

LEGIONELLA ABERDEEN

Legionella Risk Assessment



48G Nelson Street

Aberdeen

AB24 5ES

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1 INTRODUCTION

Landlords who provide residential accommodation have legal health and safety duties under the Health & Safety at Work etc. Act 1974 and the Control of Substances Hazardous to Health Regulations 2002 to take suitable precautions to prevent or control risk of exposure to legionella. To meet this requirement a risk assessment in accordance with HSE Guidance “Legionnaire’s disease – Technical Guidance” (HSG 274 Part 2 - 2014) will establish any potential risk and identify measures to either eliminate or control risks.

This assessment and report has been prepared for the Landlord to meet their responsibility against HSE Approved Code of Practice “Legionnaires’ disease” (L8 - 2013).

This report covers the initial risk assessment carried out under instruction from **Evelyn Barclay Leasing** on behalf of the landlord **Brighter Morn Enterprises**.

2 LEGIONNAIRES’ DISEASE

Legionellosis is the collective name given to the pneumonia-like illness caused by legionella bacteria. Legionnaire’s disease is a potentially fatal form of pneumonia and everyone is susceptible to infection. The risk increases with age, but some people are at higher risk, including;

- People over 45 years of age
- Smokers and heavy drinkers
- People suffering from chronic respiratory or kidney disease, diabetes, lung and heart disease
- Anyone with an impaired immune system

The bacterium *Legionella pneumophila* and related bacteria are common in natural water sources such as rivers, lakes and reservoirs, but usually in low numbers. Since legionella bacteria are widespread in the environment they may also contaminate and grow in purpose-built water systems such as hot and cold water systems.

Any water system that has the right environmental conditions could potentially be a source for legionella bacteria growth. There is a reasonably foreseeable legionella risk in water systems if:

- water is stored or re-circulated as part of your system;
- the water temperature in all or some part of the system is between 20-45°C;
- there are sources of nutrients such as rust, sludge, scale and organic matters;
- the conditions are likely to encourage bacteria to multiply;
- it is possible for water droplets to be produced and, if so, if they can be dispersed over a wide area, e.g. showers; and
- it is likely that any residents, visitors etc. are more susceptible to infection due to age, illness, a weakened immune system etc. and whether they could be exposed to any contaminated water droplets.

The most common places in residential properties where legionella may be found include hot and cold water systems, showers and spa baths, and for industrial premises cooling towers and evaporative condensers. There are also a number of other systems that may pose a risk to exposure to legionella, e.g. humidifiers, indoor ornamental fountains, hosepipes etc.

Legionnaires' disease acquired its name in 1976 when an outbreak of pneumonia occurred among persons attending a convention of the American Legion in Philadelphia, killing 34 people. Later, the bacterium causing the illness was named legionella.

Legionnaires' disease is normally contracted by inhaling tiny droplets of water (aerosol) which are contaminated with the legionella bacteria. It is very rare that drinking town's mains tap water is a cause and person to person spread of the disease has not been documented. The incubation period if contracted is between 2 and 10 days. Symptoms presented are similar to flu and pneumonia, being high fever, chills, headache, muscle pain, dry coughing and difficulty breathing.

Legionella bacteria require certain conditions to multiply including moderate temperature, adequate food supply and shelter. Therefore, the main aspect of legionella control is to ensure that there are no suitable conditions within the water system to potentially allow the legionella bacteria to multiply.

For domestic hot and cold water systems, sample water testing for legionella is not a requirement (HSE Case 37).

3 DISCLAIMER

This report is based on available access, observations or matters brought to the attention of the Assessor at the time of the visit and should not be relied upon as an exhaustive record of all possible risks or hazards that may exist or potential improvements that could be made.

4 REFERENCES

HSE "*Legionnaires' disease - A brief guide to duty holders*" (INDG 458)

HSE Approved Code of Practice and Guidance on Regulations "*Legionnaires' disease – The control of legionella bacteria in water systems*" (L8)

HSE Technical Guidance "*Legionnaires' disease – The control of the relevant part of Legionella in hot and cold water systems*" (HSG 274 Part 2)

BS 8580:2010 "*Water Quality – Risk Assessment for Legionella Control – Code of Practice*"

Nalco Chemical Company "*The Nalco Water Handbook*", 3rd Edition

Scottish Association of Landlords – "*Factsheet and Risk Assessment Template*"

Residential Landlord Association (RLA) "*Guidance on Legionnaires' disease for Tenants and Residents of Rented Domestic Properties*"

RLA "*Legionnaires' disease Risk Assessment review*"

ASSE "*Understanding Potential Water Heater Scald Hazards*" Mar 2012

5 OVERVIEW

Property Type	2 Bedroom Flat
Cold Water System	Public Mains
Hot Water System	Combination Boiler
Tenant susceptible to Legionella due to age, health or lifestyle?	Current tenants are believed not, but assume yes for future occupants

The property has:

- kitchen with sink, washer and dishwasher
- bathroom with basin, bath, shower and WC
- en-suite with basin, shower and WC

The Indesit washing machine and Lamona dish washer are cold fill.

