



J R C T E C H N I C A L R E P O R T S

Developing an evidence base and related product policy measures for "Taps and Showers"

Kick off meeting (27th June 2013) –
Supporting information to the working
document

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WORKING DRAFT IN PROGRESS

ANNEX I: SUPPORTING INFORMATION FOR SCOPE

Table A1.1: Classification of taps and showers according to NACE¹, Prodcom² and Combined Nomenclature³

Code		Description
NACE	22.23	Manufacture of builders' ware of plastic (Manufacture of builders' plastics ware; plastic doors, windows, frames, shutters, blinds, skirting boards; tanks, reservoirs; plastic floor, wall or ceiling coverings in rolls or in the form of tiles etc.; plastic sanitary ware like plastic baths, shower baths, washbasins, lavatory pans, flushing cisterns etc.; Manufacture of resilient floor coverings, such as vinyl, linoleum etc.; Manufacture of artificial stone (e.g. cultured marble))
Prodcom	22.23.12.90	Plastic bidets, lavatory pans, flushing cisterns and similar sanitary ware (excluding baths, showers-baths, sinks and wash-basins, lavatory seats and covers)
CN	3922 90 00	Bidets, lavatory pans, flushing cisterns and similar sanitary ware, of plastics (excl. baths, shower-baths, sinks, washbasins, lavatory seats and covers)
NACE	25.99	Manufacture of other fabricated metal products n.e.c (Manufacture of metal household articles (e.g. plates, pots, kettles, pans); Manufacture of building components of zinc: gutters, roof capping, baths, sinks, washbasins and similar articles; Manufacture of metal goods for office use, except furniture; Manufacture of safes, strongboxes, armoured doors etc.; Manufacture of various metal articles (e.g. ship propellers and anchors); Manufacture of foil bags; Manufacture of permanent metallic magnets; Manufacture of metal vacuum jugs and bottles; Manufacture of metal badges and metal military insignia; Manufacture of metal hair curlers, metal umbrella handles and frames, combs)
Prodcom	25.99.11.31	Sanitary ware and parts of sanitary ware of iron or steel
CN	7324 90 00	Sanitary ware, and parts thereof, of iron or steel (excl. cans, boxes and similar containers of heading 7310, small wall cabinets for medical supplies or toiletries and other furniture of chapter 94, and fittings, complete sinks and washbasins, of stainless steel, complete baths and fittings)
Prodcom	25.99.11.35	Sanitary ware and parts thereof of copper
CN	7418 20 00	Sanitary ware and parts thereof, of copper (excl. cooking and heating appliances of heading 7417, and fittings)
NACE	28.14	Manufacture of other taps and valves (Manufacture of industrial taps and valves, including regulating valves and intake taps; Manufacture of sanitary taps and valves; Manufacture of heating taps and valves)
Prodcom	28.14.12.33	Mixing valves for sinks, wash basins, bidets, water cisterns etc excluding valves for pressure-reducing or oleohydraulic/pneumatic power transmissions, check valves, safety/relief valves
CN	8481 80 11	Mixing valves for sinks, washbasins, bidets, water cisterns, baths and similar fixtures
Prodcom	28.14.12.35	Taps, cocks and valves for sinks, wash basins, bidets, water cisterns etc excluding valves for pressure-reducing/oleohydraulic transmissions, check, safety, relief and mixing valves
CN	8481 80 19	Taps, cocks and valves for sinks, washbasins, bidets, water cisterns, baths and similar fixtures (excl. Mixing valves)

¹ http://epp.eurostat.ec.europa.eu/portal/page/portal/nace_rev2/introduction

² <http://epp.eurostat.ec.europa.eu/portal/page/portal/prodcom/introduction>

³ http://ec.europa.eu/taxation_customs/customs/customs_duties/tariff_aspects/combined_nomenclature/

Table A1.2: Classification and definitions applied to taps and showers according to international standards

Product	Nomenclature	Definition	Standard
Taps and faucets	Tap	Small diameter manually operated valve from which water is drawn	BS 6100-7 ⁴
	Faucet	Lavatory faucet, kitchen faucet, metering faucet, or replacement aerator for a lavatory or kitchen faucet	Energy Policy Act 1992 ⁵
	Spray tap	A tap supplied with water at a predetermined temperature which it delivers, at a restricted rate of flow, in the form of a spray	BS 5388:1976 ⁶
	Flow rate regulator	A device which is fitted on the nozzle outlet of a tap to enable its jet to be regulated	EN 246:2003 ⁷
	Flow-restrictor	That component of a spray tap, not being the spray outlet, which governs or restricts the rate of discharge	BS 5388:19766
	Spray outlet	A fitting that is attached to the outlet of a tap and causes water passing through it to break up into a spray	BS 5388:19766
	Dead-leg	A length of hot water pipe leading to a draw-off point and not forming part of a circuit	BS 5388:19766
	Thermostatic mixing valve	Valve, with one or more outlets, which mixes hot and cold water and automatically controls the mixed water to a user selected temperature. The flow rate between no flow and maximum flow conditions can be effected either by the same control device or a separate flow control device, where fitted	EN 1111:1998 ⁸
Showers and showerheads	Shower	A showerhead through which water is intended to pass to form a spray for bathing purposes, which may include a fixed or pivot arm, a flexible hose (with or without a flow controller), tap top assemblies, or other components	AS/NZS 3662:2005 ⁹
	Shower outlet	Device for ablutionary purposes which allows water to be emitted in the form of jets or water droplets	EN 1112:2008 ¹⁰ and EN 13904:2003 ¹¹
	Shower head	Fixed overhead shower outlets which direct water onto the user from above	EN 1112:2008 ¹⁰ and EN 13904:2003 ¹¹
		Any showerhead (including a handheld showerhead), except a safety shower showerhead	US Energy Policy Act 1992 ¹²
	Fixed shower head	A fixed height outlet fitting through which water passes and is emitted as either a number of separate jets or as	BS 6340-4:1984 ¹³

4 BS 6100-7:2008. Building and civil engineering. Vocabulary. Services. British Standards Institution, London 2008

5 <https://www1.eere.energy.gov/femp/regulations/epact1992.html>

6 BS 5388:1976. Specification for spray taps. British Standards Institution, London 1976

7 EN 246:2003. Sanitary tapware – General specifications for flow rate regulators. European Committee for Standardization, Brussels 2003

8 EN 1111:1998. Sanitary tapware – Thermostatic mixing valves (PN 10) – General technical specification. European Committee for Standardization, Brussels 1998

9 AS/NZS 3662:2005. Performance of showers for bathing. Standards Australia & Standards. New Zealand, Sydney/Wellington, 2005

10 EN 1112:2008. Sanitary tapware – Shower outlets for sanitary tapware for water supply systems of type 1 and type 2 – General technical specification. European Committee for Standardization, Brussels 2008

11 EN 13904:2003. Low resistance shower outlets for sanitary tapware. European Committee for Standardization, Brussels 2003

12 <https://www1.eere.energy.gov/femp/regulations/epact1992.html>

13 BS 6340-4:1984. Shower units – Part 4: Specifications for shower heads and related equipment. British Standards Institution, London 1984

Product	Nomenclature	Definition	Standard
		water droplets	
	Swivel shower head	A fixed height outlet fitting through which water is emitted as either a number of separate jets or as water droplets. This shower head incorporates a universal joint enabling it to be swivelled through a limited angular arc, thereby permitting the water spray trajectory to be adjusted	BS 6340-4:1984 ¹³
	Shower arm	Component which supports a shower head and connects it to the water supply	EN 1112:2008 ¹⁰ and EN 13904:2003 ¹¹
		A pipe or casting which connects the concealed and/or exposed rigid riser to the shower head	BS 6340-4:1984 ¹³
	Shower handset	Moveable hand held shower outlets which are connected to the sanitary tapware via a shower hose, complying with EN 1113 ¹⁴ . They can be hung directly on the tapware or on the wall with the aid of an appropriate support	EN 1112:2008 ¹⁰ and EN 13904:2003 ¹¹
		A mobile shower head with an integral handle which, when used in conjunction with a flexible hose, permits the user to direct the water trajectory as required	BS 6340-4:1984 ¹³
	Handset holder	A device for holding a shower handset in a fixed height position such that the hands of the user are free and that the water spray emitted can be used for ablutionary purposes. Some handset holders incorporate a degree of angular movement which enables the water spray trajectory to be adjusted	BS 6340-4:1984 ¹³
	Slide bar	A fixture mounted in the shower enclosure consisting of a vertically mounted tube or bar and a clampable handset holder which allows the height of a shower handset to be varied to the user's particular needs	BS 6340-4:1984 ¹³
	Spray plate	Device with orifices through which water passes and forms a spray of water with separate, definable jets or water droplets	EN 1112:2008 ¹⁰ and EN 13904:2003 ¹¹
		A plate containing holes or slots through which water passes and thereby forms a spray of water with separate, definable jets or water droplets	BS 6340-4:1984 ¹³
	Body showers	Shower outlets fixed to the vertical wall and direct water laterally onto the user	EN 1112:2008 ¹⁰ and EN 13904:2003 ¹¹
	Flexible hose	A flexible tube, which connects the outlet of the mixing valve to the shower handset	BS 6340-4:1984 ¹³
	Shower hose	A flexible supply pipe which connects sanitary tapware to a shower handset	EN 1113:2008 ¹⁵
	Rigid riser	A pipe connecting the outlet of the mixing valve to the shower arm or head	BS 6340-4:1984 ¹³

14 EN 1113:2008. Sanitary tapware – Shower hoses for sanitary tapware for water supply systems of type 1 and type 2 – General technical specification. European Committee for Standardization, Brussels 2008

15 EN 1113:2008. Sanitary tapware – Shower hoses for sanitary tapware for water supply systems of type 1 and type 2 – General technical specification. European Committee for Standardization, Brussels 2008

Table A1.3. CEN technical committees and working groups in the areas of sanitary appliances, water supply, and wastewater engineering

Technical committee		Working groups
163	Sanitary appliances	<ul style="list-style-type: none"> 1 Terminology - Classification 2 Materials - Testing 3 Closet bowls, flushing cisterns, urinals, bidets and kitchen sinks 4 Baths (W/Pools) - Shower trays (Performance testing)
164	Water supply	<ul style="list-style-type: none"> 1 External systems and components 2 Internal systems and components 3 Effects of materials in contact with drinking water 5 Concrete pipes 8 Sanitary tapware 9 Drinking water treatment 10 Hot water and cold water storage within dwellings 12 Flexible hoses assemblies 13 Water conditioning equipment inside buildings 14 Valves and fitting for buildings and devices to prevent pollution by backflow 15 Security of drinking water supply
165	Waste water engineering	<ul style="list-style-type: none"> 1 General requirements for pipes 2 Vitrified clay pipes 4 Covers, gratings, drainage channels and other ancillary components for use outside buildings 7 Steel pipes 8 Separators 9 Concrete pipes 10 Installation of buried pipes for gravity drain and sewer systems 11 Gratings, covers and other ancillary components for use inside buildings 12 Structural design of buried pipelines 13 Renovation and repair of drains and sewers 21 Drainage systems inside buildings 22 Drainage outside buildings 30 Terminology in the field of wastewater engineering 40 Wastewater treatment plants > 50 PT 41 Small type sewage treatment plants (< 50 inhabitants)

Table A1.4. CEN standards for taps and showers and product testing procedures

Standard	Title	Content and scope	Product	Product test methods
EN 200:2008 ¹⁶	Sanitary tapware – Single taps and combination taps for water supply systems of type 1 and type 2 – General technical specification	Specifies the field of application for pillar taps, bib taps, single and multi-hole combination taps, for supply systems of type 1 and 2. ^(a) Specifies the dimensional, leak tightness, pressure resistance, hydraulic (flow rate), mechanical strength, endurance and acoustic characteristics of nominal size ½ and ¾ single taps and combination taps.	Single taps and combination taps	Leak tightness: test procedure described (different pressure exposure cycles are defined). Pressure resistance: test procedure described (different pressure regimes applied). Hydraulic characteristic: flow rate is determined at reference pressure (when tap is fully opened). Mechanical strength and endurance: test procedures described (e.g. 200 000 opening and closing cycles for taps). Acoustic characteristics: measurement according to EN ISO 3822 series ^{17,18,19,20}
EN 246:2003 ²¹	Sanitary tapware – General specifications for flow rate regulators	Applies to flow rate regulators intended to be mounted on tapware used with sanitary appliances. Specifies the dimensional, mechanical, hydraulic and acoustic characteristics with which flow rate regulators should comply.	Flow Rate Regulators	Defines classes according to the flow rate of the regulator, the lower class (class Z) corresponds to a 9 l/min flow rate regulator (at 3 bar) while class A is for a flow rate of about 38 l/min. The standard also includes testing methods to evaluate jet formation and mechanical performance. Acoustic characteristics are measured according to EN ISO 3822-1 ¹⁷ and 3822-4 ²⁰

¹⁶ EN 200:2008. Sanitary tapware – Single taps and combination taps for water supply systems of type 1 and type 2 – General technical specification. European Committee for Standardization, Brussels 2008

¹⁷ EN ISO 3822-1:1999(+A1:2008). Acoustics – Laboratory tests on noise emission from appliances and equipment used in water supply installations – Part 1: Method of measurement. International Organization for Standardization, Geneva 2008

¹⁸ EN ISO 3822-2:1995. Acoustics – Laboratory tests on noise emission from appliances and equipment used in water supply installations – Part 2: Mounting and operating conditions for draw-off taps and mixing valves. International Organization for Standardization, Geneva 1995

¹⁹ EN ISO 3822-3:1997. Acoustics – Laboratory tests on noise emission from appliances and equipment used in water supply installations – Part 3: Mounting and operating conditions for in-line valves and appliances. International Organization for Standardization, Geneva 1999

²⁰ EN ISO 3822-4:1997. Acoustics – Laboratory tests on noise emission from appliances and equipment used in water supply installations – Part 4: Mounting and operating conditions for special appliances. International Organization for Standardization, Geneva 1997

²¹ EN 246:2003. Sanitary tapware – General specifications for flow rate regulators. European Committee for Standardization, Brussels 2003

Standard	Title	Content and scope	Product	Product test methods
EN 248:2002 ²²	Sanitary tapware – General specification for electrodeposited coatings of Ni-Cr	Specifies the condition of the exposed surfaces of tapware, the characteristics (resistance to corrosion, adherence) of the surface coating and the tests for verifying these characteristics. Applies to all sanitary fittings (supply or waste fittings) which have a metallic Ni-Cr coating.	All sanitary fittings with Ni-Cr coating	Corrosion resistance: neutral saline-spray test according to ISO 9227 ²³ . Coating adherence: subjecting sample to a series of thermal shocks (temperature cycles are defined).
EN 806-1:2000 ²⁴ EN 806-2:2005 ²⁵ EN 806-3:2006 ²⁶	Specifications for installations inside buildings conveying water for human consumption.	EN 806-1 specifies requirements and gives recommendations on the design, installation, alteration, testing, maintenance and operation of potable water installations within buildings. It covers pipes, fittings and connected appliances. EN 806-2 gives recommendations, and specifies requirements, on the design of potable water installations within buildings. It applies to new installations, alterations and repairs. EN 806-3 describes a method to calculate the dimensioning of pipes for drinking water installations.	Not applicable	Not applicable
EN 816:1997 ²⁷	Sanitary tapware – Automatic shut-off valves PN 10	Applies to single and mixer taps with automatic shut-off for use with sanitary appliances installed in washrooms. Specifies the marking, identification, chemical/hygiene, dimensional, leak tightness, pressure resistance, hydraulic, mechanical endurance, and acoustical characteristics of automatic shut-off tapware	Single and mixer taps with automatic shut-off valves	Includes test procedures for these characteristics: leak tightness, pressure resistance, hydraulic characteristics (e.g. flow rate, shape of flow, sensitivity of mixers), and mechanical endurance. Acoustic characteristics are measured according to EN ISO 3822-1 ¹⁷ and 3822-2 ¹⁸

²² EN 248:2002. Sanitary tapware – General specification for electrodeposited coatings of Ni-Cr. European Committee for Standardization, Brussels 2002

²³ ISO 9227:2012. Corrosion tests in artificial atmospheres - Salt spray tests. International Organization for Standardization, Geneva 2012

²⁴ EN 806-1:2000. Specifications for installations inside buildings conveying water for human consumption – Part 1: General. European Committee for Standardization, Brussels 2000

²⁵ EN 806-2:2005. Specifications for installations inside buildings conveying water for human consumption – Part 2: Design. European Committee for Standardization, Brussels 2005

²⁶ EN 806-3:2006. Specifications for installations inside buildings conveying water for human consumption – Part 3: Pipe sizing – Simplified method. European Committee for Standardization, Brussels 2006

²⁷ EN 816:1997. Sanitary tapware – Automatic shut-off valves PN 10. European Committee for Standardization, Brussels 1997

