

# ENSURING LEGIONELLA COMPLIANCE IN SCHOOLS

## ROB BOTTOMLEY



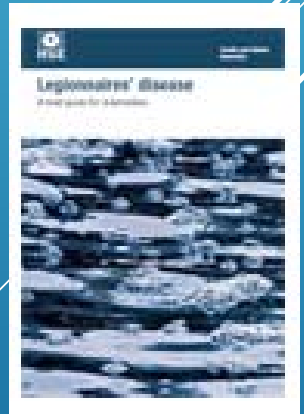
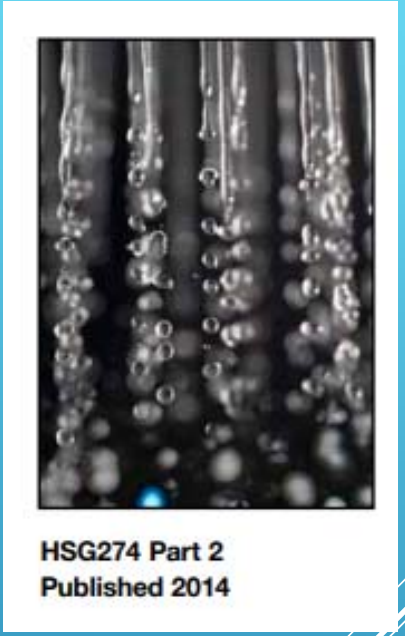
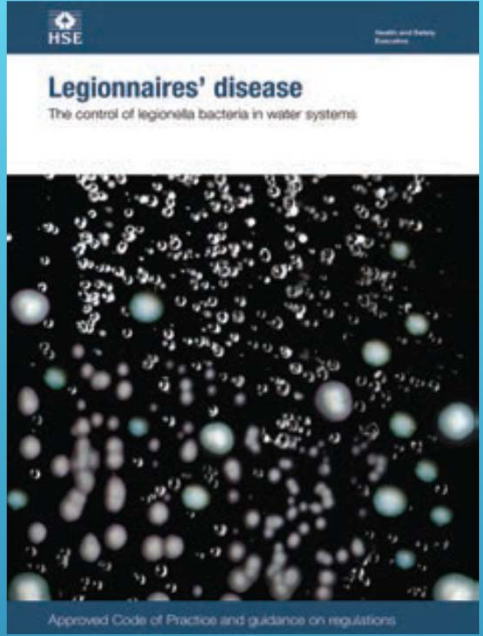
**Slide 1**

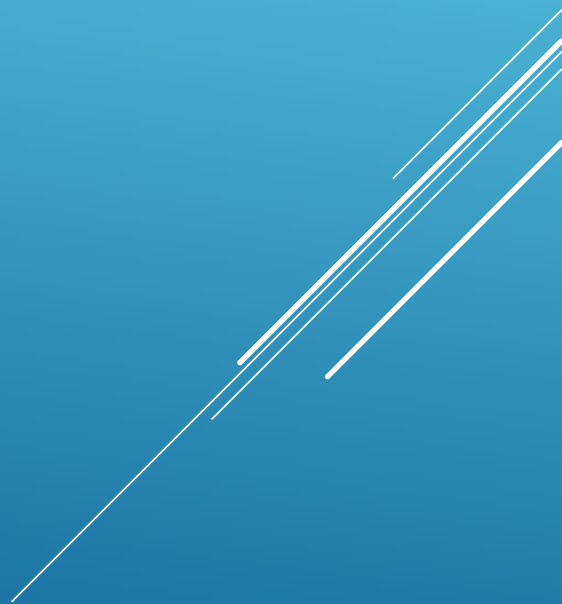
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**RB1**

Robert Bottomley, 09/01/2020

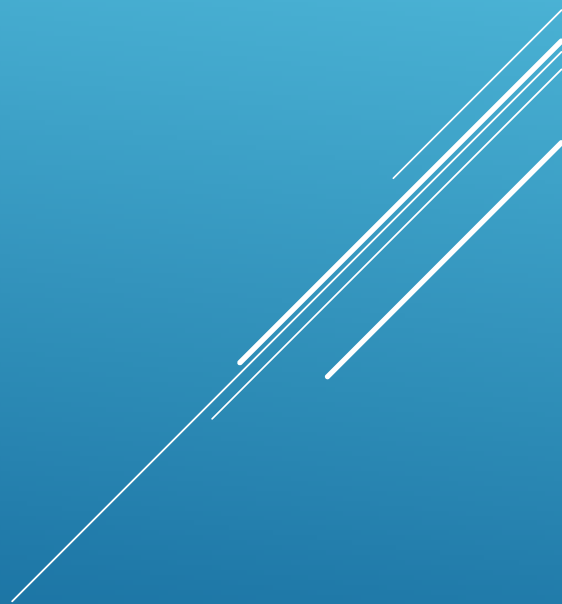
- ▶ Compliance is a big subject and topical and relevant at the current time
- ▶ The term grew about 10 years ago as HSE started to use the wording and concept
- ▶ So what does it involve in terms of Legionella
  - ▶ Legislation/Guidance
    - ▶ ACOP L8
    - ▶ COSHH
    - ▶ HSG 274
    - ▶ HSW Act
    - ▶ Many other associated standards and documents



