

# Risk Assessment & Water Hygiene

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Water -Tech



## Risk assessment - a simple standard

- Risk assessment is a legally required system for managing workplace health and safety which requires prompt consultation with union health and safety representatives.
- In a risk assessment, hazard is defined as the potential to cause harm, and risk as the likelihood of that harm occurring. Risk assessment involves deciding whether harm is so likely to occur that preventive action must be taken.
- The problem with risk assessment is that judging risk has an element of subjectivity. A bad judgment of a risk will result in inappropriate preventive action, or none.

## Basic legal obligation

- The Management of Health and Safety at Work Regulations (Management Regulations) require employers to identify all hazards at their workplace, to quantify the risk to employees and others and to systematically eliminate or control hazards.
- Employers with five or more employees must record significant findings. The assessment must take everyone into account, not forgetting cleaners, security staff, contractors and the public, and must be reviewed periodically, if an incident or illness occurs, or the installation / job or worker changes.

## Minimizing subjectivity with BS 8800

- Because of the problem of subjectivity, it is useful to have an assessment system which is as clear and logical as possible.
- A widely used method is laid down in the British Standard BS 8800, which deals with workplace safety management including risk assessment.
- A major failing is that it treats consultation with recognized safety representatives as advisable: it is a legal obligation.
- The BS 8800 method asks, 'what **harm** can be caused by exposure to an occupational hazard and what is the **likelihood** of that harm occurring?' The standard goes on to examine how the likelihood of harm can be eliminated or reduced to insignificance.



## A simple risk-based control plan

| <b>Risk level</b>  | <b>Action and time scale</b>   |
|--------------------|--|
| <u>Trivial</u>     | No action nor documentary records needed - but good practice to record the assessment  |
| <u>Tolerable</u>   | Improvement not mandatory, but record and monitoring required to ensure controls are maintained. Go for cheap improvements where possible.   |
| <u>Moderate</u>    | Aim to reduce risk but costs of prevention may be limited. Measures should be tied to a timetable  |
| <u>Substantial</u> | Where the risk involves work in progress urgent action should be taken otherwise work should not start until the risk has been reduced. Considerable resources may have to be allocated. |
| <u>Intolerable</u> | Work should not be started or continued until the risk has been reduced. If it is not possible to reduce risk even with unlimited resources work has to remain prohibited.               |

## Health & Safety Inspector Action Criteria

- trivial - monitor and review in the light of any changes to the task or workers.
- tolerable - advise minimal improvements and monitor
- moderate - request improvements in the form of a 'minded to prosecute' letter
- substantial - issue an improvement notice
- intolerable - issue a prohibition notice

# Ten steps to Risk Assessment (H.S.E)

The steps in risk assessing a hazard arising from a work task are:

- 1 Identify the hazard(s) associated with the work task
- 2 Identify who is exposed and how they can be harmed
- 3 Estimate the likelihood of harm occurring.
- 4 Use the risk level estimator to draw up a control plan
- 5 Identify how you are currently tackling exposure to the hazard
- 6 Identify additional things to do that reduce the risk to tolerable
- 7 Allocate responsibility for implementing and monitoring
- 8 Set the time-scale for making changes
- 9 Set a review date for checking effectiveness and improving controls where new methods emerge
- 10 Record all this information - this is your **Risk Assessment**.

## Risk assessment – Water Hygiene

**In considering the risks these could be split into the following headings / areas:**

- 1 Drinking Water from the incoming supply – this can be from the local Water Company or from a private Bore Hole
- 2 Drinking Water from Bottled Supplies/ Drinks Vending machines
- 3 Downwater Services i.e. hot, cold, shower outlets, spa baths
- 4 Air Conditioning equipment and cooling systems i.e. cooling towers
- 5 Ornamental ponds with spray/fountain design

## Drinking Water

- It is the responsibility of the water undertaker to provide water that is of a quality which is wholesome and fit to drink.
- If water is provided from a borehole then the responsibility rests with the licensee to ensure its quality.
- Water quality and its provision is enacted through legislation and is managed and licensed by the Drinking Water Inspectorate (D.W.I)
- All of the above criteria applies to domestic or business premises.

## Businesses are regulated by the Workplace Health and Welfare Regulations whereby:

- An adequate supply of wholesome drinking water shall be provided for all persons at work and in the workplace
- Drinking Water shall be obtained from a tap on a pipe connected directly onto the water main or from a tap connected directly to a storage cistern which complies with the UK Water Byelaws – now superceded by the Water Supply(Water Fittings) Regulations 1999.
- Taps should not be installed in places where contamination is likely e.g. workshops, or sanitary accommodation.
- All Drinking Water Supplies should be suitably marked as “Drinking Water” or conversely as “Not Drinking Water”

Water Undertakers carry out random and periodic tests to ensure standards of water quality upto the point of entry into the building.

