

» the practical guide to  
wetroom specification

How to achieve the function to match the form



PROFILE OF INNOVATION

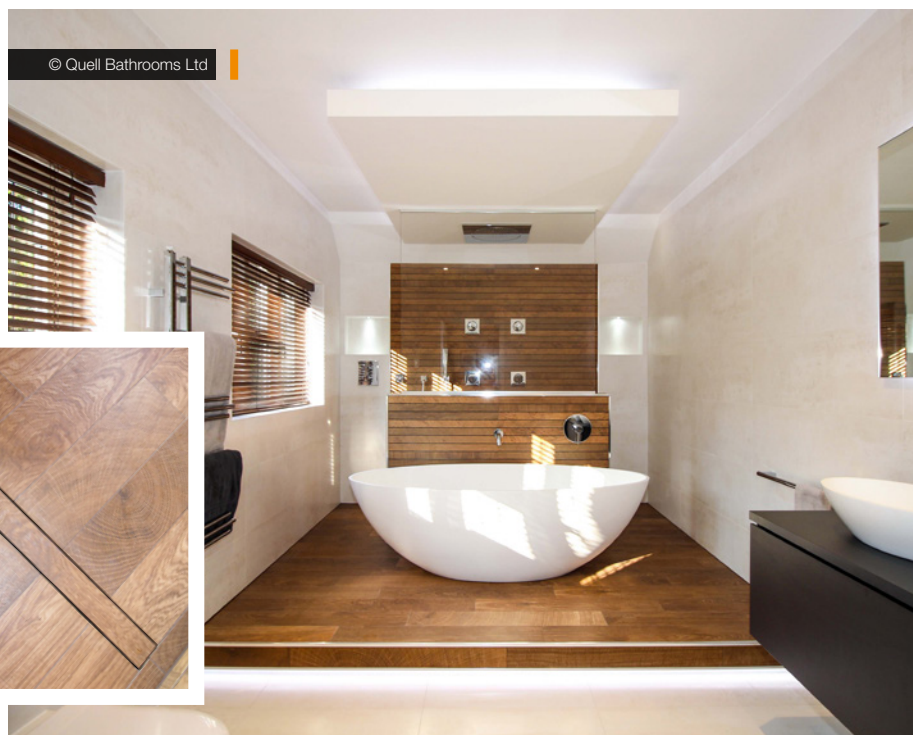




Having opened this guide, consider this for a moment: what's the first thing you notice about the image on the right? Chances are you've homed in on the tiles or fixtures. Or maybe you're taking in the overall effect.

The fact is that none of this wetroom would be functional without the elements you cannot see – not only appropriate preparation products, but also adherence to standards and industry guidelines. Much like the backstage crew to a star, these aspects put the show on the road.

This guide strips things right back to the practical essentials, so you can gain an understanding of wetroom fundamentals and how to specify for long-lasting results.



## » what is a wetroom?

As there are some common misconceptions about what a wetroom is, a definition is a good place for us to start. To clear up any uncertainty:

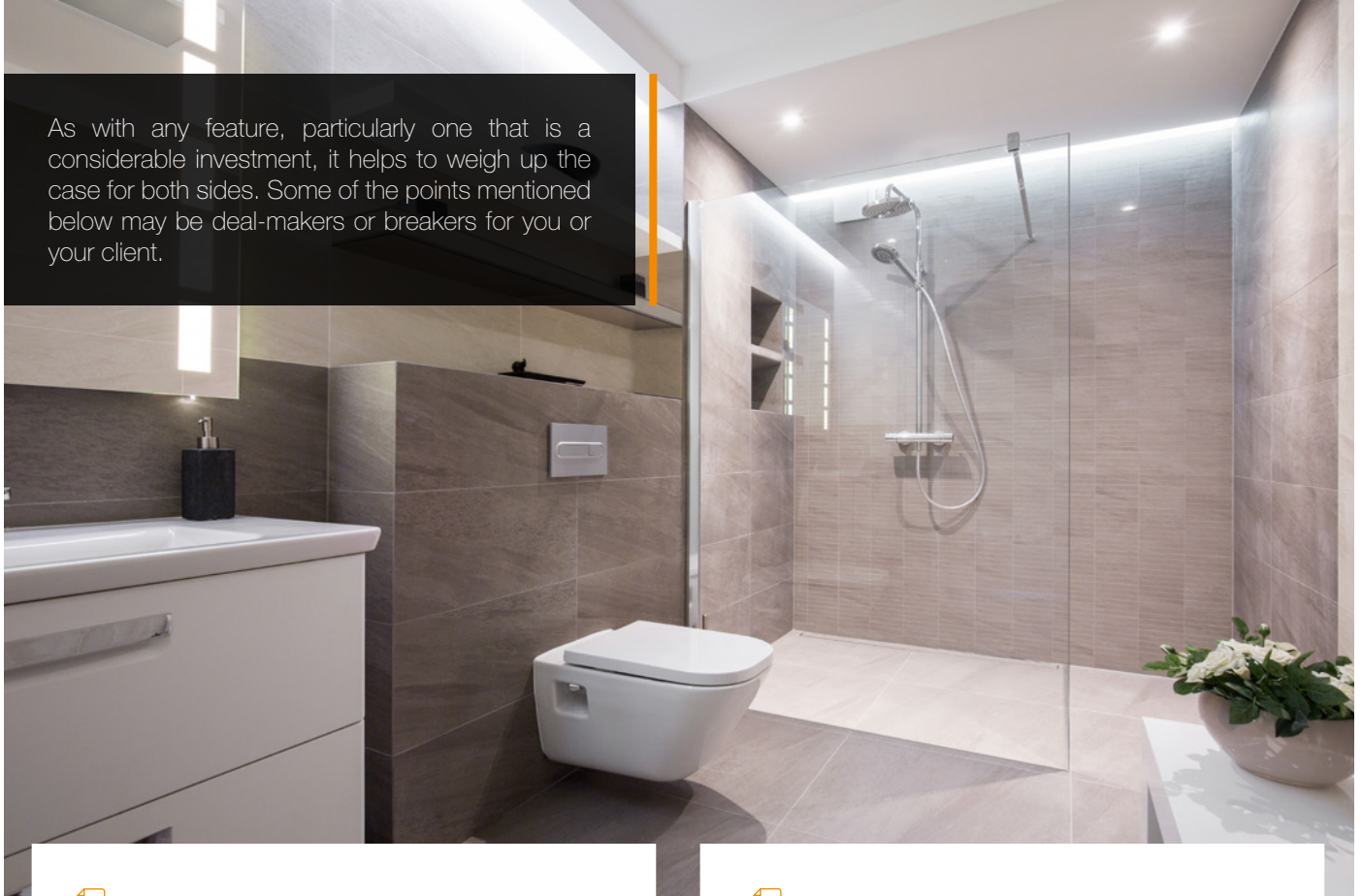
A wetroom is essentially a shower room without any barriers to entry. The most obvious difference is that a wetroom does not have a separate shower tray to step into. Instead, tile or stone continues on a level through into the shower area, where the floor slopes to allow water to drain away.

The shower area can be fully open into the rest of the room, or more often than not (to avoid splashing across other wetroom furniture) includes a shower screen.



# » pros and cons of a wetroom

As with any feature, particularly one that is a considerable investment, it helps to weigh up the case for both sides. Some of the points mentioned below may be deal-makers or breakers for you or your client.



## » pros

- ✓ **Accessibility** – with no changes of level, wetrooms are accessible for those with disabilities or mobility problems.
- ✓ **Reduced trip hazards** – a lack of ledges and steps makes for a safer environment to navigate.
- ✓ **Design** – use of your chosen tile or stone throughout the whole of the room can make the space feel larger and more unified.
- ✓ **Space occupied** – a wetroom can fit into a smaller area than a bathroom with a shower cubicle, plus the shower area isn't confined to the dimensions of a plastic shower tray.
- ✓ **Fully-tanked system** – waterproofing throughout the room eliminates weak points within an installation.
- ✓ **Easy to clean and maintain** – fewer nooks and crannies to get into, meaning a simpler and potentially cheaper cleaning regime.
- ✓ **Potential to increase property value** – if well-installed and considered in-line with the type of property.

