Fluid Category 5 Protection

WaterRegsUK

What are the water fittings regulations/byelaws?[1]

These are national regulations which help protect drinking water by ensuring a water undertakers' customer's water supply system is designed, installed and used safely.

This leaflet explains some of the ways fluid category 5 backflow protection can be provided.

For further information about the regulations/byelaws and how to comply please refer to the Water Regs UK website www.waterregsuk.co.uk.

[1] The Water Supply (Water Fittings) Regulations 1999 in England & Wales, the Water Supply (Water Fittings) Regulations (Northern Ireland) 2009 & the Water Supply (Water Fittings) (Scotland) Byelaws 2014.

What is a fluid category 5 risk?

A fluid category 5 risk exists when the water in a system is, or is at risk of, exposure to a substance which poses a serious health hazard. Examples include, but are not limited to:

- Human or animal waste
- Alternative water sources including, boreholes, rainwater, seawater, water in rivers and canals
- Pathogens
- Installations or activities which are considered to place public health at risk

Once the local water undertaker has categorised an installation as being a fluid category 5 risk backflow prevention providing this level of protection must be in place regardless of any onsite practices.

If you are responsible for a site, how do you comply?

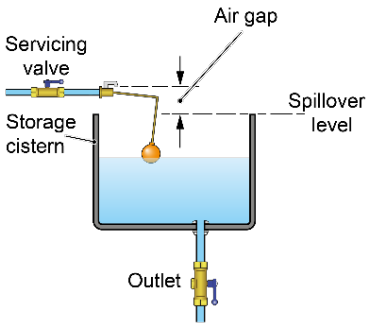
1. **Ensure your water system complies with the regulations.** For further information please refer to the Water Regs UK website www.waterregsuk.co.uk.
2. **Notify** the local water undertaker of any new installation or changes to your water system at least 10 working days before carrying out any work
3. **Confirm the level of risk and the suitability** of the proposed backflow protection with the local water undertaker
4. **Install in accordance with any conditions of consent** set by the local water undertaker

What is backflow protection?

Backflow protection is in effect a barrier intended to prevent contaminated fluid flowing backwards.

The following are recognised as providing fluid category 5 backflow protection. Please note there are two forms of backflow: backpressure and backsiphonage. The local water undertaker will confirm what type of risk you need to protect against.

Device or arrangement	Backpressure	Backsiphonage
Type AA air gap	5	5
Type AB air gap	5	5
Type AD air gap	5	5
Type DC arrangement		5
Type AUK 1 arrangement	3	5
Type AUK 3 tap gap		5

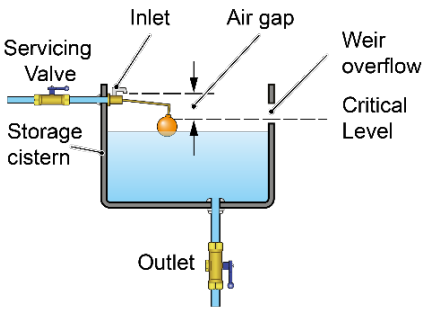


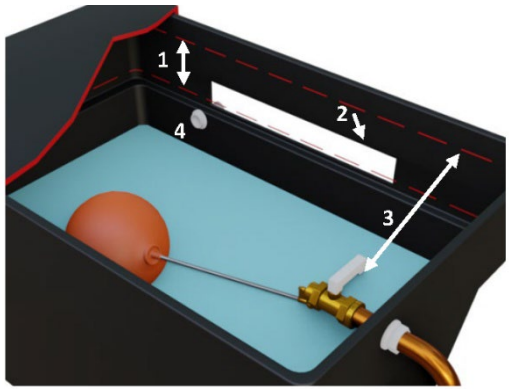
Type AA air gap

A Type AA air gap is created when an inlet discharges water, via a minimum unobstructed air gap, into a cistern, fitting or appliance (receiving vessel) with a spillover that remains unrestricted at all times. The spillover is the level at which the contents spill over the top edge due to the inflow exceeding the outflow.

Type AB air gap

A Type AB air gap is like a Type AA air gap but instead of an unrestricted spillover it has a rectangular weir or ‘slot’ overflow, the air gap being measured from the inlet lowest point of discharge to the critical water level of the overflow.

