

LEGIONELLA PROCEDURE

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1

INTRODUCTION

1. INTRODUCTION

1.1 Purpose

The purpose of this procedure is to detail the Mace approach to the design, plan, build and operate stages of water system management in the control of the risk of Legionella. This includes requirements for eliminating, reducing, isolation and controlling Legionnaires' disease (LD) for the services Mace offers across its operations.

1.2 Scope

This procedure applies to Mace operations where Mace has the responsibility for any aspect of design, build, planning and operation of water systems.

This includes projects where:

- Mace has responsibilities for the management and control of premises;
- The management of a water system is subcontracted by or on behalf of Mace.

1.3 Legal requirements

Mace is required to identify and control the risk of legionella that may affect Mace people, contractors, or members of the public on projects and premises that Mace manages or has control of.

Legislation may vary depending on the jurisdiction of the Mace project or premises.

Relevant legislation is detailed in local legal registers. Details for UK projects and premises can be found [here](#). When operating outside the UK, then local, regional legal requirements and industry guidance must also be applied. **Note:** see [Enhesa](#) for Operate legal registers or contact your local HSW Manager.

1. INTRODUCTION

1.4 What is Legionnaires' disease?

Legionnaires' disease (LD) is one of the infections caused by Legionella pneumophila (LP) and other bacteria from the family Legionellaceae. The bacteria are naturally present in the environment in soil and water and can survive and thrive in engineered water systems. More than 60 species of legionella bacteria have been identified and half of these can cause various infections to humans described as legionellosis.

Persons contracting the disease initially experience symptoms like severe flu that then develops into a life-threatening pneumonia. Legionnaires' disease can be successfully treated with antibiotics if diagnosed in the early stages.

The main symptoms are high fever, chills, headache, and muscle pain followed by dry cough, difficulty in breathing and often diarrhoea or vomiting and becoming confused and delirious. The following persons are more likely to contract Legionnaires' disease:

- Males in the over 50 age group.
- Smokers and alcoholics.
- Cancer sufferers.
- Persons suffering from diabetes, chronic respiratory disease, and kidney disease.
- People with low immunity disorders.
- Babies & Young Persons.

1.5 Where does it come from?

- Widespread in natural fresh water sources (lakes, rivers, ponds).
- Present commonly in mains water supply.
- Strong likelihood of very low concentrations in all open water systems.

Legionella thrives in recirculating and dead leg water systems at temperatures between 20°C and 45°C. It will not survive above 60°C.

The risk of legionella should be considered when dealing with the following:

- Cooling towers and all re-circulator evaporative cooling devices.
- Hot and cold-water storage vessels.
- Standing hot and cold-water distribution pipework and dead legs.
- Showers and spray taps.
- Whirlpools, spas, and jacuzzis.
- Fire hose reel systems/sprinkler systems.
- Water features/fountains.
- Vehicle washes.
- Boot wash facilities.
- Eye wash spray.
- Dust suppression systems.

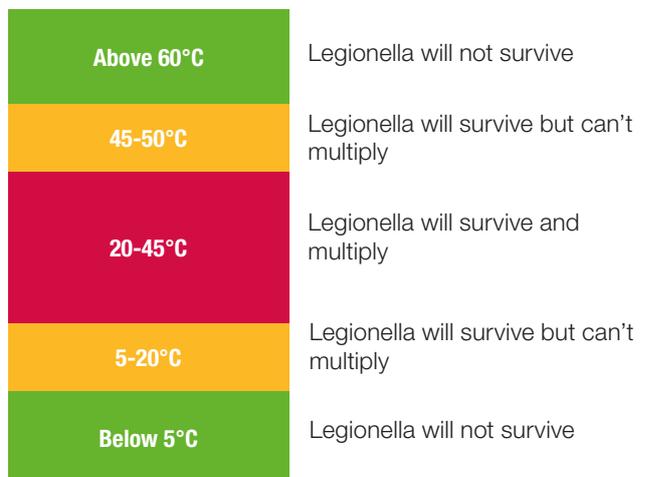


Figure 1: Legionella and Water Temperature

1. INTRODUCTION

1.6 Roles and responsibilities

Table 1 below details the various roles and responsibilities involved in the management of Legionella.

Engine	Role	Responsibility
All Engines	Legionella Coordinator	<ul style="list-style-type: none"> Monitor compliance with this procedure for projects appointed on including satellite/temporary locations. Confirm that suitable and sufficient arrangements and controls are in place against the risk of legionella for all water systems (temporary and permanent including welfare). Undertake inspections and audits in line with this procedure. Record incidents and findings on YellowJacket and track close out. Plan and arrange for routine monitoring (temperature, identify areas with a low water circulation/flow and outlets with low usage). Note: this may be conducted by a competent Mace person or arranged through a competent contractor. Plan regular maintenance and flushing of water systems including little used outlets.
	Specialist Water Management Contractor	<ul style="list-style-type: none"> Competent with relevant qualifications approved by Mace Supply Chain Management or S2C (for Operate). Provide advice, guidance and services. Conduct a Legionella Risk Assessment and develop a water quality management plan based on the assessment.
Construct	Construction Project Lead/ Project Manager	<ul style="list-style-type: none"> Overall responsibility for managing legionella on the project. Appoint a Legionella Coordinator in line with the Mace Appointed Coordinators procedure. Appoint a Specialist Water Management Contractor for the project.
	MEP Manager	<ul style="list-style-type: none"> Work with project team to monitor and reduce the risk of Legionella in line with this procedure. Conduct a basic Legionella risk assessment or appoint a Specialist Water Management contractor to conduct risk assessments for complex systems. Note: where there is no MEP Manager, this will be done by the Construction Management team. Identify dead legs.
	MEP Design Lead	<ul style="list-style-type: none"> Design out the risk of Legionella where possible. Develop schematic drawing. Provide asset register. Provide information pertaining to the water system for Client/End User handover, e.g O&M Manuals, Health and Safety File.
	Construction Manager	<ul style="list-style-type: none"> Monitor compliance with this procedure. Support the project to comply with this procedure. Maintain water turnover or implement flushing regime as required in line with HSG 274. Undertake Legionella inspections. Communicate risks and control measures of legionella with workforce and other contactors.

