

LEGIONELLA POLICY

1. APPLICATION

- 1.1 This policy covers the Control of Legionella bacteria in water systems in Council properties. It does not cover the control of Legionella bacteria in leasehold properties (where former Council tenants have purchased under Right to Buy) or properties owned by other organisations in which Council employees work.

2. POLICY STATEMENT

- 2.1 Melton Council is committed to preventing and/or managing the risks arising from Legionella bacteria in water systems in Council properties.

3. AIMS

- 3.1 The Council will ensure:

- 3.1.1 That only trained staff and appropriate competent contractors are responsible for managing the risks from Legionella bacteria.

- 3.1.2 That suitable and sufficient assessments are undertaken of work activities and water systems to determine the risks arising from Legionella bacteria, in order to:

- Avoid significant risks, so far as is reasonably practicable; or
- Develop control schemes to reduce significant risks.

- 3.1.3 That the commissioning of any new plant or equipment involving water systems adequately addresses, avoids or reduces the potential risks arising from Legionella bacteria.

- 3.1.4 That monitoring arrangements are established to ensure that any precautions taken to avoid or reduce the risks remain effective.

- 3.1.5 That risk assessments are reviewed every two years and whenever there is a reason to suspect that they are no longer valid.

- 3.1.6 That suitable records are kept which:

- In the case of records for responsible persons, risk assessments and written schemes, are retained throughout the period for which they remain current and for at least two years after that period; and

- In the case of records which relate to monitoring, inspection, testing and checking of water systems, are retained for at least 5 years in a central database.

4. REVISION AND AUDIT

- 4.1 This policy will be regularly reviewed by the Health and Safety Advisor/Safety Committee and when there is any significant change in legislation or best practice.
- 4.2 All managers who are involved in the management, installation, commissioning, repair, maintenance or decommissioning of water systems shall monitor compliance with this policy within their areas of responsibility.

5. TERMINOLOGY

- 5.1 A water system includes all plant/equipment and components associated with that system. For example, all associated pipe-work, pumps, feed tanks, valves, showers, heat exchangers, quench tanks, chillers, etc.
- 5.2 A Council tenant is someone who pays rent to the Council to live in a Council property.

Areas for Action

Council Premises (except Council housing/leasehold properties):

1. The Property Team will:
 - Arrange for a competent person/contractor to assess the risks arising from Legionella bacteria in water systems
 - Ensure that assessments avoid or reduce the significant risks with a written control scheme
 - Arrange for a competent person/contractor to monitor the written control scheme to ensure that precautions taken to avoid or reduce the risks remain effective
 - Arrange for a competent person/contractor to check water temperatures/test water quality, where appropriate
 - Keep records relating to responsible person(s), risk assessments and the written schemes for the period for which they remain valid and for at least two years after that period
 - Keep records relating to monitoring, inspection, testing and checking of water systems for at least 5 years to be kept in a central database
 - Arrange for the risk assessment to be reviewed by a competent person/contractor every 2 years and whenever there is reason to suspect it is no longer valid.

Council Housing Properties/Leaseholders' Properties

1. The Housing Repairs Team will:
 - Arrange for a competent person/contractor to assess the risks arising from Legionella bacteria. This will be conducted for:
 - Water systems from the stop cock in the street to, but not beyond, the stop cock of leaseholders' properties (i.e. communal areas, but not water systems within leaseholders' properties)
 - Water systems from the stop cock in the street to, and beyond, the stop cock of Council tenants' properties (i.e. communal areas and water systems within Council tenants' properties).
 - Ensure that risk assessments avoid or reduce the significant risks with a written control scheme
 - Arrange for a competent person/contractor to check water temperatures/test water quality, where appropriate
 - Keep records relating to responsible persons(s), risk assessments and the written schemes for the period for which they remain valid and for at least two years after that period
 - Keep records relating to monitoring, inspection, testing and checking of water systems for at least 5 years and kept in a central database
 - Arrange for the risk assessment to be reviewed by a competent person/contractor every 2 years and whenever there is reasons to suspect it is no longer valid

Council Officers visiting Non Council Premises

1. Where Council Officers have an enforcement, monitoring or similar role to ensure that owners/landlords of non Council premises are managing the risks of Legionella:
 - The line managers of those visiting officers shall ensure that there are suitable and sufficient generic risk assessments, including adequate information, instruction, training and personal protective equipment for visiting officers; and
 - The visiting officers shall conduct site specific assessments during visits to decide what precautions are required.

