

ALFIX[®]
Responsible strength

Wetrooms

Tanking with Alfix



Introduction

This brochure offers a thorough step-by-step description of how to tank a wet room with a complete range of products meeting the harmonized European Standard, ETAG 022 part 1.

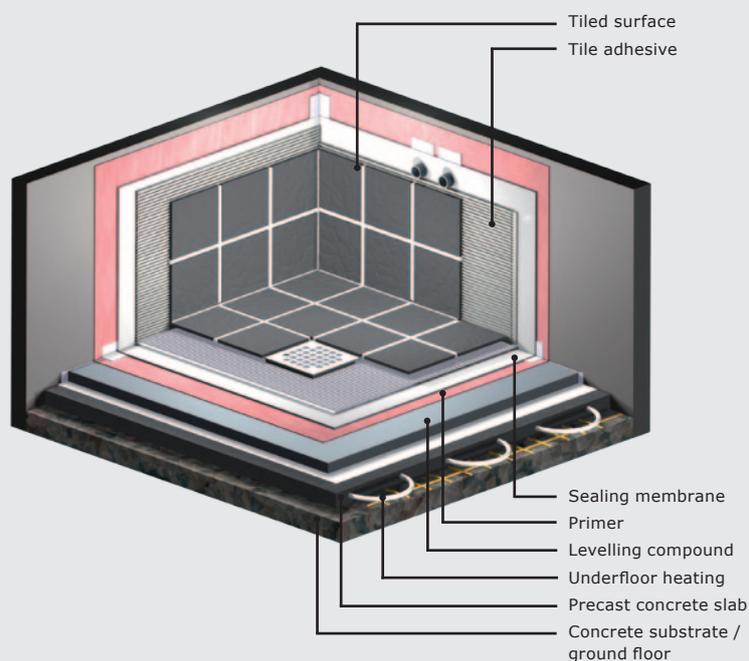
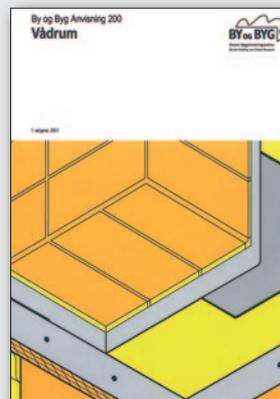
ETA-Danmark, Danish approval body for construction products, has transformed these European standards into an applicable and workable National Annex consisting of a set of performance specifications, which meet provisions stated in the Danish Building Regulations, as well as supplementary guidance documents under consideration of Danish building practices within this particular field of application.

- For moisture-sensitive substrates, the following requirement to vapour resistance (measure of a material's reluctance to let water vapour pass through) has been introduced:
 $z \geq 100 \text{ GPa} \times s \times \text{m}^2/\text{kg}$.
Further, according to performance specifications for moisture sensitive substrates, approval of the construction requires a total membrane thickness of min. 1 mm.
- For moisture-insensitive substrates, performance specifications are merely guiding as no approval is required. For e.g. bridging over cracks up to 0.4 mm, a total membrane thickness of min. 1 mm is recommended.

Applications are wet rooms in domestic and communal houses; hotels, etc. both in new buildings and in connection with renovations or refurbishment in which surfaces with a tiled finish have been installed according to the following current Danish rules:
Building Regulation 2008, BR08
Building Regulation for single family houses, BR-S 98
By og Byg Guideline 200
SBI (Danish Building Research Institute)-Guideline 180, wet rooms
SBI (Danish Building Research Institute)-Guideline 224, moisture and mould growth in buildings
These new national approvals for construction products issued by ETA-Danmark replace the former MK approvals (Materials and Structures); which are still applicable during a period of transition, though.

ETA and MK approvals

Alfix 2K Sealing Membrane:
ETA 09/0047
Alfix 1K Sealing Membrane:
ETA 09/0048
Alfix Planemix 80:
MK7.21/1700



Wet room - definition

A wet room is defined by exposure to water or high humidity. Based on degree of water exposure, this wet room guide makes a distinction between:

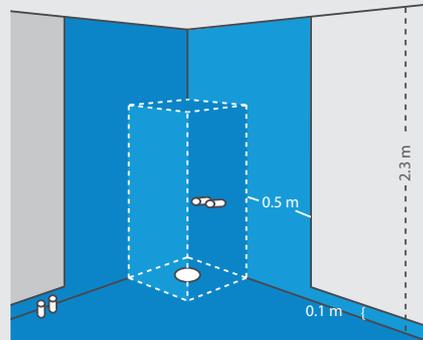
- Wet rooms with heavy or frequent water exposure to both wall and floor, e.g. bathrooms with shower enclosure or bathtub and
- Wet rooms with occasional water exposure to floors, e.g. toilets and utility rooms in which walls are not defined as wet room area.