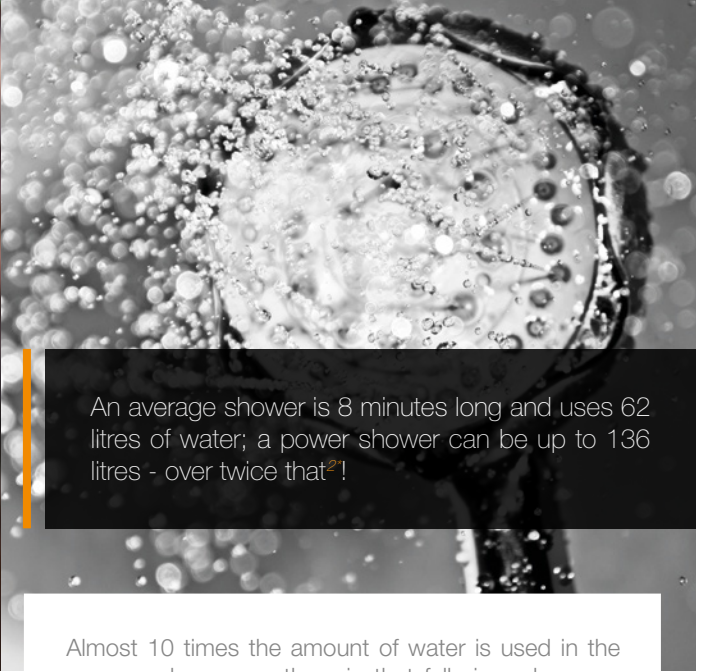
## » cons

- ✓ **Planning time/effort** – more intelligent planning is needed than with a bathroom, as water can readily splash outside the shower area.
- ✓ **Cost of coverings** – wetrooms can present more of an expense in terms of covering materials, as they should be tiled from floor to ceiling.
- ✓ **Client/user expectations of bathing** – a wetroom in its purest form won't have a bath. This may be an issue for some, particularly those with young children.

## » tip

As always, consider the eventual users of the space – will a wetroom blend with their lifestyle and needs, and will the building therefore be profitable for the client once put into use?

# » the impact of a wetroom failure

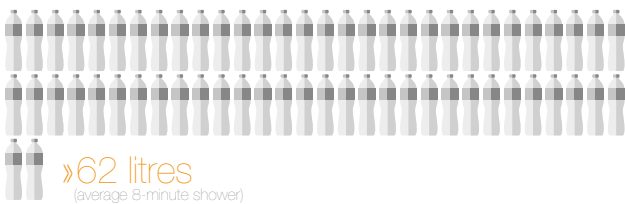


## water produced by...

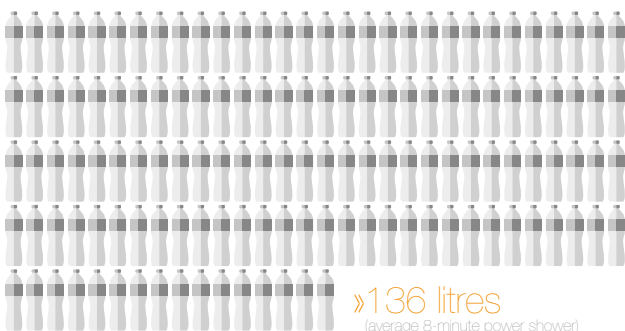
### » rainfall



### » shower



### » power shower



Almost 10 times the amount of water is used in the average shower vs. the rain that falls in a day on a m<sup>2</sup> area. This highlights the importance of proper attention to the creation of a functional, watertight facility.

Failure of a wetroom can have implications on many levels. Take the example of a 5\* hotel in London: one closed room can cause a loss of revenue to the tune of £500 a night minimum. In such buildings, a leak can cause a domino effect, putting multiple rooms out of action at once. Alongside physical damage, there is often reputational damage – arguably even more difficult to remedy.

A wetroom failure is not usually immediately obvious; unlike with sudden occurrences such as burst pipework, leaks that occur tend to be gradual and can go undetected for a good while after they've started. This means that damage caused by rot and mould is far more prevalent, and can be deep seated upon discovery. Important to note is that property insurance often takes a dim view of gradual leaks, tending to deem them a maintenance issue and a preventable event. As a result, such damage often isn't covered in insurance policies.

The above highlights the importance of employing good planning, materials and workmanship in the construction of a wetroom; properly specified and installed, there is no reason why it shouldn't last 25 years, though changing fashions and ownership usually dictate a maximum life of about 10 years.

<sup>1\*</sup> Met Office and Climatemp.com

<sup>2\*</sup> Unilever and Waterwise.org

# » making a wetroom watertight

Wetroom failure is often the result of a lack of attention to the fundamental details of products and systems. Keep these key points at the forefront of your mind during the specification process.



