

Substrates for tiling bath and shower enclosures, wet rooms and bathroom pods

(July 2023) (First issue)

Applicable sites

All warranty and Building Control sites registered with NHBC.

Applicable regions

This technical guidance applies to England, Wales, Scotland and Northern Ireland.

Background

NHBC has seen a rise in claims relating to the walls surrounding baths, shower enclosures and bathroom pods.

The purpose of this Technical Guidance Note is to clarify NHBC's position on appropriate substrates for tiling in domestic bath and shower enclosures, wet rooms and bathroom pods and to expand upon the guidance in NHBC Standards 2023 Clause 9.2.5 'Ceramic wall tiling'.

Key Technical Considerations

NHBC Standards 2023 Clause 9.2.5 'Ceramic wall tiling' advises that gypsum plasters should not be used where repeated or persistent wetting may occur and also that in wet areas e.g. showers, backing surfaces may require protection with a suitable tanking system.

Bath and shower areas (not power showers)

The walls which surround a bath or shower may be subjected to repeated or persistent wetting and therefore the substrate to any tiling needs to be carefully selected.

Certain substrates may not be adequately durable for this application and therefore additional protection measures maybe required, with the introduction of an impervious waterproofing material (i.e. tanking) behind the tiles, to prevent the ingress of water/moisture into the substrate and structure, see Table 1.

Therefore, to ensure longevity of the bath or shower area, the surrounding walls should be made watertight, in accordance with Figure 1. Tanking systems should be selected in accordance with Table 2.

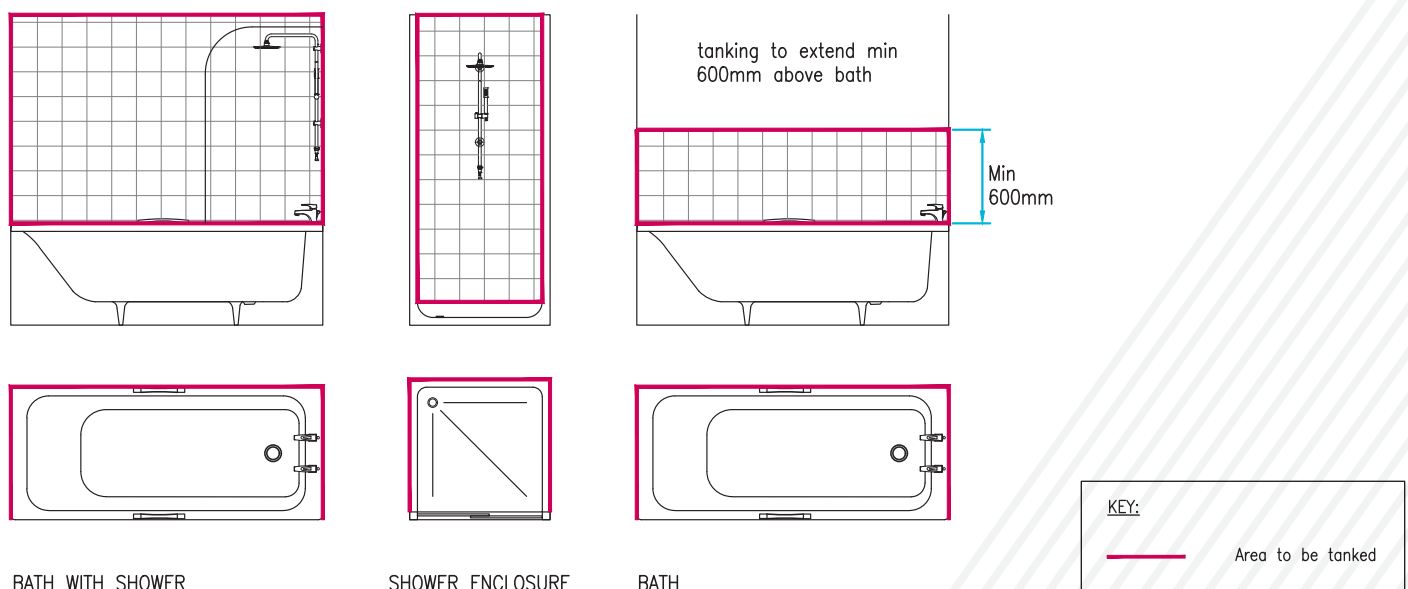


Figure 1: Bath and shower areas

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Wet rooms and/or power shower areas

A wet room is considered to be an area where the shower is open or set behind a single wall, its floor area being flush with the adjacent floor, and the water drains away through an outlet set into the floor.

A power shower incorporates a pump to boost the flow rate (>12 litres/min) of the water it uses.

Wall and floor linings in wet rooms and power shower areas are subject to frequent wetting with water and therefore the structure behind the tiles should be made watertight, in accordance with Figure 2.

The walls and floor of a wet room and/or power shower area should be made fully watertight, regardless of the substrate type, see Table 1. Tanking systems should be selected in accordance with Table 2.

Gypsum based plaster and plasterboard or calcium sulphate screed should not be used as a substrate in a wet room or where a power shower is to be installed, regardless of any tanking provision.