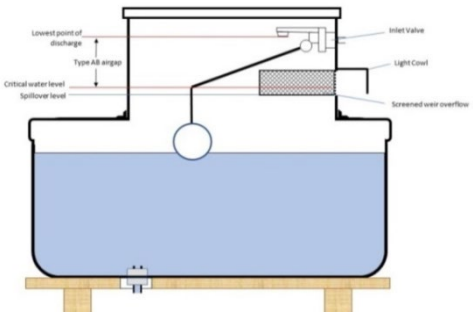




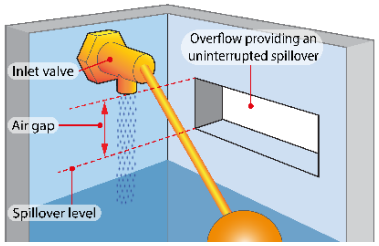
1. Air gap
2. Weir overflow
3. Lowest point of discharge
4. Warning pipe

Break tanks

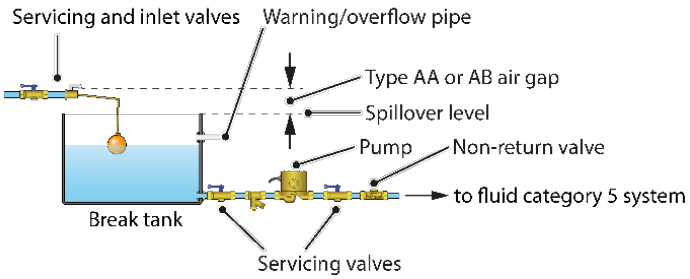
Often used to provide fluid category 5 backflow protection a break tank is a tank incorporating a Type AA or AB air gap. These systems only need to be large enough to maintain the required flow rate.

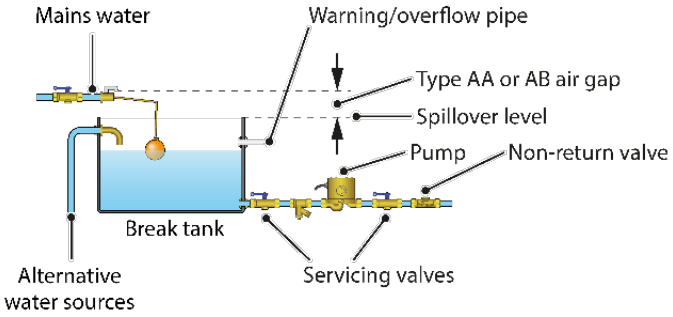


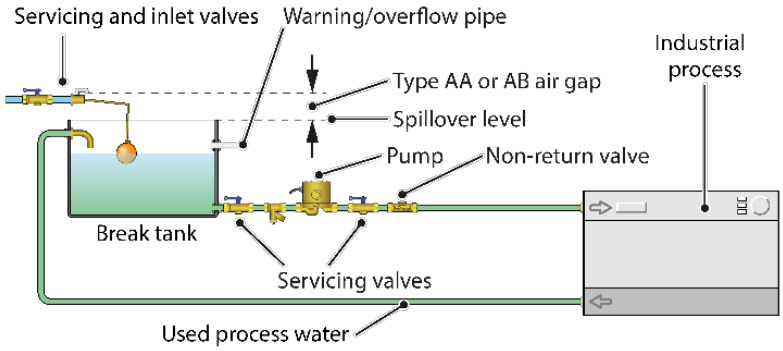
Example of a break tank design and illustration of Type AB air gap



Possible applications

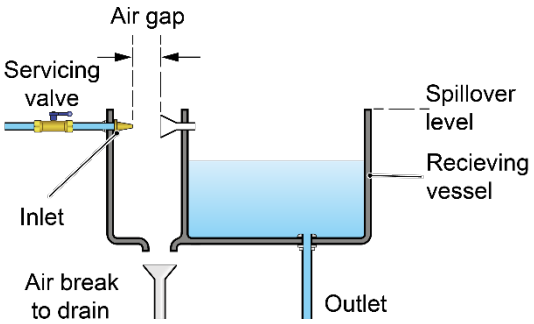


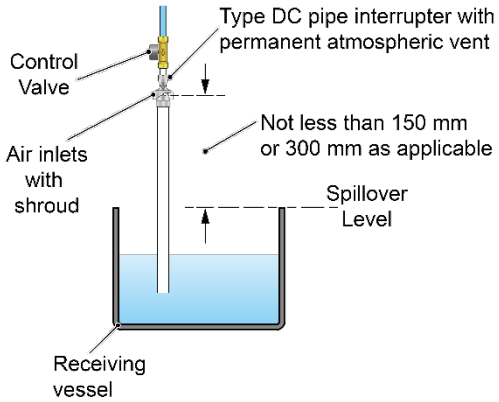




Type AD air gap

A Type AD air gap, or 'jump jet', is an arrangement where a horizontal injector 'jets' water into a cistern, fitting or appliance (receiving vessel), via a minimum unobstructed air gap. An air break to drain open to atmosphere must be installed. These arrangements are typically installed in appliances.





