

Unified Water Label

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1. INTRODUCTION

1.1 Facts

Wholesome water shortages and security of water supply are important concerns across the world. Climate change and the increasing need for environmental protection, natural resources preservation and efficient use, the availability of wholesome water and patterns in water consumption is now a concern for all.

The European Bathroom Industry supports the goal of Governments to reduce water use and wastage with the introduction of innovative and technologically advanced products supported with clear, concise and easy to understand cohesive messaging.

Encouraging the replacement of all standard residential water using equipment (taps, toilets, showers, bath tubs, washing machines, dishwashers and outdoor products) with water efficient products will result in an overall decrease in yearly domestic water consumption by as much as 35% for taps, 11% for showers and associated energy in excess of 30% by 2030¹

1.2 Best of All Initiative

Many national initiatives have been developed in the past 10-15 years to address efficiency of water-using bathroom products, of which the Swiss¹ and Swedish Energy labels² together with the European Water Label³ and the Portuguese Anqip building label⁴ have come together to form the Unified Water Label for water using bathroom products. The European Water Label has been used as the base to build from.

In the EU, drivers for water efficiency includes, Eco design approaches, Ecolabel and Green Public Procurement (GPP) criteria on water using products with the aim of awarding the label to the most efficient products.⁵

Industry is constantly improving the performance of its products in terms of water consumption and comfort. It is doing so while strictly applying National and European essential health and safety requirements, responding to consumer growing demands for environmental preservation, and respecting minimum users' comfort.

Taking the view that the EU consumer today lacks consistent information on the performance and water consumption of these basic products, European and National Trade Bodies and existing National Schemes, representing many hundreds of manufacturers, have developed a simple and harmonised water labelling Scheme – the Unified Water Label⁶.

This Scheme applies to water using bathroom equipment and its associated energy for heating water.

¹ <https://www.bfe.admin.ch/bfe/de/home/effizienz/die-energieetikette.html>

² <http://www.energimyndigheten.se/en/sustainability/households/other-energy-consumption-in-your-home/water-and-water-heater/energy-efficient-taps-and-shower-heads/>

³ <http://www.europeanwaterlabel.eu/>

⁴ <https://angip.pt/index.php/en/technical-committees/90-comissao-tecnica-0802>

⁵ https://ec.europa.eu/commission/index_en

⁶ <http://www.europeanwaterlabel.eu/registeredcompanies.asp>

1.3 National Building Regulations

Unified Water Label has been developed to work alongside National Countries Building Regulations and other National nuances, these are annotated on Annexe I which is not an exhaustive list and will be regularly updated. Merging 4 existing schemes into one, attention has been given to ensure that existing Regulations with specific water and energy standards are addressed.

1.4 Scope

For the purposes of seeking a Voluntary Agreement 'products' relate to the European market for taps (including kitchen taps), shower valves and accessories such as shower handsets.

Excluded are bath taps with no shower diverter – which are included and behind the wall valves.

The Unified Water Label Scheme embraces 13 categories associated to water using bathroom products as defined within the technical criteria of the Scheme. The Voluntary Agreement proposal is sought for taps as defined above and shower valves, heads and shower systems.⁷

1.5 Objectives and Characteristics

- Inform European consumers on water and associated energy on the consumption of bathroom products when used in accordance with manufacturer's instructions.
- Promote the use of water 'efficient' products and accessories.
- Develop a simple classification scheme applicable throughout the EU, EFTA, EEA and bordering countries.
- Set harmonised requirements while conforming to any legal National requirements.
- Set a voluntary, cost-efficient and flexible tool which aims at monitoring and adapting to the market evolution of water 'efficient' products.
- Is open to all bathroom products and accessory manufacturers placing their products on the EU, EFTA, EEA and bordering markets.
- Best of all approach

2. DEFINITIONS

2.1 Shower Solution

Shower solutions shall be used to indicate the combination of a shower control (valve) complete with shower hose (flexible or rigid) and shower outlet (hand shower or fixed head).

2.2 Shower Outlets

The term shower outlet will be used to describe any relevant hand shower or fixed head outlet (but not body or side jets as these types of sprays are not covered by this scheme).

2.3 Fixed showerheads

According to EN 1112 chapter 4.

2.4 Hand held showers

⁷ <http://www.europeanwaterlabel.eu/pdf/scheme-september2015-en.pdf>

According to EN 1112 chapter 4.

2.5 Electric Showers

Electric Showers that electrically heat the water as flow is opened. For the purposes of this Scheme all electric shower controls will comprise of a shower handset, flexible hose and shower (heating) unit.

2.6 Water Closet or WC

Water Closet or WC is a term that is generally applied to facilities intended for the removal of human waste. It is a colloquial term that is often used as blanket terminology for any part or component of the toilet suite. There are subdivisions of products into WC bowls, flushing cisterns and tested combinations of bowls and cisterns known as suites.

2.7 WC Suites

A sanitary appliance that consists of a WC bowl/flushing cistern combination with associated fittings that has been tested and complies with Type 1 (clause 5) or Type 2 (clause 6) of EN 997

2.8 Independent WC Bowls

A sanitary appliance that is an independent WC, designed to work with specified volume(s) of water and intended to be coupled with a suitable independent flushing cistern (compliant with EN 14055) that have been tested and complies with Type 1 or Type 2 (independent) WC bowls of EN 997.

2.9 Independent WC Flushing Cisterns

A sanitary appliance that is a WC flushing cistern (sometimes referred to as a tank), delivering specified volume(s) of water, complete with flushing mechanism, inlet valve and flush-pipe and intended to be coupled with a suitable independent WC bowl (compliant with EN 997) that have been tested and complies with Type 1 or Type 2 flushing cisterns of EN 14055.

2.10 Replacement WC Flush Mechanisms

A replacement flushing mechanism that has been tested and complies with the relevant parts of Type 1 clause 5 or Type 2 Clause 6 of EN 997.

2.11 Urinals

Urinals are sanitary appliance comprising a bowl for receiving urine and a flushing device, e.g. a flushing cistern, delivering water used for flushing and directing both, urine and water, into a drainage system.

2.12 Urinal (bowls)

A sanitary appliance comprising a bowl for receiving urine and water used for flushing and directing both into a drainage system

2.13 Independent Urinal Flushing Cisterns

A urinal flushing cistern (sometimes referred to as a tank), delivering specified volume(s) of water, complete with flushing mechanism and inlet valve that have been tested and

complies with Type 3 of EN 14055 i.e. flush volumes less than 5 litres per flush

2.14 Urinal Controllers

A urinal controller device, in the form of either a pressure flushing valve kit or automatically operated flushing cistern, which have been tested to ensure compliance with National Regulations.

2.15 Bath Tubs

A sanitary appliance (including whirlpools, air and jetted variants) for the immersion and washing of the human body or parts of it.

2.16 Flow Regulators

A device which is fitted to or within sanitary tapware, often on the nozzle outlet to enable dynamic control of the delivered water flow rate. A distinction is made between:

- flow rate regulators without air intake, when operating without aeration of the water;
- flow rate regulators with air intake, when aeration of the water occurs;

2.17 Grey Water Recycling Units

Grey water recycling units are considered by their very nature of re-using water to be 'eco' products. The Scheme intends only to cover those products that are permanently installed into the fabric of the building and provide water for internal use e.g. WC flushing.

2.18 Flush Free Urinals

A urinal - complete with housing, trap and associated components designed to retrofit into existing urinals

3. PRINCIPLES AND SCHEME

3.1 This Scheme sets the principles which all signatories commit to follow while supplying products and accessories (as defined under point 3) on the EU, EFTA, EEA and bordering countries. The manufacturers and signatories of this Scheme recognise that:

- Water is an essential natural resource which must be preserved.
- Water 'efficient' using products can help mitigate water and energy consumption while maintaining safety and comfort
- Product criteria has been set to guarantee fair, simple information for the user.

3.2 The manufacturers and sellers of bathroom products, bathroom accessories and kitchen taps joining this Scheme commit to:

- Engaging with all aspects of the Scheme to save water and energy, thereby protecting the environment and aiding the reduction of costs for the end user
- Commit to registering all relevant products onto the Scheme
- Promote the Scheme by informing the users about the water consumption of these products, via visibility of the Label and supporting marketing material

- Further developing the voluntary, simple and common classification Scheme
- Invite all interested stakeholders trading in the market to join this Scheme
- Cooperate with the competent bodies and other interested parties to optimise information and promote the Scheme widely in all relevant countries.

The signatories of this Scheme are expected to meet the requirements of the Scheme

The signatories commit themselves to:

- Label all registered products via a combination of websites, online literature, product literature, instruction booklets, product and packaging for which the signatory has applied and been granted labelling authorisation.
- Fulfil and declare fulfilment of the National legal requirements where the product is marketed.
- Raise awareness about the water and energy efficiency of these products assisted by the Unified Water Label.
- Cooperate with the Unified Water Label operator for the annual auditing process and the monitoring report on the progress of implementation of the Scheme in accordance with points 21

- 3.3** This Scheme and label aim at simplicity and efficiency. It concentrates on the water and associated energy savings.

The use of products in the water distribution system should suitably be combined with water quality and hygiene requirements. Advice and assistance of a local professional installer should be sought to ensure that the complete water system conforms to applicable regulations and is installed for optimal performance in terms of comfort, water and energy efficiency.

4. COMMITMENTS – TECHNICAL CRITERIA AND SPECIFICATIONS

General

The Unified Water Label (UWL) lists the maximum flow or flush volume for registration into the scheme. Therefore, product performance tolerances can be no more than the stated performance.

Products submitted for approval will comply with all relevant National Regulatory requirements of the country of intended destination.

Devices used to measure distance, flow rate, volume and pressure shall have calibration records that are traceable to National Standards.

Measurement equipment must be calibrated to National Standards.

For purposes of testing cold water recommended temp (10-15 degrees Celsius) (Hot water +50 degrees +/-1)

5. SHOWERS GUIDE TO TESTING

5.1 General

Shower solutions shall be used to indicate the combination of a shower control (valve) complete with shower hose (flexible or rigid) and shower outlet (hand shower or fixed head).

5.2 Shower Solutions

Mixer Showers

Mixer Showers are complex products. Manufacturers follow differing philosophies concerning methods of controlling flow rates. Most commonly, these include specifying limitations on the supply pressures, or the incorporation of flow limiting devices which can be located either in the mixer shower itself – or in the shower hose/outlet or handset.

In all cases The Scheme tests are to determine the maximum available flow rate that can be delivered to the end user and functional testing to ensure that the end user can be satisfied by performance characteristics of the product.

