

Shower Trays



Shower Trays

Generic Industry Guide

Welcome to the Shower Trays Generic Industry Guide one in a series of Industry Guides which are available free of charge from the Bathroom Academy Web Site.

We have aimed to make the contents of the guides both informative and relevant and hope you will consider them a valuable aid to your continuing professional development and that of your colleagues, within the Bathroom Industry.

Each Guide has been written by experts and contains the same five elements:

- Right choice of product for end user needs
- Generic industry design
- Generic industry installation
- Frequently asked questions
- Generic industry terminology

The Shower Trays Generic Industry Guide looks at the vast range of shower trays that are available and offers essential information which will allow the Retailer, Merchant and Installer to provide items best suited to the end user needs, whilst the customer's major considerations will be cost, functionality, durability and aesthetics. It is also essential to consider a number of important additional factors; available space, storage requirements and the materials used to manufacture the furniture and its' suitability and compatibility with the bathing and/or showering suite within the bathroom.

Other guides in the series are:

- Bathroom Furniture
- Baths
- Brassware
- Domestic Water Systems
- Sanitaryware and Fittings
- Shower Controls
- Shower Enclosures
- Thermostatic Mixing Valves
- Wetrooms

All guides will be downloadable free of charge from www.bathroom-academy.co.uk

How to gain evidence and recognition of your knowledge of Shower Trays

Did you know that when you have studied the guide in detail you can apply to be assessed and tested on your new found knowledge and if successful, achieve the Shower Trays Bathroom Academy Merit?

To find out more about what you need to do to achieve this qualification go to:

www.bathroom-academy.co.uk/courses.asp



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Introduction

Shower Trays

Shower Trays, irrespective of the material they are made from, are available in a substantial range of shapes and sizes. There are traditionally six standard shapes seen below.

Square



Rectangle



Quadrant



Offset Quadrant



Pentangle



Offset Pentangle

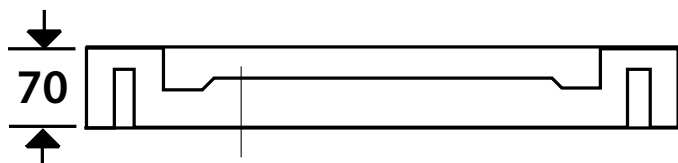


Section 1

Features of Different Shower Trays

Shower Trays can be classified by their unique features.

Standard Shower Trays



The diagram shows an example of a standard height shower tray. This type of shower tray, usually made in stone resin (either with an Acrylic or gel coat surface) allows for ease of access. The stone resin does not require legs or a base board. Owing to its inherent strength it can sit directly onto a floor, supporting the weight of the person showering.

Shower Trays with Upstands

The photograph below shows a shower tray with an upstand. This type of shower tray is usually made from stone resin or acrylic material. This allows for an effective seal between the shower tray and the bathroom wall. The shower tray with an upstand may or may not require feet or a baseboard. This need for feet and baseboard depends on the shower tray material. Acrylic shower trays generally need feet and baseboards.



Low Level Shower Trays

Low level shower trays are approximately 50mm in height. Differing types of material are used to make low level trays. Some are made using Solid Surface technology whilst others are made from either Stone Resin or Acrylic Capped Stone Resin. This means that they are extremely strong.

Some manufacturers recommend that they be fitted to a flat wooden or concrete floor. However, in all cases installers must be careful to follow the installation instructions provided by the manufacturer of the tray.

These trays can simulate the "wetroom" look and can eliminate any step into the shower.



Riser Shower Trays



This shows a shower tray with adjustable feet or risers. A set of adjustable legs is added to enable pipe work to be fitted above floor level. Risers allow for levelling on uneven floors. Riser shower trays are available with and without up stands.

This type of shower tray is generally made from Acrylic or Stone Resin and will be supplied with matching panels.



Section 2

Materials

There are 5 main types of materials used in the construction of Shower Trays.

- Moulded Acrylic or Acrylic capped ABS with Glass Reinforced Plastic
- Solid Surface
- Steel Enamel
- Stone Resin & Acrylic Capped Stone Resin
- Fireclay

Moulded Acrylic or Acrylic Capped ABS with Glass Reinforced Plastic

Advantages and features of moulded Acrylic trays are:

- Warm to the touch
- Lightweight
- Easily transported
- Easily located and installed
- Available in a wide range of colours
- Hardwearing
- Suitable for domestic use
- Excellent resistance to water staining
- Available throughout the price range
- Upstand options available

Construction

These shower trays are manufactured from a range of Acrylic and Acrylic capped ABS sheets and reinforced for strength and rigidity. Generally reinforcement is provided by spraying Glass Reinforced Plastic (GRP) to the underside.