6 COLD WATER SYSTEM

The cold water (CW) supply to the tap outlets and shower is from the public mains provided by Scottish Water and should be of good microbiological quality in accordance with the Public Water Supplies (Scotland) Regulations 2014, as enforced by the Drinking Water Quality Regulator (DWQR).

Table 1 Cold Water System

CW Outlet Temp.	Kitchen Sink Tap	Ground ambient (16°C)
	Bathroom Basin Tap	Ground ambient (16°C)
	Bath Tap	Ground ambient (16°C)
	Bathroom Shower	Adjustable from ground ambient
	En-suite Basin Tap	Ground ambient (16°C)
	En-suite Shower	Adjustable from ground ambient

6.1 Observations

No concerns.

7 HOT WATER SYSTEM

The Worcester Greenstar 30 CDi combination gas boiler supplies hot water for the central heating (CH) and domestic hot water (DHW) systems.

The shower in the bathroom and en-suite is a thermostatic mixer design supplied with both mains pressure cold and heated water.

Table 2 Hot Water System

Boiler	Location Accessibility DHW Set Temperature Charge Pressure	Kitchen Good #4 on scale (Range 0-7) 1.5 barg
HW Outlet Temp.	Kitchen Sink Tap Bathroom Basin Tap Bathroom Bath Tap Shower En-suite Basin Tap En-suite Shower	51°C 49°C 35°C Adjustable to 53°C 51°C Adjustable to 51°C



Photo 1 Boiler



Photo 2 Boiler Control Panel



Photo 3 Bathroom Shower



Photo 4 Bathroom Shower Head



Photo 5 En-suite Shower



Photo 6 Ensuite Shower Head

7.1 Observations

The temperature of the outlets is at an acceptable level from both a legionella and non-scald risk perspective.

The measured temperatures were slightly variable, which is typical of a combination boiler.

As the measured temperature from the bath taps is lower than the other tap outlets, it is deduced this is fitted with a Thermostatic Mixer Valve (TMV) to safeguard against scalding, typically set between 38°C and 46°C. This is adjustable (by a plumber). Typically, the TMV is located under the bath and thus will have a short pipe run to the tap outlet, with minimal storage of lukewarm blended water. Measured temperature indicated the setting far too low to suit most people and thus consideration be given to raising the set point.

The thermostatic / mixer shower in the bathroom has separate control of flow and temperature. The temperature of the shower at maximum setting would allow a degree of adjustment to a much more acceptable lower temperature.

The shower heads were observed to have some light mould on the nipple outlets which if allowed to build up could create a habitat for bacteria growth. The tenants should be reminded of their responsibility to clean on a regular basis and for the Letting Agent to check during their regular inspections.