- ▶ **COSHH and ACOP L8 say Duty Holders (including employers/landlords) should**
    - ▶ Identify and assess risks
    - ▶ Prepare a written scheme
    - ▶ Implement, manage and monitor precautions
    - ▶ Keep records of the precautions
    - ▶ Appoint a competent person
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▶ **Identify and assess risks**

- ▶ Risk Assessment will contain
  - ▶ Management requirements
  - ▶ Physical outcomes/remedial works
  - ▶ Monitoring requirements
  - ▶ Associated items
- Written scheme can be developed from here

- ▶ Monitoring precautions
    - ▶ Monitoring should be formulated from information and guidance given in the legionella risk assessment, however end users can refer to table 2.1 of HSG 274 for reference.
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Table 2.3: Checklist for hot and cold water systems

Service Category	Action to take	Frequency
Coldwater	Inspect coldwater externally by removing the inspection hatch or using a camera and clean by abrading the vessel. The frequency of inspection and cleaning should be subject to the findings and maintenance of the device and decided based on condition records	Annually or as indicated by the rate of fouling
	If there is no inspection hatch, purge any dead ends in the tank of the water heaters to inspect water to a suitable level. Check the pH of water from the tank of hot water heaters to inspect clarity, quantity of acids, and temperature	Annually. But may be increased as indicated by the risk assessment or result of inspection findings
Hot water services	Check coldwater flow temperature thermostat settings should increase to stop to 62 °C as practice without going below 60 °C. Check coldwater return temperatures not below 62 °C	Monthly
	For non-circulating systems: take temperatures at central points (preferably at 62 °C) to confirm that water is hot enough to confirm they are at a minimum of 60 °C within one minute (at 10 °C in recirculation pumps). For circulating systems: take temperatures at return legs of pipework (where points to confirm they are at a minimum of 60 °C (at 10 °C in recirculation pumps). Temperature measurements may be taken on the surface of metallic pipework	Monthly
POU water heaters (no greater than 15 litres)	For recirculating systems: take temperatures at return legs of pipework (where points to confirm they are at a minimum of 60 °C (at 10 °C in recirculation pumps). Temperature measurements may be taken on the surface of metallic pipework	Quarterly (based on a rating monthly rate)
	For non-circulating systems: take temperatures at return legs of pipework (where points to confirm they are at a minimum of 60 °C (at 10 °C in recirculation pumps). Temperature measurements may be taken on the surface of metallic pipework. But where this is not practicable, the temperature of water from the tap outlet on each loop may be measured and this should be greater than 62 °C within one minute of turning the tap. If the temperature is lower, it should be confirmed that the outlet is on a hot leg and not that the flow and return mix in that loop area	Representative selection of other service outlets considered on a rotational basis to ensure the whole system is meeting satisfactory temperatures for legionella control
POU water heaters (no greater than 15 litres)	For recirculating systems: take temperatures at representative selection of other service outlets (preferable outlets of large pipe systems and sanitary loops) to confirm they are at a minimum of 60 °C (at 10 °C in recirculation pumps) to ensure a temperature profile of the whole system over a defined time period	Monthly or monthly or as indicated by the risk assessment
	Check water temperature to confirm the heater operates at 60-62 °C in recirculation pumps) or check the installation has a	

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Contaminated water heaters	Inspect the integral cold water heater tanks as part of the cold water storage tank inspection regime. Clean and check as necessary. If evidence shows that the unit regularly overflows, hot water into the integral cold water heater tank, arrange a temperature monitoring regime to determine the frequency and take precautionary measures, as determined by the findings of this monitoring regime	Annually
Cold water tanks	Check water temperature of an outlet to confirm the heater operates at 60-62 °C	Annually
Cold water services	Inspect cold water storage tanks and carry out detailed work where necessary	Annually (Summer) or as indicated by the temperature profiling
	Check the tank water temperature remote from the tank inlet and the primary return temperature. Record the maximum temperature of the stored and supply water received by flow maximum temperature thermometers where fitted	Monthly
Showers and spray taps	Check temperatures at shower head typically those needed to and further from the top shelf, but may also include other no locations on the shower to shower or floor level. These outlets should be tested 22 °C when this outlet is not being used. To verify any local hot water heating during showering	Representative selection of other service outlets considered on a rotational basis to ensure the whole system is meeting satisfactory temperatures for legionella control
	Take temperature at a representative selection of other points to confirm they are below 22 °C to create a temperature profile of the whole system over a defined time period. This temperature or any temperatures not representative heating during showering	Annually
POU filters	Check thermal insulation to ensure it is intact and consider waterproofing where components are exposed to the exterior	Quarterly or as indicated by the risk factors, eg area with high risk factors
Bath exchange systems	Inspect, clean and replace removable parts, heads, nozzles and hoses	Annually or as indicated by the risk factors
	Replace the service stop valve and filter and air and date and replace filters as recommended by the manufacturer (2.2.2) and measure POU performance using primary and secondary monitoring measure with a permanent safe engineering solution as detailed, amongst long term use of such filters may be needed in some residential situations	Where not dependent on the size of the vessel and the rate of call consumption
Bath exchange systems	Usually check the set level and top up set, if required. Undertake a number check to confirm operation of the system	Annually or according to manufacturer's guidance
	Service and disinfect	

