

# Reducing water use in washrooms: taps

ENVIROWISE WATER  
MANAGEMENT LEAFLET



## Why think about taps?

**In commercial premises around 25% of 'domestic' water is used when operating taps. A tap can often deliver a flow rate of up to 20 litres/min depending on pressure.**

There are several water saving devices available to businesses to reduce water use substantially. This leaflet provides guidance on what you need to consider and how to evaluate the best solution to meet your needs.

## Tap into water savings

Tap aerators and flow restrictors can save money. Fitting a tap aerator, at a cost of £5/tap, could result in water and sewerage cost savings of £13/tap/year.

*Based on a tap being used 20 times a day for 15 seconds.*



## Ways to reduce water use

In many cases, a reduction in water use can be achieved by installing cheap and easy-to-fit retrofit devices to taps, resulting in short paybacks. But when refurbishing washrooms, bear in mind that many water efficient taps are the same price as less efficient models.

Key considerations:

- Correct installation is important - a poorly fitted device or control system may not reduce water use - in fact, it may increase it!
- Any fittings to the mains need to comply with the Water Supply (Water Fittings) Regulations 1999.
- Is maintenance required to ensure continued success? For example, soap deposits or scale build-up can cause tap mechanisms to jam (in particular, some push-down taps), resulting in taps dripping.

- Perception is often a barrier - water efficient taps and retrofit devices can be stylish and do not compromise performance, if installed correctly.
- Are the products you are considering buying included on the Water Technology List (WTL)? The Enhanced Capital Allowance (ECA) Scheme<sup>1</sup> enables businesses to claim 100% first-year capital allowances on investments in spray taps, automatic shut-off taps, electronic taps and low flow screw-down/lever taps. These can be found at [www.eca-water.gov.uk/](http://www.eca-water.gov.uk/)

The table overleaf summarises the common types of device and approach that are available to reduce water use through a tap. A flow rate of 5 - 6 litres/min is usually adequate for hand washing.

<sup>1</sup> Developed by Defra and HM Revenue & Customs in association with Envirowise

## Further information

- Envirowise water pages [www.envirowise.gov.uk/water](http://www.envirowise.gov.uk/water). Use WaterNet ([www.envirowise.gov.uk/waternet](http://www.envirowise.gov.uk/waternet)) to identify the most relevant publications for your requirements.
- Water Supply (Water Fittings) Regulations 1999. SI 1999 No. 1148 (England and Wales) [www.opsi.gov.uk/si/si1999/19991148.htm](http://www.opsi.gov.uk/si/si1999/19991148.htm)

