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L8 - LEGIONNAIRES' DISEASE

KEEPING OUT OF COURT

INTRODUCTION

Legionnaires Disease is a potentially fatal form of pneumonia. To assist managers and building maintenance engineers, we publish this simple guide to the basic requirements for complying with the current Guidance within L8. The requirement to undertake risk assessments on all water systems was included in the HSC Approved Code of Practice dating from the early 1990s. There are still sites and premises that have chosen to ignore this, or are not aware of this requirement, and it is perhaps fortunate that there have not been even more outbreaks of Legionnaires' Disease over the past years.

This booklet covers individual systems and includes cooling systems, cold water storage cisterns (tanks) and domestic hot water systems. It is intended to take the reader through the initial steps towards compliance but does not replace the need to carry out an adequate risk assessment of the system.

This guide distils the essential elements of the HSE Guidance L8 published in January 2001. It is hoped that the essential requirements listed below will be taken on board and that suitable control and monitoring regimes will be set up, covering whatever systems are present in the buildings.

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A risk assessment is the first ESSENTIAL step towards the CONTROL and MANAGEMENT of Legionnaires' Disease

1 THE FIRST STEPS

The basic steps towards effective CONTROL are listed here. You may already have started along this path, but need additional guidance to steer you in the right direction.

- 1.1 List all the sites/premises within your sphere of activity, control or responsibility.
- 1.2 Prioritise the breakdown of such sites into risk categories – bearing in mind all possible aerosol emissions and the susceptibility of persons that may come into contact with them.
- 1.3 Complete an asset register for all of the water systems on each of the sites – to include such plant as cold water storage tanks, calorifiers, showers, cooling towers and any other miscellaneous water systems that may be present and which may release aerosols.
- 1.4 Review the status of risk assessments that have been undertaken within the past two years. Initiate assessments if none have been carried out to date within this period or at any time.
- 1.5 Update the status of remedial works that have been listed in all risk assessments. Consider relative priorities alongside cost budgets to develop a plan to bring all assets up to compliance with current regulations, standards, guidance etc. Implement that plan.
- 1.6 Review the control schemes that should be in place at each site – implement suitable schemes if they do not exist to date, or modify those where changes have been made.
- 1.7 Check the system of record keeping for each site – whether hard copy or electronic, bearing in mind that records should include details of training of those involved in the control strategy.
- 1.8 Ensure that routine monitoring, applicable to each site, is regularly undertaken and the results recorded with all relevant dates, including signatures of those undertaking the monitoring duties. Record any deviation from control levels together with the remedial actions undertaken.
- 1.9 Check that the levels and frequencies of routine maintenance (cleaning / disinfection / repairs etc) are undertaken with site-specific method statements and certificates of compliance available for inspection after completion.
- 1.10 Consider a Corporate Policy or Strategy Statement for your organization, including a Management Structure giving details of the named Statutory Duty Holder, the Responsible Person, deputies and others involved in the control management team.

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1.11 Obtain a copy of L8, familiarize yourself with the contents – available via HMSO or Rainbow Water Services.

For greater detail, refer to the HSC/HSE Document: 'Legionnaires' disease The control of Legionella bacteria in water systems : Approved Code of Practice & Guidance L8' ISBN 0-7176-1772-6.

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2 THE BASIC CONTROL AND MONITORING REQUIREMENTS

There is a tendency for many sites to undertake either no routine monitoring or, alternatively, extensive monitoring which far exceeds the HSE Guidelines, but fails to identify problems or undertake remedial works where they are clearly required. A pro-active approach to monitoring is essential and only suitable training in the realisation and appreciation of problem areas can be achieved.

Bear in mind that the quality of wholesome water supplied to the curtilage of a property should conform to current wholesome water quality standards. It is up to the Statutory Duty Holder or the Site Responsible Person to ensure that such quality is maintained throughout the distribution system(s) within their premises. This is achieved by conforming to BS 6700: 1997, the Water Supply (Water Fittings) Regulations, 1999, ensuring that all materials and fittings comply with the WRAS Directory which is published twice annually.

The basic monitoring, cleaning and disinfection requirements are as follows:

2.1 COLD WATER SYSTEMS:

- 2.1.1 MONTHLY: Record temperatures at the sentinel taps (nearest and furthest from the CWS tank) after running the water for two minutes – should be less than 20°C.
- 2.1.2 MONTHLY: Record the temperature of 10% of the representative taps within the premises, covering the entire premises over a 12-month period.
- 2.1.3 SIX MONTHLY: Record the incoming cold water inlet temperature (winter and summer).
- 2.1.4 SIX MONTHLY: Record the tank cold water temperature remote from the ball float valve and the mains temperature at the float valve.
- 2.1.5 ANNUALLY: Visually inspect the cold water storage tanks – carry out remedial cleaning and disinfection works when considered necessary.