However after the stop cock the responsibility rests with the employer:  
The way in which the water is stored / used will have an effect upon its quality:

### **Water Quality Criteria:**

- General bacteria (Total Viable Counts) – small amounts are not harmful
- Legionella bacteria is not harmful when drunk and therefore is not an issue in Drinking Water.
- E.Coli / Coliforms should not be present as they are indicative of faecal contamination.
- Pseudomonas / Pseudomonas Aeruginosa are present in the environment but when found in higher numbers can present a risk to certain risk groups.

# Miss World contestant is killed by blood virus

Picture: OCTAVIO BSTOS



Model Mariana died from the bug that destroyed her hands and feet

A FORMER Miss World contestant who had her hands and feet amputated after contracting a deadly infection has died.

Brazilian Mariana Bridi, 20, celebrated for her "beautiful body", passed away from complications relating to the fierce blood infection.

The model was struck down with a drug-resistant bug, caused by the bacteria *Pseudomonas aeruginosa*, at the end of December.

By Penny Stretton

just want her to survive." After the surgery she suffered an internal haemorrhage and had another emergency operation to remove part of her stomach on Wednesday afternoon.

In a heartbreaking interview, Mr Simoes told how his girlfriend had awoken briefly from a coma before her death and expressed how much she wanted to live.

## Bottled Water Supplies and Chilled Water Dispensers from Mains Distribution

- There are many reasons why the above are used in the workplace. Each can be perfectly acceptable providing their installation / maintenance and use are considered.
- Storage of Bottled Water in warm environments can cause bacteria growth
- Storage of Bottled Water in natural daylight can cause the growth of algae and biofilm on the inside of plastic surfaces
- Poor maintenance/cleaning regimes can create bacteria on the outside surfaces as well as inside the dispenser in seal etc
- Long and un-insulated runs of plastic feed pipe in warm ceiling voids to chilled water dispensers should be avoided.
- Any of the above together with the environmental conditions in which they are used can produce water quality that can create a problem for the occupants



# Recent amendments affecting Water Hygiene and Legionella Control

Revision to L8 ACOP:

removal of 300 litre limit for hot & cold water services

The providers of **any** residential accommodation are now subject to the control of L8 which would include:-

Local authorities / universities / housing associations / charities / hostels

Private landlords / managing agents / hoteliers / guest houses

Camping & caravan site owners inc fixed caravans

Reference Document issued by HSE:

Essential information for providers of Residential Accommodation



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# Recent amendments affecting Water Hygiene and Legionella Control

Building Regulations 2010 effective 1<sup>st</sup> October 2010

Parts G & L are concerned with hot & cold water services hygiene,  
Legionella control

Changes now provide for

G1 Wholesome water

G3 Controls to ensure that water stored cannot exceed 100°C

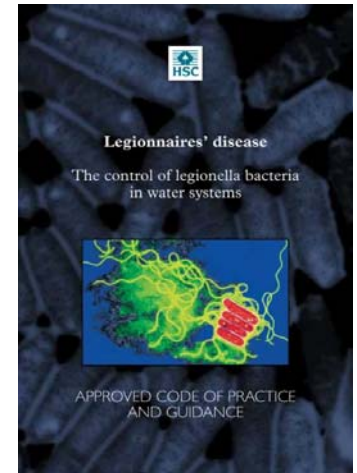
G3 Controls to ensure that water to baths does not exceed 48°C

## Water Services and Legionnaires Disease

L8 is the document previously referred to which sets out the obligations and responsibilities in the control of legionella bacteria in water systems.

The legislation that enacts and covers the risk assessment is;

- Health & safety at Work Act 1974
- Management of Health & Safety at Work Regulations 1999
- Control of Substances Hazardous to Health regulations 1999
- Building Regulations 2010 Part G & L



- The Approved Code of Practice (ACOP) is the legal requirement of L8 and stipulates the following for Identification and a suitable and sufficient Risk Assessment:
- “ A suitable and sufficient assessment is required to identify and assess the risk of exposure to legionella bacteria from work activities and water systems on the premises and any necessary precautionary measures”
- L8 sets out in paragraphs 23 to 38 the requirements of such a risk assessment.
- If it is found within a water services system that the risk of the legionella bacteria and its method of aerosolisation is established, then it follows that all of the aspects of the document L8 are brought into play.

A valid Risk Assessment will identify the potential for the growth of the bacteria within systems and for the affect by aerosolisation within relevant services systems, namely

- 1 Hot and cold water outlets where spray can occur.
- 2 Showers
- 3 Spa Baths
- 4 Ponds with fountains or jets that can cause spray
- 5 Cooling Towers / evaporative condensers
- 6 Spray humidification within air conditioning systems

## The Risk Assessment will identify

- the risk and groups that could be affected
- the use of the building and areas / installation that can produce a bacteria problem.
- Identification of the extent of the systems in schematic form that will identify problems as well as inform on what is installed
- the extent to which sampling should take place
- The interpretation of results in such a way that is meaningful to both the installation and the effect upon the risk groups identified
- Recommendations for action and timescales for their implementation

Where the Risk Assessment shows there to be a foreseeable risk of exposure to bacteria it is then necessary to implement ongoing controls to mitigate the risk highlighted within the assessment.