1. INTRODUCTION

Engine	Role	Responsibility
Operate	Facility/Office Manager	<ul style="list-style-type: none"> Check and confirm a Legionella risk assessment is conducted by a Specialist Water Management Contractor. Plan routine monitoring (temperature checks, identify areas with a low water circulation/flow and outlets with low usage). Note: this may be conducted by a competent Mace person or arranged through a Specialist Water Management Contractor. Plan regular maintenance and flushing of water systems. Retain record of inspections, audits, monitoring, and reports. Appoint a Specialist Water Management Contractor
	Responsible Person – Water (RPW)	<ul style="list-style-type: none"> This role can be fulfilled by the Legionella Coordinator or 3rd Party individual/contractor who is responsible for confirming the Water Hygiene Management Plan is implemented and the risks from legionella and Legionnaires’ disease are identified and controlled. Confirm competence of all parties carrying out water system maintenance.
	Competent Persons – Water (CPW)	<ul style="list-style-type: none"> Undertake the risk assessment and written scheme. This role is normally fulfilled by the Specialist Water Management Contractor.
Develop	Development Manager/Landlord	<ul style="list-style-type: none"> Appoint a Specialist Water Management Contractor to complete a risk assessment and water management plan. Appoint an approved SCM contractor to complete any required water treatments. Appoint a competent asset manager to help manage the risk and complete and review the Water Hygiene Management Plan. Checking, inspecting and monitoring requirements based upon the findings of the Legionella risk assessment.

Table 1: Roles and responsibilities

1.7 Training and competency

Mace people involved in the management and control of legionella must complete training in line with the [Mace Training Matrix](#).

2

PROCEDURE

2.1 OVERARCHING PRINCIPLES

The level of management and control of legionella bacteria will vary with the services Mace provides depending on the Mace role on the project. Mace responsibilities could extend to the installation, operation, and maintenance of water systems and therefore there is a foreseeable risk from legionella to Mace people, subcontractors, visitors, end users and members of the public. This section covers specific requirements that each Engine needs to implement to reduce the risk of legionella in our business.

The following requirements must be applied across all the Engines where Mace is in control of the premises and/or has a statutory responsibility for the water system:

1. Risk Assessment (Services provided specific).
2. Water Hygiene Management Plan (written scheme) - This plan documents the arrangements for the management of Legionella. This needs to be completed by a competent person (for Mace Written Scheme) or a Specialist Water Management contractor.
3. Responsible/Appointed Person.
4. Monitoring, auditing and review.
5. Keeping records - This should include details of the responsible person, risk assessment, written scheme, inspection/audit results and maintenance records.

Refer to specific engine process flows for key requirements.

2.1.1 Control Measures

- Elimination - Can the risk of legionella be eliminated at the design stage? E.g a closed water system vs open system.
- Substitution - Where the hazard cannot be eliminated, can the design process be substituted for systems that will reduce the risk of legionella, e.g. using a dry cooling system instead of wet cooling system.
- Engineering Controls - Can engineering controls such as design process avoid water stagnation /dead legs and avoid materials that harbour bacteria or act as source of nutrients for bacteria? E.g. controlling the release of water droplets, chemical dosing or UV-filters that kill bacteria, etc.
- Administrative controls – this includes training and information on legionella, monitoring, audit, record keeping etc.
- RPE - appropriate respiratory protection such as dust mask (N95 as a minimum) during monitoring and maintenance.

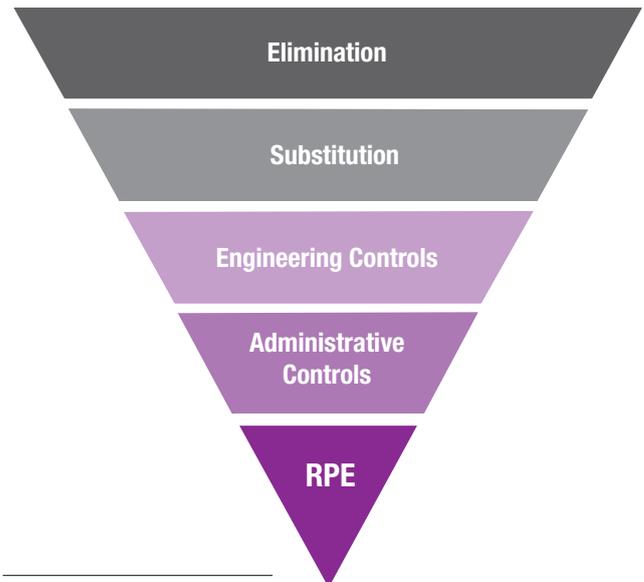


Figure 2 Hierarchy of Controls

2.1 OVERARCHING PRINCIPLES

2.1.2 Legionella Procedure

Figure 3 below identifies the key steps for management of Legionella.

