

## About this manual and training package

Water Regulations and Byelaws in the UK have been a fact of life for as long as most of us can remember. Although the four nations of the UK have different legislation covering this important area of public health the industry works closely on the training requirements for Approved Contractors. As a result, industry have agreed a common training (see Learning Outcomes) and assessment strategy for those persons wishing to apply for Approved Contractor status.

This manual forms part of a training and assessment package developed by BPEC which is approved by industry. It will serve both as a means of learning, as well as a tool of reference for future use. In addition to the manual candidates will also be required to attend training in a BPEC approved centre and undertake assessments.

## Approval

This manual, the training course and assessment have been approved for use in training by Water Undertakers throughout the United Kingdom (UK). However, it is important to understand that the satisfactory completion of the Regulations and Byelaws training and assessment does not of itself bestow Approved Contractor status - you must apply to one of the Water Companies' Approved Contractor schemes for approval. This process is explained in more detail later in the manual.

## Who is this course for?

The training is mainly aimed at practicing plumbers wishing to become Approved Contractors (Plumber) by providing evidence to the Approved Contractor schemes that appropriate training has been completed.

However, the training may also be relevant to people not wishing to become approved but whose role involves having knowledge of compliance with the Regulations and Byelaws. Such as, designers, specifiers and site managers.

The package will help you to implement the Water Regulations and Byelaws competently, not only in new installation work, but also to ensure you are able to recognise and rectify contraventions that you come across in existing water supply systems.

The aims of this package, in addition to demonstrating competence to Approved Contractor schemes, are to enable course participants to:

- become familiar with the contents of the Regulations and Byelaws across the four nations of the UK
- generally understand what the Regulations and Byelaws mean, and recognise the role of the Regulations and Byelaws in preventing waste, misuse, undue consumption, contamination and erroneous measurement of water;
- know how to comply with the Regulations and Byelaws in practice;
- be aware of the primary and secondary legislation underpinning the Regulations and Byelaws;
- have an understanding of the documents used to enhance and explain the meaning of the Regulations and Byelaws

## Course Structure

### Pre-Course

You will normally receive this manual at least two to four weeks before the training course. You should read through the manual and make notes.

It is advisable to also familiarise yourself with:

- The Water Supply (Water Fittings) Regulations 1999
- The Water Supply (Water Fittings) Regulations (Northern Ireland) 2009

These are freely available by visiting: [www.legislation.gov.uk](http://www.legislation.gov.uk) and;

- The Water Supply (Water Fittings) (Scotland) Byelaws 2014

These are freely available by visiting: [scottishwater.co.uk](http://scottishwater.co.uk)

Please note: Although the Regulations and Byelaws above are reproduced in The Water Regulations Guide (see below) there is some guidance within the documents above which may not be included in the guide. Candidates are advised therefore to ensure they make themselves familiar with their contents.

You will also benefit from having a copy of:

- The Water Regulations Guide (3rd Edition)

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and by visiting The Water Regs UK website which contains numerous guidance documents and information. Visit: [www.waterregsuk.co.uk](http://www.waterregsuk.co.uk)

## Training Centre attendance

You will be required to attend a BPEC approved training centre who will deliver the course. You should make sure you have this manual and copies of the Regulations and Byelaws mentioned above with you when you attend a course.

## Assessment

On completion of the training, you will be assessed by means of multiple-choice questions. This is delivered and marked in the training centre.

The paper will consist of 52 questions covering the Regulations and Byelaws. You must achieve 42 marks (80%) to pass the assessment. The assessment is open book so you can have all your notes, this manual and the Regulations and Byelaws with you.

If you do not pass the assessment at the first attempt, you will be allowed to re-sit the questions you got wrong at a second attempt, providing you got 37 or more marks (70%) at your first attempt. If you get less than 37 marks (70%) at your first attempt or less than 42 marks (80%) after your second attempt, then you will need to undertake further training before attempting a different version of the assessment.

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## Learning Outcomes

As stated above the water industry has agreed the training requirements for persons wishing to be considered for Approved Contractor status. The requirements are organised into learning outcomes and criteria which allow candidates to demonstrate their knowledge and understanding of Approved Contractor schemes, legislation and the Regulations and Byelaws. Specifically:

- The Water Supply (Water Fittings) Regulations 1999 (England and Wales)
- The Water Supply (Water Fittings) Regulations (Northern Ireland) 2009
- The Water Supply (Water Fittings) (Scotland) Byelaws 2014

(Hereafter these will be referred to as Regulations and Byelaws unless specific details require a distinction between them)

The learning outcomes (LO) and criteria are listed in the table below.

LEARNING OUTCOMES	CRITERIA
<b>Learning Outcome 1:</b> Understand the requirements of Part 1 of the Regulations/Byelaws	1.1 Understand when each of the Regulations/Byelaws came into force
	1.2 Understand terminology used within each of the Regulations/Byelaws
	1.3 Understand the application of the Regulations/Byelaws relating to: <ul style="list-style-type: none"> <li>• Where the Regulations apply</li> <li>• Where the Regulations do not apply</li> </ul>
<b>Learning Outcome 2:</b> Understand the requirements of Part 2 of the Regulations/Byelaws	2.1 Understand the requirements/restriction on installation of water fittings in relation to: <ul style="list-style-type: none"> <li>• Waste</li> <li>• Misuse</li> <li>• Undue consumption</li> <li>• Contamination</li> <li>• Erroneous measurement</li> </ul>
	2.2 Understand the requirements for water fittings relating to: <ul style="list-style-type: none"> <li>• Compliance with Regulation 4</li> <li>• Quality and standard of water fittings</li> <li>• Suitability of water fittings</li> <li>• Suitability of Water Fittings for use in contaminated ground (WIS)</li> <li>• Access to directories of approved fittings e.g.WRAS and KIWA</li> <li>• How to access the Regulators' Specification and Standards</li> </ul>
	2.3 Understand the term `Workmanlike Manner`
	2.4 Understand the notification requirements for any person proposing to install a water fitting, including: <ul style="list-style-type: none"> <li>• Who should serve notice</li> <li>• To whom notice should be served</li> <li>• What should be included in the notification</li> <li>• Consent from the water undertaker</li> <li>• Conditions of consent (consent still means compliance with the Regulations)</li> <li>• Examples of notifiable work including from the table</li> </ul>
	2.5 Understand the exemptions for Approved Contractors
	2.6 Understand when a contractor should issue a certificate and who the certificate should be issued to

LEARNING OUTCOMES	CRITERIA
<p><b>Learning Outcome 3:</b> Understand the requirements of Part 3 of the Regulations/Byelaws</p>	<p>3.1 Understand the penalties for contravening the Regulations/Byelaws</p> <p>3.2 Understand how an owner can prove defence in the case of a prosecution</p> <p>3.3 Understand who can undertake inspections</p> <p>3.4 Understand who enforces the Regulations/Byelaws</p> <p>3.5 Understand how relaxations may be achieved</p> <p>3.6 Understand how approval by the Regulator or Water Undertaker may be achieved</p> <p>3.7 Understand how disputes may be resolved, including the limitations and applications of arbitration</p> <p>3.8 Understand when the previous Regulations/Byelaws were revoked</p>
<p><b>Learning Outcome 4:</b> Understand the fluid categories as set out in Schedule 1 of the Regulations/Byelaws</p>	<p>4.1 Understand the five fluid categories</p> <p>4.2 Understand the seriousness of each fluid category and examples of each</p>
<p><b>Learning Outcome 5:</b> Understand terminology used to Understand requirements of Schedule 2 of the Regulations/Byelaws (schedule 2, paragraph 1)</p>	<p>5.1 Understand the meaning of the following definitions:</p> <ul style="list-style-type: none"> <li>• backflow</li> <li>• cistern</li> <li>• combined feed and expansion cistern</li> <li>• combined temperature and pressure relief valve</li> <li>• contamination</li> <li>• distributing pipe</li> <li>• expansion cistern</li> <li>• expansion valve</li> <li>• flushing cistern</li> <li>• overflow pipe</li> <li>• pressure relief valve</li> <li>• primary circuit</li> <li>• secondary circuit</li> <li>• secondary system</li> <li>• servicing valve</li> <li>• stopvalve</li> <li>• storage cistern</li> <li>• temperature relief valve</li> <li>• terminal fitting</li> <li>• vent pipe</li> </ul> <p>5.2 Understand the meaning of the following definitions used in the guidance clauses:</p> <ul style="list-style-type: none"> <li>• waste</li> <li>• misuse</li> <li>• undue consumption</li> <li>• erroneous measurement</li> <li>• wholesome water</li> <li>• water fitting</li> <li>• service pipe</li> <li>• supply pipe</li> </ul>