Dividing the wet room area into zones

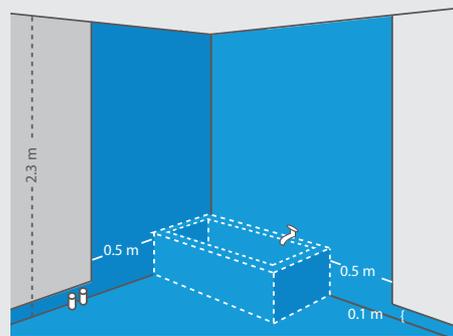
In order to ensure correct preparation and tanking, the wet room is divided into a wet zone and a damp zone. The wet zone includes all areas frequently and directly exposed to water. The installation requires a tanked and hence fully waterproof surface by using a liquid sealing membrane and a tiled surface.

The damp zone includes walls outside the wet zone where a high degree of dampness and moisture-laden air may prevail and wetting is merely occasional. Moisture-sensitive substrates should meet requirements as to vapour resistance.

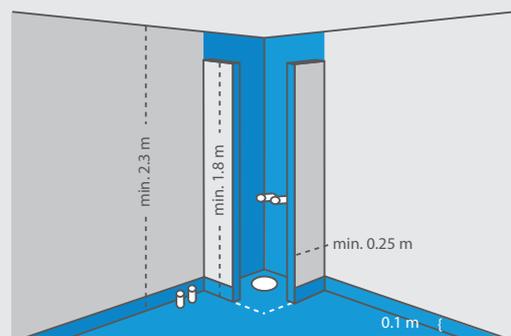
- The entire floor area is considered wet zone by definition.
- Walls in showers, shower enclosures and walls around bath tubs are considered wet zone.
- In the case of shower enclosures and bath tubs screened by fixed walls, only the area within these walls is considered wet zone.
- Areas surrounding a hand basin are considered wet zone if the water taps incorporate a shower hand set.
- In small wet rooms the entire floor is considered a wet zone. A small wet room is less than 3.25 m² or less than 1.30 m wide.
- Floors frequently exposed to water should incorporate a drainage slope of 1 – 2 % to soak away water from the walls. Floors outside showers or direct water exposure do not require any sloping.



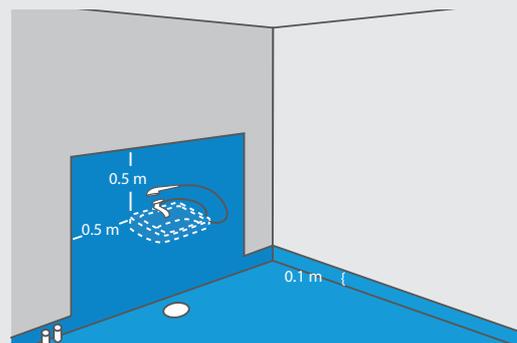
Shower - Wet zone includes entire floor and walls surrounding shower.



Bath tub - Wet zone includes entire floor and walls surrounding bath tub.



Shower enclosure - Wet zone includes entire floor and walls within the enclosure.



Basin with hand shower - Wet zone includes entire floor and wall area surrounding basin.



Suitable substrates and surface preparation



Moisture-insensitive substrates

Cement/sand rendering, brickwork, concrete, older than 1 month.

Screed, older than 2 days, aerated concrete, light-weight concrete, existing tiles.

Calciumsilicat boards, cementitious tilebacker boards such as Aqualpanel, powerpanel H20, Hydropanel, Ivarit UniCo, and Internit VR.

PVC boards with fibre-reinforced surface, such as Wediboard, Jackoboard and Supalux.

Moisture-sensitive substrates

Gypsum plaster, wet room plasterboards, fibre-reinforced plasterboards, and Glasroc Hydro.

Plywood on floors, min. board thickness 19 mm.

Max. moisture content 9 - 12%. Ensure sufficient support of boards to eliminate any springing. Leave appropriate clearance to adjoining walls when fixing boards.

Surface preparation

The surface should be dimensionally stable and flat. There should be no holes or crack formations, and the surface should be dry.

Existing tilings should be sound with adequate bond and the surface free from lime deposits. Remove any grease or dirt using Alfix Deep Cleaner.