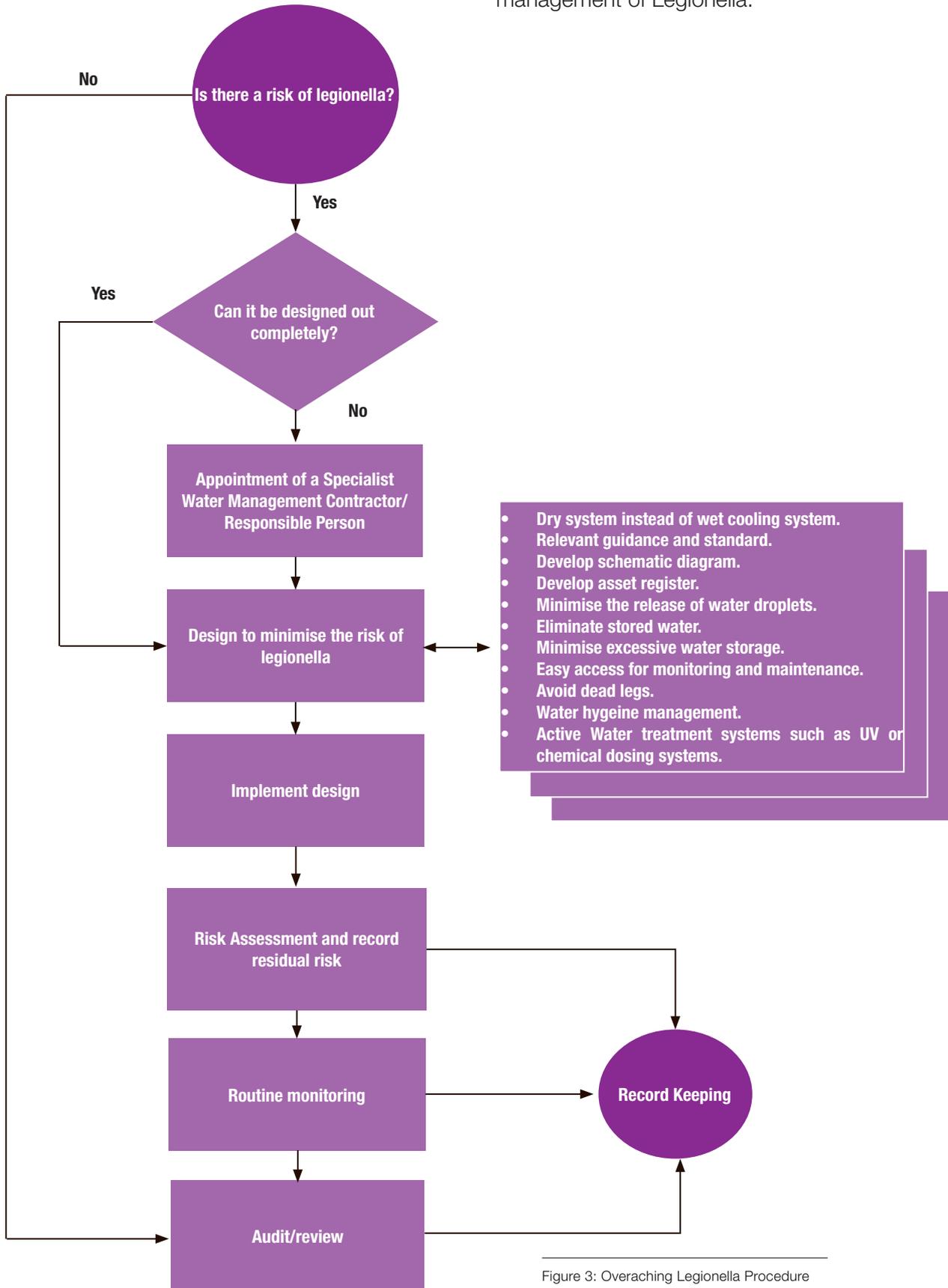


Figure 3: Overarching Legionella Procedure

2.1 OVERARCHING PRINCIPLES

2.1.3 Safety in design

The first step in the management and control of legionella is the possibility of eliminating the risk at the design stage. Water systems should be designed to minimise the risk of legionella. As part of this the following are required:

Risk assessment

- A water risk assessment is an essential component in any well managed ACOP L8 legionella management and compliance process. The assessment itself typically involves the detailed examination of all manufactured water systems. An initial assessment must be undertaken every two years on assets and reviewed following significant changes to the water system.
- The type of risk assessment is determined by the water system in place and split into two categories:
 - Basic – for low risk water systems that meets the criteria below:
 - in a small building without individuals especially 'at risk' from legionella bacteria;
 - where daily water usage is inevitable and sufficient to turn over the entire system;
 - where cold water is directly from a wholesome mains supply (no stored water tanks);
 - where hot water is fed from instantaneous heaters or low volume water heaters (supplying outlets at 50 °C);
 - where the only outlets are toilets and wash hand basins (no showers).
 - Complex – all other water systems not covered above, including for phased handover works including interiors jobs. Risk assessments must be completed by a competent third party (approved by SCM or S2C for Operate). Outcomes of the risk assessment must inform the Water Hygiene Management Plan.

- A basic risk assessment can be completed by a competent Mace employee (normally from Construct MEP or Construction Management team) who has completed the Mace Management of Legionella training and Legionella Risk Assessment training detailed in the [Mace HSW Training Matrix](#). The [Legionella Risk Assessment \(Basic System\) template](#) should be used to record the risks and control measures in place. A separate Water Hygiene Management plan is not required with a basic risk assessment.
- Risk assessments should identify any groups of employees particularly at risk (see Section 1.4) and consider occupants of other adjacent buildings, particularly with Evaporative Cooling Systems close to Healthcare facilities.

Asset register.

The asset register should include:

- list of water system equipment,
- outlet type,
- location, etc

Schematic drawings

A schematic drawing is a simplified but accurate illustration of the layout of the water system.

2.1.4 Appointed roles

Key roles need to be appointed as detailed in Table 1. These include:

- Legionella coordinator - training in line with the HSW Training matrix
- Responsible Person – Water (RPW): Adequate training, competence, and knowledge of installations under their control including appointment of a competent water treatment specialist.
- Competent Persons – Water (CPW) - This role is normally fulfilled by the Specialist Water Management Contractor

Roles are dependant on Mace responsibilities.

2.1.5 Record Keeping

All records regarding risk assessment, water monitoring, inspections and audit must be maintained either electronically, written or both. Records must be maintained and regularly updated during the duration of the contract, and at least 5 years thereafter.

2.1 OVERARCHING PRINCIPLES

2.1.6 Water Hygiene Management Plan (written scheme)

The Water Hygiene Management Plan (written scheme) is designed to control and minimise the exposure to legionella or similar bacteria and the related health risks to anyone working, visiting or living within premises. All assets must have a written scheme produced by a competent person.

The plan includes details of how Mace will:

- Assess the foreseeable risk from legionella;
- Take action to manage the risk from legionella bacteria;
- Identify Responsible Person/s;
- Provide recommendations and guidance on control measures required to maintain;
- Manage/maintain hot and cold water systems;
- Maintain appropriate records;
- Periodically review the management plan adapting it to meet any changing needs;
- Execute emergency procedures when legionella is found or suspected.

The following risk factors must be considered and addresses where applicable in the Water Hygiene Management Plan:

- Type of cooling system - wet cooling tower or dry system.
- If two different contractors are doing the installation of the welfare/toilets/CAT A fit out and primary/secondary/tertiary is split up between different packages:
 - Check chlorination and testing of different pipework circuits has been bought with all contractors to confirm all pipework does not cross contaminate and feed back into primary systems once connected. (Section or combined chlorination TBC when packages are put together).
 - Flushing of 'little used outlets' to be implemented on site to confirm that there is no build up of bacteria in pipework.

The plan must be reviewed annually or following significant changes to the water system.

2.1.7 Re-opening buildings

The Legionella Control Association (LCA) recommends that the minimum expectation for small, simple hot and cold water systems would be flushing through with fresh mains water. Larger buildings, those with tanks, showers, calorifiers and more complex pipework the expectation is likely to be for more extensive flushing followed by cleaning and disinfection. Figure 4 below is an extract from the [Legionella Control Association guidance document](#) for recommissioning hot and cold water systems.