Type DC arrangement

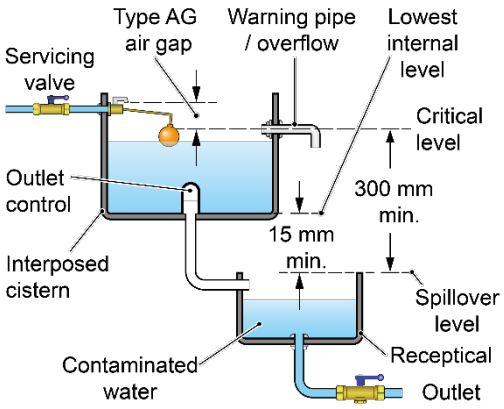
A Type DC arrangement is created when a pipe interrupter, with shrouded but permanently unrestricted air inlets, that discharges vertically downwards is installed not less than 150 mm above the sparge outlet of a urinal or 300 mm (150 mm In Scotland) above the spillover of any other receiving vessel. No method of control can be installed downstream of the pipe interrupter.

This arrangement only protects against back siphonage and when in operation can routinely discharge through the inlets on the pipe interrupter.

Type AUK1 arrangement

A Type AUK1 air gap is created when an ‘interposed’ cistern, fed via a Type AG air gap, discharges, by gravity, into a separate receiving vessel located at a minimum distance below the interposed cistern and overflow. It is only rated as providing fluid category 3 protection against back pressure.

This arrangement is typically found in toilets. Depending on the outcome of an assessment, by the local water undertaker, a Type AUK1 arrangement can feed a single or multiple installations.



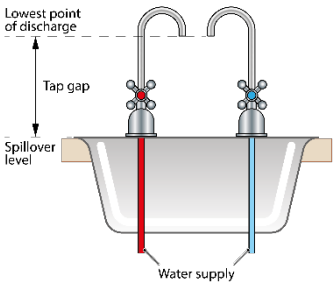
Possible application: sluice



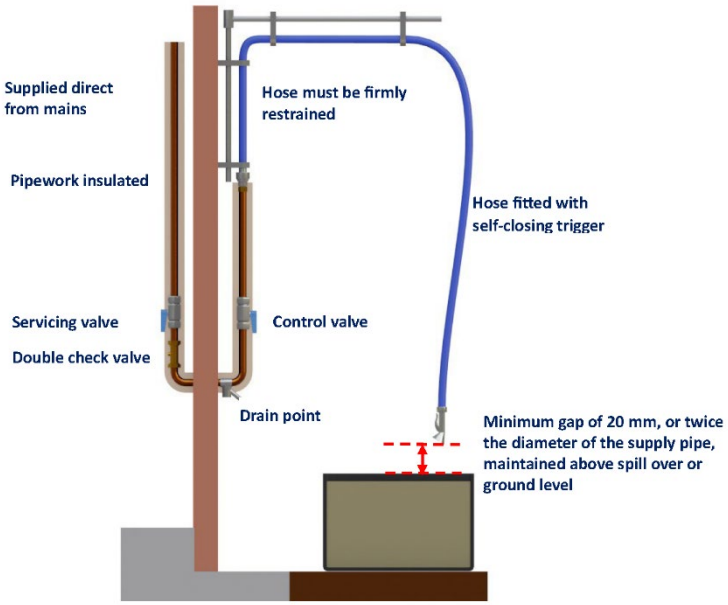
Type AUK3 tap gap

A Type AUK 3 tap gap is created by maintaining a specific minimum distance between the lowest point of an outlet, tap spout, shower head or other fitting and the spillover level of the appliance or receptacle it supplies.

A Type AUK3 tap gap provides protection against backsiphonage only.



Possible application: restrained hose



Hoses attached to hose union taps are a high contamination risk. Where fluid category 5 protection is required, with the agreement of the local water undertaker, a Type AUK3 air gap may be acceptable providing the hose is restrained and maintains a minimum gap (twice the internal diameter of the supply pipework or 20 mm, whichever is the greater) between the hose outlet and ground level or spillover level of whatever receptacle it is discharging into.

Installing an arm which can swing out will provide a greater reach.

This is informative, non-statutory guidance and intended for general guidance purposes only; it is subject to change. Conformity with this information should not be relied upon as guaranteeing compliance with the water fittings regulations/byelaws or no enforcement action will be taken by water undertakers. Water Regs UK accepts no liability for loss, indirect or consequential loss arising from or in connection with this guidance document.