
Legionella Management Plan

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Housing Services

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Agenda Item 9
Appendix B

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Document Review and Approvals		
Name	Action	Date
Name of staff member/committee that has reviewed and/or approved the policy	E.g. consulted, reviewed, approved	Date of review or approval

1 INTRODUCTION

1.1 Aim

The aim of the management plan is to set out Stroud District Council's approach to managing legionella risk in its Council Housing stock.

1.2 Purpose

Legionella bacteria are common and can be found naturally in many environmental water sources, usually in low numbers. Water temperatures in the range of 20°C to 45°C promote the growth of this bacterium. They also require a supply of nutrients to grow, which includes algae, sediment, sludge, scale etc.

Legionella bacteria are commonly encountered in environmental water sources and can eventually colonise poorly maintained and vulnerable water systems, such as hot and cold-water systems and water plant which use or store water. When legionella colonisation occurs within a water system, which is capable of producing a water mist, spray or droplets, (e.g. humidifiers, spa baths, cooling towers and shower systems etc.) the bacteria can become airborne and be subsequently inhaled by an individual. Legionnaires' disease is contracted after inhaling legionella bacteria from such spray or mist into the lining of the lungs. This can only occur if the bacteria are directly inhaled on water mist or in droplet nuclei (the particles left after the water has evaporated) contaminated with legionella.

There is no evidence to show the disease can be contracted from someone who is already infected.

On average there are approximately 200-250 reported cases of Legionnaires disease a year in the UK, although it is anticipated there is a hidden population which is not diagnosed.

To reduce the possibility of creating conditions in which the risk from exposure to legionella bacteria is increased, it is important to control such risk by introducing measures which:

- a) Do not allow colonisation of the organisms in the water system; and
- b) Reduce, as far as is reasonably practicable, exposure to water droplets and aerosol.

1.3 Scope

This management plan will apply to all premises where hot and cold water systems are directly managed by Housing and Building Services.

The document is also provided for guidance, to leaseholders, partners, etc. who have responsibility for managing water systems in premises owned by the Council's Housing service.

Whilst this document applies to the management of all hot and cold water systems, it also relates to other "at risk" systems including, for example: -

- Cooling towers and evaporative condensers.
- Humidifiers and air washers.
- Other plant and systems containing water likely to exceed 20°C and able to release a spray or aerosol.

Therefore, where the term "water system" is used it should be read to include the definitions above.

2 LEGISLATION

- a) The policy conforms to the four main statutes which apply to the control of Legionella bacteria:
- Health & Safety at Work Act 1974
 - Management of Health & Safety Regulations 1999
 - Control of Substances Hazardous to Health Regulations (COSHH 2002)
 - Approved Code of Practice L8 and Guidance HSG274.
- b) In the event of an incident, as defined by the HSE, a Reporting of Injuries, Diseases and Dangerous Occurrence Regulation (RIDDOR) form will be completed and sent to the Health & Safety Executive (HSE) by Housing Services Compliance and Assurance Manager.

3 ROLES AND RESPONSIBILITIES

To ensure compliance with the a fore mentioned legislation, the following responsibilities have been established:

The Chief Executive & Director of Communities

The Chief Executive & Director of Communities have overall responsibility for safety across the Council and the Communities Directorate respectively, including but not limited to.

- The promotion of good practice and the continuous improvement of safety management;
- Ensuring compliance with the statutory obligations and guidance have been delegated to the relevant service areas for implementation and delivery.

Strategic Head of Housing

The Strategic Head of Housing has responsibility for safety across Housing Services

Head of Assets and Investments

The Head of Assets and Investment Services has responsibility for ensuring appropriate financial and human resources are available to support the delivery of the 'Council Housing Legionella Policy and Management Plan' and any necessary training associated with such.