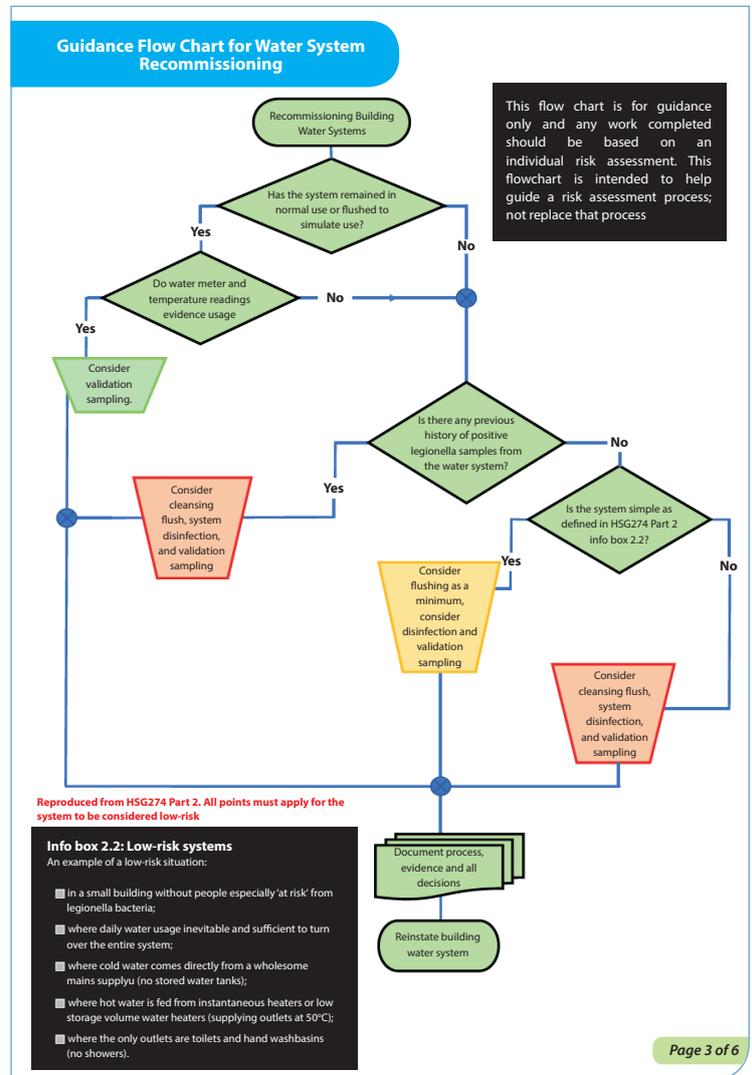


Figure 4: Extract from LCA Guidance - Water system recommissioning flow chart

2.1 OVERARCHING PRINCIPLES

2.1.8 What to do if there is a positive legionella sample?

A positive sample result does not indicate the presence of Legionnaires’ disease.

The important factor to consider is the quantity or colony forming unit (CFU). Legionella bacteria will proliferate if the environment (temperature/ concentration of nutrient) is favourable. See Table 2 for actions to be taken for different levels of positive legionella results.

All positive sample results must be reported and further investigated in line with [Mace Incident Reporting and Investigation Procedure](#).

Legionella result analysis	Legionella count (CFU/ litre)	Actions
Low level	<100	<ul style="list-style-type: none"> No immediate action needed but continue to monitor.
Medium level	>100-1000	<p>Either:</p> <ul style="list-style-type: none"> if the minority of samples are positive, the system should be resampled. If similar results are found again, a review of the control measures and risk assessment should be carried out to identify any remedial actions necessary or if the majority of samples are positive, the system may be colonised, albeit at a low level. An immediate review of the control measures and risk assessment should be carried out to identify any other remedial action required. Disinfection of the system should be considered. <p>And:</p> <ul style="list-style-type: none"> Report to the building manager/client. Check local regulations regarding any reporting requirements to the authorities. Internal reporting in line with the Mace Incident and Investigation Procedure.
High level	>1000	<ul style="list-style-type: none"> The system should be resampled and an immediate review of the control measures and risk assessment carried out to identify any remedial actions, including possible disinfection of the system. Retesting should take place a few days after disinfection and at frequent intervals afterwards until a satisfactory level of control is achieved. Report to the building manager/client. Check local regulations regarding any reporting requirements to the authorities. Internal reporting in line with the Mace Incident and Investigation Procedure.

Table 2: Guidance on legionella analysis

2.1 OVERARCHING PRINCIPLES

2.1.9 What to do if there is a suspected/confirmed case

All positive test results and outbreaks must be reported in line with [Mace Incident Reporting and Investigation Procedure](#).

An outbreak is defined as two or more cases of Legionnaires’ disease (not a high count within the water system, as described above) (see figure 5 for definitions extracted from [PHE Guidance on investigating cases, clusters and outbreaks of Legionnaire’s disease](#).) If an outbreak is suspected that may be attributed to the water system within a building, or where urgent action is required following routine inspections, the following course of action must be taken:

If there is a specialist contractor in place, they must contact the Mace Project/Site Manager/Legionella Co-ordinator who will then contact the Mace HSW Manager. The HSW Manager will take action as follows:

- In England and Wales, notify the Medical Officer of Environmental Health (MOEH) of the district health authority.
- In Scotland, notify the Community Medicine Specialist (Communicable Diseases and Environmental Health Group) or the designated medical officer. Legionellosis is a notifiable disease in Scotland. These officials will then use the services of trained epidemiologists to control the outbreak.
- Report any confirmed case of Legionnaires’ disease to the Health and Safety Executive (RIDDOR).
- Overseas, follow legal requirements of country accessible on Enhesa.

Guidance on investigating cases, clusters and outbreaks of Legionnaires’ disease

Box 3: Exposure-specific definitions for detection of clusters and outbreaks of LD. For PF or NPL, please contact the NLST for further advice

Healthcare associated cluster	Two or more cases of LD who stayed, visited or worked in the same hospital or healthcare premises within 2 to 10 days prior to onset dates of symptoms, within 2 years of each other. If there is a period of more than 2 years between cases, the first ‘new’ case should be considered a ‘single’ case and any further cases thereafter would form a new cluster.
Travel associated cluster (including foreign and UK travel)	Two or more cases of LD who stayed at or visited in the same accommodation site(s) during the 2 to 10 days prior to onset dates of symptoms, within 2 years of each other. If there is a period of more than 2 years between cases, the first ‘new’ case should be considered a ‘single’ case and any further cases thereafter would form a new cluster.
Community cluster	Two or more cases of LD that are geographically linked within 6 kilometres, by places of residence, work, or other type of community setting, and with onset of symptoms within 6 months of each other. It should be noted that UK travel cases are also exposed to potential sources of legionella in the community and so should be considered for inclusion in any potential community clusters. If there is a period of more than 6 months between cases, the first ‘new’ case should be considered a ‘single’ case and any further cases thereafter would form a new cluster.
Outbreak	Two or more cases of LD meeting the criteria for any type of cluster (as above), with an interval of no more than 28 days between onset dates of consecutive cases and one or more of the following: - isolates from clinical AND environmental specimens are indistinguishable using a highly-discriminatory microbiological method (eg sequence-based typing) for at least 2 cases OR - isolates from respiratory specimens from at least 2 cases are indistinguishable using a highly-discriminatory microbiological method (eg sequence-based typing) OR - strong epidemiological evidence for link(s) between all cases (eg, a common workplace) For the end of an outbreak, please refer to paragraph 4.12 .

