

Types and application of hot and cold water systems

2.1 Hot and cold water systems are those that supply water for domestic purposes (drinking, cooking, food preparation, personal hygiene and washing). This section provides information on the different types, design and use of systems available to supply hot and cold water services.

2.2 Water systems in high risk locations (such as healthcare premises, care homes, residential homes and other situations where those exposed to the water systems are likely to be at high risk of infection) need particular consideration. The risk assessment should consider both the relative risks of legionella and scalding. See paragraphs 2.152–2.168, www.hse.gov.uk/healthservices/ and *Health and safety in care homes*¹² for more information for care settings. Healthcare premises should refer to *Water systems: Health Technical Memorandum 04–01*¹³ (for England and Wales), or to *Scottish Health Technical Memorandum 04–01*¹⁴ (for Scotland).

2.3 Those who provide residential accommodation or who are responsible for the water systems in premises must assess the risk from exposure to legionella to residents, tenants, guests and customers and implement control measures, if appropriate. It is also increasingly common for there to be several dutyholders in one building who may also have responsibilities for assessing and managing the risk from legionella. See paragraphs 2.138–2.151 for specific guidance.

2.4 Within hot and cold water systems, the risk areas that support growth of microorganisms, including legionella, are controllable with good design, operation, maintenance and water system management and include:

- the base of the water heater and storage vessel, particularly where incoming cold water reduces the temperature of the water within the vessel and where sediment collects and is distributed throughout the system;
- where optimum temperatures for microbial growth and stagnation occur, eg dead legs, capped pipes (dead ends), infrequently used outlets and areas of the system where there is poor circulation;
- where incoming cold water temperatures are above 20 °C, or there are areas within the cold water system that are subject to heat gain and areas of stagnation where there are deposits to support growth.

Safe operation and control measures

2.5 This guidance provides detailed information on types of water system, design considerations and commissioning systems to ensure risks from exposure to legionella are minimised or reduced as far as is reasonably practicable. There is also guidance on operational and control measures.

2.6 Temperature control is the traditional strategy for reducing the risk of legionella in water systems. Cold water systems should be maintained, where possible, at a temperature below 20 °C. Hot water should be stored at least at 60 °C and distributed so that it reaches a temperature of 50 °C (55 °C in healthcare premises) within one minute at the outlets. For most people, the risk of scalding at this temperature is low. However, the risk assessment should take account of susceptible 'at risk' people including young children, people who are disabled or elderly and to those with sensory loss for whom the risk is greater.