Operational Manager – Property Care

The Operational Manager – Property Care shall ensure they are familiar with the current legislation relating to Legionella Safety and Management and is specifically responsible for Supporting repairs and voids operatives by:

- Ensuring staff are appropriately instructed on the procedures to support effective delivery of this policy;
- The promotion of good practice and continuous improvement of Legionella safety management, across the department and its housing Stock;

Compliance & Assurance Manager - Responsible Person

The Housing Compliance and Assurance Manager is required to liaise closely with other professionals in supporting specialist disciplines. This involves:

- Advising on the potential areas of risk and identifying where systems do not comply with the guidance;
- Advising on the necessary continuing procedures and actions for the prevention or control of legionella;
- Monitoring and inspecting the implementation and efficacy of these procedures and actions;
- Approving and identifying any changes to those procedures and / or actions;
- Maintaining and co-ordinating adequate records.

The Responsible Person (RP) will appoint at least one deputy to whom delegated responsibility may be given. This deputy will act on behalf of the Compliance & Assurance Manager in their absence.

Independent Living Manager

The Independent Living Manager – Shall ensure they are familiar with the current legislation relating to Legionella Safety and Management and is specifically responsible for Supporting Site Officers by:

- Ensuring staff are appropriately instructed on the procedures to support effective delivery of this policy;
- The promotion of good practice and continuous improvement of Legionella safety management, across the department and its housing Stock.

Contractors

Contractors shall ensure they follow the guidance laid down in this document and the relevant primary reference publications upon which this plan is based. They shall also ensure their knowledge and competencies are up to date, by attending relevant awareness and training sessions.

Specialist Legionella Contractors

Contractors shall conduct all of their water system related tasks in accordance with this document and the requirements of the Planned Preventative Maintenance programme. In particular, they will;

- Employ their highest standards of workmanship;
- Use only approved materials when working on water systems;
- Report any defects, suspicions or concerns regarding the design, condition, operation or performance of water systems that might increase the risk of Legionella proliferation. Where blind ends [i.e. blanked-off pipes that do not serve outlets] are found they should be reported to the Responsible Person.
- Keep relevant records; and
- Attend appropriate Legionella awareness/training sessions.

4 MANAGEMENT PLAN

Stroud District Council's, Housing Services accepts its responsibilities as outlined in L8 and associated guidance. They will aim to eliminate or reduce, as far as is reasonably practicable, the risks from legionella bacteria. In support of this they will adhere to the following Management Plan:

- a) Appoint suitable persons to be managerially responsible for the implementation of this Management Plan and supporting procedures.
- b) Identify and assess sources of risk by implementing a programme of water hygiene risk assessments to the portfolio in order to locate and identify the conditions which encourage bacteria to multiply.
- c) Ensure new or refurbished water systems are designed, so far as reasonably practicable, to eliminate/minimise the risk of legionella development within the system.
- d) Prepare and maintain a written scheme for preventing and controlling the water hygiene risks presented at each of our buildings.
- e) Implement, manage and monitor all precautions following a water hygiene risk assessment.

- f) Identify and specify necessary routine water hygiene tasks and checks for each of our buildings.
- g) Commission only competent and appropriately qualified contractors to complete the water hygiene risk assessments.
- h) Provide training for all staff engaged in routine water hygiene tasks and checks.
- i) Provide an appropriate level of information and training for those with responsibility under this management plan.
- j) Review risk assessments at least once every 2 years, or when the risk assessment is deemed no longer valid e.g. change of use, demographics and water systems upgrades.
- k) Create a schematic diagram of the hot and cold water systems for each of our premises

5 KEY PRINCIPLES AND STANDARDS

5.1 Water Hygiene Risk Assessments

All Council managed premises will be subject to a water hygiene risk assessment carried out by a competent and experienced water hygiene specialist.

The assessments will be conducted in accordance with the 'HSE Approved Code of Practice and Guidance' document L8.

The order and timescales for assessments will be prioritised based on the risks presented. This will be determined by the age of the building, its occupancy and use and any current industry knowledge of the legionella bacteria.