The shower trays are manufactured from a range of acrylic sheets having different thicknesses typically 3mm, 5mm or 8mm thick. As a rule the greater the thickness the less GRP reinforcement is needed on the underside.

Solid Surface

Advantages and features of Solid Surface trays are:

- Low Level/Level Access
- Warm to the touch
- Extremely durable
- Designed for domestic use
- Easy to install
- Available at the higher end of the price range
- Resistant to staining

Solid surface technology means that a liquid mix is poured into a mould, set and then released and the shower tray material is therefore consistent throughout. This gives a shower tray great strength which then needs no additional reinforcement as the minimum wall thickness of the material is likely to be 10mm or 12mm.

Construction

Consequently they can then be installed directly onto wooden or concrete floors - when tiles or a carpet is then laid up to the tray, the step into the shower has been eliminated as the tray will only be 50mm height in total.

Steel Enamel

Advantages and features of Steel Enamel trays are:

- Abrasion resistant
- Impact resistant
- Heat resistant
- Low expansion levels with temperature change
- Easily repaired
- Resistant to staining

Construction

Only special alloy steels with low carbon content suitable for enamelling are used. The tray shells are pressed then sprayed with a special enamel ground coat to ensure good chemical bonding with the metal and subsequent finish coat.

The finish coat is sprayed ensuring a very even finish.

The trays are then fired through a furnace at temperatures of 850° C to produce a glass hard permanent lustrous life time finish with chemical and scratch resistance second to none.



Stone Resin and Acrylic Capped Stone Resin

Advantages and features of these trays are:

- Available in a wide range of colours and shapes
- Available throughout the price range
- Very strong
- Hardwearing
- Heavier than an acrylic shower tray
- Suitable for domestic use
- Easy to install
- Available with upstand options

Construction

A surface of a sprayed polyester gel coat or moulded Acrylic or Acrylic Capped ABS sheet is placed in the mould. A Polyester Stone and Resin mix is cast onto this surface to form a complete tray. This sets to form a strong durable product.

Leg sets can be fitted to accommodate plumbing that is above floor level if required.

Fireclay

Advantages and features of these trays are:

- Available in a wide range of colour sizes and prices
- Higher end of the price range
- Easy to clean
- Resistant to staining
- Heavier than Acrylic
- Long lasting
- Fade proof
- Resistant to acids and alkalis
- Suitable for domestic use

Construction

The traditional method is to pour slip into a plaster mould. Slip is made by mixing together water, various clays and minerals. The plaster of the mould absorbs the water from the slip leaving a firm clay piece. This is then carefully removed from the mould and smoothed (fettled). The mould is dried and reused. The clay piece is dried in a warm air dryer and then sprayed with glaze. The piece is fired after spraying in a kiln where temperatures exceed 1200° C. This results in a strong ceramic product with a surface impervious to acids and alkalis. Fireclay shower trays are not fitted with adjustable legs.



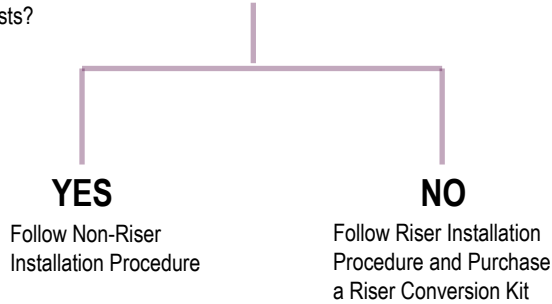
Section 3

Installation

Non-Riser and Riser Trays

The first step of the installation is to decide whether you need a non-riser or riser installation for your tray. To find out answer these simple questions.

1. Is the floor out of level by 1/4" (6mm) or more across the tray length? Then the installation of a riser tray is recommended.
2. Can a hole be made to fit the waste into the floor/timber/between the joists?



Preparation - It is recommended that the shower tray is installed before tiling to ensure the rim of the tray is recessed behind the tile face, thus helping to achieve a water tight joint.

Install the drain in accordance with the manufacturers' instructions making sure that a water tight seal exists on all drain connections. Be sure to provide access to the plumbing connections for future plumbing maintenance.

Shower trays are designed to be fitted to flat, even floors. It is vital that the whole of the shower tray base is supported.

Determine the type of floor and follow the instructions.