LEARNING OUTCOMES	CRITERIA
<p><b>Learning Outcome 6:</b> Understand the requirements for materials and substances in contact with wholesome water (schedule 2 paragraph 2)</p>	6.1 Understand the use of materials and substances in contact with water
	6.2 Understand where this requirement does not apply
	6.3 Understand the requirements for non-metallic materials used on water systems
	6.4 Understand materials that are banned for use in water systems, including: <ul style="list-style-type: none"> <li>• lead</li> <li>• hemp</li> <li>• gaskin</li> <li>• coal tar</li> <li>• bitumen</li> </ul>
<p><b>Learning Outcome 7:</b> Understand the requirements for water fittings (schedule 2, paragraphs 3, 4, 5, 6 &amp; 7)</p>	7.1 Understand the fitness for purpose of water fittings relating to: <ul style="list-style-type: none"> <li>• British Standards</li> <li>• prevention of galvanic action, including the jointing of different materials</li> </ul>
	7.2 In relation to installed water fittings. Understand the requirements for the following: <ul style="list-style-type: none"> <li>• water tightness</li> <li>• prevention of ingress from contaminants</li> <li>• prevention from damage by freezing and other causes</li> <li>• prevention from deterioration by permeation</li> <li>• the supporting of pipework</li> <li>• the fixings for water fittings</li> <li>• location of water fittings</li> </ul>
	7.3 Understand the terms 'concealed fitting' and 'dezincification resistant material'
	7.4 Understand the following installation requirements for pipes entering a building: <ul style="list-style-type: none"> <li>• Depth of pipework</li> <li>• Insulation requirements</li> <li>• Protection of pipework</li> </ul>
	7.5 Understand the installation requirements for underground pipework in relation to: <ul style="list-style-type: none"> <li>• Pipes laid underground</li> <li>• Pipes laid over an underground obstruction</li> <li>• Pipes under an underground obstruction</li> <li>• Pipes supplying water to a building below street level</li> <li>• Pipes beneath a stream</li> </ul>
	7.6 Understand the requirements for backfilling of underground pipework trenches may differ and local requirements should be checked
<p><b>Learning Outcome 8:</b> Know the design and installation requirements for water systems (Schedule 2, paragraphs 8, 9, 10, 11, 12 &amp; 13)</p>	8.1 Understand the methods of preventing the contamination of water fittings and the water contained within them when passing through contaminated environments
	8.2 Understand the maximum permissible temperature for cold water, taking into consideration the different legislation in England & Wales, Scotland and

LEARNING OUTCOMES	CRITERIA
	<p>8.3 Understand the installation requirements relating to Stopvalves for the following:</p> <ul style="list-style-type: none"> <li>• Individual properties</li> <li>• Locations within premises supplied with water</li> <li>• Blocks of flats supplied from a common supply pipe</li> <li>• Blocks of flats with separate supply pipes to each flat</li> </ul> <p>8.4 Understand the installation requirements for the provision of draining taps in relation to:</p> <ul style="list-style-type: none"> <li>• Location</li> <li>• Accessibility</li> </ul> <p>8.5 Understand that the requirements for pressure testing, flushing and disinfection may vary and to check local requirements.</p>
<p><b>Learning Outcome 9:</b> Understand the requirements for the prevention of cross connection to unwholesome water (Schedule 2, paragraph 14)</p>	<p>9.1 Understand the meaning of unwholesome water in relation to rainwater, recycled water and any fluid not supplied by a water undertaker, which may also include bore holes and spring supplies</p> <p>9.2 Understand the requirements for identifying an unwholesome water system so that it is readily distinguishable from a wholesome system in relation to:</p> <ul style="list-style-type: none"> <li>• colour coding for pipes and fittings in accordance with BS1710:2014</li> <li>• pipework laid below ground</li> <li>• labelling for pipes and terminal fittings</li> </ul> <p>9.3 Identify the correct arrangement for connecting a wholesome water supply to a re-use system</p>
<p><b>Learning Outcome 10:</b> Understand the requirements for backflow prevention (schedule 2, paragraph 15)</p>	<p>10.1 Understand the requirements for the arrangements or devices to prevent the cross connection to unwholesome water.</p> <p>10.2 Understand the term Backflow and the two causes Back siphonage &amp; Back Pressure</p> <p>10.3 Understand the terms 'upstream' and 'downstream'</p> <p>10.4 Identify devices or arrangements used to prevent backflow, back pressure and back siphonage and their suitability</p> <p>10.5 Understand the terms 'whole site' and 'zone' protection</p> <p>10.6 Process involved in assessing suitability and procedure around RPZ valves. Also have knowledge of the RPZ AIM</p>
<p><b>Learning Outcome 11:</b> Understand the requirements for cold water services (Schedule 2, paragraph 16)</p>	<p>11.1 Understand the requirements for inlet valves to cisterns</p> <p>11.2 Understand the requirement for servicing valves on inlets to cisterns</p> <p>11.3 Understand the requirement for servicing valves on outlets from cisterns</p> <p>11.4 Understand the requirements for storage cisterns including:</p> <ul style="list-style-type: none"> <li>• overflow pipes</li> <li>• warning pipes</li> <li>• covers</li> <li>• thermal insulation</li> </ul> <p>11.5 Understand the installation requirements to minimise contamination of stored water</p>

LEARNING OUTCOMES	CRITERIA
<p><b>Learning Outcome 12:</b> Learning Outcome 12. Know the requirements for hot water services (Schedule 2, paragraphs 17, 18, 19, 20, 21, 22, 23 &amp; 24)</p>	<p>12.1 Describe the installation requirements and methods of connection for water fittings in relation to:</p> <ul style="list-style-type: none"> <li>• Directly heated unvented hot water systems</li> <li>• Indirectly heated unvented hot water systems</li> <li>• Independent water heaters</li> <li>• Methods of accommodating expanded water in a hot water system</li> <li>• Maximum temperature within a hot water system</li> <li>• Hot water distribution temperatures</li> <li>• Temperature of hot water at terminal fittings and surfaces of hot water pipes</li> </ul>
	12.2 State the requirements for discharge pipes from safety devices
	12.3 State the requirements for discharge pipes from expansion valves
	12.3 State the requirements for discharge pipes from expansion valves
	12.4 State the requirements for vent pipes from a primary circuit
	12.5 State the requirements for vent pipes from a secondary hot water storage system
	12.6 State the requirements for vented systems requiring dedicated storage cisterns or mechanical safety devices
12.7 State the methods of filling closed circuits	
<p><b>Learning Outcome 13:</b> Know the installation requirements for WC's, flushing devices and urinals approved for use (Schedule 2, paragraph 25)</p>	<p>13.1 Identify the installation methods and requirements for the operation of WC pans in regard to:</p> <ul style="list-style-type: none"> <li>• Requirements for AUK1 air gaps</li> <li>• Single flush cisterns</li> <li>• Dual flush cisterns</li> <li>• Single flush siphonic outlet</li> <li>• Dual flush siphonic outlet</li> <li>• Drop and flap valves</li> <li>• Dual flush cistern capacities</li> <li>• Operating instructions for dual flush cisterns</li> <li>• Pressure flushing valves</li> <li>• Cistern water line marks</li> <li>• Requirements for warning pipes</li> <li>• Internal overflows</li> </ul>
	<p>13.2 Explain methods for flushing urinals in relation to:</p> <ul style="list-style-type: none"> <li>• Manually operated cisterns</li> <li>• Automatically operated cisterns</li> <li>• Pressure flushing valves</li> </ul>
	<p>13.3 Describe methods for filling a urinal cistern in relation to:</p> <ul style="list-style-type: none"> <li>• Manual infill</li> <li>• Electronic sensor</li> <li>• Pressure pad</li> <li>• Time switch</li> <li>• Frequency of flushing</li> </ul>
	<p>13.4 State the requirements for urinal cistern filling rates for:</p> <ul style="list-style-type: none"> <li>• a single urinal bowl</li> <li>• a urinal stall or slab serving two or more urinals</li> </ul>
	<p>13.5 State the requirements for the renewal of a WC cistern installed before 1st July 1999</p>



