

Wat 03 Water leak detection



Fully fitted



Simple building



Shell & core



Shell only



No minimum standards

Aim

To reduce the consumption of potable water in new buildings through minimising wastage due to water leaks.

Value

- Reduce potable water wastage associated with leaks.
- Minimise damage, costs and disruption arising from water leaks.
- Reduce costs related to water consumption.

Context

Water leakage within customers' properties represents 6% of the total public water supply in England and Wales (163). This is equivalent to 25% of the total water leakage, with the rest being attributed to water distribution systems of the supply companies. Water leaks in building systems are responsible for major damage to property resulting in major disruption and costs. It is, therefore, important to ensure that water leaks are detected and controlled on a building level as early as possible.

Assessment scope

	Fully fitted	Simple building	Shell & core	Shell only
Applicable assessment criteria	All	All	All	1–2
Assessment type specific notes	None	see ref 1.0 and 1.1	see ref 1.2	None

Specific notes

Assessment type specific	
1.0	As an alternative to criteria 1 and 2, install automatic excess flow valves at relevant locations to protect property from damage caused by leaking pipes or tanks.
1.1	An automatic excess flow valve acts as a flow switch ('fuse') to automatically stop the flow of water and prevent uncontrolled release when the flow of water exceeds a predetermined rate (such as may occur in the event of failure of water supply pipes and tanks).
1.2	Assess the water supplies to WC areas or facilities as per criterion 3 regardless of whether the WC areas or facilities are fitted out or not.

BAM type specific	
2.0	Healthcare This issue does not apply to toilet facilities in clinical areas
2.1	Short and long term residential accommodation Flow control devices in WC areas or facilities are not required for facilities in residential areas of long-term residential accommodation. This is due to the fact that those occupants have a sense of ownership and would identify and report a potential leak. This applies to all of the following: ensuite facilities in individual bedrooms, a single bathroom shared between several individual bedrooms (e.g. in halls of residence), or one single bathroom in an independent dwelling (e.g. within a care home). The requirement for flow control devices still

applies for the rest of the facilities within long-term residential accommodation. Where WC facilities are only provided within the residential areas of a long-term residential accommodation project (e.g. there is no staff WC), the credit is filtered out of the assessment. However, for short term accommodation, the credit still applies to buildings that have guest bedrooms with ensuite facilities, e.g. hotel rooms, and communal WC areas or facilities, e.g. communal WC facilities in hotels and hostels.

- 2.2 **Short term stay residential institutions** (such as hotels) Compliance with criterion 3 for WC facilities in hotel rooms can be achieved through providing the required flow control devices to groups of 10 rooms, rather than to each individual room.

Assessment criteria

→ One credit - Leak detection system

- 1 Install a leak detection system capable of detecting a major water leak:
 - 1.a On the utilities water supply within the buildings, to detect any major leaks within the buildings
- AND
- 1.b Between the buildings and the utilities water supply, to detect any major leaks between the utilities supply and the buildings under assessment.
- 2 The leak detection system is:
 - 2.a A permanent automated water leak detection system that alerts the building occupants to the leak OR an inbuilt automated diagnostic procedure for detecting leaks
 - 2.b Activated when the flow of water passing through the water meter or data logger is at a flow rate above a pre-set maximum for a pre-set period of time. This usually involves installing a system which detects higher than normal flow rates at meters or sub-meters. It does not necessarily require a system that directly detects water leakage along part or the whole length of the water supply system
 - 2.c Able to identify different flow and therefore leakage rates, e.g. continuous, high or low level, over set time periods. Although high and low level leakage rates are not specified, the leak detection equipment installed must have the flexibility to distinguish between different flow rates to enable it to be programmed to suit the building type and owner's or occupier's usage patterns.
 - 2.d Programmable to suit the owner's or occupier's water consumption criteria
 - 2.e Where applicable, designed to avoid false alarms caused by normal operation of large water-consuming plant such as chillers.

Where there is physically no space for a leak detection system between the utilities water meter and the building, alternative solutions can be used, provided that a major leak can still be detected.

→ One credit - Flow control devices

- 3 Install flow control devices that regulate the water supply to each WC area or sanitary facility according to demand, in order to minimise undetected wastage and leaks from sanitary fittings and supply pipework.

Methodology

No water supply to the building or unit

Where a project under assessment contains no installed fittings and therefore there is no water supply to the building, identify and assess the facilities most likely to be used by the occupants and visitors of the assessed building (e.g. specific facilities provided in a nearby accessible building).

Extensions to existing buildings

If the water supply to the new extension is via the existing building then the water supply to the existing building must be assessed against the criteria of this issue.

Utilities water meters

See criterion 1 above.

Where there is a utilities water meter at the site or building boundary, it may be necessary to install a separate flow meter (or alternative measurement system) just after the utilities water meter to detect leaks. However, if the water utilities company agrees to some form of leak detection being installed on their meter, this would also be acceptable.

Evidence

All One or more of the appropriate evidence types listed in The BREEAM evidential requirements on page 26 can be used to demonstrate compliance with these criteria.

Definitions

Clinical areas

Areas of the building in which medical functions are carried out that require specific restricted environmental conditions such as humidity, daylighting, temperature etc. (e.g. X-ray, operating department, delivery room etc.).

WC areas or facilities

WC areas or facilities refer to the cold water supply to taps, WCs and urinals. The water supply system must not allow the cold water to automatically switch off in the showers while the hot water is still running to avoid scalding from hot water.

Additional information

None.