The risk assessment will identify the remedial action necessary, in order of priority, to ensure the risk of Legionnaires Disease is minimised to an acceptable level. Following each risk assessment to a premises, a re-assessment date will be set as required (at least once every two years) and, whenever there is reason to suspect such assessment is no longer valid.

A copy of the risk assessment (subsequent reviews) and written scheme of control will be held on site, with a copy retained within the asset management system (Keystone)

Where the assessment shows there is a reasonably foreseeable risk, the use of water systems, parts of water systems or systems of work which lead to exposure, will be avoided so far as is reasonably practicable. Where this is not reasonably practicable, there will be a written scheme for controlling the risk from exposure which will be implemented and monitored by the Compliance and Assurance team.

5.2 Domestic Premises

Whilst the risk is lower in domestic premises without communal hot water systems we have identified that risk assessments are still required. This is referred to as general needs properties. We will take the following approach to general needs properties

- Conduct desk based legionella risk assessments by archetype (Type of Heating System)
- Conduct a sample of site based risk assessments covering a variety of archetypes when properties become void
- Review the desk based risk assessments based upon risk level identified but not exceeding 3 year intervals

5.3 Written Scheme of Control

As part of the water hygiene risk assessment, a site specific 'Scheme of Control' will be established by the risk assessor to minimise the risks of legionella and ensure good water hygiene for each premises. The 'Scheme of Control' will include:

- A detailed schematic drawing of the hot and cold water system;
- A description of the correct and safe operation of the system;
- Precautions to be taken;
- The required routine water hygiene tasks and checks for the building to ensure the system is functioning efficiently (These will be listed within the Water Hygiene Site Log Book);
- Remedial action to be taken in the event of the current scheme being shown not to be effective;
- Routine water testing/monitoring where identified for the system e.g. legionella bacteria, other general bacterial testing, e.g. Total Viable Count (TVC) etc.

5.4 Water Hygiene Monitoring & Record Keeping

It is a requirement of HSE Approved Code of Practice and Guidance Document L8, for appropriate records to be kept, which includes; the person responsible for conducting the risk assessment, the management and implementation of the written scheme, the significant findings of any risk assessment, the written scheme itself and all monitoring results.

Risk assessments and written schemes are provided at each site for storage in the Water Services Log Book, and on the Asset Management System (Keystone).

The 'Policy document and monitoring records logs are held by the Compliance and Assurance Team.

- Records are retained for the following periods;

- Policy and Procedures: – 2 years following re-issue or revision.
- Risk Assessments: Throughout the period for which they remain current and for a further two years' after
- Risk Management Schemes: Throughout the period for which they remain current and for a further two years' after
- Monitoring, Inspection and Test results: 5 years

5.5 Communication with tenants

In addition to the results of risk assessments discussed within this management plan. Stroud District Council aims to keep our tenants informed of the steps that they can take to reduce the risk of legionella bacteria. We will do this by:

- Incorporating legionella into the Safety Communication Plan
- Ensuring tenants receive an advice sheet on sign up
- Ensuring that the website remains up to date with the correct advice and ensure that this is easily accessed by tenants.

6 MONITORING AND PERFORMANCE MANAGEMENT

6.1 Monitoring

Water hygiene monitoring is undertaken in all properties in accordance with the ACOP (L8).

The routine monitoring comprises monthly temperature checks at all water outlets. Where the water temperature cannot be used as a control, then additional checks are carried out in the form of legionella tests at the cold water storage tank, furthest outlet, calorifier outlets, or nearest tap along with the return supply. This will be carried out on a quarterly basis with TVC tests taken in between.

Should the results of any test be unsatisfactory, then appropriate action will be taken in line with the ACOP recommendations. Users of highly susceptible occupancy sites will be informed of an unsatisfactory test result. However, users at other sites, where unsatisfactory test results are found, will only be informed if results are considered imminently dangerous (this is in accordance with the ACOP recommendations).

Cold water storage tanks and clarifiers are to be inspected annually.