Non-Riser (Wooden Floor Installation)

1. Ensure that the floor is clean, dry, firm and level. If siting your tray on a relatively level wooden/stone floor use a silicone based adhesive to bed the tray. If the floor is a rough but relatively level stone floor it is suggested the installer uses a purposed made floor screed to smooth the area beforehand. Coat the ribbed underside of the tray with silicone sealant. Then press down into place ensuring the tray is positioned into rebates.
2. Ensure that the tray is level.

Note: Please note the bottom of the shower tray has a built in fall to allow for correct drainage. Therefore please check the edges of the tray with a spirit level.

3. Connect the waste pipe.
4. If not applying a seal directly to the shower tray specifically designed to accommodate movement (see section on movement), then seal the joint between the shower tray and wall with silicone sealant to provide a secondary seal.
5. The area is now ready for tiling.
6. Remove the protective film.

Riser (Solid Floor Installation)

1. Remove the protective film from the waste area and to the sides of the tray only. Leave the film intact on the base of the tray.
2. Fit the cylindrical locking nuts onto the adjustable legs.
3. Set the adjustable legs midway on the leg moulding, this will give the initial clearance for the waste supplied. Do not tighten the locking nuts.
4. Fit the adjustable legs into the holes on the back of the tray.

Note: A soft faced mallet can be used to aid installation.

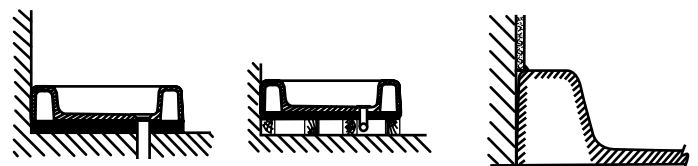
5. Temporarily fit the waste outlet pipework and the trap to the tray. Adjust the height of the feet to give the required clearance.

Note: The feet must be adjusted so that the shower tray does not rock.

6. Position the tray up to the walls and rebate the tray and tray walls into the plaster (as required).
7. Ensure that the tray is level.

Note: Please note the bottom of the shower tray has a built in fall to allow for correct drainage, therefore please check the edges of the tray with a spirit level. Adjust the height of the feet so that the tray is level in all directions and tighten the nuts.

8. Once the tray is level - tighten the individual locking nuts on the legsets and check the tray is firm and secure.
9. Tighten the waste being careful not to overtighten. Make sure that the seal is in place, additional beads of silicone sealant must be used.
10. Seal the joint between the shower tray and adjoining wall with silicone sealant to provide a secondary seal.
11. The area is now ready for tiling



Finish the Installation

1. Check the top edges of the shower tray to make sure that it is level.
2. Connect the waste.
3. If not applying a seal directly to the shower tray specifically designed to accommodate movement (see section on movement), then seal the joint between the shower tray and wall with silicone sealant to provide a secondary seal.
4. After completing the connection of the waste pipes and checking for leaks, tile down to the rim leaving a 3mm to 4mm gap between the tiles for sealant.
5. Seal the gap with silicone sealant.
6. Run water into the shower tray and check for leaks.

Basic Panel Installation Procedure

Square/ Rectangle

1. Cut the panel to length.

Note: When cutting to length, make sure that you take into account the amount of panel that goes into the corner connector and the end piece if required.

Note: The end piece is designed to be used against a flat wall surface and cannot be cut. The panel, however, can be cut or shaped to suit the wall profile e.g. skirting board.

2. Remove the backing from one side of each of the pads and stick the pads to the back of the locaters.
3. Slide the locaters onto the clips.
4. Slide the clips onto the legs until the bottom edge of the pad is 90mm from the floor. Where two clips are fitted on one leg, one of the clips can be inverted to allow both pads to be located at the same height. Make sure that they are parallel to the tray edge.
5. Offer up the panel to the tray with the grooves nearest the floor and make sure that the panel is the correct length.

Note: If extra panel stability is required, secure wooden blocks or batons to the floor along the rear edge of the panel as shown.

6. Remove the backing paper from the sticky pads and remove the protective film from the panel.
7. If required, fit the end piece onto the panel.
8. Starting at the wall end. Offer the panel up to the locator and press firmly. Continue along the panel making sure that it sticks correctly.
9. Fit the end piece and the corner to the other panel.
10. Fit the corner onto the fixed panel and continue along pressing firmly.
11. Seal the top edge of the panel to the tray wall using a line of silicone sealant.

