



YorkshireWater

SAVING WATER IS EVERYONE'S BUSINESS

WATER CONSERVATION SELF ASSESSMENT GUIDE



How to complete the water conservation self assessment

This guide will help you carry out a water conservation self assessment on your business site. Each category in this guide will help you identify the types of fittings you have. This guide explains most common types of fittings.

The water conservation self assessment form, once completed could highlight how water efficient your business is and any areas for improvements.

How the form works

The form and these guidance notes are split into 5 washroom equipment categories.

- 1 Types of urinal controls
- 2 Types of taps
- 3 Flow rates
- 4 Types of toilet cisterns
- 5 Types of shower heads



1 Types of urinal control

The majority of urinals are fed by cisterns which periodically fill and empty over time. The frequency of flushing depends on how water is controlled into the cistern.

Uncontrolled urinal cisterns are topped up constantly 24 hours a day, 7 days a week and the flow rate into the cistern is usually regulated by a simple valve on the pipe. The flush frequency depends on how much the valve is open. An uncontrolled urinal cistern is the most inefficient type of cistern so fitting some form of control will help you save water.

PIR (Passive Infra Red) urinal controls regulate the flow of water by only allowing water to fill the cistern when movement is detected by the infra red units (usually a 5m radius around the urinal). Once movement is detected the cistern will begin to fill after a pre-programmed interval of 10, 20 or 30 minutes e.g. the maximum number of times a PIR urinal control will fill and flush after being programmed at 20 minute intervals would be 3 times per hour.

How to identify a PIR urinal control

This is usually a small plastic unit with a sensor fitted to the front. They are typically wall or ceiling mounted, in close proximity to the urinal (approximately ½ metre). PIR urinal controls can be either battery or mains operated:

- Battery operated units have a single wire running from a sensor box to the solenoid valve.
- Mains units will have a second wire connecting the sensor box to a mains power supply.

Enzyme based sleeves can be identified by the raised trap cap in the urinal bowl which contains an enzyme. A timing device connected to the inlet water supply operates a solenoid valve allowing the cistern to fill and flush 4 times per day.

Pressure operated urinal controls can be identified by a cylindrical unit attached to the

inlet water supply, usually close to the cistern. These may be concealed behind panelled walls. The units allow water to pass through when water appliances are operated and a drop in pressure occurs. These units are mechanical and require no power supply.

Timed units do not have infra red sensors but are programmed to fill and flush the urinal at set intervals throughout the day and night.

To measure flush frequency:

You can measure urinal flush frequency by noting the time (in minutes) between flushes.

An effectively working PIR unit will fill and flush every 20 minutes during periods of occupancy, but can be programmed to flush less or more frequently if required.

Measuring urinal flush frequency

Measuring flush frequency could help you gain information about the operation of a urinal fitted with a PIR e.g. If the flush frequency is around 5 minutes this may be due to:

- A disconnected solenoid valve
- A faulty unit
- The PIR is set to flush too frequently

2 Types of taps fitted

As there are many types of taps, we've included the most common types in the self assessment form.

Twist taps are usually fitted as a low cost option and are probably the most common type. These taps can use significantly more water than push taps, especially when left to run constantly.

Push taps are low cost water efficient taps. Some push taps can be regulated to run for specific periods of time and at different flow rates. These taps cannot be left running and can contribute to water savings.

Swing taps are often found in disabled washrooms and are installed specifically for their ease of operation. Like the twist taps, they can be left to run constantly. Swing taps often have a mixer valve allowing hot and cold water to be controlled through 1 tap.

Infra red taps usually have a sensor either under the tap spout or on the neck of the tap. When movement is detected, a solenoid valve opens allowing the tap to operate for a preset time. These taps are water efficient, but the supply and installation tends to be more expensive than twist or push taps.

Mono block/mixer taps consist of 2 twist taps fitted into 1 solid base with a single spout. Like the twist tap, mono blocks or mixers can use significantly more water than push taps, especially when left to run constantly.

3 Flow rates

Flow rates at the tap vary greatly depending on a number of factors.

These include:

- Yorkshire Water mains pressure
- Whether its tank fed or mains fed
- Condition of internal pipework
- Whether any gate valves, stop taps and ball 'o' fix valves are partially closed

The recommended flow rate for hand washing is typically 6 litres per minute (l/min) within washrooms and 10 litres per minute (l/min) within kitchen areas.

To measure the flow rate:

- 1 Use a container that measures in litres, preferably a measuring jug
- 2 Turn the tap on as you would when washing your hands
- 3 Time 10 seconds and note the volume collected in the container
- 4 Multiply the volume by 6
- 5 This will provide the flow rate in litres per minute

4 Toilet cisterns

Some of the most common toilet flush systems have been included in this self assessment form. The most commonly installed toilets are fed by either 9 or 6 litre cisterns. The volume is often marked on the inside of the cistern.

9 litre cisterns are usually ceramic or plastic and use the most water. These can potentially be fitted with volume reducing devices to bring the flush rate down.

6 litre cisterns are more water efficient and tend to look slim-line. It's not recommended that volume reducing devices are fitted as this could lead to double flushing.

Concealed cisterns are usually 6 litre slim-line. If possible and safe to do so, remove the wall panel to confirm the cistern size.

Dual flush cisterns give the option of either a 6 or 3 litre flush. This can be identified by 2 buttons on the top of the cistern, which, if used correctly can be very water efficient when compared to standard 9 litre flushing. It is not recommended that volume reducing devices are fitted.

Infra red operated flushvalves are often found in public conveniences. They only require a 6 litre or lower volume of water to effectively flush the toilet, due to the quick opening and closing of the electronically controlled valve within the cistern. It is not recommended that volume reducing devices are fitted.

Volume reducing devices

These come in 4 different types and all do the same job, all devices are located in the toilet cistern to displace a volume of water:

These include:

- Volume reducing blocks
- Savaflush bags
- Hippo water retaining bags
- Cistern dams

5 Type of showers

Three different shower types have been included on the self assessment form, which cover most variations.

Wall mounted, fixed head showers have no detachable parts and are often found in swimming bath changing rooms. The hot and cold water pressure determines the flow rate at the shower head.

Removable head showers are commonly found in the home. As with fixed head showers the hot and cold water pressure determines the flow rate at the shower head.

Aerated showers introduce air into the water at the shower head, usually via a small hole. Water efficiency is therefore improved with potential savings of up to 60% when compared to standard shower heads.

Shower flow rates

You can measure shower flow rates in the same way as tap flow rates.

To measure the flow rate:

- 1 Use a container that measures in litres, preferably a measuring jug
- 2 Turn the shower on
- 3 Time 10 seconds and note the volume collected in the container
- 4 Multiply the volume by 6
- 5 This will provide the flow rate in litres per minute

What to do with your completed self assessment form

Once you have completed your water conservation self assessment form and you would like an estimate of costs to carry out your water conservation improvements send your form to:

Yorkshire Water Services Limited
Business Services
Conservation Assessment
Western House
Halifax Road
Bradford BD6 2SZ

Or fax back to 01274 692083