Weekly temperature monitoring will be conducted at little-used outlets, as identified in the risk assessment.

Inspections and routine maintenance will only be carried out by a competent Water Hygiene Contractor.

7 APPENDICIES

- a) Water Hygiene Management System
- b) Disinfection of Contaminated Systems
- c) Procedure in the Event of a Building Closure
- d) Occupation of New Premises – Safe Operation of Water Systems
- e) Domestic Cold Water Systems
- f) Cleaning and Disinfection of Cold Water Systems
- g) Domestic Hot Water Systems
- h) Procedure for Domestic Hot Water Systems Failure
- i) Procedure for Cold Water Tanks Following the Identification of
Water Temperature Greater Than 20 °C
- j) Temperature monitoring sheet.
- k) Tenants Guide to Legionella
- l) Housing Services Legionella Policy

8 RELATED DOCUMENTS

- a) Legionella Control Document [CHS 14](#)
- b) [Legionella Management Plan](#)

9 APPENDIX A - WATER HYGIENE MANAGEMENT SYSTEM

1. Building Managers and Building Services operatives

- All Housing Services operatives shall follow the guidance contained within this document. In particular;
- Operate hot water systems at or above the approved minimum temperatures. Stored water temperature to be at least 60 °C (unless this document indicates otherwise).
- Outlet temperatures to be at least 50 °C, unless fitted with a point of use thermostatic mixing/blending valve(TMV) which is set at 43 °C;
- Maintain cold water systems at or below the approved maximum water temperature. Cold water storage and outlet temperatures to be maintained below 20 °C. It is permitted for the temperature to be 2 °C greater than the incoming mains water temperature. However, this temperature should not exceed 25 °C.
- Infrequently used showers and outlets to be identified for removal if no longer required for operational reasons. If retained the shower and infrequently used outlets to be run weekly for at least 3 minutes.
- Avoid the stagnation of water in pipework by ensuring all outlets are run on a regular basis. If a basin or other outlet is no longer used it should be removed and the pipework serving it cut back to the last outlet point.
- Avoid potential contamination of the water systems e.g. storage of substances on top of cold water tanks. Inspect and maintain storage tanks to the required standards.
- Avoid the creation of unnecessary water aerosol.
- Clean and disinfect water systems if any activity or occurrence has jeopardised water hygiene or when recommended by the risk action plan or if a bacteriological analysis requires it;
- Where there is a risk of scalding (i.e. temperatures above 43 °C) local point of use thermostatic mixing/blending valves should be installed. The provision of instantaneous or low volume localised water heaters, set at a lower temperature can also be considered (this will be dependent upon the susceptibility of the person - see Appendix 9 - Domestic Hot Water Systems). Where a lower temperature water system is provided, water treatment must be installed to prevent legionella growth i.e. copper/silver electrodes or ultra violet lamps which must then be monitored to prove efficiency.

2. Risk Assessment

Housing Services through the Compliance and Assurance team will arrange and review its legionella risk assessments under the following circumstances:

- **Premises with highly vulnerable occupants** – An initial risk assessment will be carried out bi-annually, however this risk assessment will then be reviewed annually and will take into account management information taken from maintenance records
- **General Needs Domestic Premises** – Housing Services will aim to risk assess its general needs stock by archetype. Desktop review of the risk assessment will be undertaken every two years or if there is reason to believe the assessment may no longer be valid.
- **Non-scheduled reviews** of risk assessments will take place whenever there is reason to believe the latest risk assessment may no longer be valid e.g. due to a change of building use or major refurbishment work.

The Compliance and Assurance team shall ensure all risk assessments:

- Are undertaken by competent persons;
- Identify and evaluate potential sources of risk;
- Encompasses all buildings and all water systems

3. Risk Management Program

The risk assessment shall form the basis of a Risk Management Programme, describing the particular means by which the risk from exposure to legionella is to be controlled. Any remedial action identified within the Risk Management Program shall be reasonably practicable and prioritised on the basis of risk, cost and practicality.