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Multiple use filters	Stockwash and equipment as specified by the manufacturer	According to manufacturer's guidance
Infrequently used valves	Consideration should be given to removing infrequently used components and any associated equipment that uses water. If removed, any redundant supply piping should be pulled back as far as possible to a common supply leg in the recirculating pipework or the pipework supplying a more frequently used common fitting but preferably by removing the fitting. Infrequently used equipment where a water system is not used for a period longer than seven days should be isolated on the service return leg. Flush the valves with the temperature at the outlet suitable and is comparable to supply water and purge to drain. Regularly use the outlet to minimize the risk from microbial growth in the pipework parts of the water system. Rust and slag may produce noise. For high risk applications, eg healthcare and care homes, more frequent flushing may be required as indicated by the risk assessment	Annually or on a hearing as defined by the risk assessment, taking account of any manufacturer's recommendations
TRVs	Risk assess whether the TRV fitting is required, and if not, remove where fitted, inspect, clean, disassemble and carried out during any other maintenance carried out by competent persons in accordance with the manufacturer's instructions. Take a further observation in paragraphs 2.1.5.2-2.1.5.6	Monthly or monthly, as indicated by the risk assessment
Expansion vessels	Where practice, flush through and purge to drain. Bleeders should be changed according to the manufacturer's guidance or as indicated by the risk assessment	Annually or as indicated by the risk assessment

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BUT WE CAN ALL FOLLOW A TABLE SUCH AS THIS

▶ I WANT TO CONCENTRATE ON  
WHERE COMPLIANCE GOES WRONG  
OR HAS GAPS SO WE CAN AVOID  
THE PITFALLS AND WORK OUT THE  
SOLUTIONS





So going back to our original COSHH and ACOP L8 list

➤ **Identify and assess risks**

- Have we done one
- Is it ever reviewed
- Have we completed any actions and recorded them
- Is it seen as an on the shelf document and not live
- Is it correct for your operations
- Is anything missing-(new extensions, outlets, changes to usage)
- 'We don't have any air condition or we are all healthy so not at risk, kids don't get it'

➤ **Prepare a written scheme**

- Are we running the equipment as it should be
- Is flushing of little used outlets carried out and recorded
- Are maintenance people competent and qualified
- Is the plan or schematic in place
- Is monitoring in place, effective and recorded
- What treatment programme is utilised-temperature or chemical for example
- Emergency procedure in place before its ever needed
- Lines of communications
- Is someone trying to save energy by turning thermostats down and having a different agenda

### Implement, manage and monitor precautions

- No monitoring in place
- Poor monitoring in place-who can check
- In-house monitoring possible but question of competence
- Complacency, lack of knowledge, cost saving from service providers
- Poor reporting of issues
- Areas missed due to no access
- Gadgets that solve all issues


### Keep records of the precautions

- Missing records
- Falsified records
- Belief that electronic records cannot be wrong
- **Missing flushing records-** new outlets becoming little used
- Retention of records

### Appoint a competent person

- Who is this in a complex organisation
- Communication throughout these type of institutions
- Service Level Agreements between parties and who does what
- Who is responsible for funding

## ▶ WHAT CAN BE DONE

- ▶ Understand and acknowledge that Legionella is there in our water systems
  - ▶ Follow guidance from HSE (free from HSE website)
  - ▶ Ensure competent help is taken. Listen to the advice given. Understand the implications and actions
  - ▶ Make sure that communication is fully documented and understood
  - ▶ Take appropriate training for relevant people involved in the process
  - ▶ Don't see that the service provider for RA and/or monitoring can do all tasks
  - ▶ Ensure records are appropriate and maintained
  - ▶ Understand your system
- 

THANK YOU FOR LISTENING

DO YOU HAVE ANY  
QUESTIONS?