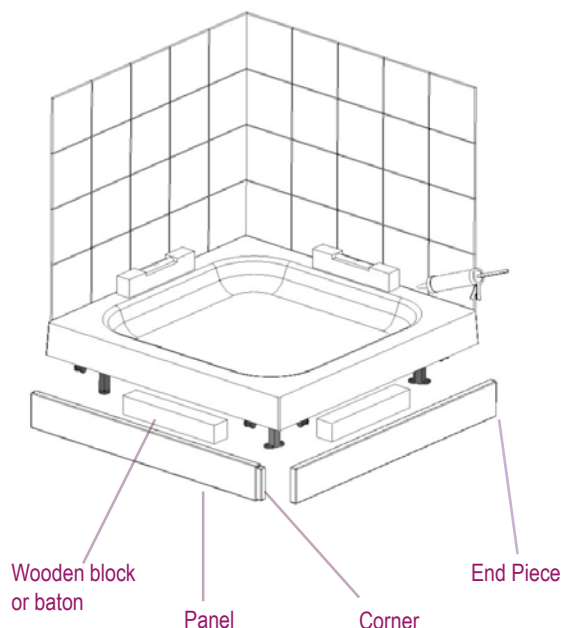
Upon Completion

If the shower tray has been raised off the floor, a suitable panel will need to be installed correctly to finish off the installation. This can either be painted or tiled to suit.

User Maintenance

Cleaning - once installed, the shower tray must be thoroughly cleaned with hot soapy water and fully dried with a soft clean cloth before use.

Risk of product damage - many cleaners contain abrasives and chemical substances and should not be used for cleaning enamel or plastic. These surfaces like stainless steel or plated surfaces should be cleaned using a mild washing up detergent or soap solution, rinsed and then wiped dry with a soft clean cloth. The gel coat surface of stone resin shower trays has good resistant properties to acids but should not come into contact with alkalis or organic solvents such as caustic soda, dry cleaning agents and paint strippers. If in doubt contact your supplier.



Section 3

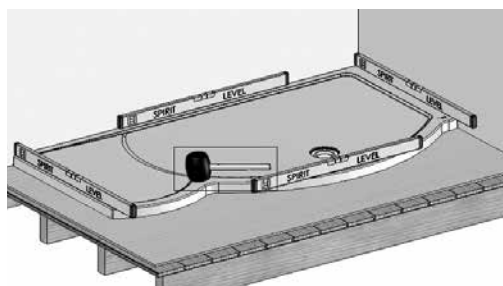
Installation

Low Level/Level Access Trays

Installation Procedure Direct to the Floor

1. Prepare the floor on which the tray is to sit, ensuring that there is adequate clearance for the waste assembly and outflow pipes. Caution should be taken in ensuring there is adequate fall on the outflow pipe. High volume shower systems may require a greater fall.
2. Check the floor is level using a Spirit Level, then place the tray in position to ensure the waste lines up correctly and the tray does not rock. Any rock on the tray indicates a floor that is not flat. Attach the waste and place the tray into position.
3. If the tray is being fitted onto a floor that is not flat or not level, lay a bed of mortar evenly over the area where the tray is to be situated, then sit the tray onto the mortar bed. Gently tap the tray to set it level. Connect the waste pipe to the trap assembly to complete the outflow pipe work.

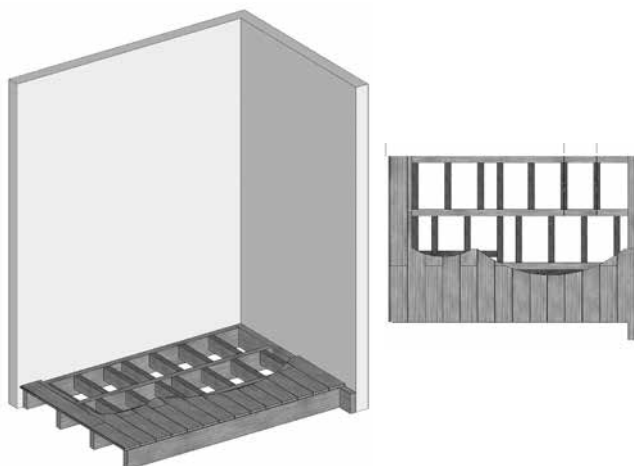
Caution: Applying a small number of “dabs” of mortar may result in poor support for the tray. Ensure there is mortar contacting as much of the underside ribs of the tray as possible.