LEARNING OUTCOMES	CRITERIA
<b>Learning Outcome 14:</b> Know the types of bath, sink, showers and taps and their location and installation Requirements (Schedule 2, paragraphs 26, 27 & 28)	14.1 State the requirements for drinking water points in premises
	14.2 State the requirements for drinking water supplies in relation to: <ul style="list-style-type: none"> <li>• Water supplied from a supply pipe</li> <li>• Water supplied from a pumped supply pipe</li> <li>• Water supplied from a storage cistern</li> <li>• Water that has been softened and used for drinking purposes</li> </ul>
	14.3 State the requirements for waste outlets from appliances
<b>Learning Outcome 15:</b> Know the consumption limitations for washing machines, dishwashers and other appliances (Schedule 2, paragraph 29)	15.1 State the upper limits of water consumption for domestic: <ul style="list-style-type: none"> <li>• horizontal axis washing machines</li> <li>• washer – driers</li> <li>• dish washers</li> </ul>
<b>Learning Outcome 16:</b> Know the requirements for water supplied for outside use (Schedule 2 paragraph 12)	16.1 Understand the backflow prevention arrangements for standpipes
	16.2 Understand the backflow prevention arrangements for animal drinking troughs
	16.3 State the installation requirements for ponds, fountains and pools in relation to: <ul style="list-style-type: none"> <li>• impervious liners and water tightness</li> <li>• temporary connections to ponds, pools and fountains</li> </ul>
<b>Learning Outcome 17:</b> Understand the requirements for hygienic working practices	17.1 Understand that water is a food product and the need for hygienic working practices
	17.2 Understand the reasons for cleaning and disinfecting tools
	17.3 Understand the reasons for hygienic storage of pipe and fittings
<b>Learning Outcome 18:</b> Understand other legislation surrounding the installation of supply pipes.	18.1 Understand the requirement to obtain a Section 50 Licence under the New Road and Street Works Act (NRSWA) 1991 if excavating adopted highways.
<b>Learning Outcome 19:</b> Understand how to become an Approved Contractor	19.1 The learner should understand that completing this course alone does not make them approved, and should understand how to apply to become an Approved Contractor

It should be noted that the manual content follows the learning outcomes and since these are closely aligned with the Water Regulations Guide it should be possible to correlate the two when studying and referencing the materials.

## Module 0 - Introduction, background and legislation

### Foreword

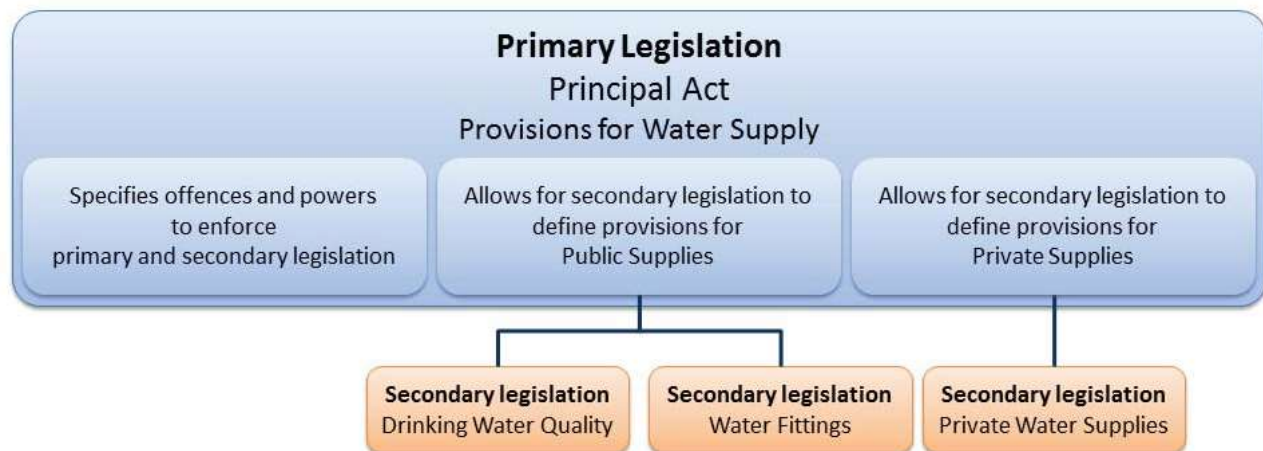
Before addressing the learning outcomes, it is perhaps timely to provide an overview of the legislation, Regulations and Byelaws which apply across the four nations of the United Kingdom (UK) and highlight some of the terminology we will use in this manual. This should help you to navigate your way through the learning outcomes and legislation.

It should be noted that the manual content follows the learning outcomes and since these are closely aligned with the Water Regulations Guide (see below) it should be possible to correlate the two when studying and referencing the materials.

Water law is one area that is the responsibility of national parliaments. This means there are separate laws, Regulations and Byelaws in each country within the UK (England/Northern Ireland/Scotland/Wales). Before looking at the Regulations and Byelaws we look first at the legal structure.

### Primary legislation

The diagram shows the relationships between the principal acts and secondary legislation created to regulate the provision of public and private water supplies in the UK.



The primary legislation (Principle Acts) for the four nations of the UK are shown below.

Legislation	England	Northern Ireland	Scotland	Wales
<b>Primary Legislation – Principal Acts</b>	Water Industry Act 1991 (as amended)	The Water and Sewerage Services (Northern Ireland) Order 2006 (as amended)	Water (Scotland) Act 1980 (as amended) and Water Industry (Scotland) Act 2002	Water Industry Act 1991 (as amended)
<b>Powers and Offences provided by the Principal Acts which can be used in relation Water Fittings Regulations enforcement</b>	Water Industry Act 1991; Section 73 & 75	The Water and Sewerage Services (Northern Ireland) Order 2006; Articles 113 & 115	Water (Scotland) Act 1980; Schedule 4; Section 30(1)(a) & (b), & 30(2), & 31(1)	Water Industry Act 1991; Section 73 & 75

As can be seen these Primary Acts give powers to create secondary legislation usually in the form of Regulations and Byelaws.

## Secondary Legislation – Regulations and Byelaws

The table below shows the Regulations and Byelaws for each country of the UK which have been created under the provisions of the primary acts. The main focus of this manual is to ensure you comply with the requirements of the Regulations and Byelaws which apply to Public Water Supplies – Water Fittings.

These are highlighted in the table and listed below together with their coming into operation or force dates which are:

Applicable in England and Wales:

- The Water Supply (Water Fittings) Regulations 1999 (as amended) coming into force 1st July 1999

Applicable in Scotland:

- The Water Supply (Water Fittings) (Scotland) Byelaws 2014 coming into operation (force) 12th July 2014

Applicable in Northern Ireland:

- The Water Supply (Water Fittings) Regulations (Northern Ireland) 2009 coming into operation (force) 3rd August 2009

In most respects the Regulations and Byelaws of the four countries have the same requirements. However, there are some differences (discussed later) and contractors need to be mindful when working across nations that they are carrying out work under different Regulations and Byelaws.

Legislation	England	Northern Ireland	Scotland	Wales
<b>Secondary legislation Public Water Supplies -Drinking Water Quality</b>	The Water Supply (Water Quality) Regulations 2016	The Water Supply (Water Quality) Regulations (Northern Ireland) 2017	The Public Water Supplies (Scotland) Regulations 2014 (as amended)	The Water Supply (Water Quality) Regulations 2018
<b>Secondary legislation Public Water Supplies -Water Fittings</b>	The Water Supply (Water Fittings) Regulations 1999 (as amended)	The Water Supply (Water Fittings) Regulations (Northern Ireland) 2009	The Water Supply (Water Fittings) (Scotland) Byelaws 2014	The Water Supply (Water Fittings) Regulations 1999 (as amended)
<b>Secondary legislation Private Water Supplies</b>	The Private Water Supplies (England) Regulations 2016	The Private Water Supplies Regulations (Northern Ireland) 2017	The Private Water Supplies (Scotland) Regulations 2006 (as amended and The Water Quality (Scotland) Regulations 2010 and The Water Intended for Human Consumption (Private Supplies) (Scotland) Regulations 2017	The Private Water Supplies (Wales) Regulations 2017

As stated The Regulations and Byelaws which apply across the nations are mainly the same, but they are laid out differently.