0 minutes



0 minutes



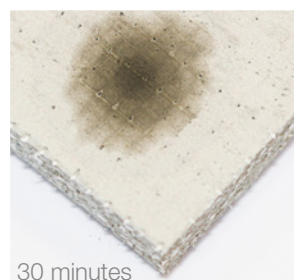
5 minutes



5 minutes



30 minutes



30 minutes

## » certified waterproofing

The difference between water-resistant and waterproof is often misunderstood. This is a fundamental distinction to make in achieving a long-lasting result for your wetroom.

**Water-resistant:** Partially absorbent; water is able to reach the tiling background.

**Waterproof:** Totally impervious; water is unable reach the tiling background.

A common misconception is that tiles and grout are waterproof in themselves. In actual fact, these two elements of an installation are at best water-resistant. This means that for waterproofing protection, you have to look to what is used beneath the tile covering.

## » BS 5385

“In tile installations that are not immersed, but subject to frequent contact with water, the basic structure behind the tiles should be watertight”



## » wall waterproofing system

Choice of a waterproofing system for walls comes down to one of three options:

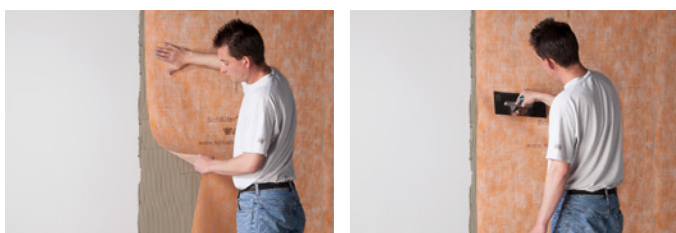
### Liquid-Applied Membranes

These commonly used membranes are cost-effective at the point of purchase. However, they can be difficult to apply evenly and slow-drying, often making them impractical for large-scale usage.



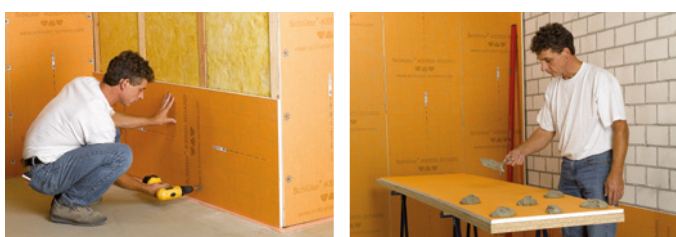
### Sheet Membranes

Provide uniform coverage and bridge cracks in substrates. Like liquid-applied membranes, their use relies on application to an even substrate. This means they are often used as a second layer over plasterboard or water-resistant backerboards.



### Waterproof Tile Backerboards

Provide a flat and even substrate as well as being ready-waterproofed. Therefore, they can reduce the number of installation processes needed to create a waterproof assembly, which can save time and money on-site.



## »tiling weight guides

Wall Substrate	Max Weight Per m <sup>2</sup>
Gypsum Plaster	up to 20kg
Gypsum Plasterboard	up to 32kg
Wood-Based Sheets	up to 30kg
Tile Backerboards (Foam-Cored)	up to 60kg
Tile Backerboards (Cementitious)	up to 60kg
Tile Backerboards (Gypsum Fibre)	35-40kg

\*In this context tiling is defined as a tile plus its bedding and grouting material. Source: *The Tile Association – Internal Ceramic Tiling to Sheet and Board Substrates.*

## »floor waterproofing system

The same waterproofing systems used for walls are often not the best choice for floors. Versus walls, floors endure more stresses, so extra functionality is desirable. An uncoupling membrane not only waterproofs but also helps to manage movement in the flooring assembly. This functionality is particularly important in heated floor assemblies, which expand and contract more than standard floors.



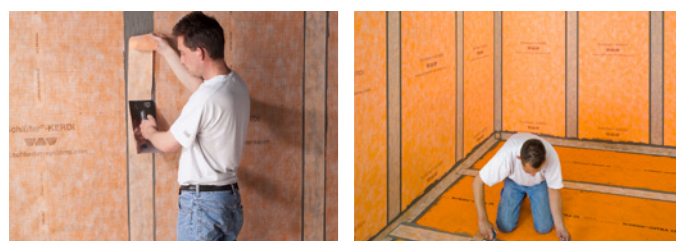
## »seal connections

These are inherent weak points for an installation if not dealt with properly. Key areas for attention are:

- ✓ Joints between membrane sheets/individual backerboards.
- ✓ Wall-to-floor junctions and corners.
- ✓ Junctions with drains.
- ✓ Pipe openings (including toilet flange).
- ✓ Sanitary ware.