4. Ensure the tray is completely level. If the tray is bedded onto mortar, allow at least 24 hours before proceeding to the next stage.
5. Once the mortar has set, spray the tray with water to check all plumbing for leaks. Tile the walls at this point, trimming the tiles to the top of the tray.
6. The tray should be fully sealed along the tiled walls, check for leaks.

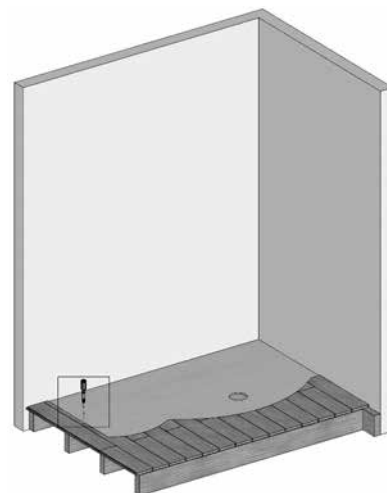
Installation Procedure Direct to Joists

1. Lift floor boarding and check the floor joists are completely level using a Spirit Level. Cut lengths of timber to fit between the floor joists approximately every 250mm to provide additional support.



Note: Fit enough timber in-fills to support the entire area on which the tray will sit. When fitting the waste assembly one of the timbers may need moving slightly to allow for clearance.

2. If the floor joists are not level, start from the highest point and cut lengths of timber to fit between the floor joists positioning them so as to achieve a level base. Check the joists and timbers are level in both directions using a Spirit Level.
3. Place the tray in position on the joists. Where necessary, cut slots in the supporting timbers to allow the waste pipe work to run correctly.



Caution: Care should be taken when cutting through the original floor joists, as extra reinforcement may be required. If in doubt, seek professional advice.

4. Check the tray is level and that there is no rocking. Connect the waste pipe work and test plumbing for leaks. At this point, fix a timber support under the front edge of the entrance to the tray which will give greater strength.
5. To achieve a more flush fit, floor tiles may be laid up to the tray. This can help provide a tray height in the range of 10mm - 25mm.

Important Notes about Installation Procedures.

1. Movement: When all trays are installed, bear in mind that movement may occur. This can be due to drying out within the building, natural settlement and even deflection due to the weight of the occupant. The installer must give careful consideration to the likely degree of movement (there are now products on the market that have been specifically designed to accommodate movement and still maintain a waterproof seal, thus preventing any leaks).
2. Manufacturers' installation instructions: Shower Trays are manufactured from different materials and installation procedures vary dependent on the type of material used. It is essential to remember that whatever the material, the manufacturers installation instructions must be strictly followed when installing any Shower Tray.

Section 4

Frequently Asked Questions

Should walls be tiled before fitting a shower tray?

No, if walls are tiled after installing a shower tray a much better leak free seal can be made between the shower tray and wall.

How high above the bathroom floor should a shower tray be installed?

The simple answer is it depends on many factors, such as, is the plumbing running above or below the bathroom floor? Is access to the trap required? As a general rule the shower tray base, that is the area a person stands on to shower, should be as close as possible to the bathroom floor level.

When installing a shower tray how do I ensure that I can unblock the trap?

Shower trays use less water than a bath and as a result the water flow rate through the waste trap is lower, this can cause a blockage in the trap. If possible always make sure there is a moveable panel to access the trap for cleaning purposes. Alternatively fit a top access waste designed to be removed from the inside of the shower tray to facilitate cleaning.

Is it necessary to buy a shower tray specifically designed for top waste access?

No, wastes and traps are manufactured to install in shower trays having a conventional waste outlet.

I want to install a ceramic shower tray but my bathroom floor is uneven, what do I do?

Use a thin bed of silicone sealant or a weak sand and cement mixture (5:1) between the shower tray and floor to level the floor.

Do the patterns on shower trays make them anti-slip?

No, unless the manufacturer states this. Always consider using a wall handrail and/or an anti-slip mat.

How long are most shower trays guaranteed for?

Depends on brand and material and varies from manufacturer to manufacturer.

Should I buy a tray and shower enclosure at the same time?

It is advisable to buy them together to ensure that they are compatible and of the same size.

Do shower trays move?

Any product, shower tray or bath that sits on a wooden floor is subject to movement. The installer must always bear in mind the likely degree of movement. e.g. in a newly completed home. The gap between the floor finish and the skirting may increase because of drying out shrinkage and deflection, particularly in timber floors. A gap of up to 10mm is normal but exceptionally 15mm may be seen where timber floors have long spans.