## The Regulations in England, Wales and Northern Ireland:

- The Water Supply (Water Fittings) Regulations 1999
- The Water Supply (Water Fittings) Regulations (Northern Ireland) 2009 have a similar layout and are divided into three parts;

### Part 1 Deals with Preliminaries

Regulation 1 - Citation, Commencement and Interpretation  
Regulation 2 – Application

### Part 2 Deals with the principle requirements

Regulations 3 and 4 – impose general requirements  
Regulation 5 – notification  
Regulation 6 – certification by approved contractors

### Part 3 – Deals with enforcement

Regulations 7 and 8 – provision of fines  
Regulation 9 – entry to premises  
Regulation 10 – requirement to enforce  
Regulation 11 – allows the regulator to relax the requirements  
Regulation 12 – makes consultation requirements  
Regulation 13 – makes provisions for dealing with disputes  
Regulation 14 – revokes previous water byelaws

## The Byelaws in Scotland:

- The Water Supply (Water Fittings) (Scotland) Byelaws 2014

The Byelaws were updated from the 2004 version. When updated, reference to parts was removed and the number of byelaws reduced from fourteen (previously aligned to the Regulations (EW)) to nine. Although it may appear requirements have been reduced it should be recognised that requirements are also contained in other Scottish legislation, for example, Scotland Water (Scotland) Act 1980 and that some requirements have been moved from one byelaw and encompassed in others. The Byelaws are:

### Byelaw 1 - Citation, Commencement and Interpretation

- makes provision as regards citation, commencement and interpretation.

### Byelaw 2 – Application of Byelaws

- makes provision as regards the application of the Byelaws.

### Byelaw 3 – Restriction of Installation etc. of water fittings

- provides, among other things, that water fittings must not be installed, connected, arranged or used such that they cause, or are likely to cause, waste, misuse, undue consumption or contamination, or erroneous measurement, of water supplied by Scottish Water.

### Byelaw 4 – Requirements for water fittings

- requires that the water fittings must be of an appropriate quality or standard, and be suitable for the circumstances in which they are used. In addition, the fittings must be installed, connected or disconnected in a way that conforms to certain specifications.

### Byelaw 5 - Notification

- requires a person who proposes to install a water fitting (in connection with certain operations) to notify Scottish Water that the person proposes to begin work, not to begin that work without Scottish Water's consent, and comply within any associated consent conditions. These requirements do not apply to the installation by an approved contractor of some fittings.

## Byelaw 6 – Contractor’s certificate

- provides that, where an approved contractor installs, alters, connects or disconnects a water fitting, the contractor must certify that the fitting complies with the Byelaws.

## Byelaw 7 – Offences and Byelaw 8 – Offences by bodies corporate

- make provision in relation to offences and provide that a person who commits an offence is liable on summary conviction to a fine not exceeding level 5 on the standard scale.

## Byelaw 9 – Revocation of the Scottish water Byelaws 2004

- Revokes previous byelaws

### Relating Regulations and Byelaws across the four nations.

The table below shows the main parts of the Regulations and Byelaws and references where they can be found or are covered in the Regulations and Byelaws pertaining to each nation. The table provides an overview and an indication of how closely the Regulations and Byelaws are aligned.

Country	England and Wales	Northern Ireland	Scotland
<b>Regulation or Byelaw</b>	The Water Supply (Water Fittings) Regulations 1999 (as amended)	The Water Supply (Water Fittings) Regulations (Northern Ireland) 2009	The Water Supply (Scotland) Byelaws 2014
<b>Heading:</b>	<b>Covered in:</b>		
<b>Citation, Commencement and interpretation</b>	Part I - Preliminary Regulation 1	Part I - Preliminary Regulation 1	Byelaw 1
<b>Application of Regulations</b>	Part I - Preliminary Regulation 2	Part I - Preliminary Regulation 2	Byelaw 2
<b>Restriction on Installation Etc. of Water Fittings</b>	Part II - Requirements Regulation 3	Part II - Requirements Regulation 3	Byelaw 3
<b>Requirements for Water Fittings Etc.</b>	Part II - Requirements Regulation 4	Part II - Requirements Regulation 4	Byelaw 4
<b>Notification</b>	Part II - Requirements Regulation 5	Part II - Requirements Regulation 5	Byelaw 5
<b>Contractors Certificate</b>	Part II - Requirements Regulation 6	Part II - Requirements Regulation 6	Byelaw 6
<b>Offences by Corporate Bodies</b>			Byelaw 8
<b>Penalty for Contravening Regulations (E/W/NI) Offences (S)</b>	Part III – Enforcement Etc. Regulation 7	Part III – Enforcement Etc. Regulation 7	Byelaw 7
<b>Inspection measurements and Tests</b>	Part III – Enforcement Etc. Regulation 9	Part III – Enforcement Etc. Regulation 8	Scotland Water (Scotland) Act 1980
<b>Enforcement</b>	Part III – Enforcement Etc. Regulation 10	Part III – Enforcement Etc. Regulation 9	Scotland Water (Scotland) Act 1980
<b>Approval by the Regulator or the Water Undertaker</b>	Part III – Enforcement Etc. Regulation 12	Part III – Enforcement Etc. Regulation 11	Byelaw 4
<b>Revocation of Byelaws/ Regulations</b>	Part III – Enforcement Etc. Regulation 14	Part III – Enforcement Etc. Regulation 15	Byelaw 9
<b>Contamination Incidents; Remedial Works and Recovery of Expenses</b>		Part III – Enforcement Etc. Regulation 14	Scotland Water (Scotland) Act 1980

## Schedules

Both the Regulations and Byelaws contain two Schedules. Except for some minor differences (which are highlighted later) these are the same across the four nations of the UK.

The schedules deal with the following:

**Schedule 1** – Fluid categories

Lists the fluid categories 1 to 5.

**Schedule 2** – Requirements for water fittings

This consists of 31 Paragraphs which are part of both the Regulations and Byelaws. They deal with the technical content.

## Terminology used in this manual

Although the Regulations and Byelaws are closely aligned there will be occasions when it is necessary to distinguish between them. When this is necessary, we will refer to them as follows:

- **Regulations (EW)** – meaning - The Water Supply (Water Fittings) Regulations 1999 (as amended)
- **Byelaws (S)** – meaning - The Water Supply (Water Fittings) (Scotland) Byelaws 2014
- **Regulations (NI)** – meaning - The Water Supply (Water Fittings) Regulations (Northern Ireland) 2009

## Water Undertaker

When reading the Regulations/Byelaws and the Water Regulations Guide you will notice that in the Byelaws (S) instead of using the term Water Undertaker they refer to Scottish Water specifically, being the only Water Undertaker in Scotland. In the guide the term Water Supplier is used. For consistency, throughout this manual we will use the term Water Undertaker to cover all these terms, since this is the term used in the Regulations (EW/NI).

## Approved guidance document and other sources of information and advice

The Department of the Environment, Food and Rural Affairs (DEFRA) has produced a Guidance Document to accompany the Regulations and Byelaws that can be used in a similar way to that of the approved documents that go with Building Regulations. The guidance can be found in the Water Regulations Guide which is published by Water Regs UK.

In addition to the DEFRA Guidance, the Water Regulations Advisory Scheme (WRAS), which from 1st April 2021 separated into two separate businesses, is also a source of guidance and information:

1. Water Regs UK promotes compliance with the water fittings Regulations and Byelaws and is responsible for operating the Water Industry Approved Plumber Scheme (WIAPS). The company has a new website [www.waterregsuk.co.uk](http://www.waterregsuk.co.uk)
2. Water Regulations Approval Scheme (WRAS) operates a voluntary certification scheme for plumbing products and materials. The company website is: [www.wrasapprovals.co.uk](http://www.wrasapprovals.co.uk)

One way for installers to check compliance might be to look for products certified by WRAS, Kiwa or NSF, but be aware, there may be restriction how and where they are installed.