This usually takes the form of a Legionella Management Plan and could include the following:

- Weekly flushing of infrequently used services
- Monthly temperature monitoring / sampling of sentinel/ little used outlets
- Quarterly descaling and disinfection of shower outlets
- 6 monthly tank inspections
- Annual review of services
- Awareness Training
- Tank Cleaning / disinfection
- Bacteria Control Equipment installation/management

## Should you carry out a Water Risk Assessment ?

- YES - The assessment is required by legislation and if not in place and would be the subject of action by the HSE, Improvement Notice or Prohibition Notice
- YES – The assessment should be reviewed at least every two years or whenever there is a substantial change to warrant a review or change of the assessment
- YES - Subsequent Harm to employees and/or public rendering the employer to prosecution by HSE and private prosecution from the affected party
- YES - Police action against the responsible person /negligent parties which in the case of deaths can lead to imprisonment
- YES – If the risk cannot be demonstrated then the Control of the Risk is also in jeopardy. Can the business afford to shutdown?

## **Manchester care home fined over Legionnaires' risk**

Date: 1 April 2010

Release No: HSE/NW/054MoseleyRubber

A care home company has been fined **£5,000** after putting elderly residents in Manchester at risk of catching Legionnaires' disease.

SJ Care Homes Ltd was prosecuted by the Health and Safety Executive (HSE) after the company failed to comply with an enforcement notice issued at one of its nursing homes.

## Director fined for neglecting legionella risk

Date: 04 February 2010

Release No: WM588/09

The managing director of a Black Country firm has been fined after neglecting to control legionella at its site.

Despite warnings from water treatment contractors, Ernest Jones of Coseley-based First Metal Finishers Ltd failed to put a management system in place for the control of legionella.

Mr Jones of Rugeley, Staffordshire, pleaded guilty to breaching Section 37(1), by virtue of Section 3(1), of the Health and Safety at Work etc. Act 1974. He was fined **£2,000** and ordered to pay **£1,000** towards costs.

Dudley magistrates heard how in September 2008, inspectors visited the site in Cannon Business Park to look at control of legionella bacteria in two cooling towers.

The towers were in operation at the time of the visit, but it became evident no management system was in place for the control of legionella, nor had there been for at least eight months. Also, none of the required test checks or monitoring were being undertaken.

A prohibition notice was issued on site to stop the towers operating and an improvement notice was issued for a management system to be put in place.

The failings identified in the investigation showed neglect on the part of managing director Ernest Jones.



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- **Liverpool hospital fined over legionella**

- Date: 08 October 2009
- Release No: NW036Trust:09

- The Health and Safety Executive (HSE) has issued a strong health warning after high levels of the legionella bacteria were found at a Liverpool hospital.
- The Liverpool Heart and Chest Hospital NHS Trust was ordered to pay nearly £48,000 following an HSE investigation at the NHS Trust's hospital on Thomas Drive, Liverpool.
- The investigation found unsafe levels of legionella in the water supply system for the showers, baths and sinks at the hospital. But it was not able to conclude whether two patients, who both contracted legionnaires' disease before their deaths in early 2007, were infected at the hospital or elsewhere.
- Liverpool Magistrates' Court heard that the NHS Trust had stopped testing the water supply for legionella, despite high levels of the bacteria being found in the Audrey Leigh wing in May 2002.
- HSE criticised the NHS Trust for failing to put suitable control measures in place, and senior management for failing to take responsibility for overseeing the control of the bacteria.
- The NHS Trust pleaded guilty to breaching Sections 2(1) and 3(1) of the Health and Safety at Work etc Act 1974 by putting employees and the public at risk. It was fined **£35,000** and ordered to pay costs of **£12,862** at Liverpool Magistrates Court on 8 October 2009.



- **Company fined for inadequate legionella assessments at Welsh care homes**

Date: 6 August 2009

- Release No: HSE/W/372/09

- The Health and Safety Executive (HSE) is warning companies responsible for carrying out legionella surveys on water systems of the need to ensure that their work is thorough and accurate.
- The warning follows the conviction of a Berkshire-based water treatment company for carrying out inadequate and misleading surveys at nursing homes in Blaenau Gwent and Powys. As a result, vulnerable residents at the homes would have been at a heightened risk of contracting legionnaires disease, a potentially fatal form of pneumonia.
- At Abertillery Magistrates Court on Thursday 6th August 2009, DEBA UK Ltd of Unit 15, The Metro Centre, Toutley Road, Wokingham, pleaded guilty to three charges under Section 3(1) of the Health and Safety at Work etc Act 1974. They were fined **£24,000** and ordered to pay costs of **£17,276**.



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## Can you afford a Water Risk Assessment ?

- 1 Ask the person who has suffered serious harm from a water acquired infection.
- 2 Ask the person who has contracted legionnaires disease
- 3 Ask the relatives of someone who has died from the above

The numbers of affected people may not be large – but is it a legal obligation and the responsible thing to do

Can you afford not to Carry one out – The Choice is Yours