The maximum available flow rate is the flow rate that can be delivered to the end user at a test reference pressure (see testing criteria) with all available outlets open and in the most 'free flowing' position. I.e. any other configuration of water flow settings will deliver a lower flow rate to the end user (with the exception of specific configurations – e.g. products with a water break.)

Shower Outlets

Shower outlets can also be complex products and as one of the most often updated products this scheme allows for the listing of these products in their own category. Products may be single spray or multi-mode products and indeed be suitable for a range of operating pressures with the inclusion or removal of flow regulators to help modify the performance of the product to satisfy the end user.

Additionally, products may also be intended to be of the fixed head type (most often connected by a rigid pipe conveying the water to the product or the hand shower type (most often connected by a flexible shower hose). In all cases The Scheme tests are to determine the maximum available flow rate that can be delivered to the end user and functional testing to ensure that the end user can be satisfied by performance characteristics of the product.

5.3 Mixer Showers

Scope and Objectives

All mixer showers that deliver water at a single showering position under pressures up to the maximum operating pressure specified by the original manufacturer - or in the case of no maximum being specified, at pressures up to and including 3.0 - 0/+0.2 bar.

Mixer Showers may consist of various configurations as supplied to the market and shall be tested accordingly: -

A mixing valve, tested with supplied hose (or rigid riser) and outlet(s);

A bath tub/shower mixer (shower outlet only): -

- tested with supplied hose (or rigid riser) and outlet(s).
- bath filling outlet not tested

5.3.1 General Requirements

Shower solutions and mixer showers must meet the three requirements:

- Maximum available flow rate
- Pressure independency (where applicable – products delivering ≤ 8.0 l/m)
- Spray coverage

If the showerhead has more than one mode, at least one of the modes, as specified by the manufacturer, must meet all the requirements outlined in this specification for pressure independency and spray coverage while the maximum available flow may require a different mode.

Where the shower Solution has the potential to be installed on both high and low pressure installations the product shall be provided with suitable instructions directing the installer on how to install correctly to achieve the rated flow.

If so desired, the manufacturer can choose to list the product for both high and low pressure setting on the scheme website

5.3.2 Test Apparatus

Use for all tests a test apparatus according EN 1111 and/or EN 1287 chapter 13.2 and Annex A3 which can deliver the pressures and tolerances given and the addition of the manufacturer supplied flexible hose/rigid riser and shower outlet.

5.3.3 Functional Tests

These tests are used to determine the performance characteristics of the shower solution. Ongoing technical discussions to improve this test will continue.

5.3.4 Flow rate testing

Procedure for shower controls

In the case of mixer showers not limited to low pressure applications only - the dedicated shower hose (or rigid riser) and dedicated shower outlet shall be attached and the range of test pressures applicable to the product shall be applied;

In the case of mixer showers designed for low pressure applications only, the dedicated shower hose(s)/outlet(s) specified by the manufacturer shall be attached and the maximum pressure specified by the manufacturer shall be applied;

In the case of Bath tub /Shower combination tap assemblies, only the flow rate to shower is measured;

In the case where multiple shower outlets can be open at the same time, the maximum flow rate shall be recorded as a combination of all available simultaneous flow rates.

Connect the mixing valve to the apparatus specified above:

Fully open the flow control.

For mixer showers that are not limited to low pressure applications only - apply a (3 -0/+ 0.2 bar) pressure to both the hot and the cold inlets,

In the case of mixer showers that are limited to low pressure applications only – apply a 0.2 -0/+0.02 bar pressure to both the hot and the cold inlets.

Position the shower outlet 100cm +5/-0cm above the shower control to mirror actual world scenario of 1 m head (.1bar) at the shower outlet. For products designed for low pressure applications only, testing at 0.1 bar at the shower outlet already confirms the performance at the worst case scenario.

In the case of mixer showers that are designed to be used at high and low pressure applications, the product should at the least be rated at the pressure setting for which the product is set when it leaves the factory i.e. the as delivered state. Alternatively, the product can be rated for both high and low pressure (type 1 and type 2) and be listed twice.

Adjust the mixed water temperature to 38 ± 1 °C.

Under steady and constant flow conditions measure and record the mixed water flow rate.

Where products record a maximum available flow rate value at 3 -0/+0.2 bar that would place the product listing in one of the two most efficient flow bands i.e. 8 l/min or less, the flow rate needs to be additionally verified at 1.5 -0/+ 0.2 bar and for type 1 (high pressure) applications

System	Pressure
Type 1	(0,15 + 0,02) MPa [(1,5 + 0,2) bar]*
	(0,3 + 0,02) MPa [(3,0 + 0,2) bar]
Type 2	(0,02 + 0,002) MPa [(0.2 + 0.02) bar] ^a

Table 1: Flow rate pressures

*Refer to pressure independency test only

Pressure supplied to the shower control – pressure at the outlet will be 0.1 bar

5.3.5 Requirements – maximum available flow rate

The flow rate shall be recorded at the standard reference pressure 3 -0/+ 0.2 bar (or 0.1 -0/+0.02 as appropriate). This is the flow rate that shall be listed on the labelling scheme.

Where the flow rate at the reference pressure 3 -0/+ 0.2 bar is ≤ 8.0 l/min
The flow rate at the lower pressure 1.5 -0/+ 0.2 bar shall be ≥ 60 % of the maximum available flow rate;

5.3.6 Scheme Rating Value

Products will be rated as per the table below according to their maximum recorded flow rate recorded to 1 decimal place.

Flow Rate (Litres per Minute)
≤6.0 L/min
≤8.0 L/min
≤10.0 L/min
≤13.0 L/min
>13.0 L/min

Table 2 Banding Shower Solution, Mixer Showers

5.3.7 Use of Flow Regulators

Where products are supplied with one or more flow regulator 'in the box' then the product can be tested and listed as a low-pressure product with testing conducted at the appropriate declared maximum working pressure (or 0.1 bar); or the product is tested and listed as if the flow regulators were fitted to the product.

Where this is the case suitable instructions in the installation guide must be included to ensure that the configuration that is listed on the scheme is adequately described to enable the declared flow rate to be achieved

Testing with a dedicated shower hose and dedicated shower outlet means that in the event of a shower hose or shower outlet having to be replaced, the components must be replaced on a like for like basis. Failure to do so may create a safety hazard and the requirements of the scheme may no longer be satisfied - and listing invalidated. This must be made clear within the installation and maintenance instructions.

5.3.8 Pressure independency

Requirements

For type 1 products rated at 3.0 bar delivering 8.0 l/min or less, the lowest flow rate shall not be less than 60 % of the maximum flow rate.

Further discussions will take place during a 2 year transition on pressure independency to verify the metrics.

Spray Coverage

Test – Apparatus

Additionally, to the test apparatus described above, use the annular ring test setup shown in Figure 1 and Figure 2 on Pages 43-44

Note: - The mode used for this test may be selected by the manufacturer and may be different to that used to determine the maximum available flow rate but must be the same as that used to determine the spray coverage.

Test Procedure

Mount the showerhead so the faceplate is horizontal and parallel with the top surface of the annular rings.

Position the annular rings underneath the showerhead so the centre line of the faceplate and the centre ring are in vertical alignment and the top of the annular gauge is $(457 \pm 6\text{mm})$ from the faceplate (see Figure 2).

Initiate the flow of water with a pressure suitable for the rating of the product i.e. $3,0 \pm 0,2$ bar for type 1 products and 0.1 ± 0.02 bar for type 2 products

Allow the water to flow through the showerhead and into the annular rings for (60 ± 10) s, if one of the rings is completely filled prior to the end of the time period then stop the flow.

Collect, measure, and record the volume of water in each annular ring.

Determine the total volume collected in all rings.

Calculate and record the percentage of the total recorded volume collected in each ring.

Requirements

The total combined maximum volume of water collected in the 2 inner annular rings shall not exceed 75 % of the total volume of water collected, and;

The total combined minimum volume of water collected in the 3 inner annular rings shall not be less than 25 % of the total volume of water collected.

5.4 Shower Outlets

5.4.1 Scope and Objective

This specification establishes the criteria for showerheads labelled under the Unified Water Label Scheme.

5.4.2 General Requirements

Showerheads have three additional functional test requirements: -

- Maximum available flow rate
- Pressure independency (where applicable – products delivering ≤ 8.0 l/m)
- Spray coverage

If the showerhead has more than one mode, at least one of the modes, as specified by the manufacturer, must meet all the requirements outlined in this specification for pressure independency and spray coverage while the maximum available flow may require a different mode.

Where the shower Solution has the potential to be installed on high and low pressure installations, the product shall be provided with suitable instructions directing the installer on how to install correctly to achieve the rated flow.

If so desired, the manufacturer can choose to list the product for both high and low pressure setting on the scheme website

5.4.3 Test apparatus

Use for all tests a test apparatus according EN 1112 chapter 11.2, which can deliver the pressures and tolerances given in Table 3 below.

5.4.4 Functional tests

System	Pressure
Type 1	*(0,15 + 0,02) MPa [(1,5 + 0,2) bar]
	(0,3 + 0,02) MPa [(3,0 + 0,2) bar]
Type 2	(0,01 + 0,002) MPa [(0.1 + 0.02) bar]

*refer to pressure independency

Table 3: Flow rate pressures

Flow rate testing

These tests are used to determine the performance characteristics of the showerhead.

Procedure

Connect the shower outlet to the apparatus specified above:

Perform flow rate test according EN 1112 chapter 11.2 at the given pressures in Table 2 below, record the flow rates:

If the showerhead has more than one mode, the mode with the highest flow rate is used to determine the flow rate.

Requirements – maximum available flow rate

The flow rate shall be recorded at the standard reference pressure 3 -0/+ 0.2 bar (or 0.1 -0/+0.02 as appropriate). This is the flow rate that shall be listed on the labelling scheme.

Scheme Rating Value

Products will be rated as per the table below according to their maximum recorded flow rate recorded to 1 decimal place.

Flow Rate (Litres per Minutes)
≤6.0 L/min
≤8.0 L/min
≤10.0 L/min
≤13.0 L/min
>13.0 L/min

Table 4: Banding - Shower Outlets

5.4.5 Use of Flow Regulators

Where products are supplied with one or more flow regulator 'in the box' then the product can be tested and listed as a low pressure product with testing conducted at the appropriate declared maximum working pressure (or 0.1 bar); or the product is tested and listed as if the flow regulators were fitted to the product.