GUIDANCE

1. What is Legionellosis?

- 1.1 Legionellosis is the collective name given to pneumonia-like illnesses caused by Legionella bacteria. It includes serious illnesses like Legionnaires Disease, and less serious conditions like Pontiac fever and Lochgoilhead fever.
- 1.2 Legionnaires' disease is a potentially fatal form of pneumonia which can affect anybody, but which affects those who are susceptible because of age, illness, immunosuppression, smoking, etc. It is caused by the bacterium Legionella pneumophila and related bacteria, and the condition can be fatal in approximately 12% of reported cases.
- 1.3 It is normally contracted by inhaling Legionella bacteria deep into the lungs, either in tiny droplets of water (aerosols) or in the droplet nuclei (the particles left after the water has evaporated).
- 1.4 Symptoms of the disease may include high fever, chills, headache, muscle pain, dry cough, breathing difficulties, diarrhoea, confusion or deliriousness.
- 1.5 The incubation period is between 2 to 10 days (usually 3 to 6). Not everyone exposed will develop symptoms of the disease and those that do not develop the "full blown" disease may only present with a mild flu-like infection.
- 1.6 Legionella bacteria can be found naturally in various water sources such as rivers, lakes and reservoirs. Water temperatures in the range of 20°C to 45°C seem to favour growth. The organisms do not appear to multiply below 20°C and will not survive above 60°C They may, however, remain dormant in cool water and multiply only when water temperatures reach a suitable level.
- 1.7 Legionella bacteria require a source of nutrients to multiply which can include algae, amoebae, sediment, sludge, scale and biofilm (a thin layer of micro-organisms).
- 1.8 As Legionella bacteria are commonly encountered in environmental sources, they may colonise manufactured water systems and be found in cooling tower systems, hot and cold water systems and other plant which use or store water.

2. What are the risks of exposure?

- 2.1 A reasonably foreseeable risk of exposure to Legionella bacteria exists in:
 - Water systems incorporating a cooling tower
 - Water systems incorporating an evaporation condenser

- Hot and cold water systems
 - Other plant and systems containing water which is likely to exceed 20°C and which may release a spray or aerosol (i.e. a cloud of droplets and/or droplet nuclei) during operation or when being maintained.
- 2.2 When identifying reasonably foreseeable risks, it is important that the system is considered as a whole, including dead-legs and parts of the system used intermittently since they can create particular problems with microbial growth going unnoticed.
- 2.3 So far as possible, the design and installation of new water systems should avoid the use of wet cooling towers and evaporation condensers. Dry cooling, using air cooled condensers or air blast coolers, should be the preferred option.
- 3. Assessing the risk of exposure**
- 3.1 A suitable and sufficient assessment is required to identify and assess the risks of exposure to Legionella bacteria from work activities and water systems on the premises and any necessary precautionary measures.
- 3.2 The employer or landlord of the premises must ensure that only competent persons, for example, trained staff or appropriate contactors, undertake the assessment and develop the necessary precautions. Consultation with employees or their representatives about the arrangements for competent help and advice is required.
- 3.3 The assessment should include the identification and evaluation of potential sources of risk and:
- The particular means by which exposure to Legionella bacteria is to be prevented; or
 - If the prevention is not reasonably practicable, the particular means by which the risk from exposure to Legionella bacteria is to be controlled
- 3.4 Where the assessment shows that there is no reasonably foreseeable risk or that the risks are insignificant and unlikely to increase, no further assessment or measures are required. However, should the situation change, the assessment needs to be reviewed and any necessary changes implemented.
- 3.5 The assessment needs to be reviewed every two years and, in any case, whenever there is reason to believe that the original assessment may no longer be valid.

4. Carrying out a risk assessment

4.1 The following factors are required to create a risk of acquiring Legionellosis:

- The presence of Legionella bacteria
- Conditions suitable for multiplication of the organism e.g. suitable temperature (20°C to 45°C) and a source of nutrients e.g. sludge, scale, rust, algae
- A means of creating and disseminating breathable droplets e.g. aerosol generated by a cooling tower or shower
- The presence (and numbers) of people who may be exposed, especially in premises where occupants are particularly vulnerable e.g. healthcare

4.2 In complex systems or premises, a site survey of all water systems should be carried out and should include an asset register of all associated plant, pumps, strainers and other relevant items. This should include an up-to-date drawing/schematic diagram showing the layout of the plant or system, including parts temporarily out of use. It should be decided which parts of the water system may pose a risk to those at work or other people.

4.3 The following factors should be considered when undertaking an assessment:

- The source of system water supply e.g. whether from mains supply or not
- Possible sources of contamination of the water supply within the premises before it reaches the cold water storage cistern, calorifier, cooling tower or any other system using water that may present a risk of exposure to Legionella bacteria
- The normal plant operating characteristics
- Unusual, but reasonably foreseeable operating conditions e.g. breakdowns

4.4 Risk assessments should be recorded and linked to other health and safety records and, in particular, the written scheme for controlling unavoidable risks.

4.5 Employers are required to consult employees or their representatives on the identified risks of exposure to Legionella bacteria and on the measures and actions taken to control the risks.