Also ensure that the shower controls and valves are easy to seal; they should have a supplied gasket for secure connections.

N.B. Puncturing of the waterproofing should be avoided. If puncturing is necessary, the waterproofing assembly should be resealed in-line with the manufacturer's instructions.



## »compatibility of products

You'll need to understand if and how products can work together. Be mindful that sourcing products from different manufacturers can cloud or even void the warranty for a wetroom.

## »tile and stone fixing

Tile and stone should always be fully bonded into the adhesive. "Dot and dab" fixing techniques leave voids behind the tile, in which moisture can be harboured and mould can develop.

Tile or stone greater than 12mm in thickness should be mechanically fixed as per BS 8298. A suitable substrate (eg. plywood or blockwork) must be in place behind your chosen waterproofing in order to support this load.

# » design considerations

We've talked about how to protect the material structure of a wetroom; now we'll move on to how you can best design to look after its end users.

## » appropriate PTV rating

The Pendulum Test is the HSE's preferred method of testing slip resistance. All tiles sold on the UK market have to have a Pendulum Test Value (PTV) rating by law. This is declared by the manufacturer and will be found within their technical documentation.

The higher the rating, the less likely a slip. Tiles suitable for the floor will have a higher rating than those suitable for wall use.

Slip Potential	Pendulum Test Value
High Slip Potential	0 - 24
Moderate Slip Potential	25 - 35
Low Slip Potential	36+

Important points to note:

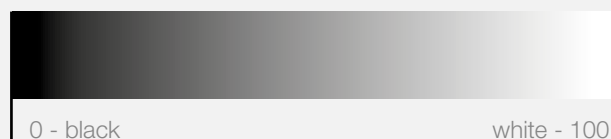
- ✓ Any additional surface finishes (eg. sealing layers, polishing etc), or the presence of surface contaminants, have the potential to change PTV ratings.
- ✓ Pendulum Test Value can be completely different in a lab to on-site. One of the benefits of the Pendulum test is that it is portable, so tile/stone can be retested on-site.
- ✓ You will also see reference to Ramp Test Values, which run from R9 (high risk) to R13 (low risk). The Ramp test can't be carried out on-site and therefore only gives factory gate values.



## » Document M

Approved Document M of The Building Regulations 2010\* sets out requirements for accessibility, including:

- ✓ **Light Reflectance Values (LRV):** a 0 - 100 scale of particular significance when designing for those with reduced vision. Measures the amount of light reflected by a surface; minimum of 30 points difference should be specified between two adjoining surfaces.



- ✓ **Placement of facilities:** based around accommodating the turning circle of a wheelchair.
- ✓ **Additional measures:** grab rails (will require plywood or blockwork behind waterproofing for strength of fixing), slip-resistant mats for further safety.

\*Also refer to BS EN 8300 and ISO 21542.



## » shower screens

If you are specifying a shower screen, ensure that it does not require mechanical fixing through the floor. Punctures in floor waterproofing can be more problematic to reseal effectively than those in wall waterproofing.

## » drainage and drain ratings

To prevent flooding of the wetroom, the flow rate of the drain should always be more than the output from the shower. Reference must be made to BS EN 274 and BS EN 1253.

## » drain style

Both linear and point drains, so long as they are manufactured well, should be equally as capable of doing their job. The main distinctions come in their visual impact and suitability for users of the wetroom.

### » linear



- ✓ A good complement to large format tile.
- ✓ Usually only feature one fall (but can include more).
- ✓ Visually more subtle than a point drain as can be positioned against the wall.
- ✓ Tile can continue in the same manner into the shower area as the rest of the room.

### » point



- ✓ Preferred choice for universal access wetrooms.
- ✓ Often partnered with smaller tiles and mosaics.
- ✓ Features four falls, that drain towards a central point.
- ✓ The installer needs to create envelope cuts in the tile.
- ✓ Cheaper than linear drains, therefore a useful tool in designing to a restricted budget.

## » correct falls to drainage

Specifiers should accommodate falls to drainage in one area of the wetroom, unless the room is particularly small.

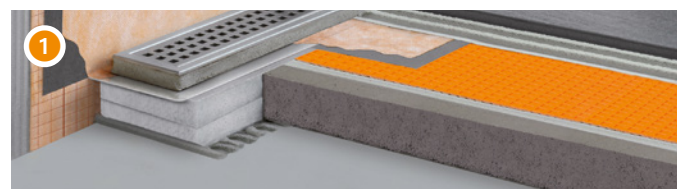
Falls should be between 1:35 and 1:80 (ie. for every 80mm the incline travels towards the waste outlet, the floor level will fall 1mm) as per BS 5385 Part 3.