Standard	Title	Content and scope	Product	Product test methods
EN 817:2008 ²⁸	Mechanical mixing valves (PN 10) - General technical specifications	<p>Specifies dimensional, leak tightness, pressure resistance, hydraulic performance, mechanical strength, endurance and acoustic characteristics for mechanical mixing valves.</p> <p>Applies to PN 10 mechanical mixing valves for use with sanitary appliances installed in rooms used for bodily hygiene (cloakrooms, bathrooms, etc.) and in kitchens, i.e. for use with baths, wash basins, bidets, showers and sinks.</p>	Mechanical mixing valves	To be included
EN 1111:1998 ²⁹	Sanitary tapware – Thermostatic mixing valves (PN 10) – General technical specification	Specifies the dimensional, leak tightness, pressure resistance, hydraulic performance, mechanical strength, endurance and acoustic characteristics for thermostatic mixing valves	Thermostatic mixing valves	<p>Leak tightness: test procedures described for different parts of the mixing valve.</p> <p>Hydraulic characteristic: test procedures are included for flow rate, sensitivity, safety (cold water failure), and temperature stability.</p> <p>Mechanical strength and endurance testing procedures are described.</p> <p>Acoustic characteristics: measurement according to EN ISO 3822-1¹⁷, 3822-2¹⁸ and 3822-3¹⁹</p>

²⁸ EN 817:2008. Sanitary tapware – Mechanical mixing valves (PN 10). General technical specifications. European Committee for Standardization, Brussels 2008

²⁹ EN 1111:1998. Sanitary tapware – Thermostatic mixing valves (PN 10) – General technical specification. European Committee for Standardization, Brussels 1998

Standard	Title	Content and scope	Product	Product test methods
EN 1112:2008 ³⁰	Shower outlets for sanitary tapware for water supply systems of type 1 and type 2 – General technical specification	Specifies the dimensional, leak tightness, mechanical, hydraulic and acoustic characteristics with which shower outlets shall comply.	Shower outlets for sanitary tapware	<p>Leak tightness: test procedure described (5 minutes at 0.5 or 0.2 MPa).</p> <p>Mechanical strength: test procedures described (applying a force of 60 N for 5 minutes).</p> <p>Thermal resistance: test procedure described (temperature cycles defined).</p> <p>Hydraulic characteristic: flow rate is determined at reference pressure.</p> <p>Acoustic characteristics are measured according to EN ISO 3822-1¹⁷ and 3822-4²⁰</p>
EN 1113:2008 ³¹	Shower hoses for sanitary tapware for water supply systems of type 1 and type 2 – General technical specification	Specifies the dimensional, leak tightness, mechanical, hydraulic and acoustic characteristics with which shower hoses shall comply.	Shower hoses for sanitary tapware	<p>Includes testing procedures for tensile strength (500 N longitudinal force for 5 minutes) and flexing durability.</p> <p>Testing leak tightness is included as well</p>
EN 1286:1999 ³²	Sanitary tapware – Low pressure mechanical mixing valves - General technical specification	Specifies the dimensional, leak tightness, mechanical, and hydraulic characteristics with which low pressure mechanical mixing valves shall comply.	Low pressure mechanical mixing valves	<p>A method for testing leak tightness is described for the different parts of the valve.</p> <p>The flow rate is determined at 0.01 MPa for different temperatures.</p> <p>Testing methods for mechanical endurance and performance under pressure are included.</p>

³⁰ EN 1112:2008. Sanitary tapware – Shower outlets for sanitary tapware for water supply systems of type 1 and type 2 – General technical specification. European Committee for Standardization, Brussels 2008

³¹ EN 1113:2008. Sanitary tapware – Shower hoses for sanitary tapware for water supply systems of type 1 and type 2 – General technical specification. European Committee for Standardization, Brussels 2008

³² EN 1286:1999. Sanitary tapware – Low pressure mechanical mixing valves – General technical specification. European Committee for Standardization, Brussels 1999

Standard	Title	Content and scope	Product	Product test methods
EN 1287:1999 ³³	Sanitary tapware – Low pressure thermostatic mixing valves - General technical specifications	Specifies the dimensional, leak tightness, mechanical, and hydraulic characteristics with which low pressure thermostatic mixing valves shall comply.	Low pressure thermostatic mixing valves	A method for testing leak tightness is described for the different parts of the valve. The flow rate is determined at 0.01 MPa for different temperatures. Testing methods for mechanical endurance and performance under pressure are included.
EN 13618:2011 ³⁴	Flexible hose assemblies in drinking water installations – Functional requirements and test methods	Specifies the requirements and test methods for materials, dimensions and function for “hose assemblies” designed for use with water with a maximum static pressure of 10 bar and a maximum operating temperature (still to be defined). The standard is applicable to hose assemblies intended to be used in water systems to connect sanitary tapware, heaters and similar appliances.	Not applicable	Not applicable
EN 13904:2003 ³⁵	Low resistance shower outlets for sanitary tapware	This standard has been replaced by EN 1112:2008 ³⁰	Not applicable	Not applicable
EN 13905:2003 ³⁶	Low resistance shower hoses for sanitary tapware	This standard has been replaced by EN 1113:2008 ¹⁵	Not applicable	Not applicable

³³ EN 1287:1999. Sanitary tapware – Low pressure thermostatic mixing valves – General technical specification. European Committee for Standardization, Brussels 1999

³⁴ EN 13618:2011. Flexible hose assemblies in drinking water installations. Functional requirements and test methods. European Committee for Standardization, Brussels 2011

³⁵ EN 13904:2003. Low resistance shower outlets for sanitary tapware. European Committee for Standardization, Brussels 2003

³⁶ EN 13905:2003. Low resistance shower hoses for sanitary tapware. European Committee for Standardization, Brussels 2003

Standard	Title	Content and scope	Product	Product test methods
EN 15091:2006 ³⁷	Sanitary tapware – Electronic opening and closing sanitary tapware	<p>Specifies the requirements for marking, identification, leak tightness, electrical and operational safety and mechanical resistance for sanitary tapware with opening and closing controlled electronically.</p> <p>The tapware has to comply with electrical safety standards (e.g. EN 60355-1, EN 61000-6-1).</p> <p>The standard does not cover flow and temperature regulation devices installed either upstream or downstream of the tapware.</p>	Not applicable	Not applicable
EN 1717:2000 ³⁸	Protection against pollution of potable water in water installations and general requirements of devices to prevent pollution by backflow	<p>Describes how to prevent the pollution of potable water supplies and specifies the general requirements of protection devices to avoid pollution by backflow.</p> <p>The hygiene protection specifications of this standard are applicable to all the standards for systems or appliances connected to the private supply system for water intended for human consumption.</p> <p>Specifies the minimum requirements for product standards covering protection units.</p>	Not applicable	Not applicable

³⁷ EN 15091:2006. Sanitary tapware – Electronic opening and closing sanitary tapware. European Committee for Standardization, Brussels 2006

³⁸ EN 1717:2000. Protection against pollution of potable water in water installations and general requirements of devices to prevent pollution by backflow. European Committee for Standardization, Brussels 2000

Standard	Title	Content and scope	Product	Product test methods
EN ISO 3822-1:1999 (+A1:2008) ¹⁷	Acoustics – Laboratory tests on noise emission from appliances and equipment used in water supply installations	Allow laboratory measurement of the noise emitted by valves and hydraulic equipment used in water supply systems.	Several	Part 1. Noise emission: test procedure described (e.g. definition of test room and water supply pipe). Water pressure (up to 0.5 MPa) and flow rate (up to 2 l/s) are defined.
EN ISO 3822-2:1995 ¹⁸		Part 1 specifies the method of noise measurement. Items covered are: draw-off taps, in-line valves, and special appliances (e.g. pressure reducers).		Part 2. Mounting (installation and connection) procedures are described. The noise emissions measurements are performed according to EN ISO 3822-1.
EN ISO 3822-3:1997 ¹⁹	Part 1: Method of measurement	Part 2 specifies the mounting and operating conditions for draw-off taps and mixing valves when measuring noise emissions. It applies to all types of draw-off taps and mixing valves with a flow range between 0.1 MPa to 0.5 MPa.		Water temperature shall not exceed 25 °C. Test should be performed at 0.3 MPa and 0.5 MPa.
EN ISO 3822-4:1997 ²⁰	Part 2: Mounting and operating conditions for draw-off taps and mixing valves Part 3: Mounting and operating conditions for in-line valves and appliances Part 4: Mounting and operating conditions for special appliances	Part 3 specifies the mounting and operating conditions to be used for in-line valves and appliances which control the flow, pressure or temperature of the water in water supply installations. This part applies to in-line valves and appliances of maximum nominal size DN 32 and to systems with a maximum water flow rate of 2 L/s. Part 4 specifies the mounting and operating conditions for special appliances (e.g. showerheads, valves, water heating appliances) when measuring noise emissions from eater flow.		Part 3. Mounting (installation and connection) procedures are described. The noise emissions measurements are performed according to EN ISO 3822-1. Water temperature shall not exceed 25 °C. Part 4. Mounting (installation and connection) procedures are described. The noise emissions measurements are performed according to EN ISO 3822-1. For showerheads, the noise emissions are measured at a water pressure of and 0.5 MPa

Table A1.5. Standards for taps and showers and product testing procedures at Member State and Third Country level

Country	Standard	Title	Content and scope
Sweden	SS 82000:2010 ³⁹	Sanitary tapware – Method for determination of energy efficiency of mechanical basin and sink mixing valves	<p>Describes a test method for energy labelling of taps.</p> <p>A series of rinse activities is prescribed with different temperatures and flow rates (or mixer lever position). Energy use is calculated based on the temperature of the incoming water (cold and hot) and the resulting water temperature and rinse time. For all activities, a total energy demand is determined.</p> <p>The proposed rating is from a total energy use below 1.6 kWh (class A) to more than 4.6 kWh (class G).</p>
UK	BS 5388:1976 ⁴⁰	Specification for spray taps	<p>Specifies the requirements for the materials, design, construction, dimensions and testing of two forms of spray taps: pillar spray taps and bib spray taps.</p> <p>Includes testing specification for flow rate and spray form (divergence).</p> <p>Includes requirements for maximum flow rate and spray form (divergence).</p>
UK	BS 6100-7:2008 ⁴¹	Building and civil engineering. Vocabulary. Services	To be included
UK	BS 6340-4:1984 ⁴²	Shower units – Part 4: Specifications for shower heads and related equipment	<p>Specifies the requirements for the materials, dimensions and functional testing of domestic shower heads and related equipment.</p> <p>Includes testing specification for spray pattern/form and spray trajectory.</p>
UK	BS 7942:2000 ⁴³	Thermostatic mixing valves for use in care establishments	<p>Specifies performance and material requirements for thermostatic mixing valves for use in care establishments.</p> <p>The standard includes testing specifications for leaktightness, durability, and performance (e.g. flow rate, temperature sensitivity, thermal shut-off, temperature stability).</p>

39 SS 82000:2010. Sanitary tapware - Method for determination of energy efficiency of mechanical basin and sink mixing valves. Swedish Standards Institute, Stockholm 2010

40 BS 5388:1976. Specification for spray taps. British Standards Institution, London 1976

41 BS 6100-7:2008. Building and civil engineering. Vocabulary. Services. British Standards Institution, London 2008

42 BS 6340-4:1984. Shower units – Part 4: Specifications for shower heads and related equipment. British Standards Institution, London 1984.

43 BS 7942:2000. Thermostatic mixing valves for use in care establishments. British Standards Institution, London 2000.

Country	Standard	Title	Content and scope
UK	SI 1999 No. 1148 ⁴⁴	The Water Supply (Water Fittings) Regulations 1999	Applies to all water fittings installed or used. Requires that no water fitting is installed that is likely to cause waste of water. No specific definition or flow rate requirements are given.
UK	SI 2000 No. 2531 ⁴⁵	Building Regulations 2000	Applies to building works (e.g. construction or renovation of buildings). Requirements for e.g. structure, fire safety, ventilation, electrical safety) are set. Part G on hygiene sets minimum requirements concerning the equipment of bathrooms with sanitary fixtures and cleaning devices (e.g. rooms containing water closets should be equipped with washbasins).
Australia and New Zealand	AS/NZS 3662:2005 ⁴⁶	Performance of showers for bathing	Specifies requirements for the performance of showers for bathing. Applies to showerheads fastened to fixed arms and pivotal arms as well as to hand-held showers. Performance requirements include flow rate, spread angle, temperature drop. Test methods are provided for the measurement of flow rate, mean spray spread angle, temperature drop, integrity of shower hoses (tensile strength and water tightness, temperature resistance, thermal shock resistance, effectiveness of rotary connection), endurance testing of flow controllers.

⁴⁴ Statutory Instrument 1999 No. 1148. The Water Supply (Water Fittings) Regulations 1999. Office of Public Sector Information, London. Available at: http://www.opsi.gov.uk/si/si1999/uksi_19991148_en.pdf

⁴⁵ Statutory Instrument 2000 No. 2531. The Building Regulations 2000. Office of Public Sector Information, London. Available at: http://www.opsi.gov.uk/si/si2000/uksi_20002531_en.pdf

⁴⁶ AS/NZS 3662:2005. Performance of showers for bathing. Standards Australia & Standards New Zealand, Sydney/Wellington, 2005

Country	Standard	Title	Content and scope
Australia and New Zealand	AS/NZS 3718:2005 ⁴⁷	Water supply – Tap ware	<p>Specifies requirements for metallic taps, plastic taps, mixing taps, sensor taps, lever taps, timed flow taps, mixing taps mechanical (non-thermostatic), and tap sets.</p> <p>Includes performance requirements concerning e.g. hydraulic strength, water tightness, endurance.</p> <p>Test methods are provided for parameters as resistance to chemical degradation (for plastic-bodies taps), hydraulic strength, determination of water tightness, determination of flow rate, torque testing, endurance.</p>
Australia and New Zealand	AS/NZS 6400:2005 ⁴⁸	Water efficient products – Rating and labelling	<p>Specifies requirements for the rating of products for water efficiency, and includes the associated registration, labelling and, where applicable, minimum performance requirements.</p> <p>Applies to showers, dishwashers, clothes washing machines, lavatory equipment, urinal equipment, tap equipment, and flow controllers.</p> <p>Is the basis for the rating and labelling of a range of products under the Australian WELS scheme. A future amendment will address the requirements for the New Zealand WELS scheme.</p> <p>Product testing is performed according to other standards (e.g. AS/NZS 3662:2005 or AS/NZS 3718:2005)</p>

⁴⁷ AS/NZS 3718:2005. Water Supply – Tap Ware. Standards Australia & Standards New Zealand, Sydney/Wellington, 2005

⁴⁸ AS/NZS 6400:2005. Water efficient products – Rating and labelling. Standards Australia & Standards New Zealand, Sydney/Wellington, 2005

Table A1.6. Mandatory, voluntary legislation and labeling covering taps and showers in EU Member States

Country	Scheme	Type	Requirements on water consumption	Other requirements of relevance
EU level	European Water Label ⁴⁹ , water efficiency label from the European Committee for the Valve Industry (CEIR)	Voluntary	Products ranked in 5 classes based on their water flow (0-6 L/min; 6-8 L/min; 8-10 L/min; 10-13 L/min; >13 L/min)	
Austria	Ecolabel for water efficient sanitary tapware ⁵⁰	Voluntary	Maximum flow rate: 6 L/min for bathroom/toilet taps 9 L/min for kitchen taps 12 L/min for bathtub taps and showerheads Presence of water flow barrier (pre-set at 60% of the maximum flow rate) and hot water barrier.	The noise level of water saving equipment should not exceed 15 dBa at 0.3 MPa
	Ecolabel for tourist accommodation services	Voluntary	Maximum flow rate: 12 L/min for taps and showerheads Maximum average flow rate: 8.5 L/min for taps and showerheads Water temperature and flow rate control for at least 80 % of taps Kitchen taps and taps and showers used in common areas equipped with time control devices	
	Ecolabel for campsites	Voluntary	Maximum flow rate: 10 L/min for taps and showerheads Maximum average flow rate:	

⁴⁹ <http://www.europeanwaterlabel.eu/>

⁵⁰ <http://www.umweltzeichen.at>

Country	Scheme	Type	Requirements on water consumption	Other requirements of relevance
			8 L/min for taps and showerheads Kitchen taps equipped with time control devices	
Czech Republic	Ecolabel for tourist accommodation services and campsites ⁵¹	Voluntary	Maximum flow rate for campsites: 9 L/min for taps and showerheads Maximum flow rate for tourist accommodation services: 8 L/min for taps and showerheads	
Germany	WELL , Water Efficiency Label from EU	Voluntary	Classification systems (A to D) based on water flow and temperature control.	
Italy	Legislation for reduction of water consumption applied in some municipalities, e.g. Avigliana (Piedmont district) ⁵² and Sassari (Sardinia district) ⁵³ .	Mandatory	Maximum flow rates equal to 8-12 L/min in Avigliana for all taps of bathrooms and showers with the exception of bathtub taps. Mandatory installation of aerators in all taps of bathrooms and kitchen (with the exception of bathtub taps) in Sassari in order to reduce the maximum water flow to 8 L/min.	
Latvia	Green Certificate for accommodation services ^{54 55}	Voluntary	Maximum flow rate for taps: 8 L/min Maximum flow rate for showerheads: 10 L/min Taps must not have any leaks. Taps and showerheads are equipped with water flow control devices.	

⁵¹ <http://www.ekoznacka.cz>

⁵² Città di Avigliana: Regolamento Edilizio. Testo Integrato cos'i come emendato in C.C. del 10 Aprile 2007. Allegato energetico – ambientale al Regolamento Edilizio della città di Avigliana. Available at: http://www.comune.avigliana.to.it/comune/risorse/regolamenti/area_ed_priv/ALLEGATOENERGETICO.pdf

⁵³ Città di Sassari: Regolamento energetico – ambientale 2008. Available at: http://www.comune.sassari.it/comune/regolamenti/energetico_ambientale.htm

⁵⁴ http://www.celotajs.lv/cont/prof/quality/certificates_en.html.