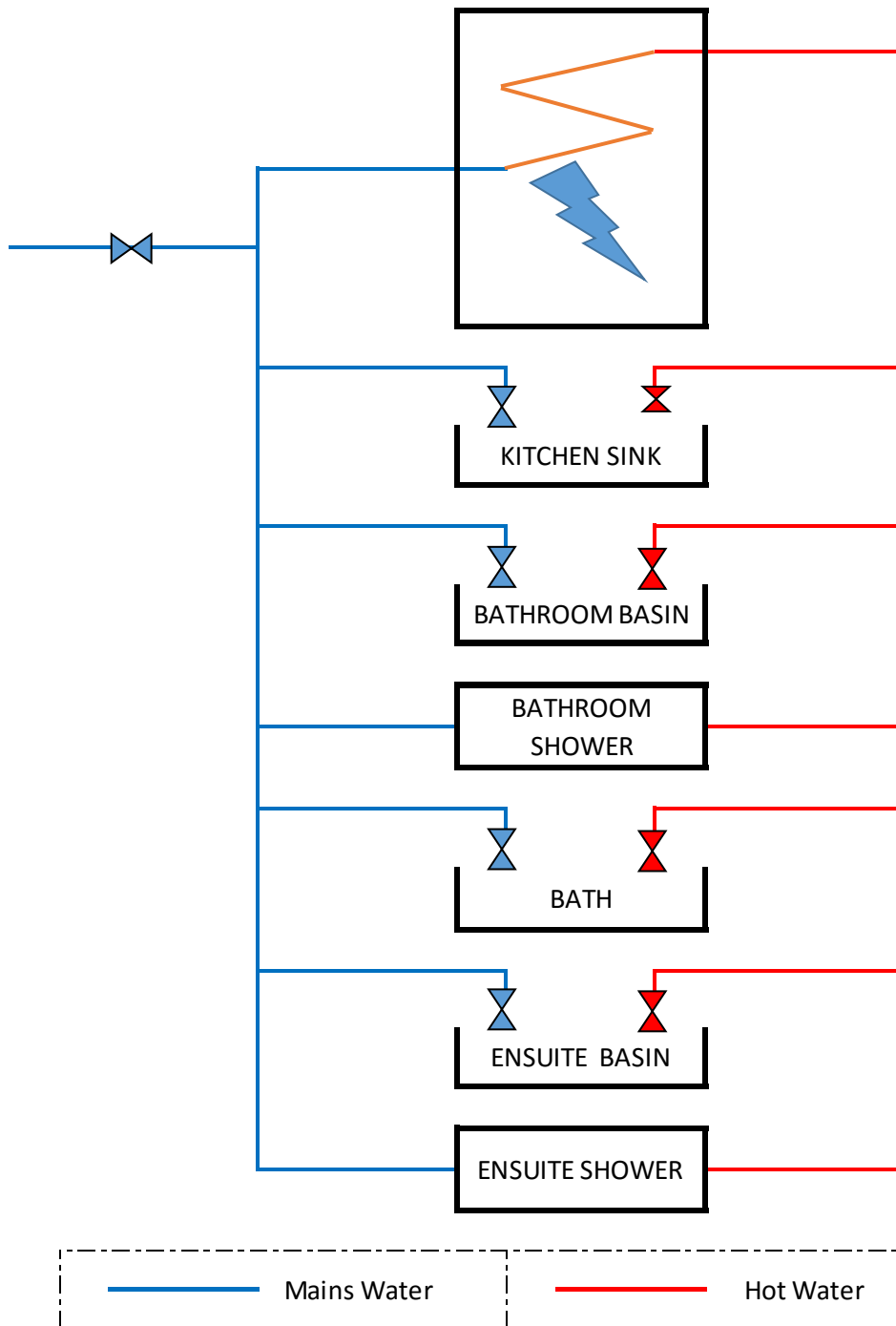
The Worcester combination boiler has a user adjustable control of the output temperature of the hot water. For any given setting of the dial on the boiler front, the temperature at the tap outlets will be affected by the draw-off flowrate and the ground ambient. A high setting on the boiler controls could easily lead to a scalding risk (particularly with temperatures at 60°C and above), whilst a temperature of around 50°C is perfectly adequate for most purposes and acceptable for legionella control.

Combination boilers are considered low risk items of hardware in terms of legionella proliferation due to their direct cold water mains supply and minimal storage of hot water. The combi boiler should be maintained along with the annual gas safety service inspection.

Carbon Monoxide (CO) Detector observed, installed in accordance with Scottish Government Statutory Guidance on provision of Carbon Monoxide Alarms in Private Rented Housing.

8 WATER SYSTEM SCHEMATIC

Outline System Sketch – General Concept only



9 ADDITIONAL OBSERVATIONS

9.1 Dead Legs

Dead legs allow water to stagnate in the pipe work and potentially allow suitable conditions for bacteria to multiply. Dead legs can be sections of old pipe which are no longer used or a system design which results in low or no flow of water.



Photo 7 Dead Leg

- There is a redundant branch under the kitchen sink on the DHW for supply to a hot & cold washing machine. However, as this is only <3" long this is considered not a concern in this system.

9.2 Little Used Outlets

Little used outlets have sections of pipework where the water does not flow on a regular basis thus holding stagnant water which could lead to a build-up of bacteria. On opening the outlet release of this bacteria may create a potential risk. Typical examples are an external tap or guest room shower.

- No little used outlets were observed during the risk assessment.

9.3 Stop Cock

A mains water stop cock is located in the communal hall cupboard outside the front door. Free operation confirmed.

