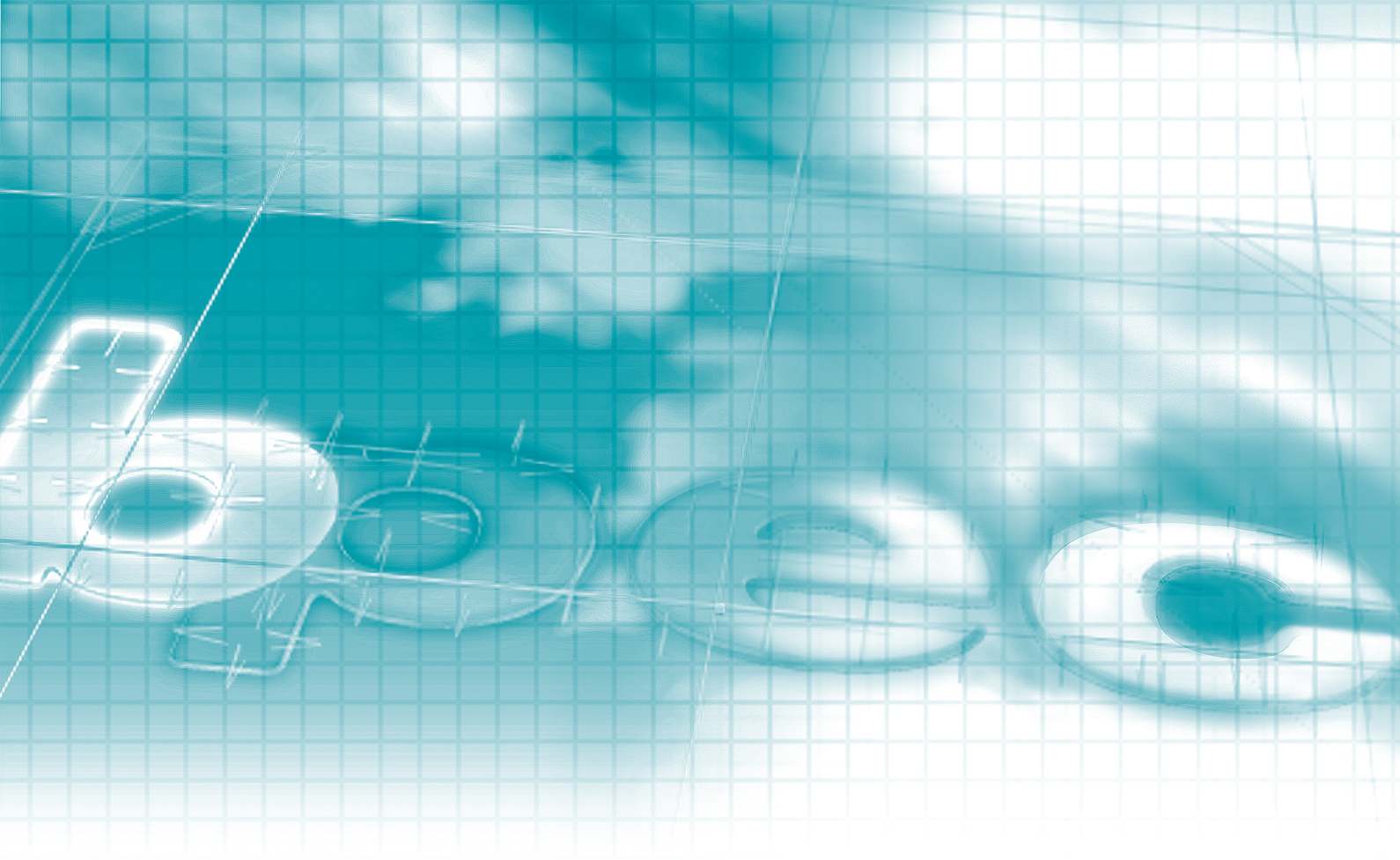

RISK ASSESSMENT OF COLD AND HOT WATER SYSTEMS IN RESIDENTIAL ACCOMMODATION LOG BOOK

bpec SERVICES LTD

LOG BOOK

Legionella Risk Assessment Log Book

Water System Hygiene - Cold and Hot Water Systems

Risk Assessment Survey and Log Book Record

Name of premises	
Address of premises	
Responsible person contact phone number	
Name of author of report	
Brief description of the use of the premises, type of occupancy and any other useful notes	
Date of risk assessment	

A person who has overall responsibility for water system hygiene should be appointed in writing as the responsible person and complete the table below.