⁵⁵ <http://www.celotajs.lv/Hotel/>.

Country	Scheme	Type	Requirements on water consumption	Other requirements of relevance
Luxembourg	Ecolabel for tourist accommodation services ⁵⁶	Voluntary	Maximum flow rate for taps: 10 L/min Maximum flow rate for showerheads: 12 L/min Taps must be single-lever taps	
Nordic Countries (Denmark, Finland, Iceland, Norway, Sweden)	Nordic Swan for restaurants ⁵⁷	Voluntary	Rinsing taps equipped with dead man's handle to shut off when the lever is released or sensor controlled	
	Nordic Swan for hotels and youth hostels ⁵⁸	Voluntary	Water flow lower than 8L/min for 90% of mixer taps for wash basins Water flow lower than 10L/min for 90% of showerheads of guest rooms 90% of mixer taps must be single-lever taps or sensor-equipped	
Portugal	General Regulation for Water and Drainage of Residual Waters in Public and Residential Building Systems ⁵⁹			Establishes requirements for the design of water supply systems
	ANQIP (National Association for Quality in Building Installations) water efficiency labelling scheme ⁶⁰	Voluntary	Classification system (A++ to E), different criteria for kitchen taps, bathroom taps, and showerheads Water efficiency of products is rated from E (lowest performance) to A++ (highest performance).	

⁵⁶ See <http://www.oeko.lu/index.php?idusergroup=12> for more information.

⁵⁷ <http://www.svanen.nu/sismabmodules/criteria/getfile.aspx?fileid=102149001>

⁵⁸ <http://www.svanen.nu/sismabmodules/criteria/getfile.aspx?fileid=102149001>

⁵⁹ Regulamento Geral dos Sistemas Públicos e Prediais de Distribuição de Água e de Drenagem de Águas Residuais. Decreto Regulamentar n° 23/95 de 23-08-1995. Diário da República n° 194 Série I Parte B de 23/08/1995, Lisboa. Available at: <http://dre.pt/pdfgratis/1995/08/194B00.pdf>

⁶⁰ Silva-Afonso A & Pimentel-Rodrigues C: Water efficiency of products. The Portuguese system of certification and labelling. Coimbra 2010

Country	Scheme	Type	Requirements on water consumption	Other requirements of relevance
			Criteria for showers and shower systems, bathroom taps and kitchen taps	
Slovakia	Ecolabel for accommodation services ⁶¹⁶²	Voluntary	<p>Maximum flow rate of 12 L/min for taps and showerheads</p> <p>Average flow from taps and showerheads excluding bath taps must not exceed 8.5 L/min</p> <p>Temperature control for at least 80% of taps</p> <p>Showers should be equipped with an automatic system to stop the water flow automatically when not in use.</p>	
Spain	Spanish national building codes (Código Técnico de Edificación) of March 2006 ⁶³	Mandatory	<p>Water saving measures⁶⁴:</p> <p>Water meters for both cold and hot water;</p> <p>Return tube in the domestic hot sanitary water piping when distance between boiler and farthest final discharge point is more than 15 m;</p> <p>Water saving devices In buildings with access for the public.</p>	
	Regulations on regional and/or local level exist, e.g. Catalonia ⁶⁵ , Madrid ⁶⁶ , San Cristóbal de Segovia ⁶⁷ . A list of other Spanish municipalities or autonomous communities		In general, in public buildings taps must be equipped with timers or other devices to stop the water flow automatically. In some regions,	

61 <http://www.enviro.gov.sk/>

62 http://www.sazp.sk/public/index/open_file.php?file=CEM/EVP/RegisterOznameni/Oznamenie_c01-08.doc

63 Ministerio de Vivienda: Real Decreto 314/2006, de 17 de marzo, por el que se aprueba el Código Técnico de la Edificación. Boletín Oficial del Estado 74 (2006) 11816-11831. Available at: <http://www.boe.es/boe/dias/2006/03/28/pdfs/A11816-11831.pdf>

64 Ministerio de la Vivienda: El Código Técnico de la Edificación. Documento Básico HS. Salubridad. 2009. Available at: http://www.codigotecnico.org/fileadmin/Ficheros_CTE/Documentos/CTEabr09/DB%20HS%20abril%202009.pdf

65 Decreto 202/1998, de 30 de julio, por el que se establecen medidas de fomento para el ahorro de agua en determinados edificios y viviendas. Diari Oficial de la Generalitat de Catalunya 2697 (1998) 10052. Available at: <http://mediambient.gencat.net/binLegis/983829e.pdf>

66 Ordenanza de Gestión y Uso Eficiente del Agua en la Ciudad de Madrid. Boletín oficial del Ayuntamiento de Madrid 5709 (2006) 2410-2443. Available at:

<http://www.munimadrid.es/UnidadesDescentralizadas/UDCBOAM/Contenidos/Boletin/2006/Ficheros/22062006.pdf>

67 Ordenanza municipal para el ahorro en el consumo de agua en San Cristóbal de Segovia. Boletín oficial de la provincia de Segovia 20 (2005). Available at: http://www.dipsegovia.es/uploads/bops/N20_160205.pdf

Country	Scheme	Type	Requirements on water consumption	Other requirements of relevance
	which have legislation in place to save water is available ⁶⁸ .		<p>the same also applies to public showers.</p> <p>In new or reformed buildings of Catalonia, water using products (taps, showerheads, bidets, wash basins, sinks, and toilets) have to present devices that allows for water saving.</p> <p>In Madrid, the maximum water flow rate for taps and showers for new buildings is 10 L/min.</p> <p>In San Cristóbal de Segovia, new buildings should have only single-lever mixers equipped with aerators or other water-saving devices that allow for a maximum flow rate of 8 L/min only. For showers, a maximum water flow of 10 l/min is allowed.</p>	
	Distintiu de Garantia de Qualitat Ambiental (emblem of guarantee of environmental quality) of Catalonia for water saving products ^{69 70}	Voluntary	<p>Maximum flow rate:</p> <p>8 L/min for taps</p> <p>10 L/min for showers</p>	
			<p>Same criteria for accommodation services ^{71 72 73} and office buildings ^{74 75}.</p>	

68 Ecología y Desarrollo: Lo público debe ser ejemplar. Ecología y Desarrollo, Zaragoza 2009. Available at: http://www.agua-dulce.org/htm/legislacion/legislacion_efic_espana_1.asp

69 Resolució de 15 de gener de 2001, per la qual s'estableixen els criteris mediambientals per a l'atorgament del distintiu de garantia de qualitat ambiental als productes i als sistemes que afavoreixen l'estalvi d'aigua. Diari Oficial de la Generalitat de Catalunya 3321 (2001). Available at: http://mediambient.gencat.net/cat/el_departament/actuacions_i_serveis/legislacio/ecoprod/resoluci_15_01_2001.jsp?ComponentID=2307&SourcePageID=3872

70 Resolución MAH/2407/2009, de 29 de abril, por la que se establecen los criterios ambientales para el otorgamiento del distintivo de garantía de calidad ambiental a los productos y a los sistemas que favorecen el ahorro de agua. Diari Oficial de la Generalitat de Catalunya 5460 (2009) 66627-66632. Available at: http://www.mediambient.gencat.cat/cat/empreses/ecoproductes_i_ecoserveis/pdf/criteris_ambientals/cast/040.pdf

71 Resolución MAH/1239/2007, de 11 abril, por la que se establecen los criterios ambientales para el otorgamiento del distintivo de garantía de calidad ambiental en los campings. Diari Oficial de la Generalitat de Catalunya 4876 (2007) 15654-15657. Available at: http://www.mediambient.gencat.cat/cat/empreses/ecoproductes_i_ecoserveis/pdf/criteris_ambientals/cast/090.pdf

72 Resolución MAH/4041/2007, de 30 de noviembre, por la que se establecen los criterios ambientales para el otorgamiento del distintivo de garantía de calidad ambiental a los establecimientos hoteleros. Diari Oficial de la Generalitat de Catalunya 5053 (2008) 5558-5570. Available at: http://www.mediambient.gencat.cat/cat/empreses/ecoproductes_i_ecoserveis/pdf/criteris_ambientals/cast/140.pdf

73 Resolución MAH/2107/2009, de 29 de abril, por la que se establecen los criterios ambientales para el otorgamiento del distintivo de garantía de calidad ambiental a las instalaciones juveniles. Diari Oficial de la Generalitat de Catalunya 5429 (2009) 59273-59285. Available at: http://www.mediambient.gencat.cat/cat/empreses/ecoproductes_i_ecoserveis/pdf/criteris_ambientals/cast/130.pdf

Country	Scheme	Type	Requirements on water consumption	Other requirements of relevance
			For public offices: 50 % of the basin taps with a flow rate lower than 12 L/min, additional points for taps which use less than 8 L/min ⁷⁶ .	
Sweden	Building regulations ⁷⁷	Mandatory	Design of water pipes and placement of water heaters in such a way that “hot tap water can be obtained within approximately 10 seconds with a flow of 0.2 L/s” (12 L/min).	
	Swedish Standard SS 820000:2010 ⁷⁸	Voluntary	Includes a testing scheme for a proposed energy labelling of taps. An energy certification scheme based on the standard was proposed ⁷⁹ .	
United Kingdom	The Water Supply (Water Fittings) Regulations 1999 ⁸⁰ .	Mandatory	Set minimum standards for the water use of WCs, washing machines, dishwashers, and washer driers Total water use limited to 80-120 l/min and person	
	Code for Sustainable Homes ⁸¹	Voluntary Mandatory for	Rates the sustainability of a house. Criteria include minimum standards for energy and water use. The water consumption per person	

74 Resolución MAH/2151/2009, de 15 de julio, por la que se establecen los criterios ambientales para el otorgamiento del distintivo de garantía de calidad ambiental en los establecimientos de turismo rural. Diari Oficial de la Generalitat de Catalunya 5431 (2009) 60093-60103. Available at: http://www.mediambient.gencat.cat/cat/empreses/ecoproductes_i_ecoserveis/pdf/criteris_ambientals/cast/160.pdf

75 Resolución MAH/1390/2006, de 24 de abril, por la que se establecen los criterios ambientales para el otorgamiento del distintivo de garantía de calidad ambiental a los edificios de uso de oficinas. Diari Oficial de la Generalitat de Catalunya 4632 (2006) 21411-21415. Available at: http://www.mediambient.gencat.cat/cat/empreses/ecoproductes_i_ecoserveis/pdf/criteris_ambientals/cast/250.pdf

76 Resolución MAH/1389/2006, de 27 de abril, por la que se establecen los criterios ambientales para el otorgamiento del distintivo de garantía de calidad ambiental a las redes de oficinas con atención al público. Diari Oficial de la Generalitat de Catalunya 4632 (2006) 21408-21411. Available at: http://www.mediambient.gencat.cat/cat/empreses/ecoproductes_i_ecoserveis/pdf/criteris_ambientals/cast/240.pdf

77 Building Regulations. Mandatory provisions and general recommendations. Section 6 Hygiene, health and the environment. Swedish Board of Housing, Building and Planning, 2006. Available at:

http://www.boverket.se/Global/Webbokhandel/Dokument/2008/BBR_English/6_Hygiene_health_and_the_environment.pdf

78 SS 82000:2010. Sanitary tapware - Method for determination of energy efficiency of mechanical basin and sink mixing valves. Swedish Standards Institute, Stockholm 2010

79 Wahlström Å: Test methods and scheme rules for energy labelling of tap water devices. ECEEE 2009 Summer Study, 1-6 June 2009, La Colle sur Loup, France. Available at: http://www.energy-management.se/attachments/documents/40/4033_wahlstrom.pdf

80 The Water Supply (Water Fittings) Regulations 1999. Statutory Instrument 1999 No. 1148. Available at: <http://www.opsi.gov.uk/si/si1999/19991148.htm>

81 Department for Communities and Local Government: The Code for Sustainable Homes. Setting the standard in sustainability for new homes. February 2008. Department for Communities and Local Government, London 2008. Available at: <http://www.communities.gov.uk/documents/planningandbuilding/pdf/codesustainablehomesstandard.pdf>

Country	Scheme	Type	Requirements on water consumption	Other requirements of relevance
		new buildings	and day is rated and limited to 80 to 120 L per person and day depending on efficiency level ⁸² . Water use of the building has to be assessed using the water efficiency calculator ⁸³ .	
	Waterwise Marque for products which reduce water wastage or raise the awareness of water efficiency ⁸⁴	Voluntary		
	Bathroom Manufacturers Association of the United Kingdom's water labelling scheme ^{85 86}		The maximum flow rates is 6 L/min and 13 L/min for taps and showers, respectively	

⁸² Department for Communities and Local Government: Code for Sustainable Homes. Technical Guide. May 2009. Version 2. Department for Communities and Local Government, London 2009. Available at:

http://www.planningportal.gov.uk/uploads/code_for_sustainable_homes_techguide.pdf

⁸³ Department for Communities and Local Government: The Water Efficiency Calculator for new dwellings. The Government's national calculation methodology for assessing water efficiency in new dwellings in support of: The Code for Sustainable Homes, May 2009 and subsequent versions; The Building Regulations 2000 (as amended); The Building (Approved Inspector etc) Regulations 2000 (as amended). Department for Communities and Local Government, London 2009. Available at:

http://www.planningportal.gov.uk/uploads/br/water_efficiency_calculator.pdf

⁸⁴ More information is provided at: http://www.waterwise.org.uk/reducing_water_wastage_in_the_uk/house_and_garden/waterwise_marque.html

⁸⁵ See <http://www.water-efficiencylabel.org.uk/>.

⁸⁶ As of 18 February 2010.

Table A1.7. Mandatory, voluntary legislation and labeling covering taps and showers in Third Countries

Country	Scheme	Type	Criteria
Australia	Water Efficiency Labelling and Standards (WELS) scheme ⁸⁷ .	Mandatory	Rating criteria for water efficiency based on the Australian and New Zealand standard AS/NZS 6400:2005
Canada	BuiltGreen programme for the certification of green buildings ^{88 89} In dependence of the rating achieved, the label is awarded in a bronze, silver, gold, or platinum version.	Voluntary	Kitchen Taps: < 6 L/min and hand-free control Bathroom Taps: < 4 L/min Showerheads: < 7.5 L/min
	British Columbia's Building Codes ^{90 91} .	Mandatory	Taps: < 8.3 L/min Showerheads < 9.5 L/min
China	Water conservation certification scheme for several water products (including taps, showerheads and showers) ⁹²	Voluntary	Criteria not known
Hong Kong	WELS Hong Kong based on AS/NZS 3662:2005 ^{93 94 95}	Voluntary	Between: < 9 L/min (grade 1) to > 16 L/min (grade 4)
Japan	Ecomark Japan ⁹⁶	Voluntary	Water-saving top (or tap equipped with water-saving top): discharge rate 70 % when handle is fully opened; Flow-control valve (or faucet with built-in flow control valve): 5-8 L/min when handle is fully opened; Aerator cap: 80 % of water

87 Water Efficiency Labelling and Standards Act 2005. No. 4/2005. An Act to provide for water efficiency labelling and the making of water efficiency standards, and for related purposes. Available at: [http://www.comlaw.gov.au/ComLaw/Legislation/Act1.nsf/0/B0C04F6D12927C49CA256FB000131478/\\$file/004-2005.pdf](http://www.comlaw.gov.au/ComLaw/Legislation/Act1.nsf/0/B0C04F6D12927C49CA256FB000131478/$file/004-2005.pdf)

88 See <http://www.builtgreencanada.ca/> for more information.

89 BuiltGreen: BuiltGreen Checklist. Effective April 1, 2010. Built Green, Edmonton 2010. Available at: http://builtgreencanada.ca/uploads/files/2010_Built_Green_Checklist_-_For_Release_V2010-3.xls

90 See <http://www.housing.gov.bc.ca/building/green/>.

91 Webb C: Changes to the Building Code, Effective September 5, 2008. Ministry for Housing and Social Development, Building and Safety Standards Branch, Victoria 2008. Available at: <http://www.housing.gov.bc.ca/building/docs/TextofCodechanges.pdf>

92 See <http://www.cecp.org.cn/former/englishhtml/products.asp#ewater>.

93 Water Supplies Department: Water Supplies Department launches Voluntary Water Efficiency Labelling Scheme. Press release 10 September 2009. Water Supplies Department, Hong Kong 2009. Available at: <http://www.info.gov.hk/gia/general/200909/10/P200909100158.htm>

94 See http://www.wsd.gov.hk/en/plumbing_and_engineering/wels/introduction_to_wels/index.html.

95 Water Supplies Department: The Hong Kong Voluntary Water Efficiency Labelling Scheme on Showers for Bathing. Water Supplies Department, Hong Kong 2009. Available at: http://www.puntofocal.gov.ar/notific_otros_miembros/hkg32_t.pdf

96 Japan Environment Association: Eco Mark Product Category No.116 "Water-saving Equipment Version 2.2". Japan Environment Association, Eco Mark Office, Tokyo 2006. Available at: <http://www.ecomark.jp/english/pdf/116eC22.pdf>

			<p>flow compared to w/o cap; minimum water flow rate not below 5 L/min;</p> <p>Flow control valve: 80 % of water flow compared to w/o flow control valve; minimum water flow rates not below 5 L/min and 8 L/min (kitchen and bathroom taps and shower rooms, respectively).</p> <p>Taps: present devices for control of discharge and temperature</p> <p>Showerheads: present devices for temporarily switch off the water flow</p>
New Zealand	WELS New Zealand (proposed) ⁹⁷ for washing machines, dishwashers, toilets, showers, tap equipment and urinal equipment ⁹⁸ .	Mandatory	<p>Showers: From 7.5 - 9 l/min (3 stars) to > 16 l/min (0 stars)</p> <p>Taps: From < 4.5 l/min (6 stars) to > 16 l/min (0 stars)</p>
Singapore	WELS Singapore ^{99 100 101}	Mandatory for taps and mixers, voluntary for other products (750 shower taps and mixers, 1297 basin taps and mixers, 1423 sink taps and mixers and 209 showerheads have been labelled ¹⁰²)	<p>Showerheads:</p> <p>< 5 l/min (excellent) to 7-9 l/min (good)</p> <p>Shower taps and mixers:</p> <p>> 9 l/min (zero) to < 5 l/min (excellent)</p> <p>Basin taps and mixers:</p> <p>> 6 l/min (zero) to < 2 l/min (excellent)</p> <p>Sink taps and mixers:</p> <p>> 8 l/min (zero) to < 4 l/min (excellent)</p>
South Korea	Ecolabel for different water using products, including faucets, showerheads, toilets Error! Bookmark not	Voluntary	<p>Taps:</p> <p>< 9 l/min for kitchen taps, < 7.5 l/min for sink taps, <</p>

⁹⁷ See <http://www.mfe.govt.nz/issues/water/wels-scheme.html> for more information.