Where this is the case suitable instructions in the installation guide must be included to ensure that the configuration that is listed on the scheme is adequately described to enable the declared flow rate to be achieved.

5.4.6 Pressure independency

Requirements

The lowest flow rate shall not be less than 60 % of the maximum flow rate.
Where the flow rate at the reference pressure 3 -0/+ 0.2 bar is ≤ 8.0 l/min
the flow rate at the lower pressure 1.5 -0/+ 0.2 bar shall be ≥ 60 % of the maximum available flow rate.

5.4.7 Spray Coverage Test – Apparatus

Additionally, to the test apparatus described above, use the annular ring test setup shown in Figure 1 and Figure 2 on Pages 43-44.

Test Procedure

Mount the showerhead so the faceplate is horizontal and parallel with the top surface of the annular rings.

Position the annular rings underneath the showerhead so the centre line of the faceplate and the centre ring are in vertical alignment and the top of the annular gauge is $(457 \pm 6\text{mm})$ from the faceplate (see Figure 2).

Initiate the flow of water with a pressure suitable for the rating of the product i.e. 3,0 + 0,2 bar for type 1 products and 0.1 + 0.02 bar.

Allow the water to flow through the showerhead and into the annular rings for (60 +10) secs, if one of the rings is completely filled prior to the end of the time period then stop the flow.

Collect, measure, and record the volume of water in each annular ring.

Determine the total volume collected in all rings.

Calculate and record the percentage of the total volume collected in each ring.

Evaluate and verify that the spray coverage meets the requirements.

Requirements

The total combined maximum volume of water collected in the 2 inner annular rings shall not exceed 75 % of the total volume of water collected, and;

The total combined minimum volume of water collected in the 3 inner annular rings shall not be less than 25 % of the total volume of water collected.

5.5 Electric Showers

5.5.1 General

Electric Showers which are only prevalent in some markets all work essentially on the same principles of the design across all manufacturers. For the purposes of this Scheme all electric shower controls will comprise of a shower handset, flexible hose and shower (heating) unit.

5.5.2 Scope and Objective

Electric showers deliver hot water at a flow rate as a function of their design primarily based upon the energy rating of the heating element contained within the shower (heating) unit. The flow rate is further affected by incoming water temperature and the desired set temperature of the outlet water. The relationship of all these factors is identical for all designs of electric showers. Physical testing is therefore not needed to validate the flow rates of these products. A mathematical calculation will therefore be employed for validation of flow rates for all electric showers as part of this Scheme.

5.5.3 Formula for flow rate calculation: -

$$\text{Flow rate l/m} = ((60 * (((\text{Operating Voltage} / (240 / (\text{Nominal kW rating} / 240)) * \text{Operating Voltage})) / 4.18 * (\text{outlet temperature} - \text{inlet temperature}))))))$$

For further calculations please visit the following link:

<http://www.europeanwaterlabel.eu/energycalculation.asp>

Further discussions will be required to align this calculation with that of the Swedish Energy

To further 'commonise' the parameters used for the calculation the inlet temperature and outlet temperature values are selected to be mid-values that essentially cover seasonal variation between winter and summer operation of these products.

For the purposes of this Scheme, the following seasonally adjusted values shall be:

-

- Outlet set temperature 42°C;
- Inlet supply temperature 15°C;
- In all cases the operating voltage shall be 240 volts.

The calculation method validates all existing known electric shower products as 'eco' or 'low flow' i.e. less than 6 litres per minute.

E.g. 7.0 kW nominal rating at 240V will calculate to 3.72 l/m

8.0 kW nominal rating at 240V will calculate to 4.25 l/m

9.0 kW nominal rating at 240V will calculate to 4.78 l/m

5.5.4 Use of Efficient Label

Products complying with these requirements will be able to use the 'recommended' water label:



6. TAPS

6.1 General

Taps are available in many configurations from pillar taps which are designed to deliver either a hot or cold supply only to mechanical and thermostatic products that are designed to deliver a blend of hot and cold water through the same outlet or divided flow type outlet. Taps can be manually opening and closing or self-closing via mechanical or electronic means. They can be typically installed to deliver water to washbasins, bidets or kitchen sinks.

This scheme does not cover rating of taps or outlets that are designed only to deliver e.g. filtered, purified or 'boiling' water etc. for the specific use of making drinks. Also note that these products may also have legislation covering the efficiency of the energy use of these products.

Automatic valves which allow water to be drawn off for use may be of a type that is:

- Manually opened, but which closes automatically giving a set period of flow. The period of flow may be adjustable at the time of installation.
- Electronically opened and closed valves actuated by a system that detects the presence of a user. Such systems may be of touch or touch less (hands free) operation. The period of flow may be pre-set at the time of installation, or constant,

whilst user presence is detected.

In the case of combination tap assemblies, each side of the fitting shall be fully open and the maximum available flow from the outlet shall be measured.

Note: In the case of taps (all types) and combination tap assemblies supplied with interchangeable outlets:

Compliance with the Scheme's requirements is based upon the 'as approved' specification. The manufacturer shall clarify in installation instructions whether the Scheme's criteria is invalidated if an alternative outlet is fitted e.g. Scheme compliant as approved - with aerator fitted, but approval invalidated if a flow regulated aerator is fitted or removed.

This Scheme does not cover taps intended to be used to fill bath tubs.

Taps have two functional test requirements: -

- Maximum available flow rate
- Pressure independency

Where Taps have the potential to be installed on high and low pressure installations the product shall be provided with suitable instructions directing the user to an alternative water-use setting where this is appropriate to do so e.g. the removal or fitting of suitable flow rate regulators. Any instruction related to the maintenance of the product, including cleaning of components, shall direct the user on how to return the product to its intended flow rate.

If so desired, the manufacturer can choose to list the product for both high and low pressure setting on the scheme website

6.2 Test Apparatus

A suitable supply system capable of delivering cold water at a dynamic pressure of 3 - 0/+0.2 bar for the duration of the test.

Suitable apparatus is described in clause 10.2.2 of EN 200 – with the exceptions that pressure gauges may be substituted for manometers and the cold water supply system shall be capable of delivering the pressure specified above for the duration of the test.

Functional Tests

Flow Rate Test

Procedure

The procedure described in clause 10.2.3 of EN 200: shall be followed, with the exceptions that:

- For taps that are not limited to low pressure applications only - apply a
- 3 -0/+ 0.2 bar pressure to both the hot and the cold inlets, alternatively;
- In the case of taps that are limited to low pressure applications only – apply a 0.4 -0/+0.02 bar pressure to both the hot and the cold inlets.
Fully open the flow control

The pressure shall be applied gradually.

Note: For combination taps with divided outlet (mains fed on cold inlet) it is essential that such taps are connected to mains water supply capable of maintaining a minimum flow pressure of 0.4 bar through the cold side.

The flow rate under stable and continuous flow conditions shall be recorded.

In the two lowest efficiency bands it will be necessary to repeat the testing at 1.5 bar of supply pressures for the appropriate product type – see table 6.

Requirement

The flow rate shall be recorded at the standard reference pressure 3 -0/+ 0.2 bar (or 0.1 -0/+0.02 as appropriate). This is the flow rate that shall be listed on the labelling scheme.

System	Pressure
Type 1	*(0,15 + 0,02) MPa [(1,5 + 0,2) bar]
	(0,3 + 0,02) MPa [(3,0 + 0,2) bar]
Type 2	(0,01 + 0,002) MPa [(0.1 + 0.02) bar]

*refer to pressure independency

Table 6: Flow rate pressures

Scheme Rating Value

The flow rate shall be recorded as a 'flow to sink', 'flow to basin' or 'flow to bidet' expression i.e. for combination tap assemblies the maximum flow rate available and for pillar taps the maximum flow rate available as a calculation of the combined flow from both the cold and hot taps.

Products will be rated as per the table below according to their maximum recorded flow rate recorded to 1 decimal place.

Average flow rating
≤6.0 L/min
≤8.0 L/min
≤10.0 L/min
≤13.0 L/min
>13.0 L/min

Table 7: Banding - flow rate Taps

6.4 Use of Flow Regulators

Where products are supplied with flow regulators 'in the box' then the product can be tested and listed as a low-pressure product with testing conducted at the appropriate declared maximum working pressure; or the product is tested and listed as if the flow regulators were fitted.

Where this is the case suitable instructions in the installation guide must be included to ensure that the configuration that is listed on the scheme is adequately described to enable the declared flow rate to be achieved

6.5 Pressure independency

Requirement

The lowest flow rate shall not be less than 60 % of the maximum flow rate

7. WATER CLOSETS (WCs) GUIDE TO TESTING

7.1 General

Products Covered in this section:

WC Suites

Independent WC bowls

Independent WC Flushing Cisterns

Replacement WC Flush Mechanisms

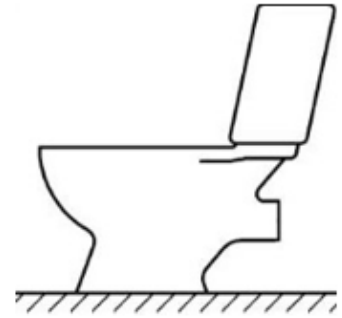
7.2 WC Suites - Principles for compliance

EN 997, when flushed with the volume(s) claimed by the manufacturer – shall be verified - based either upon:

by an average of 4 flushes for single flush WCs or

by an average of 3 short flushes to 1 full flush for dual flush WCs and interruptible WCs.

WCs complying with the requirements of Type 1 (clause 6.3) or Type 2 (clause 6).



It follows that testing under the Scheme is limited to verifying only, that the flush volumes claimed by the applicant comply with the requirements of the scheme. Note that manufacturers should retain details for principal components and critical dimensions necessary for compliance to the appropriate standard.e.g. installation dimensions etc.

7.2.1 Apparatus and Procedure

The apparatus described in clause 5 for Type 1 products and for Type 2 clause 6 of EN 997 shall be used.

Procedure

The procedures described in clause 5 for Type 1 and clause 6 for Type 2 of EN 997 as applicable shall be followed, with the exception that the water trap seal depth need not be measured and with the exception that the total number of full flushes for single flush products shall be 4.

The volume of water collected in the measuring vessel after each flushing operation shall be recorded.

Requirements

The measured volume shall meet the requirements of EN 997.

