



## **GUIDANCE ON THE IMPLEMENTATION OF THE WATER SUPPLY (WATER QUALITY) REGULATIONS 2016 IN ENGLAND AND THE WATER SUPPLY (WATER QUALITY) REGULATIONS 2010 (as amended) IN WALES**

### **The Regulations**

#### **Part 8 – Water Treatment**

**Regulation 27 [28]:  
Risk assessment**

**Regulation 28 [29]:  
Procedure following risk assessment and prohibition of  
supply**

**Regulation 29 [30]:  
Water treatment to minimise contamination from pipes**

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## PART 8 – WATER TREATMENT

### Regulation 27 [28] – Risk assessment

- 27.1 The regulation requires a comprehensive risk assessment for every treatment works and connected supply system. These risk assessments must cover all hazards and hazardous events which could present a risk of supplying water that could cause a risk to public health or an unwholesome supply, as defined by regulation 4(4).
- 27.2 In Wales regulation 28 does not require risk assessments to address the likelihood of the water supply becoming unwholesome, but since companies are required to comply with regulation 4 and supply wholesome water at all times, the Inspectorate considers that it is good practice for all companies, including companies in Wales, to consider and address risks to wholesomeness in their risk assessments.
- 27.3 The Drinking Water Inspectorate fully endorses the WHO Water Safety Planning approach to the management of drinking water supplies. It advocates that water suppliers' Regulation 27 [28] risk assessment methodology should be based on a thorough understanding of the water safety plan approach published by the World Health Organisation (WHO) in Chapter 4 of the Guidelines for Drinking Water Quality.
- 27.4 Risk assessment must take all process steps in the supply chain looking at potential risks, including for example; arrangements for receipt of chemical deliveries ([IL 2003/12](#) and [IL 2011/5](#)) as well as risks associated with the composition of chemical deliveries ([IL 2012/7 – Nitrosamines in Water Treatment Coagulants](#)).
- 27.5 The water safety plan approach provides a means of identifying hazards and hazardous events that potentially could arise in the catchment area for the source, during treatment, within the distribution system and within building plumbing systems (up to the consumer's cold water tap). The methodology requires risk to be characterised for each hazard/hazardous event using a scoring system based on likelihood and consequence criteria. Risks should be characterised before (uncontrolled) and after taking into account permanent control measures in place. The scoring method should be capable of identifying residual risks that require further mitigation (control measures) to be put in place.
- 27.6 A risk assessment conducted under regulation 27 [28] should take into consideration all parameters, elements, substances, micro-organisms including parasites, algae and viruses and all variants that are indicative of a risk to drinking water quality and wholesomeness. Companies should use all available information when assessing the likelihood of a hazard being present or a hazardous event taking place. The Inspectorate has published guidance on risk assessment for certain chemical substances that are not parameters, including [Perfluorooctane sulphonate \(PFOS\) and Perfluorooctanoic acid \(PFOA\)](#), which is available on the Inspectorate's website.
- 27.7 Risks to raw water quality should use information obtained from abstraction point monitoring conducted under regulation 17, catchment surveys and information on pesticide usage to identify chemicals which could be detected in raw water through their usage or properties. Companies may use agronomists or other expert services working in this area to provide information on agrochemical usage in catchments. The Environment Agency (EA) or Natural Resources Wales (NRW) should be consulted for data and information that they may have available. The output of catchment risk assessments should be used to confirm water treatment needs.

- 27.8 Risk assessments should be kept under continual review, and companies should have documented processes in place to capture new information, changes to residual risks and to agree and prioritise actions required for mitigating residual risks.
- 27.9 Companies should mitigate risks in an expedient manner to ensure that uncontrolled risks to public health and wholesomeness are not allowed to persist for unacceptably long periods of time. If permanent mitigation involves the implementation of a medium or long-term solution, interim operational measures should be put in place to ensure that consumers are not supplied with unwholesome water. In these circumstances the Inspectorate may issue a notice under the provisions of regulation 28 [29] – see next section.
- 27.10 Companies receiving bulk imports of treated water from other suppliers should obtain information from each supplier necessary to conduct their own risk assessments. Ideally, suppliers should make available the reports and other information submitted to the Inspectorate under the requirements of regulation 28 [29] (see below). Recipients of bulk imports should have formal agreements in place with their suppliers that cover water quality, sufficiency, information sharing, communication channels for emergencies and contingency plans in the event of a water quality problem or loss of supply.
- 27.11 Regulation 27(4) [28(5)] allows the Inspectorate to serve a notice on a company to carry out a risk assessment under the requirements of regulation 27 [28], by a date specified.
- 27.12 Regulation 27(5) [28(6)] requires water companies to inform the Inspectorate as soon as it becomes aware of any change to a residual risk that requires new or additional mitigation steps. Companies are now required to report updated risk assessment reports to the Inspectorate every month as part of the monthly data returns following [IL 01/2015](#), which fulfils the requirement of this regulation.