⁹⁸ Ministry of Consumer Affairs: Proposed Implementation of Mandatory Water Efficiency Labelling. Discussion document for consultation under the Fair Trading Act 1986. Ministry of Consumer Affairs, Wellington 2007. Available at: <http://www.consumeraffairs.govt.nz/policylawresearch/water-eff-label/discussion-document/dp-wel.pdf>

⁹⁹ See <http://www.pub.gov.sg/wels/Pages/default.aspx> for more information.

¹⁰⁰ Public Utilities Act (Chapter 261). Public utilities (water supply) (amendment) Regulations 2008. Government Gazette (Electronic Edition) S703/2008. Available at: http://www.pub.gov.sg/wels/links/Documents/MWELS%20Regulations_31Dec08.pdf

¹⁰¹ Public Utilities Board: Water Efficiency Labelling Scheme (voluntary & mandatory). PUB. Republic of Singapore. 2009. Available at: http://www.pub.gov.sg/wels/rating/Documents/WELS_Guidebook.pdf

¹⁰² As of 18 February 2010. The list of all products is at: <http://www.pub.gov.sg/wels/products/Pages/default.aspx>.

	defined. , thermostatic valves 103 104 105		9.5 l/min for other taps Showerheads: < 9.5 l/min Thermostatic valves: < 3.5 W in operate mode
Switzerland	Swiss energy label Error! Bookmark not defined. for sanitary tapware ¹⁰⁶ including showerheads, taps and water saving equipment ¹⁰⁷ .	Voluntary (about 530 products were awarded the label ¹⁰⁸)	Showerheads: < 12 l/min Single-lever mixers: < 9 l/min for sink/washbasin and bidet mixers, < 12 l/min for shower mixers Thermostatic mixers: < 9 l/min for washbasin and < 12 l/min for shower mixers Shut-off valves: Have to be equipped with automatic shut-off device Flow rate regulators: < 9 l/min for washbasin and < 12 l/min for shower
Taiwan	Greenmark Taiwan for different water using products, including water-saving faucets/devices ¹⁰⁹	Voluntary	Taps < 9 l/min Water saving devices for taps < 9 l/min
Thailand	Ecolabel Thailand for different water using products, including faucets and sanitary accessories ^{110 111} .	Voluntary (14 products in the product group of faucets and showerheads have been awarded the ecolabel ¹¹²)	Manual taps < 6 l/min Automatic taps < 5 l/min Showerheads

103 See http://www.koeco.or.kr/eng/business/business01_03.asp?search=1_3 for the full list of covered products.

104 Korea Eco-Label: EL221. Water-saving Faucets [EL221-1992/5/2004-58]. Available at: http://www.koeco.or.kr/eng/business/cover_document/EL221.pdf

105 Korea Eco-Label: EL222. Water-saving Showerheads or Faucet Appendages [EL222-2000/2/2002-96]. Available at: http://www.koeco.or.kr/eng/business/cover_document/EL222.pdf

106 See <http://www.gealabel.org/home.htm>.

107 Reglement zur Kennzeichnung energiesparender Warmwasser-Komponenten. Referenz: WW-CH0600. EnergieSchweiz, 2002. Available at: http://www.bfe.admin.ch/php/modules/publikationen/stream.php?extlang=de&name=de_542721262.pdf

108 SVGW: Marktüberwachung Energy-Label – Expertise. Schweizerischer Verein des Gas- und Wasserfaches SVGW, Zurich 2007. Available at: http://www.bfe.admin.ch/energielabel/index.html?lang=de&dossier_id=02108

109 See full list of product groups at: http://greenliving.epa.gov.tw/GreenLife/greenlife-v2/E_Criteria.aspx.

110 See <http://www.tei.or.th/greenlabel/> for more information.

111 Thailand Environment Institute: TGL-11-R1-03. Faucets and Sanitary Accessories. Office of The Green Label Secretariat, Thailand Environment Institute (TEI), Nonthaburi 2003. Available at: <http://www.tei.or.th/greenlabel/Eng%20PDF/Tgl-11-R1-03.pdf>

112 As of March 2009 (<http://www.tei.or.th/greenlabel/pdf/2009-03-31-Name-TGL-eng.pdf>).

			< 5 l/min
United States	Energy Policy Act 1992 ^{113 114} .	Mandatory	Showerheads < 9.5 l/min at 0.55 MPa Faucets and aerators < 9.5 l/min at 0.55 MPa Metering faucets < 1 l per cycle
	EPA WaterSense scheme ¹¹⁵ for bathroom taps ¹¹⁶ and showerheads are a maximum flow rate of 2 gallons per minute (about 7.6 l/min) at 20, 45 and 80 psi ^{117 118} .	Voluntary (1623 labelled bathroom faucets and accessories) ¹¹⁹	Bathroom taps < 5.7 l/min at 60 psi Showerheads < 7.6 l/min at 20, 45, and 80 psi Spray force > 0.56 N at 20 psi
	Florida Water Star label for residential and commercial buildings ^{120 121 122} : (silver/gold label for new buildings and bronze label for existing buildings).	Voluntary	Showerhead: < 9.5 l/min Sink taps: < 6.1 l/min or < 3.8 l/min (points depend on flow rate and number of taps meeting the requirements)
	LEED (Leadership in Energy and Environmental Design) certification scheme for green buildings ^{123 124 125 126} .	Voluntary	Total water use in new buildings (through closets, urinals, lavatory faucets, showers, kitchen sinks, and prerinse spray valves) should

113 Energy Policy Act of 1992. The Library of Congress. Available at: <http://thomas.loc.gov/cgi-bin/query/z?c102:H.R.776.ENR>:

114 McMahon JE, Whitehead CD, Biermayer P: Saving Water Saves Energy. In: Bertoldi P, Kiss B, Atanasiu B (eds.): Energy Efficiency in Domestic Appliances and Lighting. Proceedings of the 4th International Conference EEDAL'06. 21-23 June 2006, London. Available at: <http://re.jrc.ec.europa.eu/energyefficiency/pdf/EEDAL06/EEDAL06%20Proceedings-Volume1.pdf>

115 See http://www.epa.gov/watersense/about_us/watersense_label.html for more information.

116 EPA WaterSense FAQ: WaterSense Labeled High-Efficiency Lavatory (Bathroom Sink) Faucet specification. US EPA, Washington DC, 2007. Available at: http://www.epa.gov/watersense/docs/ws_faq_faucet508.pdf

117 EPA WaterSense: Draft Specifications for Showerheads. US EPA, Washington DC, 2009. Available at: http://www.epa.gov/watersense/docs/showerhead_draftspec508.pdf

118 EPA WaterSense: WaterSense Specification for Showerheads. US EPA, Washington DC, 2010. Available at: http://www.epa.gov/watersense/docs/showerheads_finalspec508.pdf

119 As of 22 February 2010.

120 See <http://floridaswater.com/floridawaterstar/> for more information.

121 Florida Water Star Residential Criteria. Qualification Points List Silver/Gold. Florida Water Star, Palatka 2009. Available at: http://floridaswater.com/floridawaterstar/pdfs/Silver-Gold_registration_form-points_list.pdf

122 Florida Water Star Residential Criteria. Qualification Points List Bronze. Florida Water Star, Palatka 2010. Available at: http://floridaswater.com/floridawaterstar/pdfs/Bronze_registration_form-points_list.pdf

123 See <http://www.usgbc.org/DisplayPage.aspx?CategoryID=19> for more information.

124 USGBC: LEED 2009 for core and shell development. USGBC Member Approved November 2008. U.S. Green Building Council, Washington DC 2009. Available at: <http://www.usgbc.org/ShowFile.aspx?DocumentID=5544>

125 USGBC: LEED 2009 for commercial interiors. USGBC Member Approved November 2008. U.S. Green Building Council, Washington DC 2009. Available at: <http://www.usgbc.org/ShowFile.aspx?DocumentID=5543>

126 USGBC: LEED 2009 for schools new constructions and major renovations. USGBC Member Approved November 2008. U.S. Green Building Council, Washington DC 2009. Available at: <http://www.usgbc.org/ShowFile.aspx?DocumentID=5547>

			be reduced by 20 % compared to a baseline ¹²⁷ .
Others (worldwide)	Green Key label for hotels, youth hostels, conference- and holiday centres, campsites, holiday houses and leisure facilities ^{128 129 130 131} .	Voluntary	50% showers: < 9 l/min 50% Taps: < 8 l/min (not for campsites)

127 USGBC: LEED 2009 for new constructions and major renovations. USGBC Member Approved November 2008. U.S. Green Building Council, Washington DC 2009.

Available at: <http://www.usgbc.org/ShowFile.aspx?DocumentID=5546>

128 See <http://green-key.org/> for more information.

129 The Green Key: The Green Key: An Eco-Label for Leisure Organisations. Baseline Criteria for hotels, youth hostels, conference and holiday centres 2009-2010.

Available at: http://www.kmvk.nl/cmslib/www.kmvk.nl/greenkeyorg/files/International_baseline_criteria_HOTELS_V1.doc

130 The Green Key: The Green Key: An Eco-Label for Leisure Organisations. Baseline Criteria for attractions 2009-2010. Available at:

http://www.kmvk.nl/cmslib/www.kmvk.nl/greenkeyorg/files/International_baseline_criteria_ATTRACTIONS.pdf

131 The Green Key: The Green Key: An Eco-Label for Leisure Organisations. Baseline Criteria for camp sites 2009-2010. Available at:

http://www.kmvk.nl/cmslib/www.kmvk.nl/greenkeyorg/files/International_baseline_criteria_CAMP_SITES_v1.doc

ANNEX II: MARKET ANALYSIS

EU PRODUCTION

Table A2.1 Production, Sold volume in Thousands kilos/Value in Million Euros– 2008

	PRODCOM 28.14.12.33 ⁹		PRODCOM 28.14.12.35 ⁹	
	(10 ³ kg)	(M€)	(10 ³ kg)	(M€)
EU-27*	133,042	2,722	218,058	2,400
Austria	:C	:C	:C	:C
Belgium	-	-	:C	:C
Bulgaria	:C	:C	229	2
Cyprus	-	-	-	-
Czech Republic	3,527	27	:C	20
Denmark	1,215	97	-	-
Estonia	-	-	-	-
Finland	3,447	92	:E	5
France	1,154	41	9,576	208
Germany	37,851	968	:C	:C
Greece	-	-	-	-
Hungary	:C	:C	346	4
Ireland	-	-	-	-
Italy	38,668	687	76,421	955
Latvia	-	-	-	-
Lithuania	248	3	557	:E
Luxembourg	-	-	-	-
Malta	-	-	-	-
Poland	3,888	68	:C	31
Portugal	13,144	224	1,339	11
Romania	:C	:C	565	4
Slovakia	-	-	1,025	13
Slovenia	:C	:C	:C	:C
Spain	10,585	160	7,819	57
Sweden	2,514	79	:C	:C
The Netherlands	:E	:C	:E	:C
The United Kingdom	:E	72	:E	101

⁹ See Table A1.1

* Note that the EU 27 total includes estimates and confidential data not published here.

(:C)=Confidential, (:CE)=Confidential Estimated, (:E)=Estimated

All sold volumes are expressed in thousands

Table A2.2 Calculated Production in Units (thousands of units)

	Taps	Showers
EU-27	164,578	54,859
Austria	:C	:C
Belgium	:C	:C
Bulgaria	107*	36*
Cyprus	-	-
Czech Republic	1,653*	551*
Denmark	569*	190*
Estonia	-	-
Finland	1,616*	539*
France	5,030	1,677
Germany	17,743*	5,914*
Greece	-	-
Hungary	162*	54*
Ireland	-	-
Italy	53,948	17,983
Latvia	-	-
Lithuania	377	126
Luxembourg	-	-
Malta	-	-
Poland	1,823*	608*
Portugal	6,789	2,263
Romania	265*	88*
Slovakia	480*	160*
Slovenia	:C	:C
Spain	8,627	2,876
Sweden	1,179*	393*
The Netherlands	:E	:E
The United Kingdom	:E	:E

* Incomplete data (data available for only one out of the two PRODCOM codes)

(:C)=Confidential, (:CE)=Confidential Estimated, (:E)=Estimated

EU TRADE

Table A2.3 Total Import/exports thousands kilos/Value in Million Euros– 2008

Country	CN 8481 80 11 [⊖]		CN 8481 80 11 [⊖]		CN 8481 80 19 [⊖]		CN 8481 80 19 [⊖]	
	Imports (10 ³ kg)	Exports (10 ³ kg)	Imports (M€)	Exports (M€)	Imports (10 ³ kg)	Exports (10 ³ kg)	Imports (M€)	Exports (M€)
EU27	139,682.0	127,130.3	1,951.3	2,340.9	76,453.4	44,534.6	820.5	706.6
Austria	4,564.2	3,991.8	74.3	52.8	2,000.2	512.4	30.3	7.3
Belgium	6,757.9	3,270.1	109.4	35.4	2,536.6	622.7	33.3	7.3
Bulgaria	1,160.5	8,218.1	10.8	110.6	599.9	10.5	4.2	0.1
Cyprus	544.9	5.1	8.1	0.1	159.7	0.5	1.7	0.0
Czech Republic	2,570.0	2,732.6	36.1	17.6	943.7	653.2	13.2	7.9
Denmark	2,660.5	2,853.6	43.1	75.0	972.0	954.4	19.4	29.4
Estonia	511.1	112.8	7.6	2.3	238.5	23.2	1.4	0.9
Finland	1,328.4	1,853.1	27.2	47.1	220.6	91.6	4.8	4.4
France	21,285.9	2,714.5	351.3	55.4	5,861.5	2,043.3	57.4	68.0
Germany	38,292.3	38,271.2	500.8	924.8	9,806.7	9,401.3	108.6	198.0
Greece	4,476.0	515.8	45.1	5.6	2,746.1	213.5	25.7	1.4
Hungary	1,652.9	758.3	20.5	10.6	723.7	94.5	7.0	1.8
Ireland	1,088.3	24.9	12.2	0.4	2,063.6	170.4	15.7	1.3
Italy	10,719.3	31,734.8	137.4	543.1	9,020.5	17,607.7	91.2	238.5
Latvia	476.6	18.5	6.8	0.3	113.0	21.8	1.3	0.3
Lithuania	1,461.1	740.7	15.6	7.1	529.0	668.9	4.1	15.8
Luxemburg	264.3	10.3	9.4	0.5	161.7	13.3	3.7	0.3
Malta	226.9	0.0	2.6	0.0	150.6	85.5	1.2	0.5
Poland	7,783.0	2,763.5	82.4	39.0	1,989.8	632.0	22.5	7.9
Portugal	2,022.8	13,022.6	26.8	196.4	1,071.4	2,133.5	11.7	22.8
Romania	3,508.4	5.0	18.0	0.1	1,766.3	149.3	15.5	1.1
Slovakia	885.5	128.1	13.8	2.0	1,064.3	56.1	9.1	0.7
Slovenia	1,067.2	2,496.2	11.9	30.7	585.1	1,698.2	5.3	16.8
Spain	6,509.8	5,508.8	114.2	85.7	7,855.6	3,893.7	86.2	39.0
Sweden	2,035.6	2,983.5	28.4	57.9	2,212.2	27.7	15.1	1.1
The Netherlands	5,315.2	629.5	105.1	7.3	2,909.9	241.2	21.7	6.4
United Kingdom	10,513.4	1,766.9	132.4	33.2	18,151.2	2,514.2	209.2	27.7

[⊖] See Table A1.1.