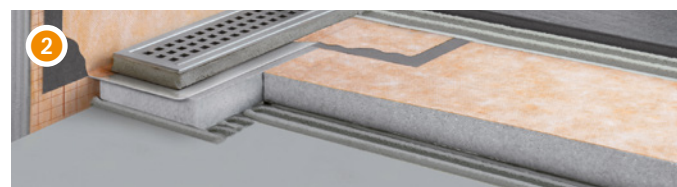
- ✓ Any steeper than 1:35 = slip hazard.
- ✓ Any flatter than 1:80 = water won't drain effectively.

## » how to achieve correct falls

Falls should always be below the waterproofing layer, not in the tile adhesive applied above. The two main methods used to create falls are:



- ✓ **Create in screed:** the traditional method, which involves use of a screed formed to the required falls to drainage. The lowest point in the screed should still meet British Standards; if a screed is too thin, it will crack or crumble when under load. Both gypsum and anhydrite screeds should be avoided.



- ✓ **Created using a preformed shower board:** these boards are manufactured with the appropriate slopes already created. Some also come ready-equipped with waterproofing layers.

## » acoustic reduction

Acoustic measures are particularly key in multi-storey projects. Check that any acoustic system specified is suitable for use under tile and stone, as some are not appropriate.

## » electrical zoning

Inclusion of electrical fittings and systems needs to comply with IET wiring regulations for wet areas (set out in BS 7671: 2018).



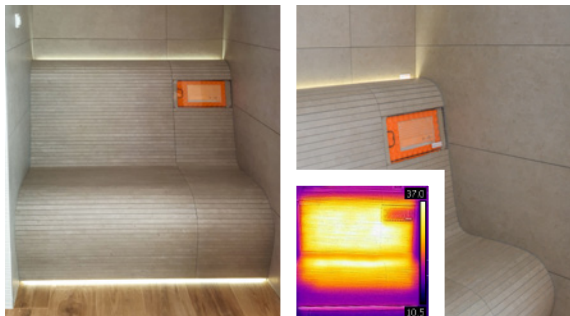
# » additional considerations



## » ideas for detailing

### 1 undertile heating

- ✓ Install in floors to help dry out residual moisture and add an extra touch of luxury underfoot.
- ✓ Install in walls to provide a safer and less intrusive alternative to radiators.
- ✓ Install in benches for added comfort.



### 2 creation of furniture

- ✓ Create custom furniture for your wetroom, using waterproof backerboard.
- ✓ Can design to suit the space, rather than trying to source a pre-made item of the right size or compromising the design.
- ✓ For a softer, spa-like look, use a pre-ridged waterproof backerboard to easily create curved benches and other features.



### 3 storage and shelving

- ✓ Shower niches provide integrated shelving that can be tiled in-line with the rest of the room, or become a focal point with use of accent tiles.
- ✓ Metal shelving is a sleek addition to a wetroom. Solutions are available that avoid the need to drill through and then reseal the underlying waterproofing.



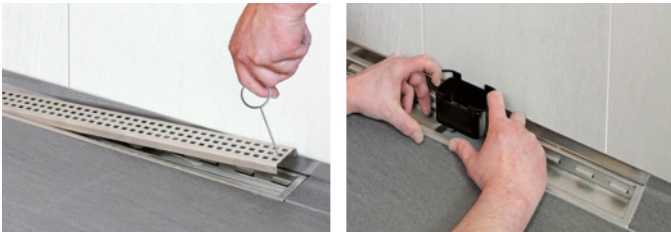
### 4 lighting for features

- ✓ LEDs can be installed to highlight particular features, such as niches, mirrors and vanities.
- ✓ They provide low-energy lighting and allow for the creation/affirmation of particular ambiance.
- ✓ To be suitable for installation in a wetroom, the LEDs chosen must have a minimum rating of IP67 (provides protection against immersion in water of up to a metre deep for half an hour).



## » maintenance

To achieve a long-lasting installation, an appropriate cleaning and maintenance schedule is essential. This must be detailed in your specification, to avoid any grey areas for parties involved in maintaining the wetroom.



The schedule created should cover the following aspects:

- ✓ Tile and stone coverings
- ✓ Grouts
- ✓ Profiles, movement joints, drains and drain grates
- ✓ Brassware
- ✓ Cleaning materials

Follow the manufacturer's instructions and contact them for advice if needed.