4.6 It is essential that the effectiveness of the control measures be monitored and decisions should be made on the frequency and manner of this monitoring.

4.7 Risk assessments should be reviewed at least every two years and whenever there is a reason to suspect that they are no longer valid. For example, assessments would require review when:

- 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)
- There is new information about the risks or control measures
- The results of checks indicate that control measures are no longer valid
- A case of Legionellosis/Legionnaires Disease is associated with the system

5. Managing the risks

- 5.1 If the assessment shows that there is a reasonably foreseeable risk and that it is reasonably practicable to prevent exposure or control the risk from exposure, management must appoint a person(s) to take managerial responsibility to supervise the implementation of precautions.
- 5.2 The Responsible Person(s) who draw up and implement precautionary measures should have such ability, experience, instruction, information, training, resources and authority to enable them to carry out their tasks competently and safely. They should know:
- Potential sources and the risks they present
 - Measures to be adopted, including precautions to be taken for the protection of people concerned, and their significance
 - Measures to be taken to ensure that controls remain effective, and their significance
- 5.3 The responsibility for ensuring competence remains with Melton Borough Council. Where the above expertise is not possessed by staff, it may be necessary to enlist the help of appropriate competent contractors.
- 5.4 The implementation of the system control scheme should be regularly and frequently monitored and everyone involved in any operational procedure should be properly supervised.
- 5.5 Management must make reasonable enquiries to satisfy themselves of the competence of contractors in the area of work before entering into contracts for the treatment, monitoring and cleaning of water systems, and other aspects of water treatment and control.
- 5.6 Responsibilities should be well defined in writing and understood by all concerned. Lines of communication should be clear, unambiguous and audited regularly to ensure they are effective. Management and communication procedures should be periodically reviewed as appropriate.

6. Preventing or controlling the risks from exposure to Legionella bacteria

- 6.1 Where the assessment shows that there is a reasonably foreseeable risk from exposure to Legionella bacteria, the use of water systems, parts of water systems or systems of work that lead to exposure should be avoided, so far as is reasonably practicable.
- 6.2 Where this is not reasonably practicable, there should be a written scheme for controlling the risks from exposure, which should be implemented and properly managed. The scheme should include:
- An up-to-date plan showing layout of the plant or system, including parts temporarily out of use (e.g. a schematic plan)
 - A description of the correct and safe operation of the system
 - The precautions to be taken
 - Checks to be carried out to ensure the success of the scheme and the frequency of such checks
 - Remedial action to be taken in the event that the scheme is shown not to be effective
- 6.3 The risk from exposure will normally be controlled by measures which do not allow the proliferation of Legionella bacteria in the system and reduce exposure to water droplets and aerosol. Precautions should, where appropriate, include the following:
- Controlling the release of water spray
 - Avoidance of water temperatures (i.e. 20°C to 45°C) and conditions that favour the proliferation of Legionella bacteria and other micro-organisms
 - Avoidance of water stagnation
 - Avoidance of the use of materials that harbour bacteria and other micro-organisms, or provide nutrients for microbial growth
 - Keeping the system clean to avoid build up of sediment and bacteria
 - Use of a water treatment programme
 - Ensuring the correct and safe operation and maintenance of the water system
- 6.4 The scheme should give details on how to use and carry out the various control measures and water treatment regimes including:
- The physical treatment programme – for example, the use of temperature control for hot and cold water systems
 - The chemical treatment programme, including a description of the manufacturer's data on effectiveness, the concentrations and contact time required
 - Health and safety information for storage, handling, use and disposal of chemicals

- System control parameters (together with allowable tolerances); physical, chemical and biological parameters, together with measurement methods and sampling locations, test frequencies and procedures for maintaining consistency
 - Remedial measures to be taken in case the control limits are exceeded, including lines of communication
 - Cleaning and disinfection procedures
- 6.5 The scheme should also describe the correct operation of the water system plant including:
- Commissioning and recommissioning procedures
 - Shut down procedures
 - Checks of warning systems and diagnostic systems in case the system malfunctions
 - Maintenance requirements and frequencies
 - Operating cycles – including when the system plant is in use or idle
- 6.6 If precautions are to remain effective, the condition and performance of the system will need to be monitored, which should involve:
- Checking the performance of the system and its component parts
 - Inspecting the accessible parts of the system for damage and signs of contamination
 - Monitoring to ensure that the treatment regime continues to control to the required standard. The frequency and extent of routine monitoring will depend on the operating characteristics of the system, but should be at least weekly.

