



GUIDANCE ON THE IMPLEMENTATION OF THE WATER SUPPLY (WATER QUALITY) REGULATIONS 2016 (as amended) IN ENGLAND AND THE WATER SUPPLY (WATER QUALITY) REGULATIONS 2018 IN WALES

The Regulations

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PART 8 – WATER TREATMENT

Regulation 27 – 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 The Inspectorate fully endorses the WHO Water Safety Planning approach to the management of drinking water supplies. This approach advocates that water suppliers' Regulation 27 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.
- 27.3 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](#)).
- 27.4 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.
- 27.5 A risk assessment conducted under regulation 27 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.
- 27.6 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.
- 27.7 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.
- 27.8 Water suppliers 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 – see next part.

- 27.9 Suppliers 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 regulation 28 (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.
- 27.10 Regulation 27(4) allows the Inspectorate to serve a notice on a company requiring it to carry out a risk assessment under regulation 27, by a date specified.
- 27.11 Regulation 27(5) requires a supplier 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 should report updated risk assessment reports to the Inspectorate every month as part of the monthly data returns following the guidance given in [IL 02/2018](#) and [IL 02/2019](#).
- 27.12 Regulation 9(9)(a) requires risk assessments used to support applications for monitoring variation notices issued under the provisions of regulation 9(3) to be carried out in accordance with recognised principles of international standards, such as [EN15975-2 Security of drinking water supply, guidelines for risk and crisis management](#). Risk assessment methodologies must be accredited by an approved organisation, and information must be available to demonstrate that a risk assessment has been carried out, together with a summary of its outcome and supporting data.
- 27.13 The relevant competent authority for approving accreditation bodies is the DWI. The Inspectorate has worked with the water industry, through Water UK, to draft a Water Industry Specification (WIS) document based on the principles of EN 15975-2, which also incorporates additional aspects of established good practice in England and Wales for carrying out robust risk assessments, including taking into account monitoring carried out under the Water Framework Directive (required by regulation 9(9)(c)). This document now forms the guidance for companies in the implementation of accredited risk assessment methodologies. A suitably accredited body (e.g. UKAS, or another organisation approved by the Inspectorate acting on behalf of the Secretary of State) will approve the appointment of inspection bodies (under ISO 17020) to confirm water suppliers' compliance with the requirements of the WIS. A water supplier may apply to an approved accreditation body to be a certified inspection body under ISO 17020, and thereby be authorised to self-certify its own risk assessment methodologies.

Regulation 28 – Procedure following risk assessment and prohibition of supply

- 28.1 Regulation 28 sets out the reporting requirements that suppliers must follow for risk assessments carried out under regulation 27. A company is required to inform the Inspectorate as soon as it becomes aware of any new risk to public health or

wholesomeness. As explained in paragraph 27.12 above, this may be as part of monthly reporting arrangements.

- 28.2 Information Letter [02/2019](#) sets out the requirements for monthly reporting of regulation 27 risk assessments to the Inspectorate.
- 28.3 Under regulation 28(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. 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 can specify actions to be taken and completion dates, and may be issued without prior consultation with the company. Currently, there are procedures 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 unlikely to issue a formal notice.
- 28.5 Regulation 28(4)(d) allows the Inspectorate to require a company, in a regulation 28(4) notice, to not supply water from a treatment works, service reservoir or other asset unless specified conditions are met. Failure to comply with a regulation 28(4)(d) condition constitutes a criminal offence under the provisions of regulation 33(1).
- 28.6 Regulation 28(6) allows the Inspectorate to revoke or amend a regulation 28 notice. This is likely only to happen 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 – Water treatment to minimise contamination from pipes and Regulation 30 – Replacement of lead pipes

- 29.1 Regulation 29 requires that, where there is a risk in a wholesaler'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 Regulations 29(2) and (4) allows a supplier 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 Regulation 30 requires a supplier 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 Lead can be imparted into the water supply from lead solder present in the domestic system and certain fittings, including brass fittings. Therefore suppliers 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.
- 29.5 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:

Version	Revision	Date
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
2.0	Updated following publication of the 2018 amendment regulations in England and the 2018 Welsh Regulations.	September 2018
3.0	New version following UK’s exit from the European Union. Reference to IL 01/2015 replaced with IL 02/2018 and IL 02/2019 in para. 27.11. Paragraph 28.2 now refers to IL 02/2019.	April 2020