## First steps

Before going on to study this manual in detail, we would advise you to familiarise yourself with the general layout of the Regulations and Byelaws. This might include comparing the Byelaws to the Regulations and looking through the Schedules and paragraphs.

The Regulations and Byelaws are contained in the Guide to the Regulations. Although the schedules for Regulations (EW) are also contained in the guide you will need to download Regulations (NI) and Byelaws (S) to view the schedules for those nations. Details of how to download these were given at the beginning of this

## Water Regulations and Byelaws Training Manual

Including:

The Water Supply (Water Fittings) Regulations 1999

The Water Supply (Water Fittings) (Scotland) Byelaws 2014

The Water Supply (Water Fittings) Regulations (Northern Ireland) 2009

## Module 1

# Understand the requirements of Part 1 of the Regulations and Byelaws

### Learning Outcome 1.

#### Understand the requirements of Part 1 of the Regulations/Byelaws

	Page
1.1 Understand when each of the Regulations/Byelaws came into force	2
1.2 Understand terminology used within each of the Regulations/Byelaws	3
1.3 Understand the application of the Regulations/Byelaws relating to:	5
• Where the Regulations apply	
• Where the Regulations do not apply	

## Learning Outcome 1 - Understand the requirements of Part 1 of the Regulations/Byelaws.

### Introduction

Part 1 of the Regulations (EW and NI) are covered by Regulations 1 and 2. Although the Byelaws (S) are not divided into parts, Byelaw 1 and 2 cover the same subjects as the Regulations. Both the Regulations and Byelaws are detailed under the following LOs.

### 1.1 Understand when each of the Regulations/Byelaws came into force

#### Regulation 1

##### *Citation, commencement and interpretation*

**(1)** These Regulations may be cited as the Water Supply (Water Fittings) Regulations 1999 and shall come into force on 1st July 1999.

**(2)** In these Regulations–

“the Act” means the Water Industry Act 1991;

“approved contractor” means a person who–

- (a) has been approved by the water undertaker for the area where a water fitting is installed or used, or
- (b) has been certified as an approved contractor by an organization specified in writing by the regulator;

“**fluid category**” means a category of fluid described in Schedule 1 to these Regulations;

“**material change of use**” means a change in the purpose for which, or the circumstances in which, premises are used, such that after that change the premises are used (where previously they were not so used)–

- (i) as a dwelling;
- (ii) as an institution;
- (iii) as a public building; or
- (iv) for the purposes of the storage or use of substances which if mixed with water result in a fluid which is classified as either fluid category 4 or 5;

“**regulator**” means–

- (a) in relation to any water undertakers whose area of appointment is wholly or mainly in Wales and their area of appointment, the National Assembly of Wales;
- (b) in relation to all other water undertakers and their area of appointment, the Secretary of State;

“**supply pipe**” means so much of any service pipe as is not vested in the water undertaker; and paragraph 1 of Schedule 2 has effect for the purposes of that Schedule.

The above is extracted from the Regulations (EW). Regulations (NI) 1 (1) and Byelaw (S) 1 (1) have similar wording but obviously with different starting dates which are given below. It should be noted that the Regulations (EW/NI) have been updated in view of withdrawal from the European Union while the Byelaws (S) have not. This will be dealt with in more detail later.



## When did the Regulations and Byelaws come into force/operation

Regulation/Byelaw 1 (1) tells us when the regulations and byelaws came into operation or force. That is:

### Applicable in England and Wales:

- The Water Supply (Water Fittings) Regulations 1999 (as amended) coming into force 1st July 1999

### Applicable in Scotland:

- The Water Supply (Water Fittings) (Scotland) Byelaws 2014 coming into operation (force) 12th July 2014

### Applicable in Northern Ireland:

- The Water Supply (Water Fittings) Regulations (Northern Ireland) 2009 coming into operation (force) 3rd August 2009

These dates become important later when we look at Regulation/Byelaw 2 (4)

## 1.2 Understand terminology used within each of the Regulations/Byelaws

Regulation 1 (2) and Byelaw 1 (2) give a number of definitions that support the Regulations/Byelaws and aim to help us to understand what exactly some of the terms mean. Some of these are quite easy to understand, whilst others perhaps need some additional explanation. It is also worth noting that the list of terms defined differs across nations. For example, the term Fluid Category is not listed in Byelaw 1 (2).

Let's have a look at some of them:

### Approved contractor

According to the Regulations for England and Wales (EW) an approved contractor means someone who:

- has been approved by the Water Undertaker for the area where a water fitting is installed or used, or
- has been certified as an approved contractor by an organisation specified in writing by the regulator.

The Byelaws for Scotland (S) mirror item (a) in the Regulations (EW) above (although it specifically mentions Scottish Water as the Water Undertaker) but (b) is worded so as to acknowledge contractors approved under the Water Regulations (EW) and Northern Ireland (NI) (see below).

*“approved contractor” means a person who is—*

- approved by Scottish Water for the area where a water fitting is installed or used;
- approved for the purposes of paragraph (a) of the definition of “approved contractor” in regulation 1 (2) of—
  - the Water Supply (Water Fittings) Regulations 1999(b); or
  - the Water Supply (Water Fittings) Regulations (Northern Ireland) 2009(c); or
- certified as an approved contractor by an organisation specified pursuant to paragraph (b) of the definition of “approved contractor” in regulation 1(2) of the Water Supply (Water Fittings) Regulations 1999(d);

There are several references to Approved Contractors in the Regulations and Byelaws and this is discussed further later in this manual.

**Fluid category** means a category of fluid described in Schedule 1 of the Regulations. A definition is not given in Byelaw 1 (2) but Byelaw (s) 5 directs us to Schedule 1 of the Byelaws (S). It should be noted that each nation has its own version of Schedule 1.

**Material change of use** means a change in the purpose for which, or the circumstances in which, premises are used, such that after that change the premises are used (where previously they were not so used)—

- (a) as a dwelling;
- (b) as an institution;
- (c) as a public building; or
- (d) for the purposes of the storage or use of substances which if mixed with water result in a fluid which is classified as either fluid category 4 or 5;

Again, material change of use is not defined in Byelaw 1(2) but it is defined in Byelaw 5(6) and the wording is the same.

The four types of premises listed are not defined in the Regulations/Byelaws. Definitions for these are given below:

- **a dwelling** is a place where people live e.g. house, flat, bungalow etc.
- **an institution** is a building that provides living accommodation for, or for the treatment or care of people suffering from illness or disability or those who are unable to care for themselves. Examples include certain hospitals, schools, homes for the young or old, but not day centres.
- **a public building** can be described as premises designed and built for use by the general public including such buildings as theatres, schools or colleges of education, public libraries, halls where people meet, and places of worship.
- **buildings used for the storage or use of substances of fluid** category 4 or 5. This can include any type of building providing the said substances are stored.

Examples of a material change of use may include a house (dwelling) that is turned into a nursing home (institution) or a church (public building) that is turned into a dwelling. In both cases there are changes in use.

**Regulator** means:

England and Wales:

(a) in relation to any water undertakers whose area of appointment is wholly or mainly in Wales and their area of appointment, The National Assembly for Wales;

(b) in relation to all other Water Undertakers and their area of appointment, the Secretary of State;

Northern Ireland

A definition of the regulator is not included in Regulation 1(2) but it defines 'the department' as the department of regional development

Scotland

A definition of the regulator is not given in Byelaw 1(2) however the Byelaws are approved by Scottish Ministers

**Supply pipe** means so much of any service pipe that is not vested in the water undertaker

It should also be noted that the Regulations (NI) and the Byelaws (S) contain additional definitions to those of the Regulations (EW). This is perhaps the result of the former being updated more recently. The additional definitions include:

Scotland and Northern Ireland

- **Grey water** (S & NI) - means wastewater from baths, showers, wash basins and washing machines
- **Reclaimed water** (S & NI) - means grey water after treatment which can be used for

Scotland only

The following definitions are only contained in the Byelaws (S).