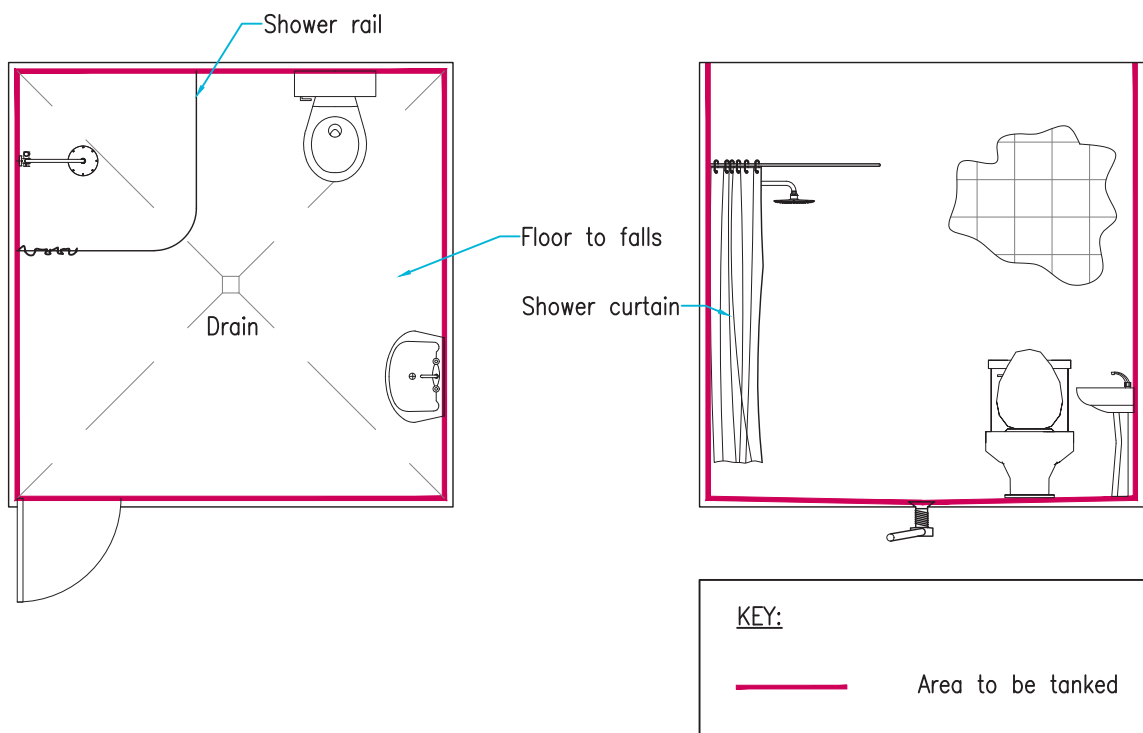


Figure 2: Typical wet room

Future adaptations

Where statutory requirements stipulate that allowances must be included in the design of a new home, for future adaptation, to meet any changing needs of the occupants e.g. the changing of a bathroom into a wet room, by the removal of a bath and replacement with a level access shower. In these instances, the designer should ensure the minimum regulatory requirements are met at NHBC final inspection stage, to permit the future adaptation to take place.

Designers may also wish to ensure the chosen wall and floor substrates are appropriate for any future adaptation and consider if tanking should be provided behind tiling, in order to reduce the disruptive works which would be required for such adaptations.

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Waterproof tanking system

Tanking systems should form an impervious waterproofing layer, behind the tiles to prevent the ingress of water/moisture into the substrate and structure. All junctions should be appropriately sealed e.g. between the wall and shower or bath, wall/floor junctions in wet rooms, including any penetrations, etc. to ensure a watertight enclosure is formed.

Tanking systems should be applied in a uniform layer, prior to any wall or floor tiling. Liquid applied solutions or membranes should be appropriate for the substrate.

The tiles, adhesive and grout should also be compatible with the tanking system.

The maximum tile weight the tanking is capable of supporting, should not be exceeded.

Tanking systems should meet NHBC Technical Requirement 'R3' (See Table 2).

Table 1: Tanking requirements for various wall substrates

Material	Standards	* Tanking system required in a bath or shower enclosures and bathroom pods (not fitted with power showers)	* Tanking system required in a wet room or where power showers are fitted
Gypsum plaster	BS EN 13279	Yes	Substrate not suitable
Gypsum board (Type H1)	BS EN 520 & BS EN 15283	Yes	Substrate not suitable
Fibre cement board & glass reinforced cement board	BS EN 12467	Yes	Yes
Other board substrates **	–	*Subject to assessment	*Subject to assessment

*Product should hold a suitable independent technical assessment by a technical approvals authority acceptable to NHBC, to demonstrate the product is fit for purpose or alternatively product is UKCA, UKNI or CE marked in accordance with Table 2.

**NHBC do not accept the use of Magnesium Oxide (MgO) building boards.

Table 2: Tanking system criteria for bathroom/wet room and power shower areas, including bathroom pods

Product type	Assessment	Alternative
Liquid applied	Products should be UKCA, UKNI or CE marked to EAD 030352-00-0503 'Liquid applied watertight covering kits for wet room floors and/or walls with or without a wearing surface'	Alternatively products should hold a satisfactory assessment by an appropriate independent technical approvals authority acceptable to NHBC
Flexible sheet	Products should be UKCA, UKNI or CE marked to EAD 030436-00-0503 'Watertight covering kits based on flexible sheets for wet room floors and/or walls'	
Watertight boards	Products should be UKCA, UKNI or CE marked to EAD 030437-00-0503 'Watertight covering kits based on inherently watertight boards for wet room floors and/or walls'	

Transitional Arrangements

This guidance comes in effect for every NHBC registered home whose foundations are begun on or after 1st January 2024.

References

Wall and floor tiling guidance can be found in the following documents:

- BS 5385 Parts 1-4 'Wall and floor tiling'