7. Record Keeping

- 7.1 The Responsible Person(s) shall ensure that appropriate records are kept, including details of:
- The person(s) responsible for conducting the risk assessment, managing and implementing the written scheme
 - The significant finding of the risk assessment
 - The written scheme and details of its implementation
 - The names and positions of people who have responsibilities for implementing the scheme, their respective responsibilities and lines of communication
 - The names and positions of people responsible for carrying out the various tasks under the written scheme.
 - Plans or schematic drawings of the systems

- Details of precautionary measures that have to be carried out, including sufficient detail to show that they were carried out correctly and the dates on which they were carried out
- Remedial work required and carried out, and the date of completion
- A log detailing visits of contractors, consultants and other personnel
- Cleaning and disinfection procedures and associated reports and certificates
- Results of the chemical analysis of the water
- Information on other hazards e.g. treatment chemicals
- Cooling tower notification
- Training records of personnel
- Records showing the current state of operation of the system, e.g. when the system or plant is in use and, if not in use, whether it is drained down
- The signature of the person carrying out the work, or other form of authentication where appropriate.
- The results of any monitoring, inspection, test or checks carried out, and the dates. This should include details of the state of the operation of the system i.e. in use / not in use.

7.2 Records which relate to the Responsible Person, the risk assessment and the written scheme, should be retained throughout the period for which they remain current and for at least two years after that period. Records which relate to monitoring, inspection, testing and checking should be retained for at least 5 years in a central database.

7.3 All records should be signed by those people performing the various tasks assigned to them.

8. Installation

8.1 Installers of water systems should ensure, so far as is reasonably practicable, that:

- Water systems are designed and constructed so as to be safe and without risks of Legionellosis when used, cleaned and maintained
- Adequate information is provided on the safe and correct use of the water systems
- Any limitations they identify in the occupier's systems or written schemes are made known

8.2 All water systems should be properly installed and commissioned as appropriate.

9. Cleaning and Disinfection

9.1 Hot water services and, exceptionally, cold water services, should be cleaned and disinfected in the following situations:

- If routine inspection shows it is necessary
- If the system or part of it has been substantially altered or entered for maintenance purposes in a manner which could lead to contamination
- During or following an outbreak (or suspected outbreak) of Legionellosis

10. General Monitoring

10.1 All water services should be routinely checked for temperature, water demand and inspected for cleanliness and use. All the inspections and measurements should be recorded and should include:

- The name of the person undertaking the survey, signature or other identifying code, and the date on which it was made (computer records are acceptable); and
- A simple description and plan of the system and its location within and around the building. This should identify piping routes, storage and header tanks, calorifiers, water softeners, filters, pumps and all water outlets.

APPENDIX 1: RECOMMENDED INSPECTION FREQUENCIES FOR RISK SYSTEMS

Service	Task	Frequency
Hot Water Services	Arrange for samples to be taken from hot water calorifiers, in order to note condition of drain water.	Annually
	Check temperature in flow and return at calorifiers.	Monthly
	Check water temperature up to one minute to see if it has reached 50 degrees Celsius in the sentinel taps.	Monthly
	Visual check on internal surfaces of calorifiers for scale and sludge. Check representative taps for temperature as above on a rotational basis.	Annually
Cold Water Services	Check tank water temperature remote from ball valve and mains temperature at ball valve. Note maximum temperatures recorded by fixed max/min thermometers where fitted.	Six monthly
	Check that temperature is below 20 degrees Celsius after running the water for up to two minutes in the sentinel taps.	Monthly
	Visually inspect cold water storage tanks and carry out remedial work where	Annually

	necessary. Check representative taps for temperature as above on a rotational basis.	
Shower Heads	Dismantle, clean and descale shower heads and hoses.	Quarterly or as necessary.
Little used outlets	Flush through and purge to drain, or purge to drain immediately before use, without release of aerosols	Weekly
Spray Humidifiers, air washers and wet scrubbers	Clean and disinfect spray humidifiers / air washers and make up tanks including all wetted surfaces, descaling as necessary	Six monthly
	Confirm the operation of non-chemical water treatment (if present)	Weekly
Water Softeners	Clean and disinfect resin and brine tank – check with manufacturer what chemicals can be used to disinfect resin bed	Weekly
Emergency showers and eye wash sprays	Flush through and purge to drain	Six monthly or more frequently if recommended by manufacturers
Sprinkler and hose reel systems	When witnessing tests of sprinkler blow-down and hose reels ensure that there is minimum risk of exposure to aerosols	As directed
Lathe and machine tool coolant systems	Clean and disinfect storage and distribution system	Six monthly

Horticultural misting systems	Clean and disinfect distribution pipe work, spray heads and make up tanks including all wetted surfaces, descaling as necessary	Annually
Car/bus washes	Check filtration and treatment system, clean and disinfect system	See manufacturers' instructions
Indoor fountains and water features	Clean and disinfect ponds, spray heads and make up tanks including all wetted surfaces, descaling as necessary	Interval depending on condition