Boards should be adequately anchored and supported in strict accordance with manufacturer's recommendations.

Higher degree of rigidity can be obtained if using Alfix self-levelling compound in a layer of min. 10 mm.



Vacuuming

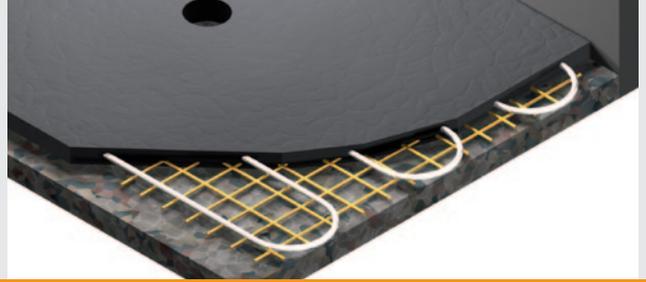


Deep cleaning



Levelling

Other wet room substrates



Underfloor heating

For new building, underfloor heating is often provided by warm water pipes incorporated in concrete. For renovation, underfloor heating can be by water systems or electric heating mats depending on construction and site conditions.

Wooden floorboards, construction height 10 mm

For wooden floorboards electric heating mats can be installed. Heating source should be installed in a manner to prevent that boards dry out. This construction is merely suitable for comfort heating with a consumption of max. 80 - 100 w/m² and a temperature of max. 27 - 30°C.

For installation of electric heating mats, use Alfix PlaneMix 50, self-levelling compound.

Timber floor joist system, construction height 45 mm

For existing joist systems lay out a concrete screed in a thickness of approx. 45 mm incorporating warm water pipes or electric heating mats. Both heating systems are fixed onto wire-mesh reinforcement, and a layer of min. 35 mm concrete ensures subsequently complete coverage of the heating system.

For screeding, use Alfix PlaneMix 80, fast-track screeding mortar.



Installation of heating mats



Application and spreading of levelling compound



Screeding onto timber joist system



Compaction and smoothing

Sloped wet room floors



In general

Floors frequently exposed to water, e.g. in shower areas, require a "soak-away" slope of min. 1-2% gradient fall towards a drain. Beneath a bath tub min. 2%.

Producing slopes of up to 1% gradient fall with levelling compound

For levelling of plane floors in e.g. large wet rooms or for building slopes on existing floors, use Alfix PlaneMix 50 suitable for a gradient fall of up to 1%.

Producing slopes of up to 2% gradient fall with levelling compound

For producing slopes in connection with installation of channel drain or beneath bath tubs, use Alfix PlaneMix 60 suitable for a gradient fall of up to 2%.

Producing slopes exceeding 2% gradient fall with screeding mortar

For screeding, levelling or substrate repairs as well as slope building, use Alfix PlaneMix 80 or PlaneMix 100 both suitable for a gradient fall exceeding 2%.



Producing slope around conventional floor drain



Producing slope towards linear channel drain



Producing slope with screeding mortar

Surface preparation



Moisture-insensitive surfaces

Render, brickwork, aerated concrete, concrete, lightweight concrete, screed, and cementious or polystyrene wet-room tile backer-boards should be primed using Alfix Wet room Primer diluted with water 1:1. Apply the mixture by brush or roller.

Drying time: approx. 1 hour

Coverage: approx. 0.1 litre/m²

Calcium silicate boards

Prime all surfaces with two coats of Alfix Wet room Primer applied by brush or roller to full coverage.

Apply first coat diluted with water 1:3. Apply second coat undiluted.

Drying time: approx. 1 hour

Coverage: approx. 0.2 litre/m²

NB! For foil-backed boards, apply only one coat of Primer diluted with water 1:3 as foil-backing eliminates any further need for waterproof membrane.

Moisture-sensitive substrates

Plasterboards, fibre-reinforced plasterboards.

Prime all surfaces with two coats of Alfix Wet room Primer applied undiluted by brush or roller to full coverage.

Drying time: approx. 1 hour

Coverage: approx. 0.2 litre/m²

Gypsum Plaster

Prime all surfaces with two coats of Alfix Wet room Primer applied by brush or roller to full coverage.

Apply first coat diluted with water 1:3. Apply second coat undiluted.

Plywood (floors only)

Prime all surfaces with two coats of Alfix Wet room Primer applied by brush or roller to full coverage.

Apply first coat diluted with water 1:3. Apply second coat undiluted.