Status	Name	Phone No.	Fax No.	Mob No.	Email address
Responsible Person					
Deputy					
Engineering Manager					
Deputy					

Water Treatment Company

Status	Name	Phone No.	Fax No.	Mob No.	Email address
Company					
Contact Person					

Management Company					

Laboratory					

Legionella Risk Assessment Log Book

Introduction

Where are the premises located?	
How much water is used in the premises each day?	
How many people use the premises each day?	
Identify if anyone is susceptible to infection	
Who provides your water? Generally this will be a Water Company/Authority or the premises may have its own private supply.	
If you have an analysis of the water, please include this in appendix 1.	

General water system details

How does mains water enter the building? Sketch the details in appendix 1 from where it enters the building to the outlets. Include all relevant valves and fittings.	
What is the temperature at the first mains fed tap?	
How is the mains distributed around in the building?	
How is water heated in the building?	
Where and how is water used in the building?	
Are there any rooms where a change of use has taken place, e.g. utility room now used for storage but systems still remain? Include any notes.	

Legionella Risk Assessment Log Book

Cold Water Storage Log

The object of this section is to allow you to assess the risk associated with storing cold water in the building. You may have more than one CWSC; please complete a sheet for each cistern. Before completing this page, go to your CWSC and identify and draw the lines representing the pipes in and out of the CWSC and record them in the space below. You may wish to add an aerial or 3D view of the tank or attach photos to show additional information.

CWSC details

Locate and identify all the pipes entering and leaving the tank.	☐ Please tick when complete
Indicate the individual pipes on the sketch above showing approximate location.	☐ Please tick when complete
Identify the pipes on the sketch.	☐ Please tick when complete
Include the approximate diameter of the principle pipes in your drawing.	☐ Please tick when complete
Which pipes are used	☐ Copper
	☐ Plastic

Cold Water Storage Cistern Details

Can you give the CWSC a name which describes its principle function (e.g. mains water storage tank)?	
Can you give the tank a number? (Label the number on the actual tank).	
Where is the tank located (e.g in the attic on the 5th floor)?	
What does the tank serve?	
What is the material of construction of the tank?	

What is the material of construction of the main pipework?

What is the material of construction of the ballcock?

Please measure CWSC and answer the questions below.

CWSC dimensions

What is the length of the CWSC?

What is the breadth of the CWSC?

What is the height of the CWSC?

What is the working volume of the CWSC?

Does the capacity of the CWSC accurately match the consumption requirements of the occupancy? y/n ☐

Condition of water in the CWSC

Describe the water in the CWSC. Is it clear or murky?

Is the inside of the CWSC clean? Describe the condition of the CWSC, e.g. debris, stagnant water, corrosion, surface skin, vermin.

What is the temperature of the water farthest from the ballvalve?

What is the temperature of the make up water?

Is there good water movement?

Is the CWSC fitted with a close fitting lid? y/n ☐

Is the CWSC fitted with a screened vent? y/n ☐

Is the CWSC fitted with effective insulation? y/n ☐

Is the CWSC located in a cool place? y/n ☐

Is the pipework kept away from a direct heat source? y/n ☐

Does the calorifier's open vent return to the CWSC? y/n ☐

Is there evidence of carry over (expansion)? y/n ☐

Is the CWSC attached to other CWSCs? y/n ☐
- Parallel. y/n ☐
- Series. y/n ☐

Is it easily accessible for inspection and cleaning? y/n ☐

Risk Assessment

For this assessment the answers yes/no have been given a numerical value; please enter the number that corresponds to your answer.

Is the internal condition of the tank good?		y/n	y = 0, n = 2
Is the water clear?		y/n	y = 0, n = 3
Is the water temperature less than 20°C?		y/n	y = 0, n = 4
Is there good water movement within the tank?		y/n	y = 0, n = 3
Is the CWSC capacity accurate for the occupancy?		y/n	y = 0, n = 3
Does the CWSC installation fully comply with Water Regulation requirements?		y/n	y = 0, n = 4
	Total:		

If the sum of the above choices is:

< 3	Assessment is no risk.
3 to 5	Assessment is small risk.
5 to 10	Medium risk.
>10	Tank presents a serious risk.

Tank number:

Please include any additional information regarding equipment associated with the CWSC.