- **Domestic purposes** (S) - in relation to the supply of water, is to be construed in accordance with section 7(1) and (2) (supply for domestic purposes) of the Water (Scotland) Act 1980;
- **Food production purpose** (S) - is to be construed in accordance with section 76L(1A) (interpretation etc.) of the Water (Scotland) Act 1980(e);
- **Private water supply** (S) - has the same meaning as in regulation 2(1) of the Private Water Supply (Scotland) Regulations 2006(f);
- **WC** (S) means water-closet

### 1.3 Understand the application of the Regulations/Byelaws

Regulation 2 and Byelaw 2 deal with what the Regulations and Byelaws apply to and when they do not apply.

#### Regulation 2

##### *Application of the regulations*

**(1)** Subject to the following provisions of this regulation, these Regulations apply to any water fitting installed or used, or to be installed or used, in premises to which water is or is to be supplied by a water undertaker or water supply licensee.

**(2)** These Regulations do not apply to a water fitting installed or used, or to be installed or used, in connection with water supplied for purposes other than domestic or food production purposes, provided that—

- (a) the water is metered;
- (b) the supply of the water is for a period not exceeding one month, or, with the written consent of the water undertaker, whose supply is used for the purpose of that supply, three months; and
- (c) no water can return through the meter to any pipe vested in a water undertaker or water supply licensee.

**(3)** Except for the purposes of paragraph 14 of Schedule 2 (Prevention of cross connection to unwholesome water), these Regulations do not apply to water fittings which are not connected or to be connected to water supplied by a water undertaker or water supply licensee.

**(4)** Nothing in these Regulations shall require any person to remove, replace, alter, disconnect or cease to use any water fitting which was lawfully installed or used, or capable of being used, before 1st July 1999.

The above is extracted from the Regulations (EW). Regulation 2 (NI) and Byelaw 2 (S) have similar wording except the date mentioned at 2 (4). For Northern Ireland this is 3rd August 2009 and for Scotland 12th July 2014. These dates align to the commencement dates of the Regulations and Byelaws (see LO 1.1)

Regulation/Byelaw 2 tells us what the Regulations and Byelaws apply to, and then goes on to say what they do not apply to.

## Where the Regulations/Byelaws apply

It's quite straightforward really. Regulation/Byelaw 2 (1) says in effect that:

- the respective Regulations/Byelaws apply to all water fittings installed or used after 1 July 1999 (EW), 12th July 2014 (S) and 3rd August 2009 (NI)
- in ALL premises that are supplied by the Water Undertaker;
- they apply to new works, and alterations to existing work, including any connections and disconnections;
- they apply to all permanent installations and to some temporary installations.

It should be noted here that the Regulations/Byelaws apply to all water fittings installed and used. This implies that both the installer and the user are responsible for water fittings installed, and for any liability under the Regulations/Byelaws for any contravention

## Where the Regulations/Byelaws do not apply

Regulation/Byelaw 2 (2) is quite explicit about **temporary water supplies**. However, there are conditions to be met for a supply to be exempt, and the exemption applies to **temporary supplies only**.

The Regulations/Byelaws **do not apply to a water fitting installed or used** '– in connection with water supplied for other than domestic or food production purposes, provided that –'

(a) the water is **metered**;

(b) the maximum period of use is **one month**, or **three months, with written consent** from the water undertaker, and

(c) **backflow prevention devices** are in place to prevent any water from returning 'through the meter'.

The term 'other than **domestic or food production purposes**' highlighted above is important to this Regulation/Byelaw and perhaps why these are defined in the Byelaws (S) (see LO 1.2 above). If temporary fittings are to be installed or used in any way for domestic purposes or for the production of food or is connected to any pipe or fitting used for those purposes, then the installation **will** need to conform to the Regulations/Byelaws.

Regulation/Byelaw 2 (3) quite clearly states that any water fitting or installation that is not connected to the Water Undertaker's main is not required to comply. There is no requirement at present to apply the Water Regulations/Byelaws to installations supplied from a private source. e.g. from a private well, however, it would be good practice to apply the same standards of installation to ALL water installation work.

It should be remembered however, and Regulation 2 (3) makes the point, that should any cross connection be made between a supply from a Water Undertaker, and a supply from any other source, then the Regulations/Byelaws will apply to the alternative source.

Regulation/Byelaw 2 (4) exempts fittings that have been installed before the Water Regulations/Byelaws came into force. They say:

### Regulations (EW)

'Nothing in these regulations shall require any person to remove, replace, alter, disconnect or cease to use any water fitting that was lawfully installed or used, or capable of being used, **before 1st July 1999**'.

### Regulations (NI)

'Nothing in these Regulations shall require any person to remove, replace, alter, disconnect or cease to use any water fitting which was lawfully installed or used, or capable of being used, before **3rd August 2009**'

### Byelaws (S)

'Nothing in these Byelaws requires any person to remove, replace, alter, disconnect or cease to use any water fitting which was lawfully—

(a) installed before these Byelaws come into force, and is so installed;

(b) in use; or

(c) capable of being used (but has not been so used), immediately before these Byelaws come into force'

The date the Byelaws came into force in Scotland was **12th July 2014**. An important point here is that this Regulations/Byelaws do not apply to fittings lawfully installed, or used, or capable of being used before the date the respective Regulations and Byelaws came into force, unless of course there is any waste of water or contamination taking place. Where there is actual wastage or contamination, the regulations will apply no matter what age the installation.

Water Regulations and Byelaws Training Manual

Including:

The Water Supply (Water Fittings) Regulations 1999

The Water Supply (Water Fittings) (Scotland) Byelaws 2014

The Water Supply (Water Fittings) Regulations (Northern Ireland) 2009

## Module 2

# Understand the requirements of Part 2 of the Regulations/Byelaws

### Learning Outcome 2.

### Understand the requirements of Part 2 of the Regulations/Byelaws

	Page
2.1 Understand the requirements/restriction on installation of water fittings in relation to:	2
<ul style="list-style-type: none"> <li>• Waste</li> <li>• Misuse</li> <li>• Undue consumption</li> <li>• Contamination</li> <li>• Erroneous measurement</li> </ul>	
2.2 Understand the requirements for water fittings relating to:	4
<ul style="list-style-type: none"> <li>• Compliance with Regulation 4</li> <li>• Quality and standard of water fittings</li> <li>• Suitability of water fittings</li> <li>• Suitability of Water Fittings for use in contaminated ground (WIS)</li> <li>• Access to directories of approved fittings e.g.WRAS and KIWA</li> <li>• How to access the Regulators' Specification and Standards</li> </ul>	
2.3 Understand the term `Workmanlike Manner`	7
2.4 Understand the notification requirements for any person proposing to install a water fitting, including:	8
<ul style="list-style-type: none"> <li>• Who should serve notice</li> <li>• To whom notice should be served</li> <li>• What should be included in the notification</li> <li>• Consent from the water undertaker</li> <li>• Conditions of consent (consent still means compliance with the Regulations)</li> <li>• Examples of notifiable work including from the table</li> </ul>	
2.5 Understand the exemptions for Approved Contractors	11
2.6 Understand when a contractor should issue a Certificate and who the certificate should be issued to	12

## Water Regulations and Byelaws Training Manual

Including:

The Water Supply (Water Fittings) Regulations 1999

The Water Supply (Water Fittings) (Scotland) Byelaws 2014

The Water Supply (Water Fittings) Regulations (Northern Ireland) 2009

## Module 3

# Understand the requirements of Part 3 of the Regulations/Byelaws

### Learning Outcome 3.

### Understand the requirements of Part 3 of the Regulations/Byelaws

	Page
3.1 Understand the penalties for contravening the Regulations/Byelaws	2
3.2 Understand how an owner can prove defence in the case of a prosecution	2
3.3 Understand who can undertake inspections	3
3.4 Understand who enforces the Regulations/Byelaws	4
3.5 Understand how relaxations may be achieved	5
3.6 Understand how approval by the Regulator or Water Undertaker may be achieved	7
3.7 Understand how disputes may be resolved, including the limitations and applications of arbitration	8
3.8 Understand when the previous Regulations/Byelaws were revoked	10