Drying time: approx. 1 hour

Coverage: approx. 0.2 litre/m²



Priming on wall by roller



Priming on floor by roller

Sealings



Jointing surfaces

For crack-bridging and reinforcement of wall-to-wall joints, use Alfix Reinforcing Strip bedded in a thin coat of Alfix Sealing Membrane.

Corners

For sealing in external and internal corners use adapted pieces in an approximate size of 15 cm of Alfix Seal-Strip, self-adhesive sealing tape. From the centre of the tape, make a cross cut enabling an internal corner-shaped folding. Subsequently, remove protective coated paper and press tape firmly into position.

Alternatively, Alfix Reinforcing Strip bedded in a thin coat of Alfix Sealing Membrane can be used.

Wall/floor junctions

For junctions between wall and floor and for vertical corner joints in wet zones use Alfix Seal-Strip, sealing tape. Apply tape by removing half the protective paper and subsequently press uncovered tape into position. Subsequently, remove remaining part of the protective paper while pressing the rest of the tape into position.

Alternatively, Alfix Reinforcing Strip bedded in a thin coat of Alfix Sealing Membrane can be used.



Reinforcing jointing surfaces



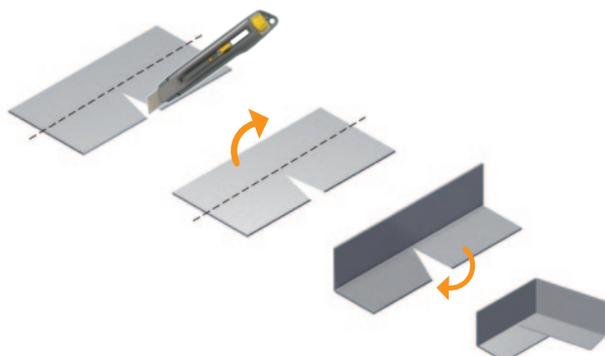
Adapting self-adhesive tape



Positioning in internal corner



Positioning in wall/floor junction



Sealings



Pipe penetrations

For sealing around pipe penetrations, fix adapted pieces of self-adhesive Alfix Seal-Strip. Cut the hole to form a small collar around the pipe.

Apply tape by removing half the protective paper and press uncovered tape into position. Subsequently remove remaining part of the protective paper while pressing the rest of the tape into position.



Application around pipe penetrations

Drains

For conventional drainage systems use self-adhesive Alfix drain mat.

For the increasing range of designer drainage systems, use Alfix Seal-Strip.

Degrease liquid membrane flange with e.g. acetone prior to application.

Apply Alfix drain mat by removing half the protective paper and subsequently press the mat into position. Subsequently remove remaining part of the protective paper while pressing the rest of the mat into position.

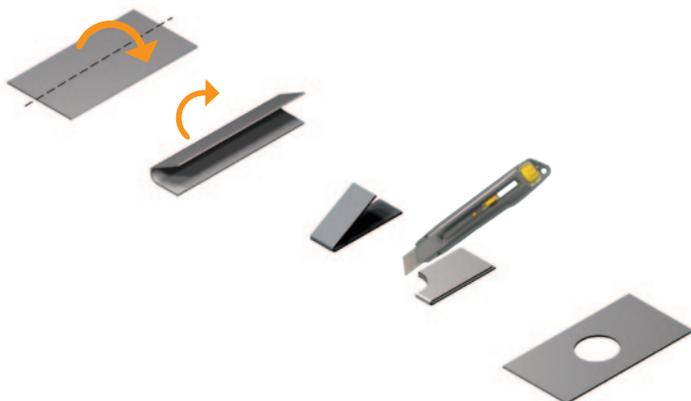


Application of drain mat

For further information about specific drainage systems, please order the leaflet "Tanking around floor gullies".

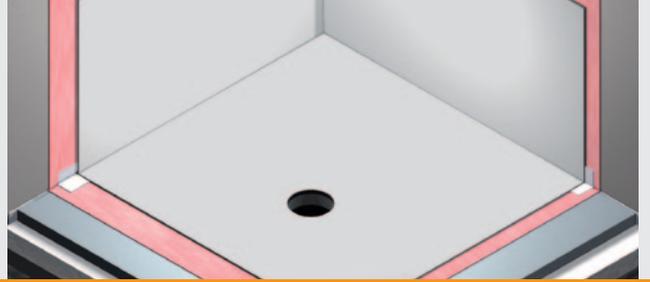


Marking and cutting hole



Trimming edges around linear channel drain

Tanking with Alfix 1K Sealing Membrane



General surface preparation

Working temperature: min. +10°C and max. +30°C. Surfaces should be dry, stable, and free from dust, grease and cement residues. There should be no crack formations, blooms or residues from form oil. Any residual moisture in the substrate will require the use of Alfix 2K Sealing.