Scheme Rating Value

Average Flush Volume (Litres)
≤ 3.5 litres
≤ 4.5 litres
≤ 5.5 litres
≤ 6.0 litres
> 6.0 litres

Table 8: Rating of Water Closets e.g. WC Suites

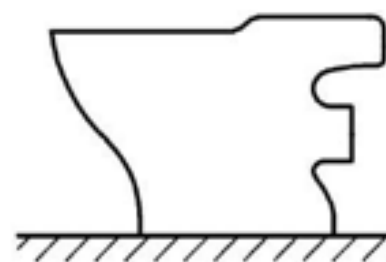
The calculated average of the 4 flushes in case of single flush or for dual flush based on the average of 1 full flush and 3 reduced flushes shall be rated as per the table below and recorded in Unified Water Label.

7.3 Independent WC Bowls

7.3.1 Principles for compliance

Independent WC bowls complying with the requirements of Type 1 (clause 5) of EN 997, shall be designed for use with and tested using a nominal flush volume of either 4, 5, 6, 7 or 9 litres and when flushed with the volume claimed by the manufacturer – shall be verified based upon either

by an average of 4 flushes for single flush WCs or
by an average of 3 short flushes to 1 full flush for dual flush WCs and interruptible WCs.



Independent WC bowls complying with the requirements of Type 2 (clause 6) of EN 997, that deliver flush volumes which enable Type 2 WC suites (a ratified combination of Independent WC flush cistern and matched WC bowls tested and verified as a suite), when flushed with the volume claimed by the manufacturer – shall be verified based upon either

by an average of 4 flushes for single flush WCs or
by an average of 3 short flushes to 1 full flush.

It follows that testing under the scheme is limited to verifying only, that the flush volumes claimed by the applicant comply with the requirements of the scheme. The product, when verified (flush volume tested in accordance with the details in EN 997 for the relevant (Sub-)type shall comply with the supplied Unified Water Label Declaration of Conformity from the Manufacturer that accompanied the original product applications to the Unified Water Label Scheme.

Applicants shall hold on file copies of test reports verifying compliance with the relevant aspects of EN 997 and Unified Water Label flush volume verification test. Such test reports shall detail the principal components that form the suite and critical dimensions necessary for compliance with the EN 997 e.g. critical installation dimensions for performance. During the audit process it may be necessary to provide copies of these test reports. Details should also be held that validate the suitability of the WC bowls to be used with a known WC cistern flush volume.

It follows that testing under the Scheme is limited to verifying only that the flush volume claimed by the manufacturer comply with the requirements of the Independent WC bowls complying with the requirements of Type 1 (clause 5) of EN 997, shall be designed for use with and tested using a flush volume of either 4, 5, 6, 7 or 9 litres and when flushed with the volume claimed – shall be verified by the average of 4 flushes.

7.3.1 Apparatus and Procedure

The apparatus described in clause 5 for Type 1 products and for Type 2 clause 6 of EN 997 shall be used.

Procedure

The procedures described in clauses 5 of EN 997 as applicable shall be followed, with the exception that the water trap seal depth need not be measured.

The volume measured after each flushing operation shall be recorded.

Requirements

The measured volume shall meet the requirements of EN 997.

Scheme Rating Value

Manufacturers often validate the WC bowls to be used with a number of differing flush volumes. The manufacturer/listing company shall provide to the scheme, on application, the generic WC bowl volumes that any given independent WC flushing cistern can be used with. This will be noted in each listing. Manufacturers will also be required to note this information in their product manual and also to indicate that should a larger flush volume cistern be used then the average flush volume will also increase over that detailed on the product and held by the Scheme.

The calculated average of the 4 flushes in case of single flush or for dual flush based on the average of 1 full- flush and 3 reduced flushes shall be rated as per the table below and recorded in the database of Unified Water Label.

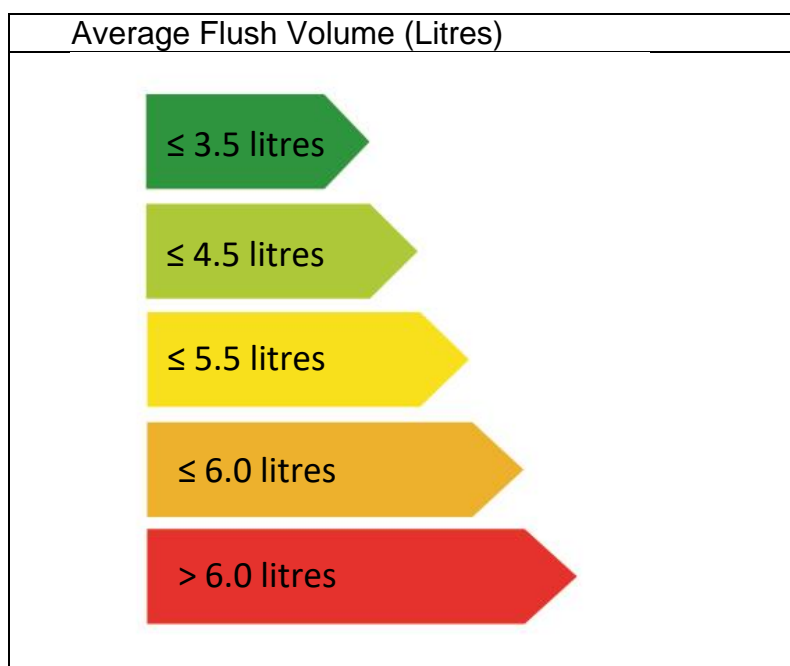


Table 9 - Banding of Water Closets e.g. independent WC Bowls

7.4 Independent WC Flushing Cisterns

7.4.1 Principles for compliance

Independent WC flushing cisterns complying with the requirements of Type 1 (clause 5) of EN 14055, shall be designed for use with and tested using a nominal flush volume of either 4, 5, 6, 7 or 9 litres and when flushed with the volume claimed by the manufacturer – shall be verified based upon either

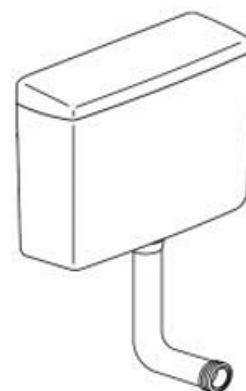
by an average of 4 flushes for single flush WC flushing cisterns or
by an average of 3 short flushes to 1 full flush for dual flush WC flushing cisterns and interruptible WC flushing cisterns.

Independent WC flushing cisterns complying with the requirements of Type 2 (clause 6) of EN 14055, that deliver flush volumes which enable Type 2 WC suites (a ratified combination of Independent WC flush cistern and matched WC bowl tested and verified as a suite), when flushed with the volume claimed by the manufacturer – shall be verified based upon either

by an average of 4 flushes for single flush WC flushing cisterns or
by an average of 3 short flushes to 1 full flush.

It follows that testing under the Scheme is limited to verifying only, that the flush volumes claimed by the applicant comply with the requirements of the scheme.

The product, when verified (flush volume tested in accordance with the details in EN 14055 for the relevant Type) shall comply with the supplied Unified Water Label Declaration of Conformity supplied by the Manufacturer that accompanied the original product applications to the Unified Water Label Scheme.



Applicants shall hold on file copies of test reports verifying compliance with the relevant aspects of EN 14055 and Unified Water Label flush volume verification test. Such test reports shall detail the principal components that form the cistern and critical dimensions necessary for compliance to the appropriate standard EN 14055 e.g. critical installation dimensions for performance. During the audit process it may be necessary to provide copies of these test reports as reference. Details should also be held that validate the suitability of the WC flushing cisterns to be used with a known WC bowls flush volume

It follows that testing under the Scheme is limited to verifying only that the flush volume claimed by the manufacturer comply with the requirements of the Independent WC flushing cisterns complying with the requirements of Type 1 (clause 5) of EN 14055, shall be designed for use with and tested using a flush volume of either 4, 5, 6, 7 or 9 litres and when flushed with the volume claimed – shall be verified by the average of 4 flushes.

7.4.2 Apparatus and Procedure

The apparatus described in clause 5 for Type 1 products and for Type 2 clause 6 of EN 14055 shall be used.

Procedure

The procedures described in clause 5 for Type 1 products and clause 6 for Type 2 of EN 14055 as applicable shall be followed, with the exception that the total number of full flushes for single flush products shall be 4 flushes

The volume of water collected in the measuring vessel after each flushing operation shall be recorded.

Requirements

The measured volume shall meet the requirements of EN 14055.

Scheme Rating Value

Manufacturers often validate the WC flushing cisterns to be used with a number of differing flush volumes. The manufacturer/listing company shall provide to the scheme, on application, the generic WC cistern flush volumes that any given independent WC bowls can be used with. This will be noted in each listing. Manufacturers will also be required to note this information in their product manual and also to indicate that should a larger flush volume cistern be used then the average flush volume will also increase over that detailed on the product and held by the Scheme

The calculated average of the 4 flushes in case of single flush or for dual flush based on the average of 1 full - flush and 3 reduced flushes shall be rated as per the table below and recorded in the database of Unified Water Label.

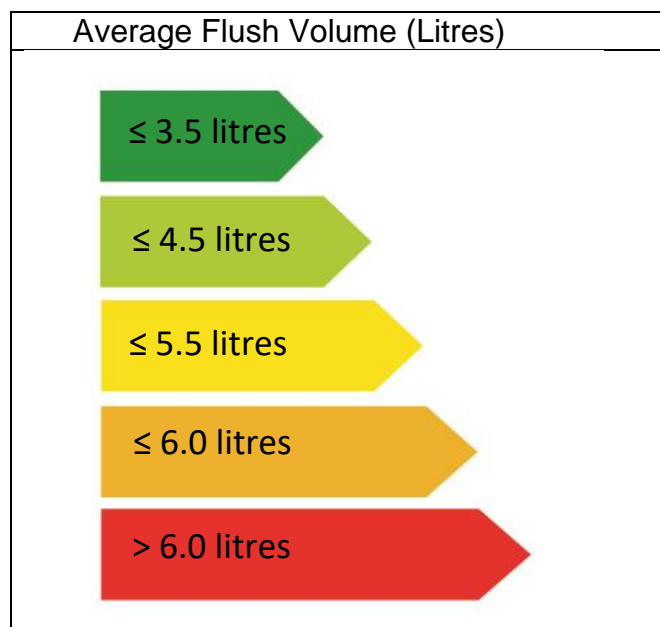


Table 10: Banding for independent WC Flushing cisterns

7.5 Replacement WC Flush Mechanisms

A replacement flushing mechanism that has been tested and complies with the relevant parts of Type 1 clause 5 or Type 2 Clause 6 of EN 997.

7.5.1 General

Replacement WC flushing devices are fitted to existing cisterns or WC suites as replacement items when repairs or maintenance may be required. Often, they are also replaced as part of water efficiency measures. However, the flush volume function is largely a factor of cistern size and must be matched for performance to the performance of the pan and as such replacement flush mechanisms may not deliver water savings.