## Water Regulations and Byelaws Training Manual

Including:

The Water Supply (Water Fittings) Regulations 1999

The Water Supply (Water Fittings) (Scotland) Byelaws 2014

The Water Supply (Water Fittings) Regulations (Northern Ireland) 2009

## Module 4

# Fluid categories

### Learning Outcome 4 – Understand the fluid categories as set out in Schedule 1 of the Regulations and Byelaws

4.1 Understand the five fluid categories

Page  
2

4.2 Understand the seriousness of each fluid category and examples of each

3



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Including:

The Water Supply (Water Fittings) Regulations 1999

The Water Supply (Water Fittings) (Scotland) Byelaws 2014

The Water Supply (Water Fittings) Regulations (Northern Ireland) 2009

## Module 5

# Interpretations

### Learning Outcome 5 –

### Understand terminology used to understand requirements of Schedule 2 of the Regulations/Byelaws (schedule 2, paragraph 1)

Page  
2

#### 5.1 Understand the meaning of the following definitions:

- backflow
- cistern
- combined feed and expansion cistern
- combined temperature and pressure relief valve
- contamination
- distributing pipe
- expansion cistern
- expansion valve
- flushing cistern
- overflow pipe
- pressure relief valve
- primary circuit
- secondary circuit
- secondary system
- servicing valve
- stopvalve
- storage cistern
- temperature relief valve
- terminal fitting
- vent pipe

#### 5.2 Understand the meaning of the following definitions used in the guidance clauses:

- waste
- misuse
- undue consumption
- erroneous measurement
- wholesome water
- water fitting
- service pipe
- supply pipe
- communication pipe
- distributing pipe

## Water Regulations and Byelaws Training Manual

Including:

The Water Supply (Water Fittings) Regulations 1999

The Water Supply (Water Fittings) (Scotland) Byelaws 2014

The Water Supply (Water Fittings) Regulations (Northern Ireland) 2009

## Module 6

# Materials and substances in contact with wholesome water

### Learning Outcome 6 –

**Understand the requirements for materials and substances in contact with wholesome water (schedule 2 paragraph 2)**

	Page
6.1 Understand the use of materials and substances in contact with water	2
6.2 Understand where this requirement does not apply	9
6.3 Understand the requirements for non-metallic materials used on water systems	9
6.4 Understand materials that are banned for use in water systems, including:	10
• lead	
• hemp	
• gaskin	
• coal tar	
• bitumen	

## Water Regulations and Byelaws Training Manual

### Including:

The Water Supply (Water Fittings) Regulations 1999

The Water Supply (Water Fittings) (Scotland) Byelaws 2014

The Water Supply (Water Fittings) Regulations (Northern Ireland) 2009

## Module 7

# Requirements for water fittings

### Learning Outcome 7.

**Understand the requirements for water fittings (schedule 2, paragraphs 3, 4, 5, 6 & 7)**

	Page
7.1 Understand the fitness for purpose of water fittings relating to:	4
<ul style="list-style-type: none"><li>• British Standards</li><li>• prevention of galvanic action, including the jointing of different materials</li></ul>	
7.2 In relation to installed water fittings Understand the requirements for the following:	5
<ul style="list-style-type: none"><li>• water tightness</li><li>• prevention of ingress from contaminants</li><li>• prevention from damage by freezing and other causes</li><li>• prevention from deterioration by permeation</li><li>• the supporting of pipework</li><li>• the fixings for water fittings</li><li>• location of water fittings</li></ul>	
7.3 Understand the terms 'concealed fitting' and 'dezincification resistant material'	18
7.4 Understand the following installation requirements for pipes entering a building:	20
<ul style="list-style-type: none"><li>• Depth of pipework</li><li>• Insulation requirements</li><li>• Protection of pipework</li></ul>	
7.5 Understand the installation requirements for underground pipework in relation to:	22
<ul style="list-style-type: none"><li>• Pipes laid underground</li><li>• Pipes laid over an underground obstruction</li><li>• Pipes under an underground obstruction</li><li>• Pipes supplying water to a building below street level</li><li>• Pipes beneath a stream</li></ul>	
7.6 Understand the requirements for backfilling of underground pipework trenches may differ and local requirements should be checked	24

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Including:

The Water Supply (Water Fittings) Regulations 1999

The Water Supply (Water Fittings) (Scotland) Byelaws 2014

The Water Supply (Water Fittings) Regulations (Northern Ireland) 2009

## Module 8

# Water system design and installation

### Learning Outcome 8. Know the design and installation requirements for water systems (Schedule 2, paragraphs 8, 9, 10, 11, 12 & 13)

	Page
8.1 Understand the methods of preventing the contamination of water fittings and the water contained within them when passing through contaminated environments	2
8.2 Understand the maximum permissible temperature for cold water, taking into consideration the different legislation in England & Wales, Scotland and Northern Ireland, and recommendations made in other legislation	5
8.3 Understand the installation requirements relating to Stopvalves for the following: <ul style="list-style-type: none"><li>• Individual properties</li><li>• Locations within premises supplied with water</li><li>• Blocks of flats supplied from a common supply pipe</li><li>• Blocks of flats with separate supply pipes to each flat</li></ul>	6
8.4 Understand the installation requirements for the provision of draining taps in relation to: <ul style="list-style-type: none"><li>• Location</li><li>• Accessibility</li></ul>	11
8.5 Understand that the requirements for pressure testing, flushing and disinfection may vary and to check local requirements	14

## Water Regulations and Byelaws Training Manual

Including:

The Water Supply (Water Fittings) Regulations 1999

The Water Supply (Water Fittings) (Scotland) Byelaws 2014

The Water Supply (Water Fittings) Regulations (Northern Ireland) 2009

## Module 9

# Prevention of cross connection to unwholesome water

### Learning Outcome 9. Understand the requirements for the prevention of cross connection to unwholesome water (Schedule 2, paragraph 14)

	Page
9.1 Understand the meaning of unwholesome water in relation to rainwater, recycled water and any fluid not supplied by a water undertaker, which may also include bore holes and spring supplies	3
9.2 Understand the requirements for identifying an unwholesome water system so that it is readily distinguishable from a wholesome system in relation to: <ul style="list-style-type: none"><li>• colour coding for pipes and fittings in accordance with BS1710:2014</li><li>• pipework laid below ground</li><li>• labelling for pipes and terminal fittings</li></ul>	3
9.3 Identify the correct arrangement for connecting a wholesome water supply to a re-use system	7

## Water Regulations and Byelaws Training Manual

Including:

The Water Supply (Water Fittings) Regulations 1999

The Water Supply (Water Fittings) (Scotland) Byelaws 2014

The Water Supply (Water Fittings) Regulations (Northern Ireland) 2009

## Module 10

# Backflow prevention

### Learning Outcome 10. Understand the requirements for backflow prevention (schedule 2, paragraph 15)

	Page
10.1 Understand the requirements for the arrangements or devices to prevent the cross connection to unwholesome water	4
10.2 Understand the term Backflow and the two causes Back siphonage & Back Pressure	14
10.3 Understand the terms 'upstream' and 'downstream'	16
10.4 Identify devices or arrangements used to prevent backflow, back pressure and back siphonage and their suitability	17
10.5 Understand the terms 'whole site' and 'zone' protection	45
10.6 Process involved in assessing suitability and procedure around RPZ valves. Also have knowledge of the RPZ AIM	46

## Water Regulations and Byelaws Training Manual

Including:

The Water Supply (Water Fittings) Regulations 1999

The Water Supply (Water Fittings) (Scotland) Byelaws 2014

The Water Supply (Water Fittings) Regulations (Northern Ireland) 2009

## Module 11

# Cold water services

### Learning Outcome 11 – Understand the requirements for cold water services (Schedule 2, paragraph 16)

	Page
11.1 Understand the requirements for inlet valves to cisterns	3
11.2 Understand the requirement for servicing valves on inlets to cisterns	4
11.3 Understand the requirement for servicing valves on outlets from cisterns	4
11.4 Understand the requirements for storage cisterns including: <ul style="list-style-type: none"><li>• overflow pipes</li><li>• warning pipes</li><li>• covers</li><li>• thermal insulation</li></ul>	4
11.5 Understand the installation requirements to minimise contamination of stored water	12