Figure 5: Extract from Public Health England Guidance on investigating cases, clusters and outbreaks of Legionnaires’ disease defining outbreaks

2.1 OVERARCHING PRINCIPLES

Figure 6 below identifies the actions required for a suspected/confirmed case of Legionnaires' disease.

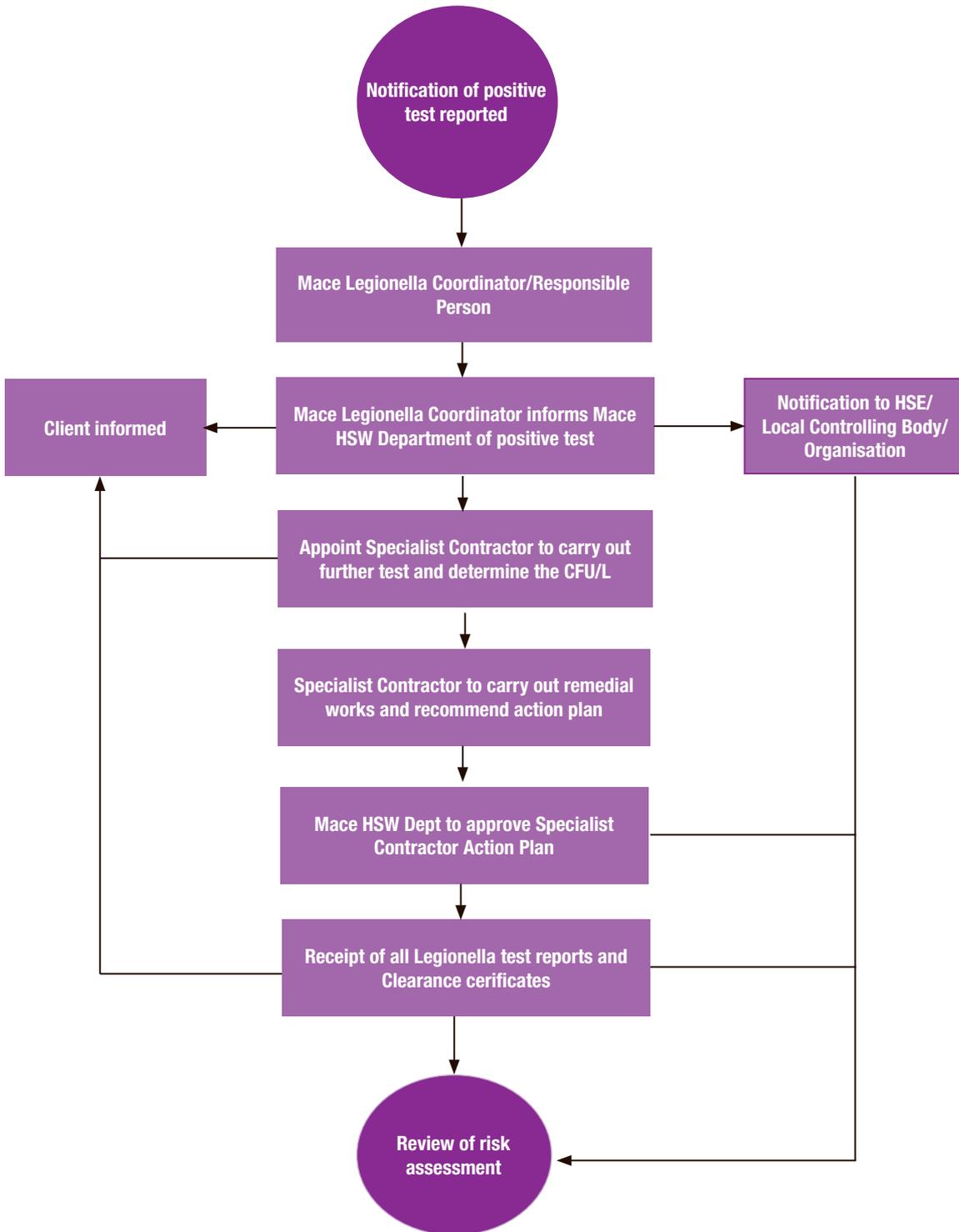


Figure 6 Positive Test flow chart

2.1 OVERARCHING PRINCIPLES

2.1.10 Monitoring, audits and inspections

Regular testing/sampling, inspections and maintenance must be carried out in accordance with the water hygiene management plan and water risk assessment. This should form part of the planned preventative maintenance (PPM) regime and undertaken in accordance with approved RAMS by competent persons.

The frequency of testing/sampling and inspection of water systems is determined following a risk assessment; frequency of operation of the water system or as advised by a Specialist Water Management contractor.

Table 3 below details the minimum requirements for monitoring and review.

Activity	Responsibility	Frequency	Records	Engine
Temperature reading	<ul style="list-style-type: none"> Facilities Manager Responsible Person Legionella Coordinator 	<ul style="list-style-type: none"> Monthly (Weekly for little used outlets) 	<ul style="list-style-type: none"> Project filing system 	<ul style="list-style-type: none"> Operate Construct
Water system flushing	<ul style="list-style-type: none"> MEP Manager Specialist Water Management contractor 	<ul style="list-style-type: none"> As indicated by risk assessment Following significant changes to the water system 	<ul style="list-style-type: none"> Project filing system 	<ul style="list-style-type: none"> Operate Construct Develop
Water sampling	<ul style="list-style-type: none"> Specialist Water Management contractor/competent person 	<ul style="list-style-type: none"> Dependant on outcome of the legionella risk assessment 	<ul style="list-style-type: none"> Project filing system 	<ul style="list-style-type: none"> Operate Construct Develop
Inspection against water hygiene management plan	<ul style="list-style-type: none"> MEP Manager Specialist Water Management contractor Legionella coordinator 	<ul style="list-style-type: none"> Quarterly 	<ul style="list-style-type: none"> Project filing system 	<ul style="list-style-type: none"> Operate Construct Develop
Audit (internal)	<ul style="list-style-type: none"> HSW Manager 	<ul style="list-style-type: none"> Annually 	<ul style="list-style-type: none"> YellowJacket 	<ul style="list-style-type: none"> Operate Construct

Table 3: Monitoring and review

2.2 DEVELOP

It is the Develop Engine’s responsibility to set the project up for success from inception and allow time, resource, and make suitable arrangements so that, following the hierarchy of risk control, we eliminate the potential for Legionella to be present in the assets we develop and are the landlord of.