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CWSC details

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Indicate the individual pipes on the sketch above showing approximate location. ☐ Please tick when complete

Identify the pipes on the sketch. ☐ Please tick when complete

Include the approximate diameter of the principle pipes in your drawing. ☐ Please tick when complete

Which pipes are used ☐ Copper

☐ Plastic

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Is the CWSC located in a cool place? y/n ☐

Is the pipework kept away from a direct heat source? y/n ☐

Does the calorifier's open vent return to the CWSC? y/n ☐

Is there evidence of carry over (expansion)? y/n ☐

Is the CWSC attached to other CWSCs? y/n ☐
- Parallel. y/n ☐
- Series. y/n ☐

Is it easily accessible for inspection and cleaning? y/n ☐

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Is the pipework kept away from a direct heat source? y/n ☐

Does the calorifier's open vent return to the CWSC? y/n ☐

Is there evidence of carry over (expansion)? y/n ☐

Is the CWSC attached to other CWSCs? y/n ☐
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Risk Assessment

For this assessment the answers yes/no have been given a numerical value; please enter the number that corresponds to your answer.

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Tank number:

Please include any additional information regarding equipment associated with the CWSC.

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Hot Water System **Vessel Number** ☐

How is the water heated?

Please include any technical information which you have available regarding the equipment used. Information on make/model/year of manufacture, can be collated and inserted in appendix 3.

Which fuel is used to heat the water ?

Draw your hot water calorifier at appendix 2 (if there is a calorifier in the system). ☐ Please tick when complete

Add the hot water system around the calorifier/ or the water heating equipment - appendix 2 ☐ Please tick when complete

Include measurements of pipelines in and out of the calorifier.

What is the temperature of the water leaving the calorifier?

What is the temperature of the water returning to the calorifier?

What is the temperature at any outlet after 1 minute?

Which mechanical safety device prevents the hot water system from over pressure?

Can the system be drained?

Is the temperature in the calorifier, including the base, heated to 60°C for an hour each day, for example using a shunt pump?

Are there any scale control measures for the calorifier? y/n ☐

Are there any dead legs/ends? y/n ☐

Are there any redundant pipe runs? y/n ☐

Does the calorifier have an access panel? y/n ☐

If there is more than one calorifier, are they connected in parallel? y/n ☐

Are the hot water pipes insulated? y/n ☐

Are the outlets scaled? y/n ☐

Risk Assessment

Insert the numerical values which correspond to your answer.

What is the water temperature leaving the calorifier or water heating device?

☐ >60°C = 0 55-60°C = 3 <55°C = 10

What is the return hot water temperature?

☐ >55°C = 0 50-55°C = 3 45-50°C = 10

What is the temperature at any outlet after 1 minute?

☐ >50°C = 0 <50°C = 5

☐ Total

If the sum of the above choices is:

3 or less minimal risk.
3-9 medium risk.
>9 high risk.

Vessel number

Please include any additional information regarding equipment associated with the hot water system.

Legionella Risk Assessment Log Book

Hot Water System **Vessel Number** ☐

How is the water heated?

Please include any technical information which you have available regarding the equipment used. Information on make/model/year of manufacture, can be collated and inserted in appendix 3.

Which fuel is used to heat the water ?

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If there is more than one calorifier, are they connected in parallel? y/n ☐

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Are the outlets scaled? y/n ☐

Risk Assessment

Insert the numerical values which correspond to your answer.

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☐ >55°C = 0 50-55°C = 3 45-50°C = 10

What is the temperature at any outlet after 1 minute?

☐ >50°C = 0 <50°C = 5

☐ Total

If the sum of the above choices is:

3 or less minimal risk.
3-9 medium risk.
>9 high risk.

Vessel number

Please include any additional information regarding equipment associated with the hot water system.

Cold and Hot Water Distribution

Describe how cold water is distributed in the premises.

Do a simple sketch of the cold water distribution if a drawing is not already available. ☐ Please tick when complete

Insert this sketch in appendix 2. ☐ Please tick when complete

Describe how hot water is distributed in the premises.

Do a simple sketch of hot water distribution. ☐ Please tick when complete

Insert this sketch in appendix 2. ☐ Please tick when complete

Are there any showers in the premises?

Are the showers regularly maintained and shower heads descaled and disinfected quarterly?

From measuring and recording on a temperature record sheet, are there any abnormal temperatures?

Are the cold water pipes insulated? y/n ☐

Is there any redundant pipework? y/n ☐

Are there any obvious deadlegs (lengths of pipeline where water will stand for prolonged periods of time)? y/n ☐

Where supplies feed fitments are used infrequently, are they:

- Flushed through on a weekly basis? y/n ☐
- **Or** purged of stagnant water before use? y/n ☐

Are there any situations where the hot and cold pipes run beside each other and affect each other's temperature?

Are thermostatic mixing valves used? y/n ☐

If yes, are they as close as possible to the point of use? y/n ☐

Please include any additional information regarding equipment associated with the hot water system.

Legionella Risk Assessment Log Book

Risk Assessment

Insert the numerical values which correspond to your answer.