A regular cleaning schedule as opposed to a deep clean a few times a year is best for a wetroom. This avoids the need to use harsher chemicals and prevents the possibility of damage to surfaces.



For full details, refer to the The Tile Association (TTA) document 'The Cleaning and Maintenance of Wall and Floor Tiles'.

## » sequencing

Product installation and sequencing on-site needs careful consideration, to ensure that no steps are missed or muddled. The package of works for a wetroom is wide-ranging and can therefore sit across numerous different sub-contractors, hence central co-ordination of activities and timings is key.

## » listed buildings

Wetrooms can place a considerable demand on historical structures, therefore special consideration and restrictions may apply if you are dealing with a listed building. Rules can vary according to area and even the particular building in question depending on what elements of it are listed. For definitive advice, contact your local planning authority at the outset of the project.



## » case studies

For more information on Schlüter-Systems' input into wetroom projects, including the Grade II listed hotel The Lalit London, please see the accompanying case study booklet.



## » end of life considerations

The sustainability of products is a more prominent issue than it has ever been. Consideration should be given to the life-cycle of products, from design through to procurement and installation and then finally on to disposal.



## » conclusion



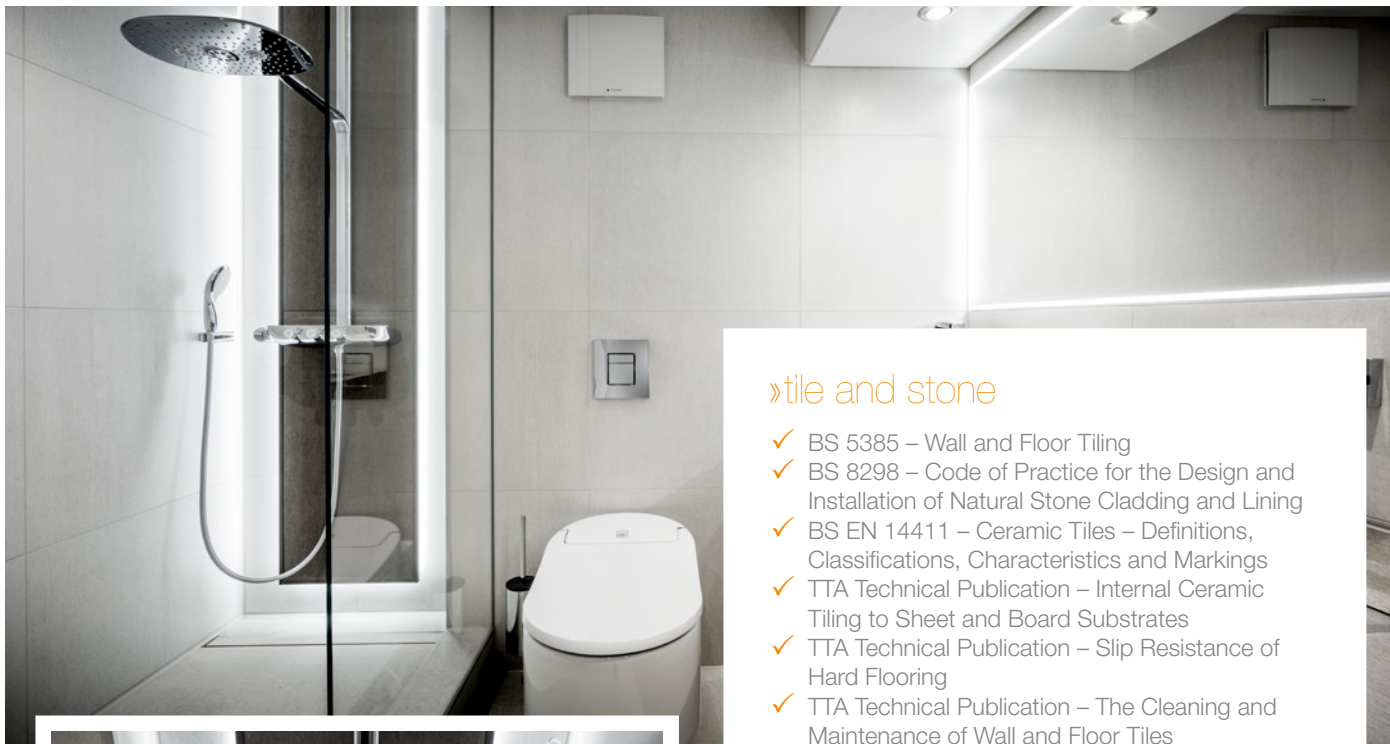
There is plenty of room for creativity in wetroom specification, but your designs need to be backed up with the correct materials and maintenance schedule in order to leave your clients in the most secure position possible. This means understanding seemingly subtle details that in fact make all the difference, such as the distinctions between water-resistant and waterproof materials.

