

This technical article provides additional guidance on showers and wet room construction for domestic properties. It is important that all workmanship carried out during construction is completed in accordance with the relevant tolerances.

Background

Shower constructions mainly fall into two types:

- A pre-formed shower tray and surround (including those incorporated with a bath) found within a typical bathroom layout. For the benefit of this guidance, we will refer to them as 'conventional shower and/or bath areas'
- A walk-in shower facility where the floor continues to be part of the shower area with or without a perimeter upstand or (a hob), these are typically referred to as 'walk-in shower and wet rooms'

With conventional shower and bath installations, an internal wall may form part of the enclosure but the pre-formed base or bath collects the water to the waste system, therefore the surrounding floor is not part of the installation.

With walk-in shower facilities, however, the floor and surrounding wall constructions form part of the enclosure and must be carefully designed and constructed to avoid water escaping into the surrounding construction and the finishes below, and adjacent to the facility.

Potential problems

All shower constructions, if poorly designed and constructed, could result in water reaching parts of the building fabric and creating potential for damage to occur. For example, water damage to ceilings below.

Conventional shower tray and bath

Conventional shower tray and bath surrounds are not without problems if not carefully detailed. The two most common situations are:

- A lack of adequate sealing between the tray or bath and the enclosure surround, door or tiled wall, allowing water to pass through and potentially cause damage to the surrounding construction
- The shower tray or bath is not properly supported and flexes as soon as someone stands in the shower or bath resulting in the sealant joint tearing and breaking adhesion between the tiled surround and the preformed tray or bath

Wet room installations

Wet room installations are particularly vulnerable to the following failures:

- Not following original specification and using alternative materials which may not be suitable
- Lack of co-ordination between the plumbing, tiling, underfloor heating (if provided) and waterproofing trades
- Floor areas in the shower area not adequately designed to a fall
- The gullies are not accessible to maintain
- The gullies may be overwhelmed by the quantity of water from the shower unit. Some 'in vogue' large shower heads produce a large quantity of water which a standard floor gully cannot cope with and flooding to other areas of the wet room floor can occur
- The floors are not adequately constructed to be water tight
- The suspended timber floor construction is not sufficiently rigid to prevent floor tiles cracking
- Water resistant plasterboard or other suitable boarding is not used behind the tiling finishes

- The water resistance of the junctions of the wall and floors is inadequate

Recommendations

The following guidance is for conventional shower installations, baths and 'walk-in' or 'wet room' installations that form part of the wall and floor constructions of the property. It does not cover areas used as saunas or steam rooms. It also assumes that normal loadings are applied and that excessive loads caused by heavy appliances, for example feature baths, are taken into account in the design and construction.

Walls

Conventional shower and bath pre-formed installations:

- Moisture-resisting plasterboard or a third party approved water-resistant cement backer board is to be used for the area of internal partition walling forming part of the enclosure that is to be tiled. The board should extend vertically to a height of 1800mm above the floor level and extend 40mm beyond any shower screen junctions. In the case of a shower fitted above a bath installation, the moisture resisting board should extend horizontally for the full length and width of the bath and 40mm horizontally beyond any shower screen junction
- Pre-formed baths and shower trays must be supported to avoid flexing when normally loaded
- Mould-resistant sealant must be applied between the shower tray and bath fitting and the tiling. A continuous sealant bed should be applied between the surfaces of any fixed shower screen to the tiling, shower tray or bath
- Opening shower doors must ensure that a proper seal is made between the frame and shower tray or bath junctions to prevent water escaping

Walk-in showers and wet rooms, as above plus:

- The surrounding tiled walls to the enclosure or accommodation are required to be waterproofed for a height of 150mm above the floor junction and then 'water resistant' to a height of at least 1800mm and a horizontal zone of 1800mm in either direction from the shower head and gully locations
- The junction of the walls and floors are required to be waterproofed

Floors

Conventional shower and bath pre-formed installations

- Moisture resistant floor boarding should be used in accordance with the manufacturer's recommendations to the whole bathroom area

Walk-in showers and wet rooms:

- The floors are required to be waterproofed and adequately drained. Waterproofing products must have a third party product approval for the use intended (e.g. suitable if an underfloor heating installation is also proposed)
- Floor waterproofing must extend for a height of 150mm above the floor junction
- A timber floor deck substrate is not suitable. The floor deck should be a water stable component with a third-party product approval confirming its use for this situation
- The structural floor below the deck must be suitably rigid and deflection minimised to avoid cracking of floor tiles and movement at the waterproofing junctions with the walls
- All penetrations in the floor construction are to be waterproofed sealed
- Floor finishes shall allow all surface water to drain without ponding and shall prevent water from discharging outside of the designed shower area

- The floor finishes shall be suitably slip resistant
- Wall and floor tiles in wet areas subject to standing water must be to product group as classified in table 1 to BS EN 14411
- Tiles must be solidly bedded on an approved flexible adhesive and similarly sealed with a flexible grout
- Falls to the wet area must prevent ponding and should fall between 1:80 and 1:100 to the drainage point. Tiles may need to be diagonally cut in the area of the gully to achieve the desired fall. There must not be any sharp edges or significant lipping in the floor tiling upper surface where falls are created
- A suitable water stop may be required to a wet room door threshold (from the other parts of the dwelling) with the base sealed to the floor waterproofing. It should be noted that in order to achieve a fall for drainage purposes and not dropping the floor construction locally, the height of the finished floor coverings may be above the adjacent floor levels in hall/landing/bedroom areas. A suitable threshold will be necessary
- Drainage gullies must be maintainable and appropriately sized to take the intended water flow from the shower head without flooding
- If a concrete floor construction forms the substrate, this and the floor screeds used to form the falls must be allowed to properly dry out before the tiles are fixed. Minimum drying times in accordance with BS 5385 should be followed
- If underfloor heating is proposed in a concrete screed forming part of a walk in shower (the floor not being a timber construction), BS EN 1264-4 requires movement control joints be incorporated at all perimeters of the screed, and installed around all upstands or anything that penetrates the screed. The method of also achieving water tightness at these points will need to be ensured
- A movement joint may be necessary at the wall and floor junctions due to the differing constructions. Specialist advice will be necessary to ensure a waterproof construction is maintained.

Further guidance can be found in Section 4: Ground Floors (general requirements) and Appendix A: Finishes section of the [Technical Manual](#).

Every care was taken to ensure the information in this article was correct at the time of publication (March 2021). Guidance provided does not replace the reader's professional judgement and any construction project should comply with the relevant Building Regulations or applicable technical standards. For the most up to date Premier Guarantee technical guidance please refer to your Risk Management Surveyor and the latest version of the [Premier Guarantee Technical Manual](#).