Two types of replacement WC flushing devices are considered suitable to meet the requirement and qualification for inclusion on the Unified Water Label:

Dual Flush Syphons

Drop type flush valves to deliver water savings replacement flush mechanisms must therefore be of dual flush design.

7.5.2 Requirement

To ensure durability and effectiveness of the flush the replacement device must comply with the appropriate requirements of the Regulator's specification for WC suites (for UK) and any other legal National Requirements of the country of destination.

For devices designed to replace the existing cistern device

The device must meet the requirements of:

Specification of the water level(s) and the ability to match the original equipment full flush rate to maintain flush efficacy.

The flush mechanism shall be dual flush in operation with the part flush volume being no greater than $\frac{2}{3}$ the full flush volume for any given installation.

Physical endurance and leakage

Chemical endurance.

Suitable instructions explaining how to operate both full and part flush operations shall be provided for the customer/end user.

7.5.3 Use of Efficient Label

Products complying with these requirements will be able to use the 'water label' blue icon



8. URINALS

8.1 Products Covered in this section:

Urinal (bowls)
Independent Urinal Flushing Cisterns
Urinal Controllers

8.2 Urinal (bowls) Principles for compliance

A sanitary appliance that is a urinal that has been tested and complies with Type 1 (clause 6) of EN 13407 or Type 2 (clause 7) of EN 13407.

Urinals complying with the requirements of Type 1 (clause 6) of EN 13407 or Type 2 (clause 7) of EN 13407, shall be designed for use with and tested using a flushing volume and/or flow rate specified by the manufacturer. The flushing volume shall be verified by the average of 4 flushes.

It follows that testing under the Scheme is limited to verifying only, that the flush volumes claimed by the applicant comply with the requirements of the scheme.

The product, when verified (flush volume tested in accordance with the details in EN 13407 for the relevant Type or Subtype) shall comply with the supplied Unified Water Label Declaration of Conformity supplied by the Manufacturer that accompanied the original product applications to the Unified Water Label Scheme.

Applicants shall hold on file copies of test reports verifying compliance with the relevant aspects of EN 13407 and Unified Water Label flush volume verification test. Such test reports shall detail the principal components that form the suite and critical dimensions necessary for compliance with the EN 13407 e.g. flush rate / flushing device for suitability of the urinal to be used with a flushing devices and critical installation dimensions for performance.

8.2.1 Apparatus and Procedure

The apparatus described in clauses 6 and 7 and Annex A, B or Annex C of EN 13407 shall be used.

Procedure

The procedures described in clause 6 of EN 13407 for type 1 or in clause 7 of EN 13407 for type 2 as applicable shall be followed with the exception that the water trap seal depth need not be measured.

The volume measured after each flushing operation shall be recorded.

Requirements

The measured volume shall meet the requirements of EN 13407.

Scheme Rating Value

The calculated average of the 4 flushes shall be rated as per the table below and recorded in the database of the Unified Water Label.

Average Flush Volume (Litres)
≤ 1.0 litres
≤ 2.0 litres
≤ 3.0 litres
≤ 4.0 litres
>4.0 litres

Table 11 – Banding for Urinal Bowls

8.3 Independent Urinal Flushing Cisterns

8.3.1 Principles for compliance

Independent urinal flushing cisterns complying with the requirements of Type 3 (clause 7) of EN 14055 when flushed with the volume(s) claimed – shall be verified by the average of 4 flushes.

For claimed volumes the manufacturer shall provide the customer with an instruction manual showing adjustments of the flush rate and the flush volume in accordance with the requirements of a particular urinal in the following ranges measured in accordance with EN 13407.

It follows that testing under the Scheme is limited to verifying only, that the flush volumes claimed by the applicant comply with the requirements of the scheme.

The product, when verified (flush volume tested in accordance with the details in EN 14055 for Type 3 products) shall comply with the supplied Unified Water Label Declaration of Conformity supplied by the Manufacturer that accompanied the original product applications to the Unified Water Label Scheme.

Applicants shall hold on file copies of test reports verifying compliance with the relevant aspects of EN 14055 and Unified Water Label flush volume verification test. Such test reports shall detail the principal components that form any critical dimensions necessary for compliance with the EN 14055 e.g. critical installation dimensions for performance.

8.3.2 Apparatus and Procedure

The apparatus described in clause 5 for Type 3 products of EN 14055 shall be used.

Procedure

The procedures described in clause 5 for Type 3 products of EN 14055 as applicable shall be followed, with the exception that the total number of flushes shall be 4.

The volume measured after each flushing operation shall be recorded.

Requirements

The measured volume shall meet the requirements of EN 14055.

The measured volume shall not exceed the claimed nominal value of any quoted flush volume.

Scheme Rating Value

The calculated average of the 4 flushes shall be rated as per the table below and recorded in the database of Unified Water Label.

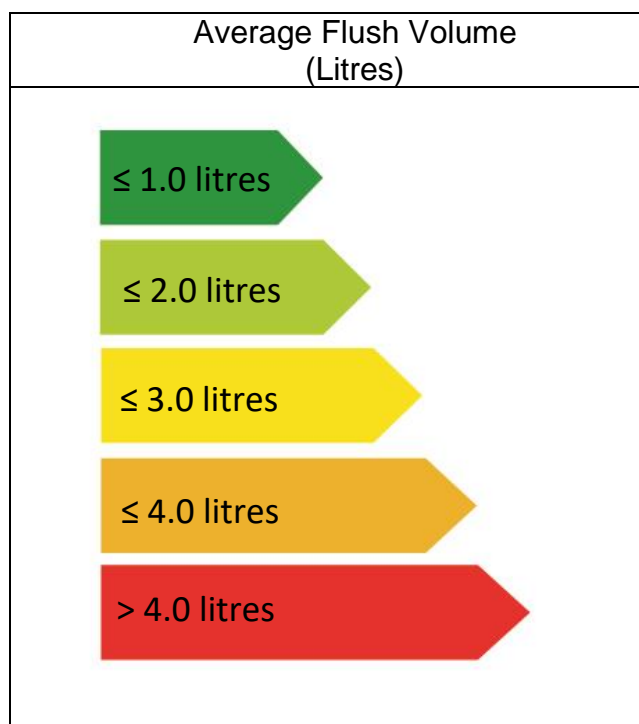


Table 12: Banding for Independent Urinal Flushing Cisterns

8.4 Urinal Controllers

8.4.1 Principles for compliance

All pressure flushing valves shall deliver a maximum flush volume of 1.50 litres per flush per bowl.

All automatically operated flushing cisterns serving urinals shall be filled with water at a rate of 10 litres/hour per urinal bowl for a cistern serving a single urinal bowl or 7.50 litres/hour per urinal bowl or position or as the case might be each 700mm width of urinal slab for a cistern serving 2 or more urinals.

Urinal controllers are available in a number of forms from controllers designed to operate a flush to a single urinal bowl, to a controller that controls the flow of water into a cistern, which flushes multiple urinal bowls, or a stall designed for multiple persons.

Testing under the Scheme is limited to verifying only, that the flow rate(s) and requirement

8.4.2 Procedure and Requirement

There are two types of permitted urinal controllers:

A pressure flushing valve kit with no extra parts needed, supplied to meet requirements. Directly connected to a supply or distributing pipe which is designed to flush the urinal either manually or automatically, provided that the flushing arrangement incorporates a DC pipe interrupter backflow prevention arrangement or device appropriate to fluid category 5. Installation should be checked to ensure compliance with requirements. For these products, the maximum flush volume per bowl or position each time the valve is used is 1.50 litres per flush. If manually operated solenoid or equivalent pressure flushing valves are used, the valve must be of the normally closed type or latching (bi-stable).

An automatically operated flushing cistern serving urinals, which shall be filled with water at a rate of:

10 litres/hour per urinal bowl for a cistern serving a single urinal bowl

or

7.50 litres/hour per urinal bowl or position

or,

as the case might be, for each 700mm width of urinal slab for a cistern serving two or more urinals;

or

If sensors are used to control the flush, then they shall not be falsely triggered, and they should prevent flushing during long periods of non-use (with the exception of a hygienic flush). Hygiene flush periods should be factory set to occur no more frequently than 12 hours or set to default 'off'.

Any sensor should ensure that the urinal is only flushed after use, excluding hygiene flush.

In each case the controller must be designed so that on installation it can be adjusted to deliver water flush cycles that comply with the Water Supply (Water Fittings) Regulations 1999 i.e. less than 1.50 litres per urinal bowl or position each time the device is operated.

As this is typically an installation requirement then this aspect must be verifiable on physical audit of the product and must be suitably documented in the product documentation to ensure that operatives can install and adjust the product to give suitable performance.

8.4.3 Use of Efficient Label

Products complying with these requirements will be able to use the 'blue icon' water label



9. BATH TUBS

9.1 Procedure

Use any suitable means e.g. weighing/volume measurement, to establish the volume of water contained when the bath tub is filled to a point at which water first flows through the overflow fitment.

Bath tub without provision of an overflow fitment shall be filled to a level 86 mm below their spill over level.

Note: 86 mm is intended to replicate the invert of an overflow fitment should one have been installed at the maximum height permitted by EN 232 i.e. dimension H1 \geq 60 mm.

By calculation, establish and record the volume.

9.2 Requirement

The volume shall be recorded.

9.3 Scheme Rating Value

Product will be further sub-divided into the following bands allowing for the fixing of the Scheme Label to the product. A grey arrow on the efficiency rating chart allows for the optional quotation of actual capacity to enable consumers to identify where in the band a particular product sits. If this is used, then value quoted must be rounded to the nearest whole number.

Using calculations detailed in EN 806-5: 2012 the effective capacity (i.e. the water required, allowing for displacement of a person, to take a satisfactory bath tub) of a bath tub is 40% of the measured volume. While this is not often understood it is a useful messaging tool to aid consumers in the selection of the correct product.











Actual Capacity (Litres L)	Effective Capacity (40% of Actual) (Litres L)
 ≤ 155 L	 ≤ 62 L
 ≤ 170 L	 ≤ 68 L
 ≤ 185 L	 ≤ 74 L
 ≤ 200 L	 ≤ 80 L
 > 200 L	 > 80 L

Table 13: Banding for Baths, actual and effective capacity

10. MISCELLANEOUS

10.1 General

This section has been set to allow emerging products and technologies to be introduced on a trial basis thus giving recognition of the type of product and for the ability to positively impact reduced waste of water.