Are the shower heads cleaned and disinfected regularly?

Yes = 0 No = 8 ☐

Are there any dead legs/redundant pipework?

No = 0 1 or 2 = 2 Many = 5 ☐

Are there any outlets that do not achieve more than 50°C after 1 minute (hot) or maximum 20°C after 2 minutes (cold)?

No = 0 1 or 2 out of range = 1 3 + out of range = 3 ☐

Total: ☐

If the sum of the above choices is:

<2 No risk.
2-6 Medium risk.
>6 Severe risk.

General

Do the materials and fittings used conform with the WRAS Fittings and Materials Directory? y/n ☐

Are low corrosion materials used? y/n ☐

Temperature Monitoring Log

Use the temperature monitoring log in appendix 6 to record system temperature.

Records

Do site maintenance records of routine operational and maintenance requirements exist? y/n ☐

Are these records up to date? y/n ☐

Other Risk Systems

Do the premises have any of the following:

Spa baths or jacuzzis? ☐

Water features? ☐

External water hoses, e.g. for car washing? ☐

Air conditioning and humidification? ☐

Water cooling tower? ☐

Water softeners? ☐

These systems are beyond the scope of this course. Further information can be obtained from the ACOP.

Recommendation for Improvements

Recommendations for the improvement for the following are in appendix 6.

- CWSC(s).
- Hot water systems.
- Hot and cold water supply.

When the assessments have been made and a list of improvements identified, improvement work should be noted and listed. Completion certificates or proof that work has been done should be included in appendix 4.

☐ Please tick when complete

Appendix 1

Mains Water Supply

Please include in your pocket folder(s) all information relating to the water supply to the building. Include a simple sketch of a pipework layout showing any relevant valves and fittings.

Appendix 2

Cold and Hot Water Distribution Diagrams

Please include all diagrams which show how cold and hot water is distributed within the building.

Appendix 3

Equipment Details

Please include in your plastic folder(s) all information relating to the water supply to the building. Include a simple sketch of a pipework layout showing any relevant valves and fittings, incorporating

- Dimensions of calorifier.
- Use of pump(s) for secondary circulation.
- Use of shunt pump.

Also include in the folder manufacturer's operating instructions, service schedules etc.

Appendix 4

Disinfection Completion Certificates

All disinfection completion certificates should be inserted in the pocket folder(s).

Appendix 5

Analytical Test Results

All results of tests on any samples taken from the water system should be included.

Appendix 6

6.1 Limitations of assessment

Appendix 6.2 Risk Assessment Summary of Recommendations

Use this table to record your recommendations.

Recommendations	Priority	Planned completion	By whom	Date completed
Cold water storage cistern				
Hot water system				
Calorifiers				
Cold and hot water distribution				
Showers				
Water Softener				
Record System				

Priority: 1 = within 1 month 2 = 1-3 months 3 = 3-6 months 4 = 6-12 months 5 = 12-24 months

Appendix 6.3 Temperature Monitoring Log

Client:

Site:

Date:

Location	Mains	Cold	Hot	Cwsc	C'fier return	C'fier flow	Engineer's signature
CWSC							
3rd floor gents WC							
2nd floor gents WC							
1st floor gents WC							
Cleaners cupboard							
Calorifier							
Bathroom1 floor 1							
Bathroom 5 floor 2							
Bathroom 9 floor 3							
Main kitchen							

Requirements:
Tanks - <20ºC
Hot - At least 50ºC within 1 minute
Cold - <20ºC After 2 minutes
Mains - <20ºC After 2 minutes

RISK ASSESSMENT OF COLD AND HOT WATER SYSTEMS IN RESIDENTIAL ACCOMMODATION

BPEC Services Ltd offers training manuals in the following areas:

GAS
CCN1 Core Domestic Gas Safety
Domestic Gas Appliances (combined): CEN1, CKR1, HTR1, WAT1, DAH1, MET1

WATER
Unvented Hot Water Storage Systems L1 (England and Wales)
Unvented Hot Water Storage Systems J (Scotland)
Water Regulations
Water Byelaws (Scotland)
Water System Disinfection
Risk Assessment of Cold and Hot Water Systems in Residential Accommodation

GOOD BUSINESS GUIDES
Part 1: Getting and Keeping Customers in the Domestic Market
Part 2: Selection and Recruitment of Craft Operatives
Part 3: Basic Finance and Business Planning
Part 4: Succeed in the Plumbing/Heating industry by putting People at the Heart of your Business
Employer's Guide: Succeed in the Plumbing/Heating industry by putting People at the Heart of your Business

BUSINESS TRAINING
ICT Computer Training Programme

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