2.2.1 Legionella Procedure

Figure 7 below identifies the key steps for management of legionella risks in the Develop engine. The main requirements are identified in 2.1.2.

2.2.2 Develop engine specific considerations:

The following considerations should be made when identifying and developing controls for legionella:

- Principal designer influence in the early stages of the M&E design i.e. Royal Institute of Building Architects (RIBA) Stages 2 and 3 ([RIBA Plan of Works](#)).
- Appointment of a Specialist Water Management Contractor (if required).
- Appointment of a competent asset manager to help manage the risk and complete and review the Water Hygiene Management Plan.
- Development brief for project addressing requirements.
- Landlord duties as the asset owner.

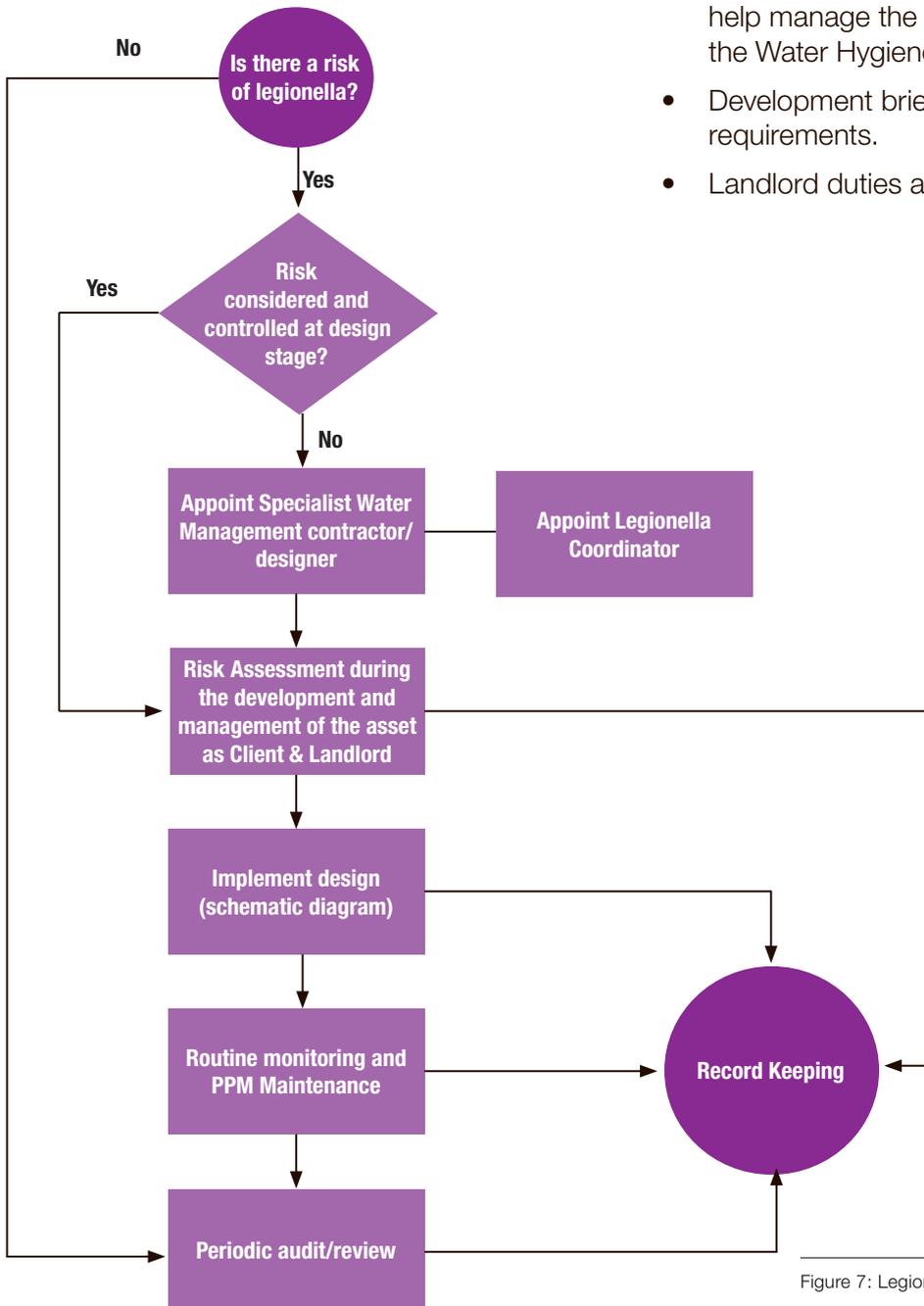


Figure 7: Legionella Procedure for Develop Engine

2.3 CONSTRUCT

The legionella procedure is applicable on construction projects where Mace is in control of the premises including phased handovers and sectional completion.

2.3.1 Legionella Procedure

Figure 8 below identifies the key steps for the management of legionella risks at Mace construction projects. The main requirements are identified in 2.1.2.