Alfix 1K Sealing Membrane

Alfix 1K Sealing Membrane is a liquid 1-part ready-for-use tanking system.

Apply 1K Sealing Membrane to the surface to full coverage leaving no voids. Apply by roller, brush or 4x4 mm notched trowel.

For application by roller or brush, 2 - 3 coats are recommended to ensure adequate membrane thickness.

For application by notched trowel, 2 coats are recommended to ensure adequate membrane thickness.

First and preparatory coat should be thin and pore-filling. For subsequent applications, use 4x4 mm notched trowel and finish application by smoothing with straight edge of the trowel.

Ensure complete overcoating of any Alfix reinforcing Strip, Alfix Seal-Strip and Alfix Drain Mat to protect any projecting fabric edges.

Drying time 1K Sealing Membrane: leave first coat to dry for approx. 6 - 12 hours. Subsequent coats approx. 12 hours.

Coverage: approx. 2.0 kg/m², corresponding to a total membrane thickness of 1 mm.

Expected outcome/Final result

Once tanking is completed, the sealing membrane should appear as an even, fully covering coat leaving no voids or cracks.

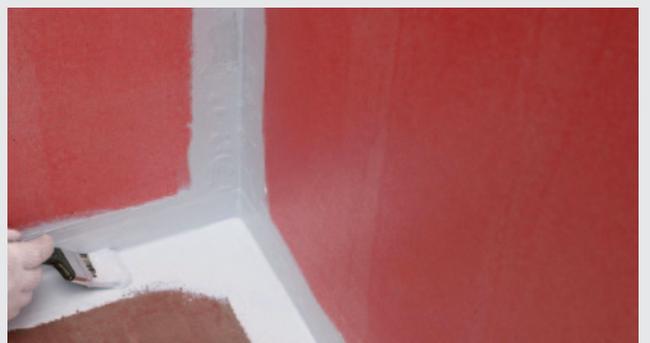
Before proceeding with tile fixing, the sealing membrane should be dry and sound to receive further treatment.



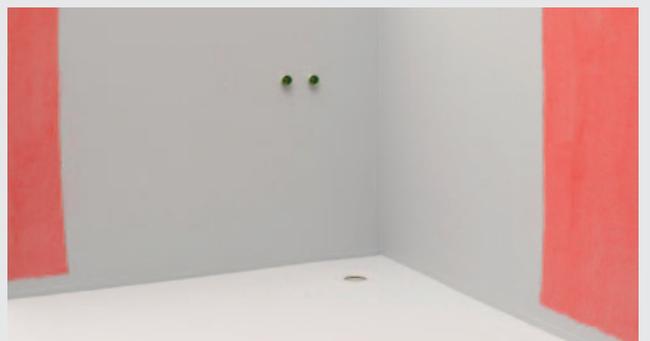
Sealing membrane ready-to-use



Application by roller



Application by brush



Ready for tiling

Tanking with Alfix 2K Sealing Membrane



General surface preparation

Working temperature: min. +10°C and max. +30°C. Surfaces should be dry, stable, and free from dust, grease and cement residues. There should be no crack formations, blooms or residues from form oil.

Alfix 2K Sealing Membrane

Alfix 2K Sealing Membrane consists of two components and is ready for use when mixed.

Working time: approx. 3 hours.

Apply 2K Sealing Membrane to the surface to full coverage leaving no voids.

For application by notched trowel, 2 coats are recommended to ensure adequate membrane thickness.

First and preparatory coat should be thin and pore-filling. For subsequent applications, use 4x4 mm notched trowel and finish application by smoothing with straight edge of the trowel.

Ensure complete overcoating of any Alfix reinforcing Strip, Alfix Seal-Strip and Alfix Drain Mat to protect any projecting fabric edges.

For application by roller or brush, 2 - 3 coats are recommended.

Drying time 2K Sealing Membrane: leave first coat to dry for approx. ½ - 1 hour. Subsequent coats approx. 6 hours.

Coverage: approx. 1.2 - 1.5 kg/m², corresponding to a total membrane thickness of 1 mm.

Expected outcome/Final result

Once tanking is completed, the sealing membrane should appear as an even, fully covering coat without voids or crack formations.