Table A2.4 Calculated Imports of Taps and Showers (thousands of units)

	Taps	Showers
EU27	101,313.5	33,771.2
Austria	3,077.1	1,025.7
Belgium	4,356.8	1,452.3
Bulgaria	825.2	275.1
Cyprus	330.3	110.1
Czech Republic	1,647.0	549.0
Denmark	1,702.7	567.6
Estonia	351.4	117.1
Finland	726.1	242.0
France	12,725.3	4,241.8
Germany	22,546.4	7,515.5
Greece	3,385.4	1,128.5
Hungary	1,114.0	371.3
Ireland	1,477.5	492.5
Italy	9,253.0	3,084.3
Latvia	276.4	92.1
Lithuania	932.9	311.0
Luxembourg	199.7	66.6
Malta	177.0	59.0
Poland	4,581.0	1,527.0
Portugal	1,450.4	483.5
Romania	2,472.5	824.2
Slovakia	914.0	304.7
Slovenia	774.5	258.2
Spain	6,733.8	2,244.6
Sweden	1,991.2	663.7
The Netherlands	3,855.5	1,285.2
United Kingdom	13,436.5	4,478.8

Table A2.5 Calculated Exports of Taps and Showers (thousands of units)

	Taps	Showers
EU27	80,467.9	26,822.6
Austria	2,111.3	703.8
Belgium	1,824.8	608.3
Bulgaria	3,857.2	1,285.7
Cyprus	2.6	0.9
Czech Republic	1,587.1	529.0
Denmark	1,785.0	595.0
Estonia	63.8	21.3
Finland	911.6	303.9
France	2,230.2	743.4
Germany	22,346.5	7,448.8
Greece	341.9	114.0
Hungary	399.8	133.3
Ireland	91.5	30.5
Italy	23,129.3	7,709.8
Latvia	18.9	6.3
Lithuania	660.8	220.3
Luxembourg	11.1	3.7
Malta	40.1	13.4
Poland	1,591.6	530.5
Portugal	7,104.4	2,368.1
Romania	72.3	24.1
Slovakia	86.3	28.8
Slovenia	1,966.1	655.4
Spain	4,407.4	1,469.1
Sweden	1,411.5	470.5
The Netherlands	408.1	136.0
United Kingdom	2,006.8	668.9

Intra-EU Trade and Extra-EU Trade

Mixing valves for sinks, washbasins, bidets, water cisterns, baths and similar fixtures (CN 8481 8011):

Intra EU27 Imports

Intra EU imports in kg represented nearly 60% of all imports within the EU27. Germany was the largest importer of goods from within the EU27 representing 25% of all intra Europe imports, followed by France (21%), Italy (7%), Spain and the Netherlands (both 5%), in kg.

- 42% of Germany's imports were from Portugal and 27% from Italy (kg)
- 39% of France's imports were from Germany and Italy (both 39%) and Spain (8%) (kg)
- 70% of Italy's imports were from Germany (kg)

In terms of value (euro), the intra Europe imports within EU27 represented 73.5% of the total value of all the EU imports. France and Germany intra EU imports both represented 21% of all intra Europe imports (and 18% and 26%, respectively, of all imports), followed by the Italy, the Netherlands and Spain (all approximately 6.5%).

- Germany's imports were mainly from Portugal (43%) and Italy (26%)
- France's imports came mainly from Italy 41% and Germany (40%)

Intra EU27 Exports

Intra Europe exports represented 70% of all exports in kg. Further analysis of the intra Europe export data indicated that Germany and Italy were the most important exporters representing 27% of the quantity (kg) of all intra EU exports, followed by Portugal with 14%, and Bulgaria with nearly 7%.

- Germany exported to almost all MS and mainly to France (20% of all German exports), 13% to Italy as well as the Netherlands, 9% to Austria, and 7% to both Spain and the UK
- Italy exported mainly to France (29%), Germany (17%), the UK (15%) and to Spain (7%)
- Portugal mainly exported to Germany (70%) and to Spain (24%)

In terms of value (euro), the intra Europe exports represented 68% of the total value of all the EU exports. Germany exports represented 35% of intra EU27 exports (and nearly 40% of all exports), followed by Italy (26%) and Portugal (12% of the intra Europe export value).

- Germany exported mainly to France – 18% of its overall intra Europe export; followed by the Netherlands with 16%
- Italy exported mainly to France (32%), Germany and the UK (both 16%)
- Portugal exported mainly to Germany (72%)

Extra EU27 Imports

- The largest imports (in weight) to Europe came from China, representing 80% of all extra Europe imports, but just 33% of all European imports (intra and extra). In value terms import from China represented 68% of the extra Europe imports, but just 18% of all European imports.

- Import from China represented more than 50% of all imports for some MS such as:
 - Romania (70%) of all imports
 - Poland (66%)
 - Lithuania (67%)
 - Bulgaria (61%)
 - the UK (55%)

Extra EU27 Exports

- Europe main export destination was Russia which represented 22% of all extra Europe exports (expressed in weight), but just 7% of all exports.
- The following Member States exported to Russia:
 - Hungary – 68% of all export to Russia came from Hungary (in kg) and this represented 70% of Hungarian export value (in euro)
 - Lithuania – 62% of its extra EU27 exports were to Russia, which represented 58% of the export value (in euro)
 - Latvia - 58% of its extra EU27 exports in kg were to Russia, representing 58% of the export value (in euro)

For taps, cocks and valves for sinks, washbasins, bidets, water cisterns, baths and similar fixtures (excl. mixing valves) (CN 8481 8019)

Intra EU27 Imports

Intra EU imports in kg represented 50% of all imports within the EU27. The UK was the largest importer of goods from within the EU 27 representing 16% of all intra Europe imports, followed by Germany with 13%, Spain (10%) and France (9%).

- 66% of the UK's imports were from Italy, and 16% were from Germany
- 46% of Germany's intra Europe imports came from Italy, 12% from the Netherlands, and 9% from Portugal
- 76% of Spain's intra Europe imports came from Portugal, and 8% from Italy
- 46% of France's intra Europe imports came from Italy

In terms of value (euro), the intra Europe imports within EU27 represented 61% of the total value of all the EU imports. The UK intra EU imports represented 19% of all intra EU imports, followed by Germany (12%), Spain (11%) and Italy (7%).

- UK's imports were mainly from Italy (59%)
- German's imports came mainly from Italy, representing 39% of the overall value of intra Europe imports
- Spain's imports came from Portugal (68%)

- Italian intra Europe imports were mainly from Germany (77%)

Intra EU27 Exports

Intra Europe exports represented 50% of all exports (in kg). Further analysis of the intra Europe export data indicated that Italy was the biggest intra EU27 exporter representing 29% of the quantity (kg) of all intra EU exports, followed by Germany with 27%, the UK and Spain – both with 7%.

The MS that exported the most within the EU 27 were:

- Italy with 37% of its overall exports being to other MS. Italy mainly exported to Germany representing 31% of its intra EU exports followed by France (22%) and Greece (15%). Again Italy also exports to almost every MS.
- Germany, where 64% of all exports were to other MS. Germany mainly exported to Austria (representing 17% of Germany's intra EU exports), followed by the Netherlands (13%). It can be noted that Germany exports to almost all MS.

Looking at the value (in Euro) of intra EU exports, they represented 54% of all exports for the EU27.

- Germany intra EU export represented 35% of the total value of intra EU exports. It mainly exported to the Netherlands (14%), Austria (13%) and Belgium 12%.
- Italy was the second largest intra EU exporter, representing 25% in value (euro) of all intra EU exports. Italy exported mainly to Germany (23%), France (22%) and the UK (15%).

Extra EU27 Imports

- The largest imports to Europe came from China – 88% of all extra Europe imports originated from there; however it constituted just 44% of all European imports (intra and extra). In terms of value (euro), the imports from China represented 75% of all imports value (extra EU27), but just 30% of the overall European imports value.
- Imports from China (in weight) represented more than 50% of all imports for some MS such as:
 - Italy – 80%
 - Malta – 64%
 - the UK – 54%
- The second largest imports to Europe came from Taiwan (representing just 2% of all European imports (both – in weight and value terms).

Extra EU27 Exports

- Europe main export destination were the United States which represented 15% of extra Europe export expressed in weight, but just 7% of the overall exports; in term of value (euro) the US represented 8% of all export.
- Saudi Arabia was the second main export destination with 7% (kg) of all export from Europe, representing just 5% of the value (euro) of all EU exports.

APPARENT CONSUMPTION

Table A2.6 EU Apparent Consumption (thousands of units)

	Taps	Showers
EU-27	185,424	61,808
Austria	966	322
Belgium	2,532	844
Bulgaria	*(-2,925)	*(-975)
Cyprus	328	109
Czech Republic	1,713	571
Denmark	487	163
Estonia	288	96
Finland	1,431	477
France	15,525	5,175
Germany	17,943	5,981
Greece	3,044	1,015
Hungary	876	292
Ireland	1,386	462
Italy	40,072	13,358
Latvia	258	86
Lithuania	649	217
Luxembourg	189	63
Malta	137	46
Poland	4,812	1,605
Portugal	1,135	378
Romania	2,665	888
Slovakia	1,308	436
Slovenia	*(-1,192)	*(-397)
Spain	10,953	3,652
Sweden	1,759	586
The Netherlands	3,447	1,149
The United Kingdom	11,430	3,810

* The estimates suggest that some member states are net exporters; these are shown as negative values

MARKET AND STOCK DATA

Stock

Domestic sector stock

Table A2.7 Stock taps (units) Domestic sectors (to nearest thousand)

Stock of Taps	2005	2006	2007	2012	2015	2020
EU-27	990,520,000	997,223,000	1,015,257,000	1,069,367,000	1,101,314,000	1,153,998,000
Austria	16,878,000	17,480,000	17,740,000	18,675,000	19,264,000	20,266,000
Belgium	21,176,000	21,094,000	22,381,000	23,167,000	23,615,000	24,325,000
Bulgaria	14,642,000	14,703,000	14,672,000	14,412,000	14,204,000	13,843,000
Cyprus	1,184,000	1,215,000	1,276,000	1,427,000	1,522,000	1,685,000
Czech Republic	20,564,000	20,890,000	21,048,000	22,596,000	23,600,000	25,292,000
Denmark	11,885,000	11,895,000	12,017,000	12,353,000	12,528,000	12,811,000
Estonia	2,558,000	2,619,000	2,655,000	2,821,000	2,873,000	2,958,000
Finland	12,145,000	12,145,000	12,268,000	12,657,000	12,876,000	13,221,000
France	126,327,000	127,470,000	131,815,000	137,052,000	142,087,000	150,514,000
Germany	196,114,000	197,023,000	196,609,000	203,761,000	206,981,000	212,303,000
Greece	20,007,000	21,018,000	21,186,000	22,618,000	23,666,000	25,401,000
Hungary	19,604,000	19,512,000	19,481,000	19,649,000	19,863,000	20,209,000
Ireland	9,128,000	9,376,000	9,653,000	10,930,000	11,664,000	12,722,000
Italy	113,482,000	113,125,000	118,786,000	127,060,000	131,540,000	138,765,000
Latvia	4,309,000	4,247,000	4,176,000	4,518,000	4,617,000	4,784,000
Lithuania	6,024,000	6,085,000	6,065,000	6,885,000	7,276,000	7,985,000
Luxembourg	904,000	909,000	924,000	1,001,000	1,047,000	1,125,000
Malta	659,000	638,000	638,000	698,000	704,000	713,000
Netherlands	35,557,000	35,731,000	35,777,000	36,804,000	36,800,000	36,742,000
Poland	63,151,000	64,667,000	64,851,000	67,352,000	68,740,000	71,022,000
Portugal	18,751,000	19,088,000	19,323,000	20,340,000	21,055,000	22,219,000
Romania	39,422,000	37,370,000	37,574,000	37,457,000	37,394,000	37,245,000
Slovakia	8,275,000	8,490,000	8,536,000	8,899,000	9,136,000	9,532,000
Slovenia	3,640,000	3,620,000	3,814,000	3,938,000	4,053,000	4,233,000
Spain	73,187,000	75,607,000	78,247,000	90,748,000	98,029,000	109,928,000
Sweden	20,012,000	20,127,000	20,327,000	21,185,000	21,686,000	22,491,000
United Kingdom	130,937,000	131,080,000	133,418,000	140,364,000	144,493,000	151,664,000

Table A2.8 Stock of Showers (units) Domestic sectors (to nearest thousand)

Stock of Showers	2005	2006	2007	2012	2015	2020
EU-27	242,530,000	244,171,000	248,587,000	261,836,000	269,658,000	282,558,000
Austria	4,133,000	4,280,000	4,344,000	4,573,000	4,717,000	4,962,000
Belgium	5,185,000	5,165,000	5,480,000	5,672,000	5,782,000	5,956,000
Bulgaria	3,585,000	3,600,000	3,593,000	3,529,000	3,478,000	3,390,000
Cyprus	290,000	298,000	313,000	349,000	373,000	413,000
Czech Republic	5,035,000	5,115,000	5,154,000	5,533,000	5,779,000	6,193,000
Denmark	2,910,000	2,913,000	2,943,000	3,025,000	3,068,000	3,137,000
Estonia	626,000	641,000	650,000	691,000	704,000	724,000
Finland	2,974,000	2,974,000	3,004,000	3,099,000	3,153,000	3,237,000
France	30,931,000	31,211,000	32,275,000	33,557,000	34,790,000	36,854,000
Germany	48,019,000	48,241,000	48,140,000	49,891,000	50,680,000	51,983,000
Greece	4,899,000	5,146,000	5,188,000	5,538,000	5,795,000	6,219,000
Hungary	4,800,000	4,778,000	4,770,000	4,811,000	4,863,000	4,948,000
Ireland	2,235,000	2,296,000	2,363,000	2,676,000	2,856,000	3,115,000
Italy	27,786,000	27,699,000	29,085,000	31,111,000	32,208,000	33,977,000
Latvia	1,055,000	1,040,000	1,023,000	1,106,000	1,131,000	1,171,000
Lithuania	1,475,000	1,490,000	1,485,000	1,686,000	1,782,000	1,955,000
Luxembourg	221,000	223,000	226,000	245,000	256,000	276,000
Malta	161,000	156,000	156,000	171,000	172,000	175,000
Netherlands	8,706,000	8,749,000	8,760,000	9,011,000	9,011,000	8,996,000
Poland	15,463,000	15,834,000	15,879,000	16,491,000	16,831,000	17,390,000
Portugal	4,591,000	4,674,000	4,731,000	4,980,000	5,155,000	5,440,000
Romania	9,653,000	9,150,000	9,200,000	9,171,000	9,156,000	9,119,000
Slovakia	2,026,000	2,079,000	2,090,000	2,179,000	2,237,000	2,334,000
Slovenia	891,000	886,000	934,000	964,000	992,000	1,036,000
Spain	17,920,000	18,513,000	19,159,000	22,220,000	24,003,000	26,916,000
Sweden	4,900,000	4,928,000	4,977,000	5,187,000	5,310,000	5,507,000
United Kingdom	32,060,000	32,095,000	32,668,000	34,368,000	35,379,000	37,135,000

Non Domestic sector Stock

Table A2.9 Stock Taps (units) – Non-Domestic (to nearest thousand)

Stock of Taps	2005	2006	2007	2012	2015	2020
EU-27	66,580,000	68,177,000	69,810,000	77,951,000	83,513,000	95,041,000
Austria	1,394,000	1,414,000	1,433,000	1,614,000	1,698,000	1,851,000
Belgium	1,242,000	1,251,000	1,267,000	1,366,000	1,406,000	1,479,000
Bulgaria	732,000	774,000	847,000	1,122,000	1,332,000	1,816,000
Cyprus	170,000	170,000	172,000	176,000	177,000	179,000
Czech Republic	2,323,000	2,240,000	2,317,000	2,457,000	2,507,000	2,594,000
Denmark	805,000	820,000	828,000	921,000	965,000	1,048,000
Estonia	126,000	140,000	145,000	200,000	248,000	363,000
Finland	634,000	657,000	678,000	775,000	840,000	964,000
France	9,859,000	10,053,000	10,097,000	10,911,000	11,331,000	12,079,000
Germany	7,233,000	7,498,000	7,582,000	8,315,000	8,643,000	9,222,000
Greece	2,334,000	2,365,000	2,394,000	2,624,000	2,781,000	3,092,000
Hungary	1,521,000	1,488,000	1,467,000	1,428,000	1,391,000	1,332,000
Ireland	392,000	415,000	424,000	520,000	576,000	687,000
Italy	11,546,000	11,715,000	12,006,000	13,045,000	13,637,000	14,689,000
Latvia	181,000	194,000	204,000	250,000	276,000	329,000
Lithuania	298,000	336,000	344,000	437,000	508,000	658,000
Luxembourg	107,000	108,000	109,000	119,000	123,000	129,000
Malta	103,000	103,000	106,000	108,000	110,000	113,000
Netherlands	2,142,000	2,250,000	2,281,000	2,447,000	2,557,000	2,764,000
Poland	3,762,000	3,837,000	3,965,000	4,396,000	4,583,000	4,923,000
Portugal	2,180,000	2,214,000	2,220,000	3,156,000	4,072,000	6,356,000
Romania	1,335,000	1,393,000	1,400,000	1,712,000	1,944,000	2,431,000
Slovakia	287,000	306,000	298,000	388,000	446,000	582,000
Slovenia	260,000	276,000	283,000	330,000	355,000	403,000
Spain	7,986,000	8,252,000	8,431,000	9,571,000	10,337,000	11,754,000
Sweden	1,729,000	1,811,000	1,854,000	2,053,000	2,188,000	2,438,000
United Kingdom	5,900,000	6,098,000	6,656,000	7,509,000	8,483,000	10,767,000