# Reducing water use in washrooms: taps

| Item                                                                                                                                                                                                                                                                                                                                                 | Advantages                                                                                                                                                                                                                                                                 | Disadvantages                                                                                                                                                                                                                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Isolating ball valve</b> (screwdriver/lever actuated)<br/> <i>Primary function is that of an isolating valve. However, the flow through the valve can be adjusted to reduce flow rate.</i></p>                                                                                                                                                 | <ul style="list-style-type: none"> <li>Water savings of up to 10 litres/min</li> <li>Retrofit available</li> <li>Cheap and easy to install</li> </ul>                                                                                                                      | <ul style="list-style-type: none"> <li>Orifice may block with scale build-up</li> <li>Does not regulate pressure</li> </ul>                                                                                                                                                                                    |
| <p><b>Flow restrictor</b><br/> <i>The orifice on 15 mm pipe can be as small as 2 mm. Externally, the flow restrictor looks similar to the isolating ball valve (screwdriver actuated).</i></p>                                                                                                                                                       | <ul style="list-style-type: none"> <li>Water savings of up to 10 litres/min</li> <li>Can be used as an isolating valve (a quarter turn closes the orifice)</li> <li>Retrofit available</li> <li>Cheap and easy to install</li> </ul>                                       | <ul style="list-style-type: none"> <li>Orifice may block with scale build-up</li> <li>Does not regulate pressure</li> </ul>                                                                                                                                                                                    |
| <p><b>Spray tap</b><br/> <i>The tap nose contains small holes to force water out in the form of a mist or spray.</i></p>                                                                                                                                                                                                                             | <ul style="list-style-type: none"> <li>Water savings of up to 10 litres/min</li> <li>Retrofit spray tap nose available</li> </ul>                                                                                                                                          | <ul style="list-style-type: none"> <li>Requires maintenance to prevent blockage</li> <li>Legionella can be a problem if used infrequently</li> <li>Can cause splashing</li> <li>Does not regulate pressure</li> </ul>                                                                                          |
| <p><b>Tap aerator</b> (flow restrictor)<br/> <i>The design of the nozzle mixes air with the water under pressure. When the water exits the nozzle the air expands, increasing the apparent water flow.</i></p>                                                                                                                                       | <ul style="list-style-type: none"> <li>Water savings of up to 10 litres/min</li> <li>Retrofit available</li> <li>No splashing</li> <li>Flow rate reduced to 2.5-8 litres/min</li> <li>Pressure compensating aerator (PCA) regulates flow regardless of pressure</li> </ul> | <ul style="list-style-type: none"> <li>Not effective at pressure &lt; 1 bar</li> <li>Standard aerators do not regulate pressure</li> </ul>                                                                                                                                                                     |
| <p><b>Self-closing taps</b> (percussion taps/push-down taps)<br/> <i>To deliver flow, the user pushes down on the tap head. When the user removes their hand, the pressure generated inside forces the tap up and it automatically closes off the flow after a delay period (1 - 20 seconds, set at the time of installation).</i></p>               | <ul style="list-style-type: none"> <li>Retrofit available</li> <li>Automatically closes after use</li> <li>Savings can vary</li> </ul>                                                                                                                                     | <ul style="list-style-type: none"> <li>Delay cycle needs to be set correctly</li> <li>Mechanism can jam (hard water can be a contributor)</li> <li>Payback period can be 2 - 3 years</li> </ul>                                                                                                                |
| <p><b>Electronic tap</b><br/> <i>An infrared sensor is located on the underside of the tap head. The sensor is triggered when the user places their hands under the tap head. The temperature is preset.</i></p>                                                                                                                                     | <ul style="list-style-type: none"> <li>Improved hygiene - tap does not need to be touched</li> <li>Savings can vary</li> </ul>                                                                                                                                             | <ul style="list-style-type: none"> <li>Retrofit not applicable</li> <li>Requires energy - mains or battery operated</li> <li>Scalding can be an issue if the temperature control is incorrectly set</li> <li>If sensor is fouled by soap then water flow is continuous</li> <li>Long payback period</li> </ul> |
| <p><b>Single lever mixer tap with water saving ceramic cartridge</b><br/> <i>The 'Ecotop'<sup>2</sup> cartridge provides resistance as the lever is raised above the half-way position (5 - 10 litres/min), dissuading users from using the full flow setting (10 - 20 litres/min). The lever swivels left to right for temperature control.</i></p> | <ul style="list-style-type: none"> <li>Water savings of up to 10 litres/min</li> <li>Retrofit available</li> </ul>                                                                                                                                                         | <ul style="list-style-type: none"> <li>Temperature control needs to be clearly marked</li> <li>Long payback period (£90 per tap)</li> </ul>                                                                                                                                                                    |
| <p><b>Thermostatic mixer valve (TMV)</b><br/> <i>Changes in water pressure or temperature cause the thermostat element to expand or contract. This in turn moves the slide valve which alters the proportion of hot and cold water entering the TMV, thus maintaining the mixed water temperature.</i></p>                                           | <ul style="list-style-type: none"> <li>Water temperature is set - uses less water at initial draw-off</li> <li>Only one tap may be required</li> <li>Savings can vary</li> </ul>                                                                                           | <ul style="list-style-type: none"> <li>Long payback period (£50 - £100 per unit)</li> </ul>                                                                                                                                                                                                                    |
| <p><b>Point of source heater</b><br/> <i>Avoids long periods of running water to get the desired temperature.</i></p>                                                                                                                                                                                                                                | <ul style="list-style-type: none"> <li>Uses less water at initial draw-off</li> <li>Savings can vary</li> </ul>                                                                                                                                                            | <ul style="list-style-type: none"> <li>Capital costs for installation of heater</li> </ul>                                                                                                                                                                                                                     |
| <p><b>Foam soap</b><br/> <i>Soap dispenser delivers a ball of foam/mousse.</i></p>                                                                                                                                                                                                                                                                   | <ul style="list-style-type: none"> <li>Small amount of soap required per event (water saving of up to 50%)</li> <li>When user rubs hands together, foam/mousse reduces to small volume that requires less water to rinse off hands</li> </ul>                              | <ul style="list-style-type: none"> <li>May require new soap dispenser</li> </ul>                                                                                                                                                                                                                               |

<sup>2</sup> Also referred to as 'pop up waste' function