## **Regulation 28 [29] - Procedure following risk assessment and prohibition of supply**

- 28.1 Regulation 28 [29] sets out the reporting requirements for companies' risk assessments carried out under regulation 27 [28]. Under this regulation, companies are required to inform the Inspectorate as soon as it becomes aware of any new risk to public health or wholesomeness. As explained in paragraph 27.11 above, the monthly reporting arrangements fulfil this requirement.
- 28.2 Information Letter [02/2014](#) established the basis for this reporting framework, updated with Information Letter [01/2015](#). Both of these Information Letters and supporting Annexes are available on the Inspectorate's website.
- 28.3 Under regulation 28(4) [29(4)] the Inspectorate has the power to issue a notice to companies on receipt of a risk assessment report that identifies a risk to public health or wholesomeness [public health in Wales] that requires additional mitigation (control measures). The Inspectorate considers that a risk of consumers rejecting water because of unacceptable appearance, taste or odour constitutes a risk to public health.
- 28.4 Such a notice will specify actions to be taken and completion dates, and may be issued without prior consultation with the company. In practice, a documented procedure is in place whereby companies agree with the Inspectorate appropriate steps to be taken, and suitable timescales. Refer also to the Inspectorate's

[Enforcement Policy](#). If a company can demonstrate that it has a robust action plan in place to mitigate a risk within an appropriate timescale, and the company has a good track record in risk management and complying with existing notices, then the Inspectorate is likely to deem it unnecessary to issue a formal notice.

- 28.5 Regulation 28(4)(d) [29(4)(d)] allows the Inspectorate to place conditions in a regulation 28(4) [29(4)] notice to not supply water from a treatment works, service reservoir or other asset unless the specified conditions are met. Failure to comply with a regulation 28(4)(d) [29(4)(d)] condition constitutes a criminal offence under the provisions of regulation 33(1).
- 28.6 Regulation 28(6) [29(6)] allows the Inspectorate to revoke or amend a regulation 28 [29] notice, which will only normally be done once the Inspectorate is satisfied that, having received sufficient evidence from the company that all the conditions and steps in the notice have been complied with, the required reduction in risk and other benefits have been achieved.
- 28.7 Where a company seeks to change a step in a notice, for example because a new solution has been identified which provides improved mitigation for the identified risk, the process is explained in Information Letter [02/2015 - Legal Instruments - Processes for reporting on, agreeing changes to and closure/revocation](#). The forms that companies should use when applying for changes are appended as annexes to the letter, and are available on the Inspectorate's website.

## **Regulation 29 [30] – Water treatment to minimise contamination from pipes and Regulation 30 [30] – Replacement of lead pipes**

- 29.1 Regulation 29 [30] requires that, where there is a risk in a company's supply system of copper and lead parameters failing the PCV because of the prevalence of these materials in service pipes, the company is required to treat the water supplied to minimise plumbo- and cupro-solvency. This means that water put into supply must be chemically stable, by treatment if necessary, and, where there is a high risk of lead failures, treated to minimise plumbosolvency. The latter is normally carried out by dosing the supply with a phosphate chemical.
- 29.2 Regulation 29(4) [30(3)] allows a company to decide not to treat the water as specified above where there is sufficient evidence to demonstrate that the treatment is unlikely to achieve a significant reduction in the levels of copper or lead, or where such treatment is not reasonably practicable. The Inspectorate expects companies to be able to provide evidence to demonstrate these conditions.
- 29.3 In England, regulation 30 requires a company to replace or modify its part of any service pipe (normally the communication pipe) that is made from lead or where the major component is lead, when a property owner replaces their private lead supply pipe, and there is a risk of lead exceeding the PCV at the consumer's tap. The operation to replace or modify the communication pipe can take place when the private supply pipe has been replaced.
- 29.4 In Wales, regulation 30(4) applied up until 25<sup>th</sup> December 2013, requiring a company to replace its part of any service pipe (normally the communication pipe) that is made from lead or where the major component is lead, where a property owner replaces their private lead supply pipe and there is a risk of lead exceeding the PCV at the consumer's tap. This regulation has been superseded by Welsh regulation 18(10), where the same principle applies, because if there is a lead service pipe in situ it

follows that a failure of the standard for lead is likely. Therefore, if a consumer has indicated in writing that he/she has, or intends to, replace the private lead supply pipe, the company must replace or modify its own part of the service pipe that is made of lead, in order to eliminate the potential for any future exceedance of the PCV for lead. The operation to replace or modify the communication pipe can take place when the private supply pipe has been replaced.

- 29.5 Lead can be imparted into the water supply from lead solder present in the domestic system and certain fittings, including brass fittings. Therefore companies should consider these factors when assessing the risk of failing the PCV for lead. The risk assessment might include sampling as well as a plumbing inspection.
- 29.6 Research commissioned by the Inspectorate (*Assessing the effect of water meter installation on exposure to lead in water*) has identified that where domestic water meters are installed or replaced on a lead service there is a transient risk of lead significantly exceeding the PCV. The [final report](#) on this research, published in 2016, includes the following suggestion: *Where the installer determines that the service pipe is lead, the consumer should be informed of this fact and offered the standard company advice on lead pipes. In addition they should be advised to flush their cold water supply immediately following the installation, for a minimum of 10 minutes, and to flush again for 2 minutes at the first use of the kitchen tap, for the next 3 days.* This advice is applicable whenever there is physical intervention on a lead service.

**Revision notes:**

<b>Version</b>	<b>Revision</b>	<b>Date</b>
1.0	First major version covering the 2016 Regulation	July 2016
1.1	Typo in para 27.2, 26.10. New para – 29.6 about DWI’s research report - Assessing the effect of water meter installation on exposure to lead in water, with suggestion made in this report.	April 2017
1.2	Amendments to paragraph 27.6 to advise scope and incorporate guidance on water safety plans - PFOS (IL 2009/10); and to paragraph 27.4 chemical deliveries (IL 2003/12 and IL 2011/5) and quality IL 2012/7	August 2017
1.3		
1.4		
1.5		