10.2 Supply Line Flow Regulators (In a product body)

A flow regulating device fitted as recommended in the supplied manufacturer's instructions, in either the outlet or inlet of the product or system, designed to produce a maximum flow of water independent from the supply pressure and limits the stated flow rate to those claimed below at 3 - 0/+0.05 bar pressure.

Flow regulators can either be stand-alone flow regulators or combined tapware components, such as flow regulated aerators or flow regulating check valves

Listing on the Unified Water Label will require verification of the claimed flow rate on

the following basis:

Flow rate @ 3 - 0/+0.05 bar = Claimed maximum flow rate +0/-20%

Examples

6 litres per minute claimed flow rate = 6 +0 -1.2 (4.8 to 6) litres per minute

8 litres per minute claimed flow rate = 8 +0 -1.6 (6.4 to 8) litres per minute

10 litres per minute claimed flow rate = 10 +0 -2.0 (8.0 to 10) litres per minute

10.2.1 Verification of listed product

Claimed flow rate with +0/-20% tolerance to be tested @1.5 and 3.0 bar pressures.

N.B. It is strongly recommended that when fitting a flow regulator to a terminal fitting or any part of a system that supplies water to a flow regulator, it must be compatible with such a system, any fitting within the system or any equipment. In other word the addition of the flow regulator does not affect the safety or performance of the equipment or fitting for the purpose for which it was originally intended.

10.3 Spray Flow Regulator for outlet fittings – Refurbishment

The market often has difficulty telling the difference between spray flow regulators and supply line flow regulators and as such the Unified Water Label identifies then as – supply line (in the body of the product) and spray flow regulator (sold separately).

Spray flow regulators with fixed water volume are measured at the manufacturer's setting (basic setting) and adjustable water volume that be adjusted manually by the user (e.g. by pressing a button) the flow rate is measure at the basic setting – this is the setting that the flow regulator automatically defaults to when the tap/shower is opened.

Pressure is set at 3 bar and water temperature is taken at 15 C +/- 5 C (cold water), with time of measurement 10 to 25 seconds after opening.

Relevant grading is depicted in Figure 14.

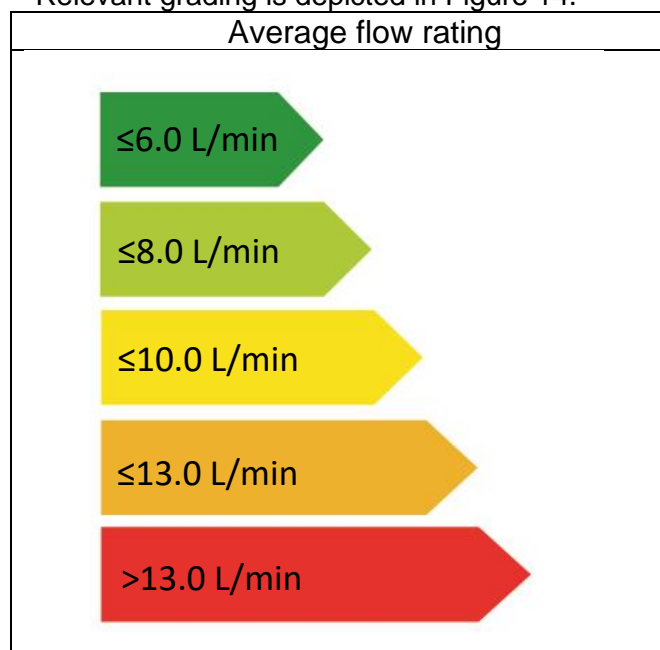


Figure 14 – Banding for Flow Regulators

10.4 Grey Water Recycling Units

10.4.1 General

Grey Water Units are considered by their very nature of re-using water to be 'eco' products. The outlet itself can be 'fixed' or 'flexible' with either single or multi-mode spray patterns.

This Scheme only covers those products that are permanently installed into the fabric of the building and provide water for internal use e.g. WC flushing.

10.4.2 Requirements

It follows, that testing under the Scheme is limited to verifying only the capacities.

Grey water recycling units are considered by their very nature of re-using water to be 'eco' products. The Scheme intends only to cover those products that are permanently installed into the fabric of the building and provide water for internal use e.g. WC flushing.

It follows, that testing under the Scheme is limited to verifying only the capacities claimed by the manufacturer.

10.4.3 Use of Efficient Label

Products complying with these requirements will be able to use the 'Efficient' Unified water label.



10.5 Flush Free Urinals

10.5.1 General

A urinal complete with housing, trap and associated components designed to retrofit into existing urinals that have been tested and comply with resistance to blockage and trap backpressure tests in clause numbers section resistance to blockage test etc and back pressure test as listed in 3.8.3 It follows, that testing under the Scheme is limited to verifying only those tests detailed.

The products, when verified in accordance with tests as listed in this section for resistance to blockage and trap backpressure tests shall comply with the supplied Declaration of Conformity from the manufacturer that accompanied the original product applications to the Unified Water Label Scheme.

10.5.2 Functional Tests

Verification required to the following tests: -

Resistance to Blockage Test

Trap Test Pressure Test

Installation and Maintenance.

10.5.3 Resistance to Blockage Test

Procedure

Two unfiltered cigarette pieces shall be deposited into the urinal. The length of the cigarette pieces shall be 1.5in +/- 0.25in (38mm +/- 6.4mm) and created by folding an unfiltered cigarette back upon itself such that the cigarette paper tears or breaks apart in approximately one-half lengths.

Tap water shall be added to the unit at a flow rate of 0.5L per min. Cigarette pieces and water shall be alternately added to the urinal until a total of 20 cigarette pieces and 5L of water have been added. The cigarette pieces shall then be removed from the urinal and the test shall be conducted five additional times (for a total of six test replicates).

Alternate between unfiltered and crumpled unfiltered cigarettes per test so that three tests are conducted using unfiltered cigarettes and three tests are conducted using crumpled unfiltered cigarettes.

Requirement

There shall be no evidence of blockage or clogging during each test run with cigarette pieces in the fixture and when removed.

10.5.4 Trap Backpressure Test

Procedure

The trap insert shall be installed and removed 6 times using the extractor tool provided by the manufacturer. This shall be considered one repetition. Upon completion of the extractions and insertions, the trap shall be capable of withstanding an air test of positive pressure of 0.04 -0/+0.002 bar for at least 3 mins. Every trap should remain leak tight.

Requirement

There shall be no pressure loss at any time during the test and the reliability between water seal and open drain must be maintained.

10.5.5 Installation & Maintenance

The manufacturer's instructions for installation and maintenance must be followed to ensure correct fitting of products and their cleaning regime are maintained

10.5.6 Use of Efficient Label

Products complying with these requirements will be able to use the 'blue efficient product' Label;



11. ENERGY

11.1 General

It is recognised that the amount of energy used to heat water can be a significant contributor to the cost of running a home. With this in mind, it can be useful to identify the amount of energy used in running a terminal fitting for the consumer as part of the general European water label information.

Note: The “Best of All” approach has identified that for some countries the current methodology should be improved and therefore further discussions will be ongoing during the transition period.

11.2 Calculation

To calculate, consistently, the energy used to heat water, average supply and delivery temperatures along with average use patterns have to be established. The basic calculation is based on first principle physics: -

$$\text{Energy [kWh]} = \text{Mass [kg]} \times \text{spec.Heat-coefficient of water [kWh / (kg x K)]} \times \text{Delta T [T]}$$

This basic calculation coupled with average use times can easily be used to calculate expected annual energy consumption.

11.3 Average use times to be used for the following products are: -

- 11.4.6 Basin (& bidet) taps: - 1 minute per event, 5 events per person per day
- 11.4.7 Kitchen taps: - 1 minute per event, 5 events per person per day
- 11.4.8 Showers: - 7 minutes per event, 1 event per person per day (handsets & mixer controls)
- 11.4.9 For basin (& bidet) taps and showers the average outlet temperature is always regarded as 38°C while for kitchen taps the average outlet temperature is regarded at 45°C. In all cases the average seasonally adjusted inlet temperature is regarded as 15°C.

Core assumptions have been taken directly from the European Commission study into taps and showers task 3 report: users. For reference purposes this document can be found via the following link: -

http://susproc.jrc.ec.europa.eu/taps_and_showers/docs/Task3_2ndTWG_v2.4.pdf

For Bath tubs, the same core calculation can be used to help users understand, in energy terms the cost of filling the bath tub for each bathing event.



11.4 Energy Icons

The energy icon can be added to the base of the Unified Water Label to depict to the consumer the expected annual energy cost of using the product. It is required that all basin taps, kitchen taps, showers (handsets and mixer controls) and bath tubs shall carry the energy icon. The energy icon shall in all cases be placed under

the main water rating and to the far left of the space provided for all technical icons (for the applicable categories).

An example of the energy icons can be seen below:

Swedish Building Regulations – see Annexe 1 as the methodology may change for some product categories.

Description		Icon	Applicable to
Energy*	Calculation of energy use		All taps and showers
Energy	Fittings that use an Energy Saving mode		All taps and showers

* the energy Icon needle will be set according to the kWh/p.a. calculated from 10.2 and then set at an angle determined in the Unified Water Label Guidelines that provide Manufacturers with label design and use.

12. TECHNICAL ICONS

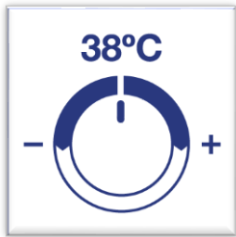





12.1 General



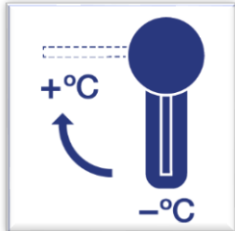


To enhance the label and to highlight to consumers technical features present, manufacturers are able to add a maximum of three technical icons (in addition to the energy icon) to the label.

12.2 Icons


To be defined along with their qualifying criteria.