4. Risk Management Audit

An annual legionella risk management audit is undertaken in order to ascertain the effectiveness of the management arrangements. The audit report includes recommendations for improvement and forms part of the legionella risk management programme.

5. Management Review

Annual management review meetings are held to assess the progress on identified legionella management issues.

6. Competence

Legionella risk management training, appropriate to the level of responsibility for each member of Housing Services staff, shall be provided. For example, technical and procedural training is provided to staff responsible for day-to-day operation of buildings e.g. temperature testing and flushing regimes undertaken by Site Officers.

The Compliance and Assurance Manager and their deputies are provided with training specific to their legionella risk management roles and responsibilities.

7. Contractor competence

The roles and responsibilities of contractors involved in the control regime shall be defined in writing, in all contract documents. Any agreed deviation from the initial contract document, shall be mutually agreed and documented as part of the contract review process. The competence of such contractors will be assessed prior to the engagement of any contractor.

For Legionella and water sample testing, the laboratory shall be UKAS accredited.

APPENDIX 3 - PROCEDURE IN THE EVENT OF BUILDING CLOSURE

1. Where a property or building is closed for a period of greater than one week, the Operations Manager must ensure the following procedures are implemented and recorded in the Site Water Services Hygiene Log Book.

1.1. Closure of less than 60 days.

Where a closure exceeds 7 days, a nominated individual is identified to run each and every tap for a period of three (3) minutes and flush every toilet once per week. This flushing practice must be recorded in the site Log Book.

N.B: It is the responsibility of the building's manager to notify the Compliance and Assurance of their intention to re-open a closed building.

Before the property is re-occupied, an inspection and legionella test of the hot and cold water systems will be conducted. Results must be reported to the Compliance and Assurance team.

1.2. Closure of greater than 60 days

When a property or building is to close, with no planned re-opening date or where the closure period exceeds 60 days, the building's manager must inform the Compliance and Assurance team so that they can arrange to isolate, disconnect and drain the water services within the affected area/s.

Notices shall be posted throughout the affected building stating that water services are disconnected.

2. Re-occupation of a Building closed for greater than 60 Days.

Upon the re-occupation of a building or property closed for greater than 60 days the following shall be undertaken:

The relevant water systems will only be put back into service following completion of any necessary modifications or maintenance.

The system will be chlorinated and flushed clean, in accordance with BS6700:1997. This will include shower units and any booster pump sets.

APPENDIX 4 - OCCUPATION OF NEW PREMISES - SAFE OPERATION OF WATER SYSTEMS.

Prior to the occupation of any new premises, cleaning and chlorination of all domestic hot and cold water systems shall be carried out in accordance with L8.

At the point of handover, all relevant information on the systems operation, together with schematic and as-fitted drawings, along with design criteria of the hot and cold water systems plus any chlorination and cleaning certificates must be submitted to the Compliance and Assurance team. These records will be kept against the relevant property on the Asset Management System (Keystone).

N.B: -The responsibility of maintaining the water system remains with the Contractor until handover. After handover and up to occupation the responsibility lies with the building's manager. If the period between handover and occupation of the site is greater than seven (7) days, then the procedure for short term closure is implemented (see Appendix 5, para' 1.1)

APPENDIX 5 - DOMESTIC COLD WATER SYSTEMS

1. Cold Water Storage Cisterns and Tanks

1.1. All new domestic cold water storage cisterns and tanks will comply with the requirements of the Water Supply (Water Fittings) Regulations 1999 for cold water storage. All tanks are subject to a cleaning and disinfection regime before being put into service.

1.2. All cold water storage tanks are visually inspected on a yearly basis.

Based upon the findings, a decision is made as to whether a clean and disinfection takes place.

1.3. Any non-compliance temperatures must be reported to the Compliance and Assurance team and recorded. Any recurring 'out of range' temperatures will be investigated and remedial actions taken to rectify the situation

N.B: where possible, potable water outlets will be supplied directly from the mains service.