## Water Regulations and Byelaws Training Manual

Including:

The Water Supply (Water Fittings) Regulations 1999

The Water Supply (Water Fittings) (Scotland) Byelaws 2014

The Water Supply (Water Fittings) Regulations (Northern Ireland) 2009

## Module 12

# Hot water services

**Learning Outcome 12. Know the requirements for hot water services (Schedule 2, paragraphs 17, 18, 19, 20, 21, 22, 23 & 24)**

**12.1 Describe the installation requirements and methods of connection for water fittings in relation to:**

- Directly heated unvented hot water systems
- Indirectly heated unvented hot water systems
- Independent water heaters
- Methods of accommodating expanded water in a hot water system
- Maximum temperature within a hot water system
- Hot water distribution temperatures
- Temperature of hot water at terminal fittings and surfaces of hot water pipes

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12.2 State the requirements for discharge pipes from safety devices	20
12.3 State the requirements for discharge pipes from expansion valves	20
12.4 State the requirements for vent pipes from a primary circuit	23
12.5 State the requirements for vent pipes from a secondary hot water storage system	23
12.6 State the requirements for vented systems requiring dedicated storage cisterns or mechanical safety devices	26
12.7 State the methods of filling closed circuits	27



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Including:

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## Module 13

# WCs, flushing devices and urinals

**Learning Outcome 13 – Know the installation requirements for WC's, flushing devices and urinals approved for use (Schedule 2, paragraph 25)**

	Page
13.1 Identify the installation methods and requirements for the operation of WC pans in regard to: <ul style="list-style-type: none"> <li>• Requirements for AUK1 air gaps</li> <li>• Single flush cisterns</li> <li>• Dual flush cisterns</li> <li>• Single flush siphonic outlet</li> <li>• Dual flush siphonic outlet</li> <li>• Drop and flap valves</li> <li>• Dual flush cistern capacities</li> <li>• Operating instructions for dual flush cisterns</li> <li>• Pressure flushing valves</li> <li>• Cistern water line marks</li> <li>• Requirements for warning pipes</li> <li>• Internal overflows</li> </ul>	6
13.2 Explain methods for flushing urinals in relation to: <ul style="list-style-type: none"> <li>• Manually operated cisterns</li> <li>• Automatically operated cisterns</li> <li>• Pressure flushing valves</li> </ul>	13
13.3 Describe methods for filling a urinal cistern in relation to: <ul style="list-style-type: none"> <li>• Manual infill</li> <li>• Electronic sensor</li> <li>• Pressure pad</li> <li>• Time switch</li> <li>• Frequency of flushing</li> </ul>	15
13.4 State the requirements for urinal cistern filling rates for: <ul style="list-style-type: none"> <li>• a single urinal bowl</li> <li>• a urinal stall or slab serving two or more urinals</li> </ul>	17
13.5 State the requirements for the renewal of a WC cistern installed before 1st July 1999	18

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## Module 14

# Baths, sinks, showers and taps

**Learning Outcome 14 – Know the types of bath, sink, showers and taps and their location and installation Requirements (Schedule 2, paragraphs 26, 27 & 28)**

	Page
14.1 State the requirements for drinking water points in premises	3
14.2 State the requirements for drinking water supplies in relation to:	4
• Water supplied from a supply pipe	
• Water supplied from a pumped supply pipe	
• Water supplied from a storage cistern	
• Water that has been softened and used for drinking purposes	
14.3 State the requirements for waste outlets from appliances	8

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# Module 15

## Washing machines, dishwashers and other appliances

**Learning Outcome 15 – Know the consumption limitations for washing machines, dishwashers and other appliances (Schedule 2, paragraph 29)**

**15.1 State the upper limits of water consumption for domestic:**

- horizontal axis washing machines
- washer – driers
- dish washers

## Water Regulations and Byelaws Training Manual

Including:

The Water Supply (Water Fittings) Regulations 1999

The Water Supply (Water Fittings) (Scotland) Byelaws 2014

The Water Supply (Water Fittings) Regulations (Northern Ireland) 2009

## Module 16

# Water for outside use

### Learning Outcome 16 – Know the requirements for water supplied for outside use (Schedule 2 paragraph 30 and 31)

	Page
16.1 Understand the backflow prevention arrangements for standpipes	3
16.2 Understand the backflow prevention arrangements for animal drinking troughs	4
16.3 State the installation requirements for ponds, fountains and pools in relation to:	6
• impervious liners and water tightness	
• temporary connections to ponds, pools and fountains	

## Water Regulations and Byelaws Training Manual

Including:

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# Module 17

## Hygienic working practices

### Learning Outcome 17 – Understand the requirements for hygienic working practices

	Page
17.1 Understand that water is a food product and the need for hygienic working practices	2
17.2 Understand the reasons for cleaning and disinfecting tools	4
17.3 Understand the reasons for hygienic storage of pipe and fittings	4

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## Module 18

# Other legislation surrounding the installation of supply pipes

**Learning Outcome 18 – Understand other legislation surrounding the installation of supply pipes.**

18.1 Understand the requirement to obtain a Section 50 Licence under the New Road and Street Works Act (NRSWA) 1991 if excavating adopted highways.

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## Module 19

# How to become an Approved Contractor

### Learning Outcome 19 – Understand how to become an Approved Contractor

19.1 The learner should understand that completing this course alone does not make them approved, and should understand how to apply to become an Approved Contractor

## Learning Outcome 19. Understand how to become an Approved Contractor

### Introduction

This module is aimed at ensuring persons undertaking this course are aware of the process of becoming an Approved Contractor.

### 19.1 The learner should understand that completing this course alone does not make them approved, and should understand how to apply to become an Approved Contractor

Under the Regulations and Byelaws an Approved Contractor is a person who:

- a) has been approved by the water undertaker for the area where a water fitting is installed or used, or
- b) has been certified as an approved contractor by an organisation specified in writing by the regulator.

There are currently six Approved Contractor Schemes in the UK. Three are approved by the Water Undertaker for the area which they supply. They are;

- APLUS (Anglian Water)
- WaterMark Scheme (Severn Trent Water)
- The Water Industry Approved Plumbers' Scheme (WIAPS) which covers the other geographical areas

Three are certified by the Regulator:

- Association of Plumbing and Heating Contractors (APHC)
- Chartered Institute of Plumbing and Heating Engineers (CIPHE) Approved Contractor Persons
- Scottish and Northern Ireland Plumbing Employers' Federation (SNIPEF) Water Regulations Approved Contractors' Scheme

### Categories of Approval

There are five categories of approval. They are:

- Approved Plumber
- Approved Groundworker
- Approved Catering Installer
- Approved Point of Use (POU) Installer
- Approved RPZ tester

All of the schemes have similar entry requirements, but the three organisations certified by the Regulator (APHC/CIPHE/SNIPEF) can only approve Plumbers.



## Becoming approved

It is important to recognise that by undertaking this course you are not an Approved Contractor. To become approved, you must apply to one of the schemes mentioned above and complete their application process.

As well as supplying evidence of completing approved training, the schemes may also require you to provide additional evidence such as insurance and other qualifications. They may also charge a fee and require you to adhere to a code of conduct.

## The benefits of being an Approved Contractor

The benefits of being an Approved Contractor may differ between schemes, but the following are common to most.

1. Customers get reassurance that your business employs qualified plumbers who understand the Water Fittings Regulations and Byelaws.
2. Your business gets promotion through Approved Contractor Scheme websites and the WaterSafe website.
3. Your business has the backing of Water Undertakers who refer customers to WIAPS and WaterSafe to find a plumber
4. Approved Contractors can start certain works without issuing prior notification to the local water company - saving you and your customer's time and money.
5. Some organisations will only use businesses that employ Approved Contractors.
6. As trenches can be backfilled immediately, this reduces health and safety risks on site
7. Some water companies may offer an incentive for the use of approved contractors
8. It may meet the requirements of self-lay contractors