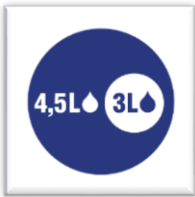



Shower and Taps Icons

Technology	Description	Associated Icon	Applicable to
Thermostatic	Must meet EN 1111 &/or EN 1287		Showers/taps that meet EN 1111 and/or EN 1287
Bath/Shower	Including Hand sets and Spray Handset		Bath Shower Taps
Boost (typically used with showering or vessel filling)	Additional force required/movement to fully open flow control or press boost button. Must be auto return to default flow rate when flow rate is turned off i.e. temporary flow; this must be a second deliberate and separate action to the normal flow control		Showers/taps
Water Break (typically, but not limited to single lever mixer taps)	additional force/action required – can be in the same plane as normal opening function. Does not need to be auto return as this is assured by closing the flow; Force to overcome =6 Nm Products to be rated at the break flow rate		Taps: - Single lever - Electronic controls
Single Lever Mixer Taps	Standard dual flow mixer taps		Taps
Timed Flow	Taps that have a variable or fixed concussive timed flow		Showers/taps


Shower Hand set	Shower Handset only		Shower Handsets
Sensor	- If proximity or motion sensing – auto off after removal of hands maximum 2 seconds. Where the sensor is artificially blocked the maximum run time is 1 minutes. If unit is powered off must auto off for water flow		Showers/taps
Cold Start	Use of a specific cold start function can reduce the unintended use of hot water (that could be wasteful) Single lever products to have cold start in the central lever position Conveys 10% reduction in energy rating – ref Swiss system		Taps: - Single lever - Electronic controls - Pillar taps - 3 handle
Extendable Spout	Kitchen taps that use an extendable Spout		Kitchen Taps
Kitchen Tap	Standard Kitchen Mixer Taps		Kitchen Taps




WC Icons

Description	Icon	Applicable to
Standard Cistern and Bowl Arrangement with a washdown toilet bowl – all trap arrangements.		Gravity Flushing Toilets


Single Flush Standard Cistern and bowl Arrangement with a washdown toilet bowl – all trap arrangements.		Gravity Flushing Toilets
Assisted Flush Standard Cistern and bowl Arrangement with a washdown toilet bowl – all trap arrangements.		Assisted Flushing Toilets
Dual Flush Standard Cistern and bowl Arrangement with a washdown toilet bowl – all trap arrangements. Full and reduced Flush volumes will be stated in the label.		Any Dual Flushing Toilets
Standard Cistern and toilet bowl combination – all trap arrangements.		Cistern and bowl sold together
Standard toilet bowl sold on its own – all trap arrangements.		Back to wall, low level, close coupled wall hung toilets
Standard toilet cistern sold on its own – all trap arrangements.		Cisterns, Low level, including cisterns enclosed in wall frames.

Urinal Icons

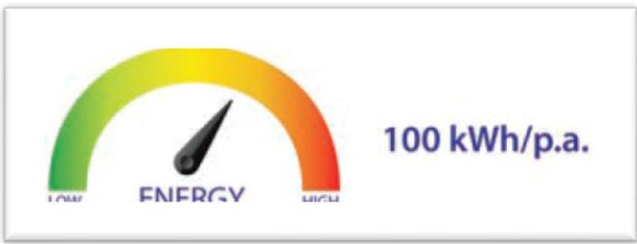
Description	Icon	Applicable to
A pressure flushing valve kit with no extra parts needed, supplied to meet requirements. Directly connected to a supply or distributing pipe which is designed to flush the urinal manually		Gravity Flushing Toilets

An electronic automatically operated flushing sensor valve serving urinals		
Urinal Bowl independent or sold with cistern		Urinal Bowls
Urinal Bowl independent or sold with cistern		Urinal Bowls

Bath Icons

Description	Icon	Applicable to
Baths freestanding or standard design.		Bath

Energy Icon

Description		Icon	Applicable to
Energy	Calculation of energy use		All taps and showers

Energy	Fittings that use an Energy Saving mode		All taps and showers
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12. Annular Ring Test Equipment

This defines the important measurements of the annular ring. The red dashed lines within the annular ring shows optional additional rings.

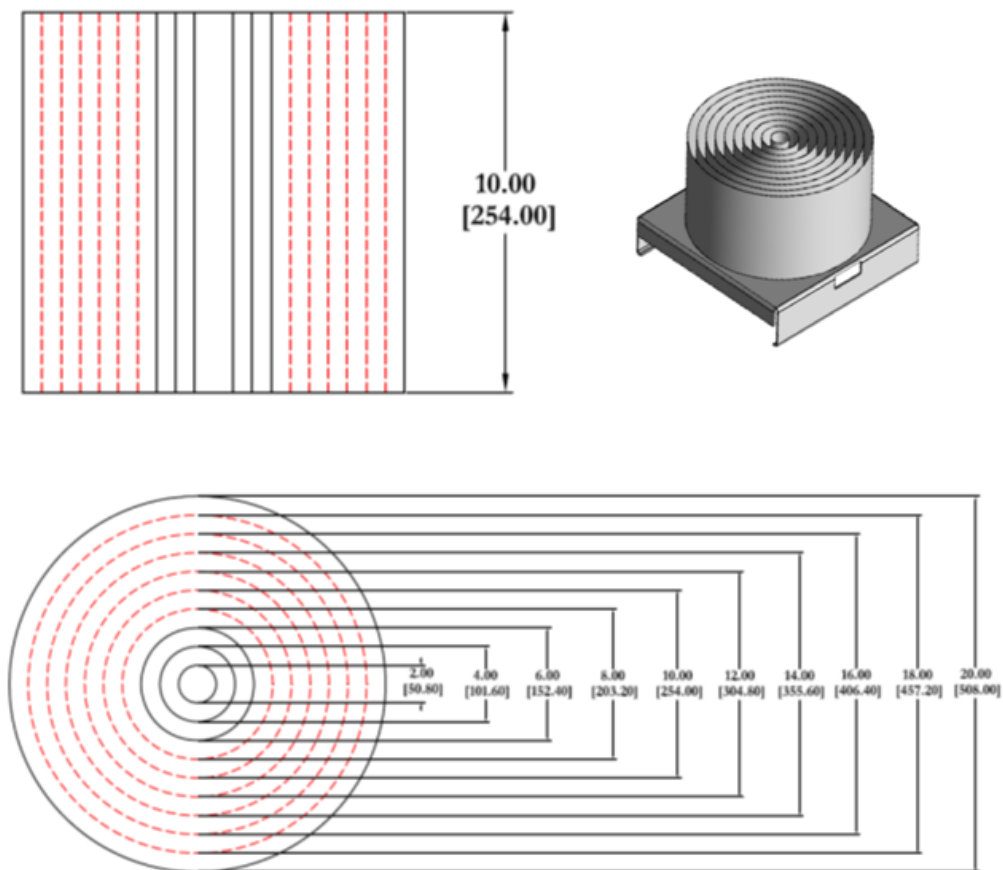


Figure 1: Annual ring specification dimension in inches and mm (in brackets)

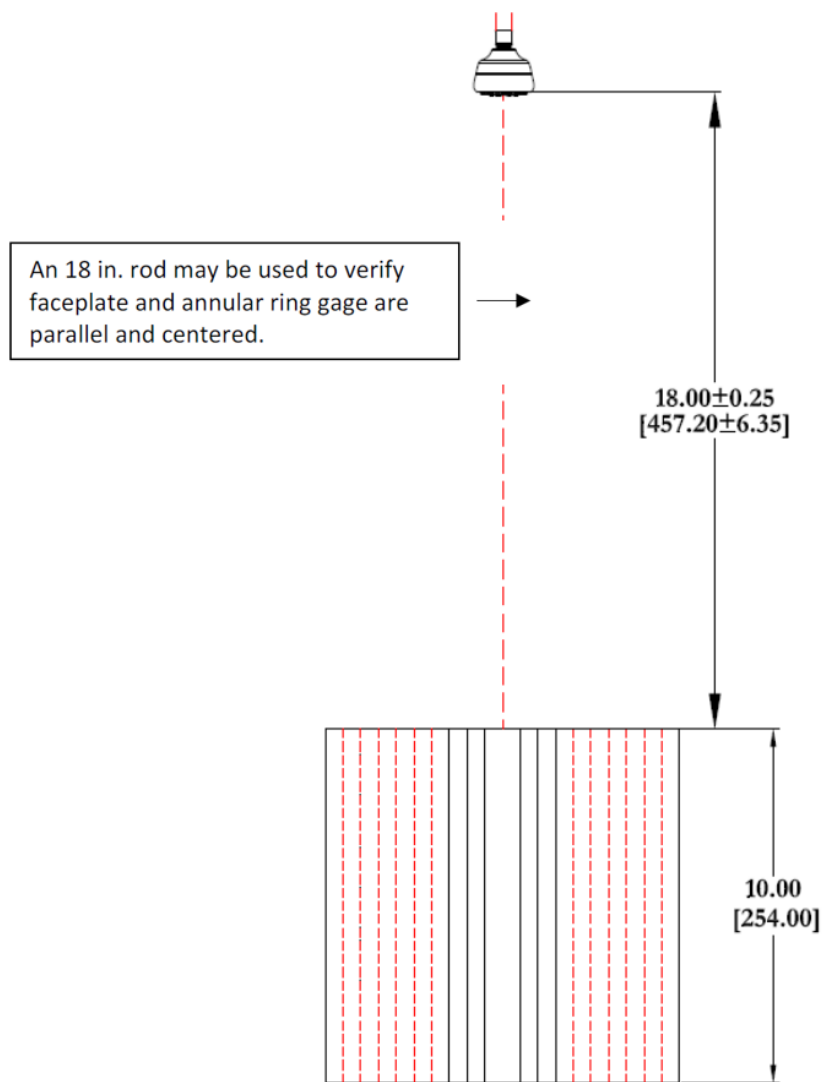


Figure 2 Spray Coverage Test Setup

Notes:

1. All dimensions in inches. (mm)
2. Tolerance: ± 0.06 in. (1.6 mm)
3. Suggested Material: (0.03 in. [0.75 mm]) 304 Stainless Steel
4. 8 in. – 18 in. Rings Optional (Shown as red dotted lines)

Additionally, to the test apparatus described above, use the annular ring test setup shown in Figure 1 and Figure 2.

Note: - The mode used for this test may be selected by the manufacturer and may be different to that used to determine the maximum available flow rate but must be the same as that used to determine the spray coverage.

13. REPORTING AND MONITORING

Signatories shall submit to an Independent Inspector – appointed by the Scheme – on an annual basis relevant data. This will enable the Independent Inspector to compile an annual report based on compliance with the Voluntary Agreement (the 'Reports') according to the guidelines in this Section and shall include:

- Company name and Scheme registration number
- Market data
- Registration of products listed, type
- Production of said product
- Market share of registered products
- Audit, test results undertaken by third party test house plus marketing material
- Annual comparison to verify Scheme growth and market penetration

The 'Report' will commence with the collation of data during 2nd quarter 2019 to provide independent evidence to establish a baseline for a Voluntary Agreement.