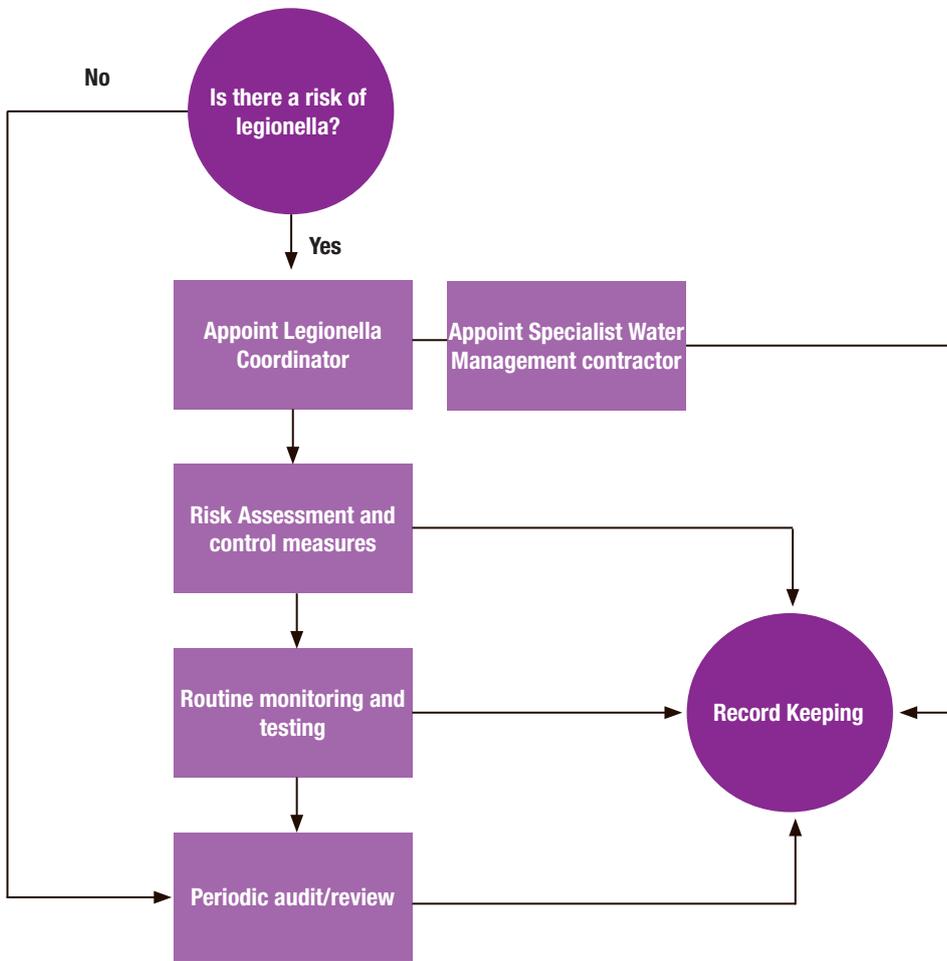


Figure 8: Legionella Procedure for Construct Engine

2.3 CONSTRUCT

2.3.2 Construction delivery specific considerations

- Availability of the schematic drawing of the water system - A schematic diagram is a simplified but accurate illustration of the layout of the water system.
- Appointment of a Specialist Water Management Contractor to fulfil the 'Responsible person' role for Mace unless Mace has an individual who is competent to fulfil the Responsible Person role.
- Appointment of a Legionella Coordinator – The Project Director is responsible for appointing a Responsible person or Legionella Coordinator. The Legionella Coordinator or Responsible person must be competent and must have completed the training in line with the [Mace HSW training matrix](#).
- Appointment of a specialist Specialist Water Management Contractor - this will be based on the risk profile of the project and whether there is a Mace person to fulfil the Responsible Person role
- Legionella risk assessment for the project – The RA should identify any groups of employees particularly at risk and consider occupants of other adjacent buildings, particularly with Evaporative Cooling Systems close to Healthcare facilities. The type of risk assessment is determined by the water system in place and split into two categories:
 - Basic – water systems which are part of a temporary situation (e.g. site cabins and temporary welfare). Risk assessment can be completed by a competent Mace employee (normally from Construct MEP or Construction Management team) who has completed the Mace Management of Legionella training and Legionella Risk Assessment training detailed in the [Mace HSW Training Matrix. The Legionella Risk Assessment \(Basic System\) template](#) should be used to record the risks.
 - Complex – all other water systems not covered above, including for phased handover works including interiors jobs. Risk assessments must be completed by a competent third party (approved by SCM or S2C for Operate).
- Notify local authority of any cooling tower or evaporative condenser – The local authority must be notified in writing if the water in the cooling system is connected to an electric supply and exposed to the air and the water.
- Routine monitoring and inspection in line with the legionella risk assessment and written scheme.
- Maintenance procedure – Details of maintenance strategy for the cooling system including flushing of the system.
- Periodic review of legionella management procedure.
- Record keeping - A written record of risk assessment, control strategy, monitoring, inspection, and review.
- Emergency procedure and remedial action.
- All fittings must comply with the The Water Supply (Water Fittings) Regulations 1999 and meet the requirements of The Water Regulations Advisory Scheme (WRAS).

2.4 CONSULT

Although the Consult engine doesn't provide professional LD advice, we need to have an awareness of the risk associated with LD and our clients' responsibilities around LD. We will also need to consider what other consultants or contractors will need to address when designing projects where LD is a risk.

Note: On projects that are a Construction Management contract, the Construct engine requirements must be followed.

2.4.2 Consult engine specific considerations

- Identify Mace responsibilities (design, planning, build, operate).
- Develop appropriate control measures depending on scope of works and responsibilities.
- Briefing of M&E design teams.

2.4.1 Legionella Procedure

Figure 9 below identifies the key steps for the management of legionella risks in the Consult engine. The main requirements are identified in 2.1.2.

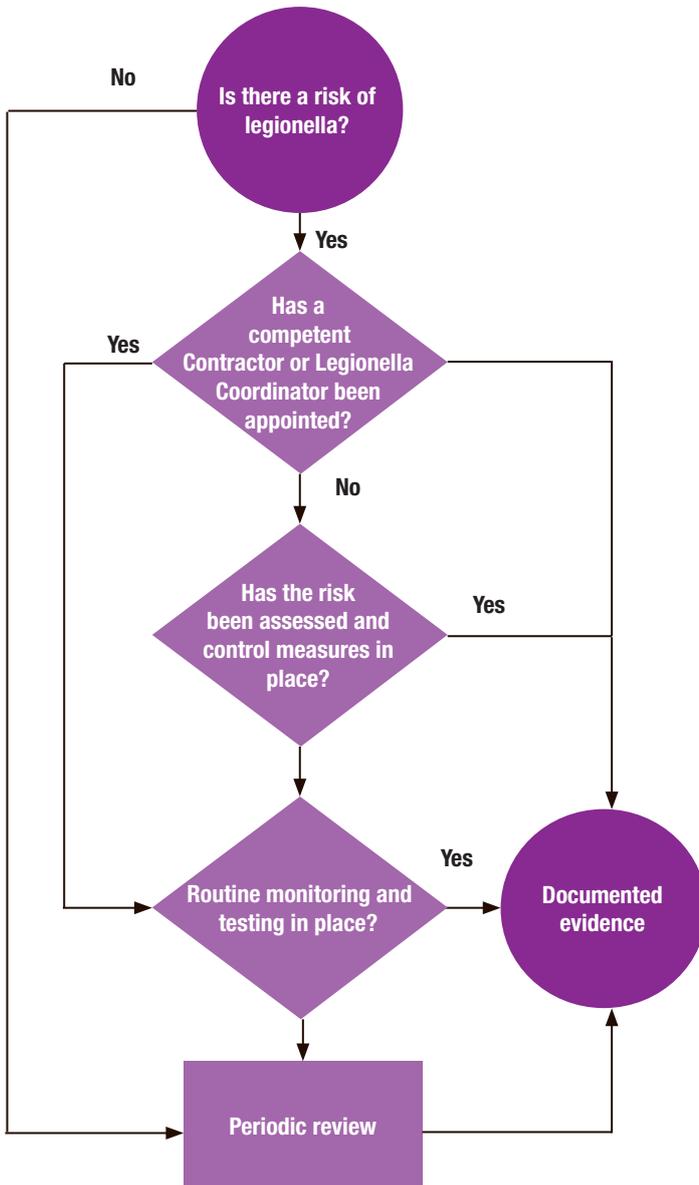


Figure 9: Legionella Procedure for Consult Engine

2.5 OPERATE

The legionella procedure is applicable on projects where Mace is responsible for the operation and maintenance of the facility/premises. Where the management of Legionella is subcontracted to a specialist Water Management Contractor, Mace Managers are responsible for ensuring that works are carried out to Mace standard and local regulations including a suitable monitoring and maintenance regime for both the UK and international projects. For international projects refer to Enhesa or the [Mace Operate Sharepoint folder](#).