Table A2.10 Stock of showers (units) Non Domestic (to nearest thousand)

Stock of shower	2005	2006	2007	2012	2015	2020
EU-27	26,475,000	27,094,000	27,908,000	30,162,000	32,365,000	37,065,000
Austria	799,000	800,000	809,000	855,000	879,000	923,000
Belgium	438,000	434,000	435,000	431,000	427,000	423,000
Bulgaria	236,000	261,000	287,000	400,000	518,000	817,000
Cyprus	86,000	85,000	85,000	81,000	80,000	78,000
Czech Republic	603,000	592,000	606,000	636,000	648,000	669,000
Denmark	370,000	373,000	372,000	377,000	378,000	381,000
Estonia	41,000	46,000	49,000	72,000	97,000	163,000
Finland	237,000	236,000	241,000	251,000	258,000	273,000
France	5,129,000	5,217,000	5,186,000	5,415,000	5,539,000	5,755,000
Germany	3,311,000	3,361,000	3,377,000	3,450,000	3,567,000	3,772,000
Greece	817,000	833,000	843,000	916,000	977,000	1,090,000
Hungary	443,000	434,000	420,000	391,000	376,000	353,000
Ireland	195,000	199,000	201,000	240,000	261,000	299,000
Italy	4,333,000	4,449,000	4,582,000	4,979,000	5,265,000	5,780,000
Latvia	45,000	48,000	49,000	61,000	71,000	91,000
Lithuania	70,000	74,000	76,000	89,000	100,000	124,000
Luxembourg	58,000	58,000	58,000	60,000	61,000	63,000
Malta	41,000	39,000	41,000	41,000	41,000	42,000
Netherlands	1,075,000	1,092,000	1,095,000	1,148,000	1,183,000	1,244,000
Poland	979,000	976,000	993,000	1,045,000	1,064,000	1,098,000
Portugal	581,000	593,000	600,000	739,000	872,000	1,191,000
Romania	405,000	417,000	420,000	467,000	504,000	577,000
Slovakia	157,000	158,000	147,000	173,000	183,000	205,000
Slovenia	79,000	82,000	83,000	92,000	96,000	105,000
Spain	3,044,000	3,136,000	3,166,000	3,492,000	3,754,000	4,234,000
Sweden	689,000	734,000	755,000	809,000	848,000	918,000
United Kingdom	2,216,000	2,366,000	2,932,000	3,453,000	4,318,000	6,397,000

Sales

Domestic sector estimated sales

Table A2.11 Estimated sales of taps (units) - Domestic sectors (to nearest thousand)

Sales of taps	2005	2006	2007	2012	2015	2020
EU-27	61,907,000	62,326,000	63,454,000	66,835,000	68,832,000	72,125,000
Austria	1,055,000	1,092,000	1,109,000	1,167,000	1,204,000	1,267,000
Belgium	1,324,000	1,318,000	1,399,000	1,448,000	1,476,000	1,520,000
Bulgaria	915,000	919,000	917,000	901,000	888,000	865,000
Cyprus	74,000	76,000	80,000	89,000	95,000	105,000
Czech Republic	1,285,000	1,306,000	1,316,000	1,412,000	1,475,000	1,581,000
Denmark	743,000	743,000	751,000	772,000	783,000	801,000
Estonia	160,000	164,000	166,000	176,000	180,000	185,000
Finland	759,000	759,000	767,000	791,000	805,000	826,000
France	7,895,000	7,967,000	8,238,000	8,566,000	8,880,000	9,407,000
Germany	12,257,000	12,314,000	12,288,000	12,735,000	12,936,000	13,269,000
Greece	1,250,000	1,314,000	1,324,000	1,414,000	1,479,000	1,588,000
Hungary	1,225,000	1,219,000	1,218,000	1,228,000	1,241,000	1,263,000
Ireland	571,000	586,000	603,000	683,000	729,000	795,000
Italy	7,093,000	7,070,000	7,424,000	7,941,000	8,221,000	8,673,000
Latvia	269,000	265,000	261,000	282,000	289,000	299,000
Lithuania	377,000	380,000	379,000	430,000	455,000	499,000
Luxembourg	56,000	57,000	58,000	63,000	65,000	70,000
Malta	41,000	40,000	40,000	44,000	44,000	45,000
Netherlands	2,222,000	2,233,000	2,236,000	2,300,000	2,300,000	2,296,000
Poland	3,947,000	4,042,000	4,053,000	4,209,000	4,296,000	4,439,000
Portugal	1,172,000	1,193,000	1,208,000	1,271,000	1,316,000	1,389,000
Romania	2,464,000	2,336,000	2,348,000	2,341,000	2,337,000	2,328,000
Slovakia	517,000	531,000	533,000	556,000	571,000	596,000
Slovenia	227,000	226,000	238,000	246,000	253,000	265,000
Spain	4,574,000	4,725,000	4,890,000	5,672,000	6,127,000	6,870,000
Sweden	1,251,000	1,258,000	1,270,000	1,324,000	1,355,000	1,406,000
United Kingdom	8,184,000	8,192,000	8,339,000	8,773,000	9,031,000	9,479,000

Table A2.12 Estimated sales of showers (units) - Domestic sectors (to nearest thousand)

Sales of showers	2005	2006	2007	2012	2015	2020
EU-27	24,416,000	24,581,000	25,026,000	26,359,000	27,147,000	28,445,000
Austria	416,000	431,000	437,000	460,000	475,000	500,000
Belgium	522,000	520,000	552,000	571,000	582,000	600,000
Bulgaria	361,000	362,000	362,000	355,000	350,000	341,000
Cyprus	29,000	30,000	31,000	35,000	38,000	42,000
Czech Republic	507,000	515,000	519,000	557,000	582,000	623,000
Denmark	293,000	293,000	296,000	304,000	309,000	316,000
Estonia	63,000	65,000	65,000	70,000	71,000	73,000
Finland	299,000	299,000	302,000	312,000	317,000	326,000
France	3,114,000	3,142,000	3,249,000	3,378,000	3,502,000	3,710,000
Germany	4,834,000	4,857,000	4,846,000	5,023,000	5,102,000	5,233,000
Greece	493,000	518,000	522,000	558,000	583,000	626,000
Hungary	483,000	481,000	480,000	484,000	490,000	498,000
Ireland	225,000	231,000	238,000	269,000	288,000	314,000
Italy	2,797,000	2,788,000	2,928,000	3,132,000	3,242,000	3,420,000
Latvia	106,000	105,000	103,000	111,000	114,000	118,000
Lithuania	148,000	150,000	149,000	170,000	179,000	197,000
Luxembourg	22,000	22,000	23,000	25,000	26,000	28,000
Malta	16,000	16,000	16,000	17,000	17,000	18,000
Netherlands	876,000	881,000	882,000	907,000	907,000	906,000
Poland	1,557,000	1,594,000	1,599,000	1,660,000	1,694,000	1,751,000
Portugal	462,000	471,000	476,000	501,000	519,000	548,000
Romania	972,000	921,000	926,000	923,000	922,000	918,000
Slovakia	204,000	209,000	210,000	219,000	225,000	235,000
Slovenia	90,000	89,000	94,000	97,000	100,000	104,000
Spain	1,804,000	1,864,000	1,929,000	2,237,000	2,416,000	2,710,000
Sweden	493,000	496,000	501,000	522,000	535,000	554,000
United Kingdom	3,228,000	3,231,000	3,289,000	3,460,000	3,562,000	3,738,000

Non-domestic sector estimated sales

Table A2.13 Estimated sales of taps (units) Non-Domestic sectors (to nearest thousand)

Sales of taps	2005	2006	2007	2012	2015	2020
EU-27	6,658,000	6,818,000	6,981,000	7,795,000	8,351,000	9,504,000
Austria	139,000	141,000	143,000	161,000	170,000	185,000
Belgium	124,000	125,000	127,000	137,000	141,000	148,000
Bulgaria	73,000	77,000	85,000	112,000	133,000	182,000
Cyprus	17,000	17,000	17,000	18,000	18,000	18,000
Czech Republic	232,000	224,000	232,000	246,000	251,000	259,000
Denmark	81,000	82,000	83,000	92,000	97,000	105,000
Estonia	13,000	14,000	14,000	20,000	25,000	36,000
Finland	63,000	66,000	68,000	78,000	84,000	96,000
France	986,000	1,005,000	1,010,000	1,091,000	1,133,000	1,208,000
Germany	723,000	750,000	758,000	832,000	864,000	922,000
Greece	233,000	237,000	239,000	262,000	278,000	309,000
Hungary	152,000	149,000	147,000	143,000	139,000	133,000
Ireland	39,000	42,000	42,000	52,000	58,000	69,000
Italy	1,155,000	1,171,000	1,201,000	1,304,000	1,364,000	1,469,000
Latvia	18,000	19,000	20,000	25,000	28,000	33,000
Lithuania	30,000	34,000	34,000	44,000	51,000	66,000
Luxembourg	11,000	11,000	11,000	12,000	12,000	13,000
Malta	10,000	10,000	11,000	11,000	11,000	11,000
Netherlands	214,000	225,000	228,000	245,000	256,000	276,000
Poland	376,000	384,000	397,000	440,000	458,000	492,000
Portugal	218,000	221,000	222,000	316,000	407,000	636,000
Romania	134,000	139,000	140,000	171,000	194,000	243,000
Slovakia	29,000	31,000	30,000	39,000	45,000	58,000
Slovenia	26,000	28,000	28,000	33,000	36,000	40,000
Spain	799,000	825,000	843,000	957,000	1,034,000	1,175,000
Sweden	173,000	181,000	185,000	205,000	219,000	244,000
United Kingdom	590,000	610,000	666,000	751,000	848,000	1,077,000

Table A2.14 Estimated sales of shower (units) - Non-Domestic sectors (to nearest thousand)

Sales of Showers	2005	2006	2007	2012	2015	2020
EU-27	3,843,000	3,933,000	4,051,000	4,378,000	4,698,000	5,380,000
Austria	116,000	116,000	117,000	124,000	128,000	134,000
Belgium	64,000	63,000	63,000	63,000	62,000	61,000
Bulgaria	34,000	38,000	42,000	58,000	75,000	119,000
Cyprus	12,000	12,000	12,000	12,000	12,000	11,000
Czech Republic	87,000	86,000	88,000	92,000	94,000	97,000
Denmark	54,000	54,000	54,000	55,000	55,000	55,000
Estonia	6,000	7,000	7,000	10,000	14,000	24,000
Finland	34,000	34,000	35,000	36,000	38,000	40,000
France	744,000	757,000	753,000	786,000	804,000	835,000
Germany	481,000	488,000	490,000	501,000	518,000	548,000
Greece	119,000	121,000	122,000	133,000	142,000	158,000
Hungary	64,000	63,000	61,000	57,000	55,000	51,000
Ireland	28,000	29,000	29,000	35,000	38,000	43,000
Italy	629,000	646,000	665,000	723,000	764,000	839,000
Latvia	7,000	7,000	7,000	9,000	10,000	13,000
Lithuania	10,000	11,000	11,000	13,000	15,000	18,000
Luxembourg	8,000	8,000	8,000	9,000	9,000	9,000
Malta	6,000	6,000	6,000	6,000	6,000	6,000
Netherlands	156,000	159,000	159,000	167,000	172,000	181,000
Poland	142,000	142,000	144,000	152,000	154,000	159,000
Portugal	84,000	86,000	87,000	107,000	127,000	173,000
Romania	59,000	61,000	61,000	68,000	73,000	84,000
Slovakia	23,000	23,000	21,000	25,000	27,000	30,000
Slovenia	11,000	12,000	12,000	13,000	14,000	15,000
Spain	442,000	455,000	460,000	507,000	545,000	615,000
Sweden	100,000	107,000	110,000	117,000	123,000	133,000
United Kingdom	322,000	343,000	426,000	501,000	627,000	929,000

MARKET TRENDS

Table A2.15 UK Bath and Sanitary ware Market Share for 2005 by Company

Company	Overall (%)
American Standard (Armitage, Shanks, Armitage Venesta, Ideal Standard, Jado, Sottini, Trevi Showers)	25
Jacuzzi	14
Twyford Bathrooms	13
Qualceram Group	5
Others	43

Source: Bathroom Market UK 2006, AMA Research Ltd

Table A2.16 Key suppliers in the UK and key importers for the UK market (AMA data)

Key suppliers in the UK
Keramag,
Villeroy & Boch,
VitrAbad Gmbh,
Duravit Ag,
Kohler and Ideal Standard.
Grohe,
Hansgrohe,
Kludi,
Ideal Standard
Hansa
Bristan Group
Ideal Standard (UK)
Jacuzzi UK Group
Qualceram Shires
Roca
Samuel Heath & Sons
Triton
Twyford Bathrooms
Key importers (AMA data)
VitraA and Tipravit from Turkey
Dahll from China
Lecico from Egypt
Roca and Porcelanosa form Spain

Table A.2.17 UK distribution channels for bath and sanitary ware

Sector	2002 (%)	2005 (%)
Builders' merchants	60	45
DIY	25	31
Bathroom Specialist	12	20
Others (e.g. Direct)	3	4

Source: Bathroom Market UK 2006, AMA Research Ltd

CONSUMER EXPENDITURE BASE DATA

Table A.2.18 Gas prices for household consumers (Euro/Gigajoule)

geo\time	2005	2006	2007	2008	2009	2010
EU 27	8.46	10.00	11.68	11.81	12.67	11.12
Austria	8.91	10.72	10.98	11.88	13.13	12.54
Belgium	8.85	10.75	10.33	13.01	13.54	11.75
Bulgaria	5.61	6.42	7.36	8.20	10.95	8.51
Cyprus	:	:	:	:	:	:
Czech Republic	6.30	8.43	7.94	10.25	11.55	10.87
Denmark	12.58	13.19	13.64	:	12.40	14.60
Estonia	3.92	3.93	4.99	7.39	8.99	7.71
Finland	:	:	:	:	:	:
France	9.00	10.81	11.42	12.29	13.01	12.25
Germany	10.16	12.25	13.97	13.32	13.48	11.54
Greece	:	:	:	:	:	:
Hungary	4.43	4.59	5.97	9.36	11.15	:
Ireland	8.80	11.02	14.74	13.29	15.76	12.07
Italy	8.98	10.43	11.79	12.03	14.16	10.45
Latvia	3.85	4.54	6.35	8.27	13.21	7.92
Lithuania	4.58	5.29	5.97	7.75	10.00	8.62
Luxembourg	7.68	9.74	10.87	14.10	12.19	10.60
Malta	:	:	:	:	:	:
Netherlands	9.64	11.09	12.30	12.01	14.43	11.19
Poland	6.19	7.76	8.76	9.48	8.85	9.68
Portugal	11.75	13.83	13.22	16.54	15.68	15.71
Romania	4.03	6.44	7.60	5.95	5.28	4.18
Slovakia	6.84	9.12	9.64	9.60	10.78	10.18
Slovenia	7.82	10.03	10.75	12.14	14.44	12.56
Spain	10.25	11.75	12.27	13.78	14.64	12.79
Sweden	11.72	14.80	15.09	14.77	14.00	16.45
United Kingdom	6.91	7.84	11.20	10.46	11.28	10.73

Source: Eurostat <http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&language=en&pcode=ten00113&plugin=1>

Table A.2.19 Gas Prices for industrial consumers (Euro/Gigajoule)

geo\time	2005	2006	2007	2008	2009	2010
EU 27	6.01	8.11	8.87	8.84	9.32	7.76
Austria	6.14	8.34	8.91	:	:	:
Belgium	5.27	7.06	6.89	8.98	8.73	7.64
Bulgaria	3.78	4.50	5.22	5.72	8.74	6.66
Cyprus	:	:	:	:	:	:
Czech Republic	5.11	7.34	6.56	8.54	8.98	8.23
Denmark	6.01	6.17	5.77	:	7.38	6.65
Estonia	2.75	2.84	3.69	6.78	7.30	7.50
Finland	6.43	7.32	7.61	7.40	8.00	7.90
France	6.22	8.06	7.63	9.06	9.76	8.95
Germany	7.76	10.47	12.15	11.28	10.86	8.98
Greece	:	:	:	:	:	:
Hungary	5.81	7.95	9.48	9.39	10.04	:
Ireland	:	:	:	11.05	9.30	7.67
Italy	6.09	7.04	8.46	8.77	10.40	7.78
Latvia	3.48	4.05	5.29	7.90	10.86	7.16
Lithuania	3.61	4.45	6.02	8.79	8.73	8.91
Luxembourg	6.95	9.01	9.85	10.44	11.08	10.13
Malta	:	:	:	:	:	:
Netherlands	6.39	8.14	8.40	8.12	9.02	7.31
Poland	5.30	6.77	7.54	8.36	7.73	8.40
Portugal	6.03	7.63	7.76	8.69	9.81	7.62
Romania	3.68	6.23	7.32	6.23	5.10	4.12
Slovakia	5.08	7.66	8.00	8.92	11.12	8.72
Slovenia	5.10	7.17	7.33	9.33	11.34	10.88
Spain	4.68	7.24	7.07	7.64	8.70	7.70
Sweden	8.08	11.15	11.06	12.49	9.30	10.32
United Kingdom	5.81	8.92	10.55	7.29	7.99	5.63