Section 5

Industry Terminology



Acrylic

A flat plastic sheet moulded into shape and reinforced with either GRP or Stone Resin.

Acrylic Capped ABS

A flat plastic sheet, consisting of 2 layers of different materials, where the top layer is acrylic and the backing is ABS. This is moulded into shape and reinforced with either GRP or Stone Resin

Acrylic Capped Stone Resin

Polyester stone and resin mixture is cast onto an acrylic surface to form a complete tray.

Adjustable Legs

Devices by which trays are supported above the floor incorporating a mechanical adjustment facility which accommodates unevenness in the floor and usually provides adjustment of the rim height within a limited range.

Baseboard

Usually made of chipboard. Bonded to the bottom of a tray to provide support and rigidity.

Fireclay

A ceramic based product used for stronger shower trays.

Glass Reinforced Plastic (GRP)

Reinforcing material comprising strands of glass fibre and high quality resin (sometimes known as Glass Reinforced Polyester).

Level Access

When shower trays are installed below the floor so that any step into the shower is eliminated.

Locking Nuts

Additional nut on a nut and bolt to prevent movement of the bolt once adjusted.

Non-Riser

A Shower Tray that rests flat directly onto a floor without adjustable legs.

Panel

Trim panel fitted to the front and/or sides to complete the installation on a riser Shower Tray.



Porcelain Steel Enamel

A coated steel tray pressed into shape and sprayed with an enamel coating which is fired on at high temperature.

Rebate

Area of tiling which is behind the front tiled surface i.e. barked into the wall.

Risers

See adjustable legs.

Screed

If the tray is being fitted onto a floor that is not flat or level a layer of mortar or "screed" must be spread evenly over the area where the tray is to be fitted. This will ensure that the floor is level.

Solid Surface

A liquid which is poured into a mould to produce an extremely strong low level shower tray.

Upstand

Lipped area around the edge of a Shower Tray to tile down over.

Section 6

References

BS EN 251: 2012

Shower Trays: Connecting dimensions.

BS EN 14527: 2006+A1:2010

Shower Trays for domestic purposes.

BS EN 249:2010

Sanitary appliances. Shower trays made from cross-linked cast acrylic sheets. Requirements and test methods.

BS EN 15636:2010

Sanitary appliances. Shower trays made from impact modified extruded acrylic sheets. Requirements and test methods.

BS EN: 15720:2009

Sanitary appliances. Shower trays made from impact modified coextruded ABS/acrylic sheets. Requirements and test methods.

BS EN 263: 2008

Sanitary appliances. Cross linked cast acrylic sheets for baths and shower trays for domestic purposes.

BS EN 13558: 2003

Specification for impact modified extruded acrylic sheets for shower trays for domestic purposes.

BS EN 13559: 2003

Specification for impact modified co extruded ABS/Acrylic sheets for baths and shower trays for domestic purposes.

Section 7

Sources of Useful Information

BSI British Standards

BSI British Standards' publications give recommendations on a wide range of building and construction matters including materials, testing, health and safety, access and regulations. They are an essential reference for architects, developers, building owners, site managers, building contractors, structural engineers, materials specifiers and other interested parties.

www.bsigroup.com

Water Supply (Water Fittings) Regulations 1999

Water Fittings Regulations (1999) (or Byelaws 2000 in Scotland) are national requirements for the design, installation and maintenance of plumbing systems, water fittings and water-using appliances. Their purpose is to prevent misuse, waste, undue consumption or erroneous measurement of water and to prevent contamination of drinking water.

www.legislation.gov.uk/ukxi/1999/1148/contents/made

Note: References to Water Regulations apply to England and Wales. Data may vary for Scotland and Northern Ireland – please check for specific regulations applicable.

Building Regulations

Communities and Local Government are responsible for building regulations which exist to ensure the health and safety of people in and around buildings, and the energy efficiency of buildings. The regulations apply to most new buildings and many alterations of existing buildings in England and Wales, whether domestic, commercial or industrial. General public users and professional users can access building regulations guidance, including the Approved Documents and associated guidance from the Planning Portal at:

www.planningportal.gov.uk/buildingregulations/approveddocuments

Waterwise

Waterwise is a UK NGO (non-governmental organisation) focused on decreasing water consumption in the UK and building the evidence base for large scale water efficiency. They are the leading authority on water efficiency in the UK. Waterwise have produced a number of product brochures covering a wide range of water efficient products suitable for the bathroom, enabling you to easily identify and incorporate water efficient products into the bathroom design.

www.waterwise.org.uk