

### 15. Other equipment and activities that create risk:

- Water softeners, sprinkler, and hose reel systems, lathe or machine tool coolant systems, horticultural misting equipment, fume cupboard water supplies, automatic feeding systems, indoor fountains, and water features can also create risk.
- Provide adequate written information to users to enable the safe use of the water system(s)

#### 15.1 Cooling towers and evaporative condensers (including adiabatic systems):

- The Free Cooling systems which service the Data Centre form part of the Estates water maintenance programme
- It is also suggested that given the nature of the system and the risk of airborne spores being found within the Data Centre itself, that air quality monitoring is also carried out.



## 16. Training:

Estates can arrange training sessions and seminars in conjunction with the University's specialist water hygiene contractor. School RP's and DRP's should attend, as well as those individuals who are managerially responsible for specialist departmental water-using equipment.

Further information relating to training can be obtained from the Estates and Property Services or Governance and Compliance Departments.

## 17. Summary of School and Department actions:

### Schools and Departments must ensure that:

- Suitable regimes are in place for general maintenance, disinfection, cleaning, and monitoring of specialist water systems / departmental equipment, and records are kept.
- Personnel who operate and maintain specialist water systems/school or departmental equipment are suitably trained.
- Estates are notified and given the opportunity to comment and advise in advance of any intended alteration to the domestic water distribution system(s) prior to works being instructed or commencing.
- Estates are notified of any hot or cold-water outlet which is under-used or used intermittently (infrequently used outlets) so that an appropriate management plan can be discussed and implemented by the school.
- All specialised water systems/school or departmental equipment connected to water supplies are risk assessed for legionella exposure.
- Assist Estates to minimise the risk of cross-contamination of domestic equipment/specialist equipment. Schools and departments should seek advice and guidance from Estates.

- Notify, upon receipt of this Policy, with details of air spray washers or spray humidifiers still in operation.

## 18. Review

This policy will be reviewed every 2 years or when new buildings are constructed and / or when significant changes such as additions / modifications are made to the water systems.



Robert Gordon University,  
Garthdee Rd,  
Aberdeen AB10 7AQ