Source Eurostat: <http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&language=en&pcode=ten00112&plugin=1>

Table A.2.20 Electricity prices for Household consumers (Euro/kWh)

geo\time	2005	2006	2007	2008	2009	2010
EU 27	0.10	0.11	0.12	0.12	0.12	0.12
Austria	0.10	0.09	0.11	0.13	0.14	0.14
Belgium	0.11	0.11	0.12	0.15	0.14	0.14
Bulgaria	0.05	0.06	0.05	0.06	0.07	0.07
Cyprus	0.09	0.12	0.12	0.15	0.13	0.16
Czech Republic	0.07	0.08	0.09	0.11	0.11	0.11
Denmark	0.09	0.10	0.12	0.12	0.12	0.12
Estonia	0.06	0.06	0.06	0.06	0.07	0.07
Finland	0.08	0.08	0.09	0.09	0.10	0.10
France	0.09	0.09	0.09	0.09	0.09	0.09
Germany	0.13	0.14	0.14	0.13	0.14	0.14
Greece	0.06	0.06	0.07	0.10	0.11	0.10
Hungary	0.09	0.09	0.10	0.13	0.12	:
Ireland	0.12	0.13	0.15	0.16	0.18	0.16
Italy	0.14	0.15	0.17	:	:	:
Latvia	0.07	0.07	0.06	0.08	0.10	0.10
Lithuania	0.06	0.06	0.07	0.07	0.08	0.10
Luxembourg	0.13	0.14	0.15	0.14	0.16	0.14
Malta	0.07	0.09	0.09	0.09	0.16	0.16
Netherlands	0.11	0.12	0.14	0.13	0.14	0.13
Poland	0.08	0.09	0.09	0.10	0.09	0.10
Portugal	0.13	0.13	0.14	0.11	0.13	0.11
Romania	0.07	0.08	0.09	0.09	0.08	0.09
Slovakia	0.11	0.12	0.13	0.11	0.13	0.13
Slovenia	0.09	0.09	0.09	0.09	0.11	0.11
Spain	0.09	0.09	0.10	0.11	0.13	0.14
Sweden	0.08	0.09	0.11	0.11	0.10	0.12
United Kingdom	0.08	0.10	0.13	0.14	0.14	0.13

Source Eurostat: <http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&language=en&pcode=ten00115&plugin=1>

Table A.2.21 Electricity prices for industrial consumers (Euro/kWh)

geo\time	2005	2006	2007	2008	2009	2010
EU 27	0.07	0.08	0.08	0.09	0.10	0.09
Austria	0.06	0.07	0.08	0.09	:	:
Belgium	0.07	0.08	0.09	0.10	0.10	0.09
Bulgaria	0.04	0.05	0.05	0.06	0.06	0.06
Cyprus	0.08	0.11	0.10	0.14	0.12	0.15
Czech Republic	0.06	0.07	0.08	0.11	0.11	0.10
Denmark	0.06	0.07	0.06	0.08	0.07	0.08
Estonia	0.05	0.05	0.05	0.05	0.06	0.06
Finland	0.05	0.05	0.05	0.06	0.07	0.07
France	0.05	0.05	0.05	0.06	0.07	0.07
Germany	0.08	0.09	0.09	0.09	0.10	0.09
Greece	0.06	0.07	0.07	0.09	0.09	0.09
Hungary	0.07	0.08	0.08	0.11	0.12	:
Ireland	0.09	0.10	0.11	0.13	0.12	0.11
Italy	0.08	0.09	0.10	:	:	:
Latvia	0.04	0.04	0.04	0.07	0.09	0.09
Lithuania	0.05	0.05	0.05	0.08	0.09	0.10
Luxembourg	0.08	0.08	0.10	0.09	0.11	0.10
Malta	0.07	0.07	0.09	0.12	0.15	0.18
Netherlands	0.08	0.09	0.09	0.09	0.09	0.09
Poland	0.05	0.05	0.05	0.08	0.09	0.09
Portugal	0.07	0.08	0.09	0.08	0.09	0.09
Romania	0.08	0.08	0.08	0.09	0.08	0.09
Slovakia	0.07	0.08	0.09	0.12	0.14	0.12
Slovenia	0.06	0.07	0.08	0.09	0.11	0.09
Spain	0.07	0.07	0.08	0.09	0.11	0.11
Sweden	0.05	0.06	0.06	0.07	0.07	0.08
United Kingdom	0.06	0.08	0.10	0.09	0.11	0.09

Source Eurostat: <http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&language=en&pcode=ten00114&plugin=1>

Table A.2.22 Unit price of water and sanitation services to households including taxes

Country	Unit price of water and sanitation services to households incl. taxes (USD/m3)	Unit price of water and sanitation services to households incl. taxes converted into Euros¹³²
Portugal	1.23	0.962
Greece	1.40	1.095
Italy	1.45	1.134
Spain	1.92	1.502
Hungary	2.02	1.580
Poland	2.12	1.658
Czech Republic	2.43	1.901
Sweden	3.59	2.808
France	3.74	2.925
GBR - England & Wales	3.82	2.988
Belgium – Wall.	3.92	3.066
Belgium – Fla.	4.14	3.238
Finland	4.41	3.449
GBR – Scotland	5.72	4.474
Denmark	6.70	5.240
Average		2.535

¹³² Exchange Rate 1USD = 0.7821 Euros – 20th August 2010

Table A.2.22 Inflation Rate across Member States (%)

geo\time	2005	2006	2007	2008	2009	2010
European Union	2.2	2.2	2.3	3.7	1.0	2.1
Austria	2.1	1.7	2.2	3.2	0.4	1.7
Belgium	2.5	2.3	1.8	4.5	0	2.3
Bulgaria	6	7.4	7.6	12	2.5	3.0
Cyprus	2	2.2	2.2	4.4	0.2	2.6
Czech Republic	1.6	2.1	3	6.3	0.6	1.2
Denmark	1.7	1.9	1.7	3.6	1.1	2.2
Estonia	4.1	4.4	6.7	10.6	0.2	2.7
Finland	0.8	1.3	1.6	3.9	1.6	1.7
France	1.9	1.9	1.6	3.2	0.1	1.7
Germany	1.9	1.8	2.3	2.8	0.2	1.2
Greece	3.5	3.3	3	4.2	1.3	4.7
Hungary	3.5	4	7.9	6	4	4.7
Ireland	2.2	2.7	2.9	3.1	-1.7	-1.6
Italy	2.2	2.2	2	3.5	0.8	1.6
Latvia	6.9	6.6	10.1	15.3	3.3	-1.2
Lithuania	2.7	3.8	5.8	11.1	4.2	1.2
Luxembourg	3.8	3	2.7	4.1	0	2.8
Malta	2.5	2.6	0.7	4.7	1.8	2.0
Netherlands	1.5	1.7	1.6	2.2	1	0.9
Poland	2.2	1.3	2.6	4.2	4	2.7
Portugal	2.1	3	2.4	2.7	-0.9	1.4
Romania	9.1	6.6	4.9	7.9	5.6	6.1
Slovakia	2.8	4.3	1.9	3.9	0.9	0.7
Slovenia	2.5	2.5	3.8	5.5	0.9	2.1
Spain	3.4	3.6	2.8	4.1	-0.2	2.0
Sweden	0.8	1.5	1.7	3.3	1.9	1.9
United Kingdom	2.1	2.3	2.3	3.6	2.2	3.3

Source: Eurostat <http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&language=en&pcode=tsieb060&plugin=2>

Table A.2.23 Long term interest rate (10 years' average %)

geo\time	2005	2006	2007	2008	2009	2010
EU (27 countries)	3.71	4.03	4.56	4.55	4.13	3.83
Euro area	3.42	3.84	4.32	4.3	3.82	3.62
Belgium	3.43	3.81	4.33	4.42	3.9	3.46
Bulgaria	3.87	4.18	4.54	5.38	7.22	6.01
Czech Republic	3.54	3.8	4.3	4.63	4.84	3.88
Denmark	3.4	3.81	4.29	4.28	3.59	2.93
Germany	3.35	3.76	4.22	3.98	3.22	2.74
Estonia	-	-	-	-	-	-
Ireland	3.33	3.76	4.31	4.53	5.23	5.74
Greece	3.59	4.07	4.5	4.8	5.17	9.09
Spain	3.39	3.78	4.31	4.37	3.98	4.25
France	3.41	3.8	4.3	4.23	3.65	3.12
Italy	3.56	4.05	4.49	4.68	4.31	4.04
Cyprus	5.16	4.13	4.48	4.6	4.6	4.60
Latvia	3.88	4.13	5.28	6.43	12.36	10.34
Lithuania	3.7	4.08	4.55	5.61	14	5.57
Luxembourg	2.41	3.3	4.46	4.61	4.23	3.17
Hungary	6.6	7.12	6.74	8.24	9.12	7.28
Malta	4.56	4.32	4.72	4.81	4.54	4.19
Netherlands	3.37	3.78	4.29	4.23	3.69	2.99
Austria	3.39	3.8	4.3	4.36	3.94	3.23
Poland	5.22	5.23	5.48	6.07	6.12	5.78
Portugal	3.44	3.91	4.42	4.52	4.21	5.40
Romania	:	7.23	7.13	7.7	9.69	7.34
Slovenia	3.81	3.85	4.53	4.61	4.38	3.83
Slovakia	3.52	4.41	4.49	4.72	4.71	3.87
Finland	3.35	3.78	4.29	4.29	3.74	3.83
Sweden	3.38	3.7	4.17	3.89	3.25	2.89
United Kingdom	4.46	4.37	5.06	4.5	3.36	3.36

Source: Eurostat <http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&plugin=1&language=en&pcode=tec00097>

ANNEX III: ECOREPORT RESULTS FOR TAPS

Table A.3.1 Domestic Brass Taps

Parameter	Units	Production		Distribution		Use		End of Life		TOTAL	
		Value	% of total	Value	% of total	Value	% of total	Value	% of total	Value	% of total
Total Energy (GER)	MJ	56	0.06%	64	0.07%	90,050	99.86%	5	0.01%	90,175	100.00%
of which, electricity (in primary MJ)	MJ	8	0.01%	0	0.00%	90,048	99.99%	0	0.00%	90,057	100.00%
Water (process)	ltr	2	0.00%	0	0.00%	172,435	100.00%	0	0.00%	172,438	100.00%
Water (cooling)	ltr	15	0.01%	0	0.00%	240,128	99.99%	0	0.00%	240,143	100.00%
Waste, non-haz./landfill	g	2,999	2.79%	57	0.05%	104,437	97.09%	70	0.07%	107,563	100.00%
Waste, hazardous/incinerated	g	1	0.05%	1	0.05%	2,075	96.96%	62	2.90%	2,140	100.00%
Emissions (Air)											
Greenhouse Gases in GWP100	kg CO2 eq.	3	0.08%	5	0.13%	3,930	99.80%	0	0.00%	3,938	100.00%
Ozone Depletion, emissions	mg R-11 eq.	neg		neg		neg		neg		neg	
Acidification, emissions	g SO2 eq.	37	0.16%	14	0.06%	23,188	99.78%	1	0.00%	23,240	100.00%
Volatile Organic Compounds (VOC)	g	0	0.00%	0	0.00%	34	100.00%	0	0.00%	34	100.00%
Persistent Organic Pollutants (POP)	ng i-Teq	36	5.74%	0	0.00%	591	94.26%	0	0.00%	627	100.00%
Heavy Metals	mg Ni eq.	88	5.37%	3	0.18%	1,546	94.33%	2	0.12%	1,639	100.00%
PAHs	mg Ni eq.	3	1.63%	3	1.63%	177	96.20%	0	0.00%	184	100.00%
Particulate Matter (PM, dust)	g	2	0.37%	31	5.75%	495	91.84%	11	2.04%	539	100.00%
Emissions (Water)											
Heavy Metals	mg Hg/20	8	1.36%	0	0.00%	581	98.64%	1	0.17%	589	100.00%
Eutrophication	g PO4	0	0.00%	0	0.00%	3	100.00%	0	0.00%	3	100.00%
Persistent Organic Pollutants (POP)	ng i-Teq	neg		neg		neg		neg		neg	

NB Values have been rounded to whole numbers, and percentages to two decimal places. Therefore the values in each life cycle phase may not appear to add up to the total value, and small percentages may appear as 0.00%.

Table A.3.12 Domestic Steel Taps

Parameter	Units	Production		Distribution		Use		End of Life		TOTAL	
		Value	% of total	Value	% of total	Value	% of total	Value	% of total	Value	% of total
Total Energy (GER)	MJ	71	0.08%	64	0.07%	90,050	99.85%	1	0.00%	90,186	100.00%
of which, electricity (in primary MJ)	MJ	21	0.02%	0	0.00%	90,048	99.98%	0	0.00%	90,069	100.00%
Water (process)	ltr	56	0.03%	0	0.00%	172,436	99.97%	0	0.00%	172,492	100.00%
Water (cooling)	ltr	24	0.01%	0	0.00%	240,128	99.99%	0	0.00%	240,152	100.00%
Waste, non-haz./landfill	g	863	0.82%	57	0.05%	104,416	99.08%	49	0.05%	105,386	100.00%
Waste, hazardous/incinerated	g	1	0.05%	1	0.05%	2,075	97.01%	62	2.90%	2,139	100.00%
Emissions (Air)											
Greenhouse Gases in GWP100	kg CO2 eq.	6	0.15%	5	0.13%	3,930	99.72%	0	0.00%	3,941	100.00%
Ozone Depletion, emissions	mg R-11 eq.	neg		neg		neg		neg		neg	
Acidification, emissions	g SO2 eq.	48	0.21%	14	0.06%	23,188	99.73%	0	0.00%	23,251	100.00%
Volatile Organic Compounds (VOC)	g	0	0.00%	0	0.00%	34	100.00%	0	0.00%	34	100.00%
Persistent Organic Pollutants (POP)	ng i-Teq	7	1.17%	0	0.00%	590	98.66%	0	0.00%	598	100.00%
Heavy Metals	mg Ni eq.	146	8.60%	3	0.18%	1,546	91.10%	2	0.12%	1,697	100.00%
PAHs	mg Ni eq.	0	0.00%	3	1.66%	177	97.79%	0	0.00%	181	100.00%
Particulate Matter (PM, dust)	g	7	1.29%	31	5.72%	495	91.33%	9	1.66%	542	100.00%
Emissions (Water)											
Heavy Metals	mg Hg/20	63	9.77%	0	0.00%	581	90.08%	1	0.16%	645	100.00%
Eutrophication	g PO4	2	40.00%	0	0.00%	3	60.00%	0	0.00%	5	100.00%
Persistent Organic Pollutants (POP)	ng i-Teq	neg		neg		neg		neg		neg	

NB Values have been rounded to whole numbers, and percentages to two decimal places. Therefore the values in each life cycle phase may not appear to add up to the total value, and small percentages may appear as 0.00%.

Table A.3.3 Non-Domestic Brass Taps

Parameter	Units	Production		Distribution		Use		End of Life		TOTAL	
		Value	% of total	Value	% of total	Value	% of total	Value	% of total	Value	% of total
Total Energy (GER)	MJ	56	0.02%	64	0.02%	280,145	99.96%	5	0.00%	280,270	100.00%
of which, electricity (in primary MJ)	MJ	9	0.00%	0	0.00%	280,140	100.00%	0	0.00%	280,149	100.00%
Water (process)	ltr	2	0.00%	0	0.00%	536,506	100.00%	0	0.00%	536,508	100.00%
Water (cooling)	ltr	15	0.00%	0	0.00%	747,040	100.00%	0	0.00%	747,055	100.00%
Waste, non-haz./landfill	g	2,999	0.91%	57	0.02%	324,841	99.05%	70	0.02%	327,967	100.00%
Waste, hazardous/incinerated	g	1	0.02%	1	0.02%	6,455	99.00%	62	0.95%	6,520	100.00%
Emissions (Air)											
Greenhouse Gases in GWP100	kg CO2 eq.	3	0.02%	5	0.04%	12,225	99.93%	0	0.00%	12,234	100.00%
Ozone Depletion, emissions	mg R-11 eq.	neg		neg		neg		neg		neg	
Acidification, emissions	g SO2 eq.	37	0.05%	14	0.02%	72,138	99.93%	1	0.00%	72,189	100.00%
Volatile Organic Compounds (VOC)	g	0	0.00%	0	0.00%	106	100.00%	0	0.00%	106	100.00%
Persistent Organic Pollutants (POP)	ng i-Teq	36	1.92%	0	0.00%	1,837	98.08%	0	0.00%	1,873	100.00%
Heavy Metals	mg Ni eq.	88	1.80%	3	0.06%	4,807	98.10%	2	0.04%	4,900	100.00%
PAHs	mg Ni eq.	3	0.54%	3	0.54%	552	98.92%	0	0.00%	558	100.00%
Particulate Matter (PM, dust)	g	2	0.13%	31	1.96%	1,541	97.29%	11	0.69%	1,584	100.00%
Emissions (Water)											
Heavy Metals	mg Hg/20	8	0.44%	0	0.00%	1806	99.50%	1	0.06%	1815	100.00%
Eutrophication	g PO4	1	11.11%	0	0.00%	9	100.00%	0	0.00%	9	100.00%
Persistent Organic Pollutants (POP)	ng i-Teq	neg		neg		neg		neg		neg	

NB Values have been rounded to whole numbers, and percentages to two decimal places. Therefore the values in each life cycle phase may not appear to add up to the total value, and small percentages may appear as 0.00%.