2. Cold Water Services - Boosted Pressure Supply Pumps

2.1. Where two or more pumps have been fitted for pressurising cold water services, the lead pump shall be changed over, (at least weekly), in order to avoid water stagnation in the standby pump. Dates and times of the manual pump change over shall be recorded in the site Log Book.

2.2. Where pumps have not been in service for a period of greater than four weeks or have been removed for any reason, the pump and associated pipework shall be thoroughly washed out and chlorinated before being brought back into service. Chlorination of pumps shall be to 50ppm free residual chlorine for 1 hour and pumps shall be totally submerged during this period. An incident report record sheet shall be completed, giving details of why the pump was out of use. Details of any such action shall be recorded in the Site Water services Log Book

APPENDIX 6 - CLEANING AND DISINFECTION OF COLD WATER SYSTEMS

1. Cold water domestic systems will be chemically disinfected where the conditions below are applicable.

If the risk assessment conducted by the specialist third party consultant shows that this is necessary;

- If unsatisfactory bacteriological water quality results are obtained;
- If physical contamination or extremely dirty tanks are identified.
- When a building has been closed for more than 60 days.

2. Tank Cleaning Precautions

2.1 Tank cleaning operatives shall not be permitted to enter any water storage system (i.e. tank, calorifier, AHU) if they are suffering or have recently suffered from any gastric or other communicable illness, or a condition which may result in their increased susceptibility to legionellosis. It is the responsibility of the individual to inform their supervisor immediately if applicable.

2.2 All tanks are classified as potable water tanks.

2.3 The project manager shall notify all users of the proposed line of action, and of any disruption or modification to service. The project manager will be responsible for the management of the task in question.

2.4 All equipment and tools to be employed during the cleaning and disinfection process must be dedicated only to this task - this will include hire equipment. All equipment should be disinfected in a high concentration of chlorine solution prior to commencement of the process

3. Tank Cleaning Process Steps

3.1 The contractor will isolate and shut down the cold water storage tank and remove the cover or inspection hatch. The contractor shall display warning labels in and around the plant room stating chlorination in progress.

3.2 The tank shall be examined visually for signs of corrosion (if applicable), debris and biological growth. The water storage temperature and any defects identified are to be recorded and reported to the Compliance and Assurance team.

3.3 Permission must be obtained from the relevant water authority before dumping the contents of a tank. The relevant water authority will need to be informed of the volume to be discharged. Any further quantities of chlorinated water dumped as a result of tank cleaning should be included. It may be necessary to neutralise the chlorine with sodium thiosulphate before dumping. Tank cleaning shall be performed using non-abrasive cleaning materials

3.4 Protective clothing, footwear, face goggles and masks are to be worn where required. These items must be specific to the task of cleaning and chlorination, and must not have been used for other activities.

3.5 Where tanks are to be painted; only paints, coatings or materials recognised and approved by the Water Research Council (WRc) and detailed in "The Water Fittings

and Materials Directory" shall be employed. The specification for any such product must be submitted to the Compliance and Assurance team for approval prior to use;

3.6 Details of all cleaning and painting materials shall be listed on the cold water tank inspection record sheet;

3.7 On completion of the cleaning/painting exercise, and after the necessary paint maturing period (if required), the tank shall be thoroughly flushed and washed out with water, refilled to the tank's normal working level and dosed to a level of 50 ppm free residual chlorine. The tank shall be left to stand for a minimum period of one (1) hour. During this period the level of free chlorine shall be monitored and maintained at 50 ppm.