With a wetroom, proper protection is particularly important as water is falling directly onto a tiled floor rather than a prefabricated shower tray. Not only this, but the volumes of water that a wetroom is subjected to in just 8 minutes of use are far greater than the average UK rainfall over a comparable area for an entire day. No-one would hesitate to make sure that a roof had the right protective measures in place, yet many fail to make the same provision for a wetroom. So what's going amiss?

In our opinion, it's a question of the balance of form and function. A roof usually doesn't form a talking point for building occupants unless it fails to deliver functionally, which gives a clear point of focus for its construction. But a wetroom is more of a juggling act; a client will likely have much more of an opinion as to how it should look and tie in with the rest of a building and therefore focus can be drawn away from getting the fundamentals correct. These fundamentals are what we've sought to give you a guide to in this document, so you can achieve a wetroom that not only looks great but performs as it should.



# » references and resources



## »tile and stone

- ✓ BS 5385 – Wall and Floor Tiling
- ✓ BS 8298 – Code of Practice for the Design and Installation of Natural Stone Cladding and Lining
- ✓ BS EN 14411 – Ceramic Tiles – Definitions, Classifications, Characteristics and Markings
- ✓ TTA Technical Publication – Internal Ceramic Tiling to Sheet and Board Substrates
- ✓ TTA Technical Publication – Slip Resistance of Hard Flooring
- ✓ TTA Technical Publication – The Cleaning and Maintenance of Wall and Floor Tiles
- ✓ TTA Technical Publication – Tiling in Wet Rooms

## »electrical zoning

- ✓ BS 7671 – Requirements for Electrical Installations. IET Wiring Regulations
- ✓ Approved Document P: Electrical safety, dwellings

## »drainage and plumbing

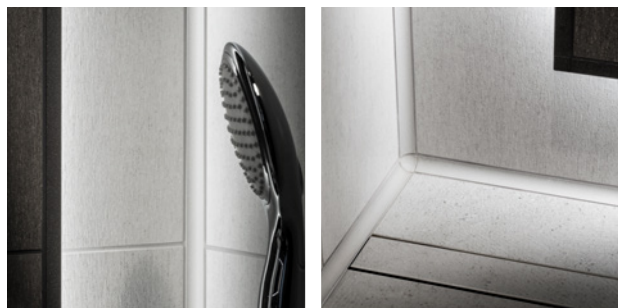
- ✓ BS EN 274 – Waste Fittings for Sanitary Appliances
- ✓ BS EN 12056-2 – Gravity drainage systems inside buildings. Sanitary pipework, layout and calculation
- ✓ BS EN 1253 – Gullies for Buildings
- ✓ Approved Document H: Drainage and Waste Disposal

## »accessibility and disabled access

- ✓ BS 8300 – Design of an accessible and inclusive built environment
- ✓ Approved Document M: Access to and use of buildings
- ✓ ISO 21542 – Building construction – Accessibility and usability of the built environment

## »misc

- ✓ Approved Document B (fire safety) volume 1: Dwellings
- ✓ Approved Document F: Ventilation
- ✓ Government Planning Portal



## » contributors



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Ian is Head of Technical & Training for Schlüter-Systems UK. He has spent his whole career in the construction industry, working variously as a plasterer, with a heating engineering firm and as a technical estimator before joining the company in March 1997. Starting out as the sole technical support for Schlüter UK, Ian now oversees an ever-growing team dedicated to helping customers understand the functions of products and refine their specifications. He also sits on the committees of a number of industry associations and is involved in guiding British and International Standards for the use of tile and stone.



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Tom is a Technical Support Consultant for Schlüter-Systems UK, with a specialism in wetrooms and waterproofing. He joined Schlüter-Systems in 2012, working as an office-based Account Manager as well as an Area Sales Consultant out on the road before taking up his current position. Having seen specification from all sides, Tom is expert in identifying and resolving issues that arise both during the design process and at all stages of a build. He splits his time between the office and on-site consulting on major Schlüter projects throughout the UK.





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