Table A.3.4 Non-Domestic Steel Taps

Parameter	Units	Production		Distribution		Use		End of Life		TOTAL	
		Value	% of total	Value	% of total	Value	% of total	Value	% of total	Value	% of total
Total Energy (GER)	MJ	71	0.03%	64	0.02%	280,145	99.95%	1	0.00%	280,281	100.00%
of which, electricity (in primary MJ)	MJ	21	0.01%	0	0.00%	280,140	99.99%	0	0.00%	280,161	100.00%
Water (process)	ltr	56	0.01%	0	0.00%	536,507	99.99%	0	0.00%	536,563	100.00%
Water (cooling)	ltr	24	0.00%	0	0.00%	747,040	100.00%	0	0.00%	747,064	100.00%
Waste, non-haz./landfill	g	863	0.26%	57	0.02%	324,480	99.60%	49	0.02%	325,790	100.00%
Waste, hazardous/incinerated	g	1	0.02%	1	0.02%	6,455	99.00%	62	0.95%	6,520	100.00%
Emissions (Air)											
Greenhouse Gases in GWP100	kg CO2 eq.	6	0.05%	5	0.04%	12,225	99.90%	0	0.00%	12,237	100.00%
Ozone Depletion, emissions	mg R-11 eq.	neg		neg		neg		neg		neg	
Acidification, emissions	g SO2 eq.	48	0.07%	14	0.02%	72,138	99.91%	0	0.00%	72,201	100.00%
Volatile Organic Compounds (VOC)	g	0	0.00%	0	0.00%	106	100.00%	0	0.00%	106	100.00%
Persistent Organic Pollutants (POP)	ng i-Teq	7	0.38%	0	0.00%	1,836	99.57%	0	0.00%	1,844	100.00%
Heavy Metals	mg Ni eq.	146	2.94%	3	0.06%	4,808	96.96%	2	0.04%	4,959	100.00%
PAHs	mg Ni eq.	0	0.00%	3	0.54%	552	99.46%	0	0.00%	555	100.00%
Particulate Matter (PM, dust)	g	7	0.44%	31	1.95%	1,541	97.04%	9	0.57%	1,588	100.00%
Emissions (Water)											
Heavy Metals	mg Hg/20	63	3.37%	0	0.00%	1807	96.63%	1	0.05%	1870	100.00%
Eutrophication	g PO4	2	18.18%	0	0.00%	9	81.82%	0	0.00%	11	100.00%
Persistent Organic Pollutants (POP)	ng i-Teq	neg		neg		neg		neg		neg	

NB Values have been rounded to whole numbers, and percentages to two decimal places. Therefore the values in each life cycle phase may not appear to add up to the total value, and small percentages may appear as 0.00%.

Table A.3.6 Domestic Showerheads – Plastic

Parameter	Units	Production		Distribution		Use		End of Life		TOTAL	
		Value	% of total	Value	% of total	Value	% of total	Value	% of total	Value	% of total
Total Energy (GER)	MJ	30	0.03%	64	0.07%	88,831	99.89%	4	0.00%	88,928	100.00%
of which, electricity (in primary MJ)	MJ	11	0.01%	0	0.00%	88,830	99.99%	0	0.00%	88,841	100.00%
Water (process)	ltr	2	0.00%	0	0.00%	137,322	100.00%	0	0.00%	137,324	100.00%
Water (cooling)	ltr	35	0.01%	0	0.00%	236,880	99.99%	0	0.00%	236,915	100.00%
Waste, non-haz./ landfill	g	79	0.08%	57	0.06%	102,995	99.86%	11	0.01%	103,142	100.00%
Waste, hazardous/ incinerated	g	2	0.09%	1	0.04%	2,047	92.00%	175	7.87%	2225	100.00%
Emissions (Air)											
Greenhouse Gases in GWP100	kg CO2 eq.	1	0.03%	5	0.13%	3,877	99.85%	0	0.00%	3,883	100.00%
Ozone Depletion, emissions	mg R-11 eq.	neg		neg		neg		neg		neg	
Acidification, emissions	g SO2 eq.	8	0.03%	14	0.06%	22,874	99.90%	1	0.00%	22,898	100.00%
Volatile Organic Compounds (VOC)	g	0	0.00%	0	0.00%	33	97.06%	0	0.00%	34	100.00%
Persistent Organic Pollutants (POP)	ng i-Teq	1	0.17%	0	0.00%	582	99.83%	0	0.00%	583	100.00%
Heavy Metals	mg Ni eq.	39	2.49%	3	0.19%	1,524	97.13%	3	0.19%	1,569	100.00%
PAHs	mg Ni eq.	0	0.00%	3	1.69%	175	98.31%	0	0.00%	178	100.00%
Particulate Matter (PM, dust)	g	1	0.19%	31	5.77%	489	91.06%	16	2.98%	537	100.00%
Emissions (Water)											
Heavy Metals	mg Hg/20	1	0.17%	0	0.00%	573	99.65%	1	0.17%	575	100.00%
Eutrophication	g PO4	0	0.00%	0	0.00%	3	100.00%	0	0.00%	3	100.00%
Persistent Organic Pollutants (POP)	ng i-Teq	neg		neg		neg		neg		neg	

NB Values have been rounded to whole numbers, and percentages to two decimal places. Therefore the values in each life cycle phase may not appear to add up to the total value, and small percentages may appear as 0.00%.

Table A.3.7 Domestic Showerheads – Metal

Parameter	Units	Production		Distribution		Use		End of Life		TOTAL	
		Value	% of total	Value	% of total	Value	% of total	Value	% of total	Value	% of total
Total Energy (GER)	MJ	136	0.15%	64	0.07%	88,832	99.76%	15	0.02%	89,047	100.00%
of which, electricity (in primary MJ)	MJ	20	0.02%	0	0.00%	88,830	99.98%	0	0.00%	88,850	100.00%
Water (process)	ltr	4	0.00%	0	0.00%	137,322	100.00%	0	0.00%	137,326	100.00%
Water (cooling)	ltr	74	0.03%	0	0.00%	236,881	99.97%	-1	0.00%	236,954	100.00%
Waste, non-haz./ landfill	g	5927	5.43%	57	0.05%	103,054	94.39%	140	0.13%	109,179	100.00%
Waste, hazardous/ incinerated	g	5	0.20%	1	0.04%	2,047	83.82%	389	15.93%	2442	100.00%
Emissions (Air)											
Greenhouse Gases in GWP100	kg CO2 eq.	6	0.15%	5	0.13%	3,877	99.69%	1	0.03%	3,889	100.00%
Ozone Depletion, emissions	mg R-11 eq.	neg		neg		neg		neg		neg	
Acidification, emissions	g SO2 eq.	82	0.36%	14	0.06%	22,875	99.57%	3	0.01%	22,974	100.00%
Volatile Organic Compounds (VOC)	g	0	0.00%	0	0.00%	33	97.06%	0	0.00%	34	100.00%
Persistent Organic Pollutants (POP)	ng i-Teq	49	7.74%	0	0.00%	583	92.10%	1	0.16%	633	100.00%
Heavy Metals	mg Ni eq.	147	8.72%	3	0.18%	1,525	90.50%	9	0.53%	1,685	100.00%
PAHs	mg Ni eq.	7	3.78%	3	1.62%	175	94.59%	0	0.00%	185	100.00%
Particulate Matter (PM, dust)	g	4	0.70%	31	5.46%	489	86.09%	44	7.75%	568	100.00%
Emissions (Water)											
Heavy Metals	mg Hg/20	18	3.03%	0	0.00%	573	96.46%	3	0.51%	594	100.00%
Eutrophication	g PO4	0	0.00%	0	0.00%	3	100.00%	0	0.00%	3	100.00%
Persistent Organic Pollutants (POP)	ng i-Teq	neg		neg		neg		neg		neg	

NB Values have been rounded to whole numbers, and percentages to two decimal places. Therefore the values in each life cycle phase may not appear to add up to the total value, and small percentages may appear as 0.00%.

Table A.3.8 Non-Domestic Showerheads – Plastic

Parameter	Units	Production		Distribution		Use		End of Life		TOTAL	
		Value	% of total	Value	% of total	Value	% of total	Value	% of total	Value	% of total
Total Energy (GER)	MJ	30	0.05%	64	0.10%	61,300	99.84%	4	0.01%	61,397	100.00%
of which, electricity (in primary MJ)	MJ	11	0.02%	0	0.00%	61,299	99.98%	0	0.00%	61,310	100.00%
Water (process)	ltr	2	0.00%	0	0.00%	94,758	100.00%	0	0.00%	94,760	100.00%
Water (cooling)	ltr	35	0.02%	0	0.00%	163,464	99.98%	0	0.00%	163,499	100.00%
Waste, non-haz./landfill	g	79	0.11%	57	0.08%	71,074	99.79%	11	0.02%	71,221	100.00%
Waste, hazardous/incinerated	g	2	0.13%	1	0.06%	1,413	88.81%	179	11.25%	1,591	100.00%
Emissions (Air)											
Greenhouse Gases in GWP100	kg CO2 eq.	1	0.04%	5	0.19%	2,675	99.74%	0	0.00%	2,682	100.00%
Ozone Depletion, emissions	mg R-11 eq.	neg		neg		neg		neg		neg	
Acidification, emissions	g SO2 eq.	8	0.05%	14	0.09%	15,785	99.85%	1	0.01%	15,808	100.00%
Volatile Organic Compounds (VOC)	g	0	0.00%	0	0.00%	23	100.00%	0	0.00%	23	100.00%
Persistent Organic Pollutants (POP)	ng i-Teq	1	0.25%	0	0.00%	402	99.75%	0	0.00%	403	100.00%
Heavy Metals	mg Ni eq.	39	3.56%	3	0.27%	1,052	95.90%	3	0.27%	1,097	100.00%
PAHs	mg Ni eq.	0	0.00%	3	2.42%	121	97.58%	0	0.00%	124	100.00%
Particulate Matter (PM, dust)	g	1	0.26%	31	8.05%	337	87.53%	16	4.16%	385	100.00%
Emissions (Water)											
Heavy Metals	mg Hg/20	1	0.25%	0	0.00%	395	99.50%	1	0.25%	397	100.00%
Eutrophication	g PO4	0	0.00%	0	0.00%	2	100.00%	0	0.00%	2	100.00%
Persistent Organic Pollutants (POP)	ng i-Teq	neg		neg		neg		neg		neg	

NB Values have been rounded to whole numbers, and percentages to two decimal places. Therefore the values in each life cycle phase may not appear to add up to the total value, and small percentages may appear as 0.00%.

Table A.3.9 Non-Domestic Showerheads - Metal

Parameter	Units	Production		Distribution		Use		End of Life		TOTAL	
		Value	% of total	Value	% of total	Value	% of total	Value	% of total	Value	% of total
Total Energy (GER)	MJ	136	0.22%	64	0.10%	61,301	99.65%	15	0.02%	61,516	100.00%
of which, electricity (in primary MJ)	MJ	20	0.03%	0	0.00%	61,299	99.97%	0	0.00%	61,319	100.00%
Water (process)	ltr	4	0.00%	0	0.00%	94,758	100.00%	0	0.00%	94,762	100.00%
Water (cooling)	ltr	74	0.05%	0	0.00%	163,465	99.96%	-1	0.00%	163,538	100.00%
Waste, non-haz./landfill	g	5927	7.67%	57	0.07%	71,133	92.07%	140	0.18%	77,258	100.00%
Waste, hazardous/incinerated	g	5	0.28%	1	0.06%	1,413	78.15%	389	21.52%	1,808	100.00%
Emissions (Air)											
Greenhouse Gases in GWP100	kg CO2 eq.	6	0.22%	5	0.19%	2,675	99.52%	1	0.04%	2,688	100.00%
Ozone Depletion, emissions	mg R-11 eq.	neg		neg		neg		neg		neg	
Acidification, emissions	g SO2 eq.	82	0.52%	14	0.09%	15,786	99.38%	3	0.02%	15,885	100.00%
Volatile Organic Compounds (VOC)	g	0	0.00%	0	0.00%	23	100.00%	0	0.00%	23	100.00%
Persistent Organic Pollutants (POP)	ng i-Teq	49	10.82%	0	0.00%	402	88.74%	1	0.22%	453	100.00%
Heavy Metals	mg Ni eq.	147	12.12%	3	0.25%	1,053	86.81%	9	0.74%	1,213	100.00%
PAHs	mg Ni eq.	7	5.34%	3	2.29%	121	92.37%	0	0.00%	131	100.00%
Particulate Matter (PM, dust)	g	4	0.96%	31	7.43%	337	80.82%	44	10.55%	417	100.00%
Emissions (Water)											
Heavy Metals	mg Hg/20	18	4.33%	0	0.00%	395	94.95%	3	0.72%	416	100.00%
Eutrophication	g PO4	0	0.00%	0	0.00%	2	100.00%	0	0.00%	2	100.00%
Persistent Organic Pollutants (POP)	ng i-Teq	neg		neg		neg		neg		neg	

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Table A.3.10 Comparison of EcoReport results for different water heating energy efficiency scenarios

Parameter	Units	70% water heating energy efficiency										86% water heating energy efficiency									
		Production		Distribution		Use		End of Life		TOTAL		Production		Distribution		Use		End of Life		TOTAL	
		Value	% of total	Value	% of total	Value	% of total	Value	% of total	Value	% of total	Value	% of total	Value	% of total	Value	% of total	Value	% of total	Value	% of total
Total Energy (GER)	MJ	56	0.06%	64	0.07%	90,050	99.86%	5	0.01%	90,175	100.00%	56	0.08%	64	0.09%	73,418	99.83%	5	0.01%	73,543	100.00%
of which, electricity (in primary MJ)	MJ	8	0.01%	0	0.00%	90,048	99.99%	0	0.00%	90,057	100.00%	9	0.01%	0	0.00%	73,416	99.99%	0	0.00%	73,425	100.00%
Water (process)	ltr	2	0.00%	0	0.00%	172,435	100.00%	0	0.00%	172,438	100.00%	2	0.00%	0	0.00%	171,326	100.00%	0	0.00%	171,329	100.00%
Water (cooling)	ltr	15	0.01%	0	0.00%	240,128	99.99%	0	0.00%	240,143	100.00%	15	0.01%	0	0.00%	195,776	99.99%	0	0.00%	195,791	100.00%
Waste, non-haz./landfill	g	2,999	2.79%	57	0.05%	104,437	97.09%	70	0.07%	107,563	100.00%	2,999	3.40%	57	0.06%	85,153	96.46%	70	0.08%	88,279	100.00%
Waste, hazardous/incinerated	g	1	0.05%	1	0.05%	2,075	96.96%	62	2.90%	2,140	100.00%	1	0.06%	1	0.06%	1,692	96.36%	62	3.53%	1,756	100.00%
Emissions (Air)																					
Greenhouse Gases in GWP100	kg CO2 eq.	3	0.08%	5	0.13%	3,930	99.80%	0	0.00%	3,938	100.00%	3	0.09%	5	0.16%	3,204	99.75%	0	0.00%	3,212	100.00%
Ozone Depletion, emissions	mg R-11 eq.	neg		neg		neg		neg		neg		neg		neg		neg		neg		neg	
Acidification, emissions	g SO2 eq.	37	0.16%	14	0.06%	23,188	99.78%	1	0.00%	23,240	100.00%	37	0.20%	14	0.07%	18,905	99.73%	1	0.01%	18,957	100.00%
Volatile Organic Compounds (VOC)	g	0	0.00%	0	0.00%	34	100.00%	0	0.00%	34	100.00%	0	0.00%	0	0.00%	28	100.00%	0	0.00%	28	100.00%
Persistent Organic Pollutants (POP)	ng i-Teq	36	5.74%	0	0.00%	591	94.26%	0	0.00%	627	100.00%	36	6.95%	0	0.00%	482	93.05%	0	0.00%	518	100.00%
Heavy Metals	mg Ni eq.	88	5.37%	3	0.18%	1,546	94.33%	2	0.12%	1,639	100.00%	88	6.50%	3	0.22%	1,260	93.06%	2	0.15%	1,354	100.00%
PAHs	mg Ni eq.	3	1.63%	3	1.63%	177	96.20%	0	0.00%	184	100.00%	3	1.99%	3	1.99%	145	96.03%	0	0.00%	151	100.00%
Particulate Matter (PM, dust)	g	2	0.37%	31	5.75%	495	91.84%	11	2.04%	539	100.00%	2	0.45%	31	6.94%	404	90.38%	11	2.46%	447	100.00%
Emissions (Water)																					
Heavy Metals	mg Hg/20	8	1.36%	0	0.00%	581	98.64%	1	0.17%	589	100.00%	8	1.66%	0	0.00%	473	98.13%	1	0.21%	482	100.00%
Eutrophication	g PO4	0	0.00%	0	0.00%	3	100.00%	0	0.00%	3	100.00%	0	0.00%	0	0.00%	2	100.00%	0	0.00%	2	100.00%
Persistent Organic Pollutants (POP)	ng i-Teq	neg		neg		neg		neg		neg		neg		neg		neg		neg		neg	

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