2.5.1 Legionella Procedure

Figure 10 below identifies the key steps for the management of legionella risks in the Operate engine. The main requirements are identified in 2.1.2.

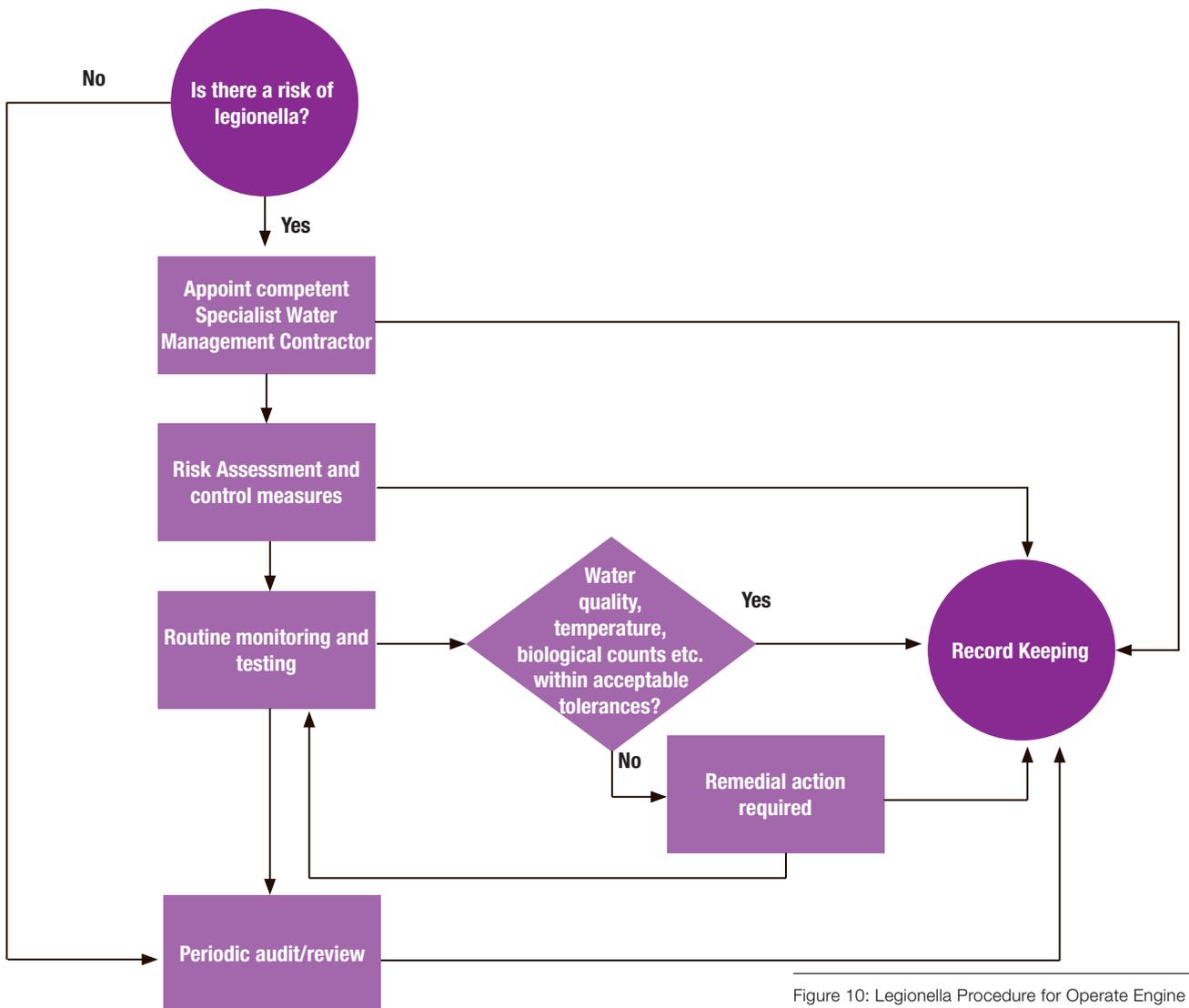


Figure 10: Legionella Procedure for Operate Engine

2.5 OPERATE

2.5.2 Operate engine specific considerations

- Confirm appointment of a competent Specialist Contractor for the Management of Legionella (where applicable) and confirm that a suitable monitoring & inspection regime is in place.
- Understand your statutory or contractual responsibilities for health and safety.
- Carry out risk assessments, prepare written scheme and implement the findings as conducted by the appointed Water Management Contractor.
- Maintain hot and cold water temperatures outside the legionella growth range.
- Responsibilities for regular flushing of system and 'little used outlets.
- Treat cooling towers and other risk systems with biocides.
- Testing, inspections and maintenance.
- Record keeping.

2.5.3 Responsible Person – Water (RPW)

The Responsible Person must complete suitable training in relation to the RPW role from an accredited/approved training provider. Where this role will be carried out by a Mace person this will be the Management of Legionella training and additional Legionella Risk Assessment training if they will be developing a risk assessment for basic water systems.

They must also have sufficient knowledge and experience of the systems they are responsible for.

The Duty Holder (dependant on the scope, this will usually be the Client) will appoint all designated Mace RPW and any deputies, in writing following a competency review. They will also confirm 3rd Party Managed Assets have competent RPW's on all assets.

2.5.4 Competent Persons – Water (CPW)

This will normally be an external appointment to undertake the risk assessment and written scheme. They will be appointed by Mace and 3rd Party Asset Managers following a due diligence process and specified procurement procedures to verify competence.

2.6 INTERNATIONAL

The varying market that we operate in outside of the UK means that there is no 'one size fits all' for legionella policy. Therefore, we recommend reading the above for guidance but using Enhesa to find your local legislation regarding LD.

Where the local regulations do not specify requirements for LD management, this procedure must be followed.

2.6.1 Relevant guidance

- WHO Legionella Guidelines (2007).
- EU Technical Legionella Guidelines (2017).

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