A second report will be issued in the 4th quarter 2019 following a 6 month period from the issue of the first report to monitor scheme growth

During 2020 two further reports at 6 month intervals will be issued, with 2021 an annual report will be issued thereafter.

The Independent Inspector shall send a request to signatories to file their data reports with the consolidated 'Progress Report' issued within three months by the Independent Inspector. The Scheme Steering Committee will receive the 'Report' containing consolidated data, no individual data will be made available to any third party.

The Independent Inspector shall be responsible for ensuring confidentiality of signatory's identity and data and if requested to do so enter into non-disclosure agreement with each signatory.

The Steering Committee shall meet twice yearly to discuss progress and the findings of the annual report. This committee will decide if an independent audit on the annual report is necessary to verify accuracy of data. If requested the Steering Committee will appoint an independent auditor who will be required to maintain confidentiality of data and signatories. If necessary, the auditor will enter into non-disclosure agreement with each signatory before having access to the data.

14. STEERING COMMITTEE

Each signatory to the VA as well as the European Commission shall have the right to nominate one person to represent it at the Steering Committee.

The Steering Committee shall elect, from amongst its members a Chair. The Chair shall be responsible for convening the Steering Committee at least twice a year, in order, to review progress, analyse and discuss reports presented by the Independent Inspector. The Chair shall have no executive or representative function unless this is delegated to them by the Steering Committee.

Meetings of the Steering Committee will be open to:

- A representative from a Signatory Company
- A representative from the European Commission, Members States and Member States of EEA or EFTA
- Invite guests from related NGO's, related Organisations such as European trade

bodies representing Merchants, Retailers, Water Utilities and other manufacturers

The Committee will always seek to reach a consensus agreement on topics. If consensus cannot be achieved the Steering Committee may reach a decision in accordance with the voting procedure as outlined in section 15.

The Steering Committee may decide to develop and adopt additional rules of procedure and to delegate powers where it deems it to be necessary or delegate to sub-committees.

15. VOTING RULES

All decisions of the Steering Committee are undertaken by consensus. On the occasion where this is not possible a call for a vote on specific topic may be taken by the Steering Committee or by a Quorum. Each signatory shall be entitled to cast a single vote. If the vote indicates a favourable outcome (two thirds majority or greater in favour) but a consensus is nonetheless not achieved, a call to defer decision to the next Steering Committee can be made. At the second meeting, the adoption of a decision shall require (1) a Quorum, or, (2) the agreement of a two-thirds majority of the Quorum.

16. PARTIES AND APPLICATION

This Scheme is the culmination of bringing 4 existing labelling schemes together under the 'Best of All' approach in partnership with the European Water Label, Swiss Energy, Swedish Energy and Anqip labels to form the Unified Water Label. It is now addressed to all manufacturers of water 'using' products supplying their products on the EU, EFTA, EEA and bordering country markets.

17. APPLICATION

Any manufacturer or Stakeholder selling suitable products on the EU, EFTA, EEA and bordering countries markets can eligible to apply to the Scheme if the product complies with the technical criteria. All applications to be submitted to the Scheme Administrator using the application form and must be accompanied with a completed and sign copy of the declaration of conformity.

Any changes to the technological characteristics of the product for which application is sought, and which may have an influence on the performance of the product and potentially change the classification of the product, should be notified via completion of the appropriate product modification form to the Scheme Administrator.

Copies of certificates of compliance/test reports from third parties can be provided in support of declaration of compliance.

Products shall remain listed as long as the product remains available in the said markets with an annual registration fee applicable.

The company registration to the Scheme will be invoiced in accordance with the applicable conditions and fees and are due annually. Applications received during the 1st year will be charged pro rata and full rates applied thereafter.

The Unified Water Label scheme will inform the applicant if the application has been successful and provide all the necessary information and guidance on the use of the label, or if the application has been rejected and the reasons for this decision.

18. TERMINATION

The Scheme Administrator has the right to cancel or suspend the registration of a product carrying the Unified Water Label. This may be justified e.g. if the criteria of the Scheme are not met, if the information provided is incorrect or not submitted, misleading of information or if no notification of relevant product modification has been provided in due time. The Scheme Director or Independent Inspector will give notice and reasons in writing.

A signatory can terminate his registration to the Scheme at any time by submission by registered mail of a letter of termination to the Scheme Director.

There will be no refund of the fees already paid to the Scheme and all outstanding invoices must be settled prior to termination taking effect.

19. REPAIR

The European Bathroom Industry disseminates information to the end user via a multitude of platforms on how to carry out regular maintenance and repair on products, thus ensuring a continued performance from the product.

Manufacturers offer a variety of guarantees, some lifetime and as such carry stocks of these products to meet the criteria of a lifetime guarantee.

Manufacturers regularly carry spares for products over a 5-15 year period dependent on the product type. In addition, the supply chain and installation base carry stocks of components such as washers, flow regulators, cartridges that are replaced more frequently.

20. RECYCLE

Metal is an expensive commodity and as such taps and showers have a collective value. The builder or installer will collect old used product until they have enough bulk to sell to a waste collector for scrap metal, which is then mechanically separated, melted to be used again for manufacturing purposes. Recycling used taps and showers are sent for recycle due to their monetary value.

21. AUDITING

The Scheme auditing is coordinated by the Scheme Administrator in conjunction with the Independent Inspector. Audits are performed regularly by approved test houses who have previously registered to the Scheme on products randomly electronically selected. The cost and arrangement of testing is the responsibility of the listing company. For full details of undertaking audit and applicable third party test houses⁸ please visit the website: www.europeanwaterlabel.eu

Compliance with the audit is mandatory and forms part of the annual report produced by the Independent Inspector.

The Scheme Administrator in conjunction with the Independent Inspector will arrange for 5% of the products (and accompanying literature, point of sale material and advertisements in relationship to the listed products) on the Scheme database

⁸ www.europeanwaterlabel.eu

to undergo an audit for compliance with the Scheme's requirements on an annual basis. The 5% will be selected, across the qualifying product ranges. Various options exist to qualify for audit. See www.europeanwaterlabel.eu for further details on these options⁹

It is expected that the manufacturer will retain internal documentation to verify any claims made in verification of products. Internal documentation may also be subject to audit as part of the normal requirements of ratification of manufacturers claims

see <http://www.europeanwaterlabel.eu/testhouses.asp>.

22. NON-COMPLIANCE, SANCTIONS AND PENALTIES

Only products that have been granted acceptance to the Scheme and that conform to all its requirements may be listed in the Scheme database and may carry the Unified Water Label.

Any inappropriate use of the Unified Water Label either on the product, packaging or supporting marketing/technical material will result in the signatory being warned to conform to the use requirements or being withdrawn from the Scheme, and the use of the label from all marketing/ technical material should be withdrawn with immediate effect.

This Scheme is a voluntary Scheme developed to raise awareness on the water and associated energy performance of water using bathroom products, and to promote best practice for water efficiency within the bathroom and kitchen environment. In the event of a dispute between parties, the practice of 'good faith' for resolving the dispute under the Scheme will be used. In the event that a dispute cannot be resolved between the parties, formal notification of the dispute must be lodged with the Independent Inspector who will undertake to resolve the dispute as quickly as possible.

In case of evidence of non-compliance, the Governance Committee will review the evidence and make recommendations.

If a signatory fails to meet the requirements of the Scheme and the Unified Water Label, the Governance Committee will address a warning. The signatory will have to take all necessary measures to redress the situation within 3 months.

If the signatory takes the necessary measures, but these measures are insufficient to comply with the requirements, the Governance Committee may decide to extend the deadline for compliance.

If the signatory fails to take the necessary measures within the set deadline and no extension is given, he will be deemed not to comply with this Scheme and will be deleted from the list of signatories. In this case, the Scheme and label administrator will publicly state that the signatory no longer participates in the Scheme. No refund of fees paid or due can be claimed either in part or in full.

If a non-signatory or a former signatory uses the Unified Water Label in a way which does not comply with this Scheme, the Governance Committee will take any reasonable step, including legal measures if available, to prevent any prejudice to this Scheme, label and its signatories.

⁹ www.europeanwaterlabel.eu/audit

23. REVISION

This Scheme and label is based on the current state of the art. The signatories via the Steering Committee platform in agreement with the European Commission agree to review its objectives should the technology, economic and societal situation require so. In the event of a review, the signatories commit themselves not to lower the requirements of the current Unified Water Label. Any changes and updating of this Scheme will be handled by correspondence or where necessary a formal meeting. A transition for implementation of any changes will be agreed at the time.

24. DURATION

Scheme registrations are for a rolling 12 month period, running from January to December. Registrations undertaken during the first year will be charged on a pro rata basis. To cease registrations a formal resignation letter is required.

25. MARKETING

European and National Associations will ensure that the present Scheme is accessible on the internet and promoted. All National Associations are encouraged to promote the Unified Water Label at National level. All signatories to refer to the Scheme on their websites, brochures, registered products documentations etc.

26. COPYRIGHT

The Unified Water Label owns the full copyright.

27. DISCLAIMER

The Unified Water Label is a voluntary not for profit scheme aimed at raising awareness and informing on the water and associated energy consumption and performance of water using bathroom products in Europe. The Scheme and label administrator cannot be held liable for any misuse or counterfeit use of the label under the Scheme. This Scheme does not endorse the quality of the products labelled or the quality control of the manufacturing process.

Annexe 1 – Known National Building Regulations

The Unified Water Label has been developed to work alongside National nuances i.e. National Building Regulations where water and energy savings or levels are specified.

The following hyperlinks are quick links to known Regulations, it is not an exhaustive list and will be regularly updated.



Sweden

Boverket's building regulations, BBR, are valid when you build a new of details on how to fulfill 8 of the 10 technical characteristic of construction works. BBR also consists of details on how to fulfill the design requirements of buildings. The link below takes you to the full requirements:

<https://www.boverket.se/en/start/building-in-sweden/swedish-market/laws-and-regulations/national-regulations/building-regulations/>



United Kingdom

Building Regulations in the developed Nations of the United Kingdom, each have slightly different approach to building regulations, including specific product and whole building approach for water saving criteria. The links below will take you to the building regulation in each area:

<https://gov.wales/building-regulations>

<https://www.gov.uk/government/collections/approved-documents>

<https://www.gov.scot/policies/building-standards/monitoring-improving-building-regulations/>

<http://www.buildingcontrol-ni.com/regulations>



Eire

Building Regulations for water conservation are under review in Eire and will be reviewed under the SEA1 Government Energy agency and will be similar to Part G calculation of the UK