2.2 HOT WATER SYSTEMS

- 2.2.1 MONTHLY: Record temperatures at the sentinel taps after running water for 1 minutes – should be at least 50 °C.
- 2.2.2 MONTHLY: Record the temperature of the water leaving and returning to the calorifier. Outgoing should be at least 60 °C, return not less than 50 °C.
- 2.2.3 MONTHLY: Record the temperature at 10% of the representative taps within the premises, covering the entire premises over a 12-month period.
- 2.2.4 ANNUALLY: Sample the water from the base drain of the calorifiers and note the condition ie the presence of any sludge and the time taken to run clear.
- 2.2.5 ANNUALLY: Undertake a visual check on the internal surfaces of the calorifiers – note the presence of scale or sludge. Clean and disinfect as required.

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2.3 SHOWER HEADS

2.3.1 QUARTERLY OR AS NECESSARY: Dismantle, clean and descale shower heads and hoses – disinfect before returning to service.

2.4 LITTLE USED OUTLETS

2.4.1 WEEKLY: Flush through and purge to drain without release of aerosols.

2.5 COOLING TOWERS AND EVAPORATIVE CONDENSERS

2.5.1 WEEKLY: Site staff should undertake basic monitoring of the recirculating cooling system water. The tests should include: pH, conductivity (Total Dissolved Solids), oxidising biocide (if used) and microbiological activity – using dipslides. Note that the dipslides should be used prior to the routine addition of biocides to the system, be incubated at 30°C for 48 hours and the results recorded graphically for easy reference.

2.5.2 MONTHLY: The service provider should undertake such tests listed in Table 1 (L8) as considered suitable for the quality of make up water and the type of system. The condition of the pack, the internal state of the pond and the quality of the system water should be recorded.

2.5.3 MONTHLY: Record the conductivity sensor calibration, the blowdown function, condition of troughs/sprays/eliminators/the pack, pond, immersion heater fans and any sound attenuators.

2.5.4 3-MONTHLY: Take representative samples for Legionella testing – preferably from the outlet of the chillers. Samples should be tested by a UKAS accredited laboratory. The tables in L8 clearly indicate the required action levels should positive results be obtained.

2.5.5 6-MONTHLY: Clean and disinfect the cooling tower/evaporative condensers, making sure that any make-up tanks and associated systems are included. Descale as required, remove and clean packs where practicable or as decided by local HSE/EHO inspectors.

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3. RECORD KEEPING AND DOCUMENTATION

Records and Documentation are a fundamental requirement to provide evidence that management schemes and precautionary measures are in place and working.

Rainbow Water Services provides L8 compliant record schemes which can be manual or electronic, and tailor-made to individual site and system requirements.

Audits of L8 records and documentation is recommended to act as an early warning mechanism in the instance that control measures are failing.

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4. TRAINING

Frequently significant aspects of L8 Legionella and water hygiene control are passed on by staff to successors by word of mouth. This has the danger of not stressing the importance of control measures and implications of not undertaking remedial works.

L8 specifically requires staff training which would cover all staff involved in Legionella control.

Rainbow Water Services provides a regular programme covering a wide range of training services. Details of which are on our website www.rainbow-water.com. Training services are provided at various centres around the UK and at our headquarters in Ashford, Kent. We also tailor-make training packages to meet specific company requirements.

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5. NOTES

- 5.1 HSE Guidance recommends that you INSPECT cold-water storage tanks on an annual basis – or more often if required, and drain, clean and disinfect if considered necessary. The Guidance does not require annual cleaning if tanks are in a satisfactory condition.
- 5.2 Regular routine sampling and testing for micro-organisms is only recommended for cooling tower control, as listed above. If there is deviation from control measures – including temperature regimes and biocide levels used in domestic water systems – then additional sampling and testing may be required as laid down in L8.
- 5.3 Routine dip slide testing of domestic water systems is not recommended – dipslides will not show signs of growth below 10² and are therefore not sensitive enough.

Remember that attention to the details given above will help break the causative chain that may lead to an outbreak situation:

1	2	3	4	5
Legionella bacteria enters a water system	Site conditions allow the bacteria to multiply	The infected water is aerosolized	A susceptible person may inhale the aerosol	That person may catch Legionnaires' disease

This is not a complete list of all the Guidance that is currently available, but by following the simple rules, and adapting them for the systems within your premises, you will be well on the way to fulfilling your legal obligations within the Health & Safety at Work etc Act 1974 and the latest COSHH Regulations. Your active compliance will certainly help towards ensuring that you are not the one who ends up in court on charges relating to an outbreak situation.