3.8 On completion of the tank chlorination period, the tank contents shall be discharged as previously detailed in paragraph 3.3. The tank is then refilled to its normal operating level with fresh water. The free chlorine level in the tank water shall be monitored until it matches that of the incoming water supply

3.9 On completion of this exercise the tank shall be put back into service immediately, and water samples taken for analysis. A sample of water should be taken using sterile bacteriological techniques for deposit and examination at a UKAS accredited laboratory. The analysis shall include:

- Total Coliforms - 100ml
- E. coli - 100ml
- Total Colony Count 2 days @ 37 °C /ml, 3 days @ 22 °C /ml

Samples must reach the laboratory within 6 hours of sampling

3.10 On receipt of analysis results, these shall be submitted to the Compliance and Assurance team. The assistance of a consultant may be required to aid with the interpretation of the results, and the identification of remedial actions if necessary;

3.11 On completion of the tank cleaning or inspection exercise, it is recommended that details should be entered onto a tank cleaning record label to be posted on or adjacent to the tank. Such a label must be robust, and able to withstand contact with water;

Any defects shall be reported immediately to the Responsible Person or nominated deputies

Once a system has been filled it will not be drained unless full disinfection is to be undertaken before the system is brought into use again. The only exception is in the case of an emergency and with the consent of the Responsible Person.

APPENDIX 9 - PROCEDURE FOR COLD WATER TANKS FOLLOWING THE IDENTIFICATION OF WATER TEMPERATURE GREATER THAN 20°C

1. If the cold water tank temperature rises above 20 °C (and the incoming mains is below 20 °C), the building's manager is responsible for contacting the Compliance and Assurance team.
2. Our approach is to investigate the cause of temperature increase, carry out remedial work to prevent its reoccurrence and clean and disinfect the system.
3. Examples of failures which may be responsible for tepid cold water (greater than 20°C):
 - High ambient temperature and heat gain - may be accentuated by poor ventilation, glass windows above tanks, lack of or poor insulation.
 - Mixing valve failure causing back feeding - non return valves are recommended.
 - Domestic hot water system venting over the tank.
 - Failure of the primary heating coil.

4. Procedure

- 4.1. The building's manager, on receiving report of or identifying a tepid cold water occurrence must notify the Compliance and Assurance team as soon as the problem is identified in order for them to remedy the issue;
- 4.2. The Technical Compliance Officer shall verify the problem by taking the water temperature of the appropriate cold water storage tank. If the cold water storage temperature is greater than 20 °C, the temperature of the incoming mains cold water should be taken;
- 4.3. If the incoming water is 19 °C or greater, and the tank water is no greater than 2 °C higher, no actions are necessary unless the incoming water exceeds 25 °C (in which case the Responsible Person will contact the Water Authority);
- 4.4. If the water temperature in the tank is greater than 2 °C higher than the incoming water supply, the following actions should be implemented;

The reason for failure must be identified and rectified as soon as possible;

If the cause of the warm water is identified as heat gain to the tank, drain the tank contents and clean if necessary. A permanent solution, such as ventilation for the plant room or reducing the water storage volume must be implemented;

If the reason for warm water is found to be due to ingress of hot water (i.e. from the DHW system or similar source). A Housing Services representative shall inform the users of the failed system that they must not draw off any cold water (and hot water if a single domestic hot water header) from the affected system until further notice;

- Chlorine disinfection of the tank and distribution system shall be carried out in accordance with the tank cleaning/disinfection procedure.
- The tank shall be brought back into service as detailed in the tank cleaning/disinfection procedure.
- The users shall be informed when the system is back in operation.

Appendix 10 - MONTHLY OUTLET AND WATER HEATER TEMPERATURE MONITORING RECORD

Cold Water Outlet Temperatures												
Location	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Date												
Initials												

Control Parameter - Cold water <20oC within 2 minutes

Defect log to be completed in the event of non-compliant outlet temperatures.

Hot Water Outlet Temperatures												
Location	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Date												
Initials												

Control Parameters - Hot water >50oC within 1 minute

Defect log to be completed in the event of non-compliant temperature results.

Where TMV/TMT devices are installed ensure the hot water supply pipework temperature is recorded as well as the blended outlet temperature for that location.