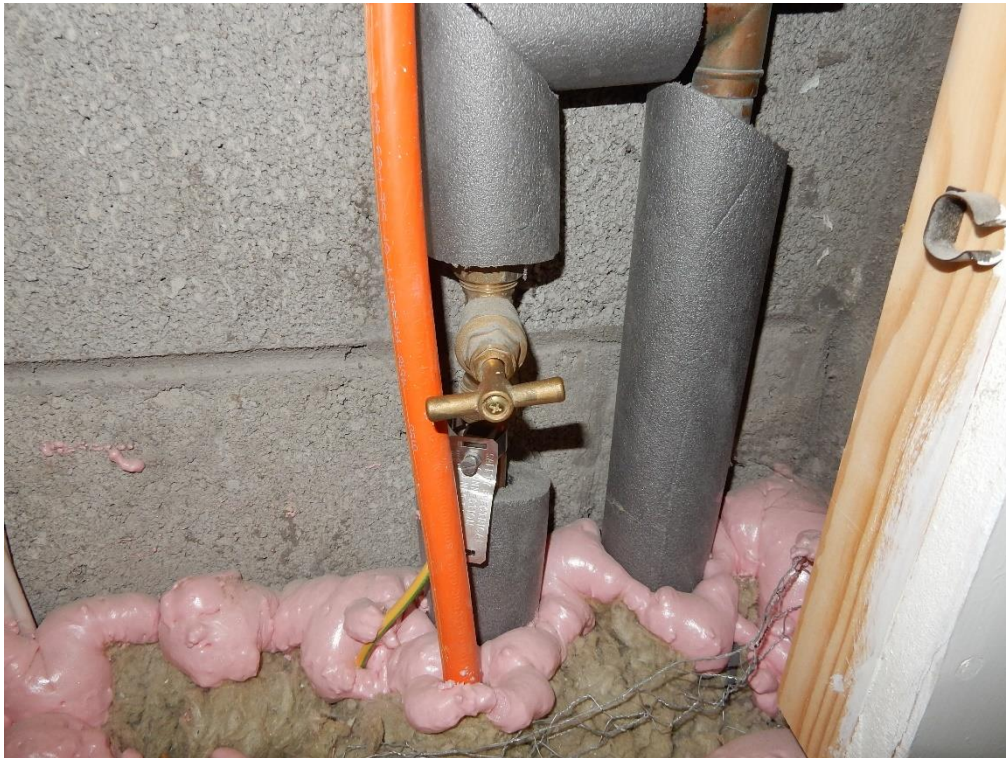


Photo 8 Stop Cock

10 RECOMMENDATIONS

1.0 High Priority - Urgent remedial action required to control a serious risk	
None	
Responsible Person:	N/A
2.0 Medium Priority - Action is required in the near future to achieve compliance with ACOP L8 standards/guidance	
None.	
Responsible Person:	N/A
3.0 Low Priority - Minor action or remedial work that is beneficial but may not be directly linked with compliance to ACOP L8	
3.1 Comply with Tenant's Responsibility as outlined in Section 11.5 below.	
Responsible Person:	Tenant
3.2 Comply with Landlord's responsibility outlined in Sections 11.4 below.	
Responsible Person:	Landlord

11 LEGIONELLA CONTROL PROGRAMME

11.1 Cold Water Services

The cold water temperatures were recorded below 20°C at the time of assessment and are considered unlikely to increase above this value therefore no further measures are required.

11.2 Hot Water Services

The hot water temperatures were recorded around 50°C at the time of assessment and so long as the system maintained are considered unlikely to fall below this value, therefore no further measures are required.

11.3 Shower Heads

Dismantle, clean and descale removable parts, heads and hoses where fitted on a quarterly basis or as indicated by the rate of fouling.

11.4 Unoccupied Property

The risk may increase where the property is unoccupied for a short period. It is important that water is not allowed to stagnate in the water system and so properties that are vacant for an extended period should be managed carefully. 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. To manage the risks during non-occupancy, consider implementing a suitable flushing regime or other measures, such as draining the system if the property is to remain vacant for long periods.

11.5 Tenants Responsibility

- Advise letting agent if they believe the cold water temperature is above 20°C.
- Not adjust the temperature of the hot water.
- Inform the letting agent if they believe the hot water temperature is below 50°C or the boiler is defective in any way.
- Inform the letting agent if they believe the hot water temperature is above 60°C.
- Flush through any little used outlets for 2 minutes at least once a week.
- Clean, disinfect and descale shower heads at least once every 3 months or as indicated by the severity of scaling.
- Notify the /letting agent if they notice any debris or discolouration in the hot or cold water.

12 RISK ASSESSMENT REVIEW

As this assessment confirmed Low Risk it should simply be reviewed at each change of tenancy or every two years and documented on the likes of the RLA Legionnaires' disease Risk Assessment Review form.

Should there be no change or cause for concern there is no set period in the Guidance for when a new assessment to be instructed although it is prudent to carry one out periodically, as determined by the type and condition of the installation. Based on this initial review, it is recommended a new assessment is carried out within 10 years.

This Assessment Report should be retained for a minimum period of 5 years after the issue of a new assessment.