Before proceeding with any tile fixing, the sealing membrane should be dry and sound to receive further treatment.



Mixing binder and cement



Application by notched trowel...

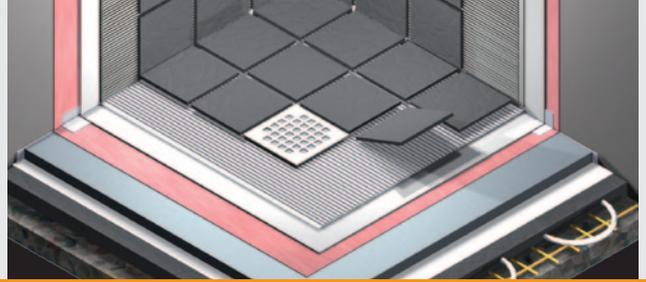


... and subsequent smoothing



Ready for tiling

Tile fixing



Tile fixing

For fixing tiles, use one of the following adhesives: Alfix LetFix Universal, Alfix LetFix or Alfix CombiFix. Apply adhesive to the substrate using notched trowel and press tiles firmly into position with a slight twisting action to ensure solid bedding, i.e. full adhesive coverage at the backside of the tile.

Setting time prior to grouting: approx. 24 - 48 hours.

Coverage: 0.9 - 4.5 kg/m² - depending on tile size and adhesive.

Tile dimensions	LetFix	CombiFix	LetFix Universal
Up to 50 mm	Coverage in kg/m ² for 4x4 mm notched trowel		
	0,9	1,1	1,1
50-200 mm	Coverage in kg/m ² for 6x6 mm notched trowel		
	1,4	1,7	1,7
200-300 mm	Coverage in kg/m ² for 8x8 mm notched trowel		
	1,8	2,2	2,3
>300 mm	Coverage in kg/m ² for 10x10 mm notched trowel		
	2,3	2,8	2,7



Application of tile adhesive



Tile fixing on wall



Tile fixing on floor

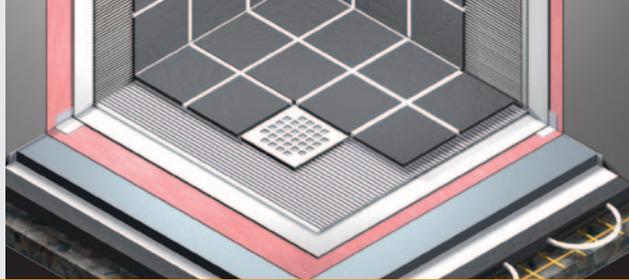


Ready for grouting

NB!

For difficult and demanding substrates, such as timber boards and wooden floors, use Alfix LetFix Universal mixed with Alfix Flexbinder. Dosage: 0.3 litres per kg powder.

Grouting



Cement-based grouts

For highly absorbent tiles and joint widths up to 5 mm, use Alfix CeraFill 5 colour.

For moderately to non-absorbent tiles and joint widths from 2 - 5 mm, use Alfix CeraFill 10 colour.

For joint widths on floors from 2 - 15 mm, use Alfix CeraFill 15 quick.

For joint widths from 5 - 20 mm, use Alfix CeraFill 20. Apply grout by soft rubber trowel. Wipe diagonally over the area with firmly squeezed sponge to clean off excess grout.

Setting time prior to exposure to foot traffic: min. 48 hours.

Coverage: 0.5 - 2.0 kg/m².

For an exact calculation of coverage, consult our product calculator on alfix.com.

Elastic joints

For sealing of internal, vertical corners, for junctions between wall and floor and around sanitary installations, use Alfix S-Silicone or Alfix M-Silicone.

Curing time: approx. 1 mm per 24 hours

Coverage: approx. 9 m per cartridge for joint sizes of 4x8 mm.



Grouting with cement-based grout



Cleaning off with sponge



Sealing with silicon sealant



Removing excess sealant

Subsequent installation

How to drill into ceramic tiling

- The tiled surface should be dry and clean
- Apply pieces of masking tape over the spot to be drilled
- Use masonry drill bit of suitable size. It may be recommendable to start with a small hole and subsequently enlarge.
- Drill hole at low speed while applying constant, firm pressure. Remove any dust.
- Fill hole with Alfix silicone sealant and insert suitable plug or wall anchor.
- Fill plug with Alfix silicone sealant.
- Insert threaded screw and tighten. Remove excess sealant.



Drilling a hole



Filling hole with silicone sealant



Inserting plug



Inserting screw

Product range

Levelling and slope building

PlaneMix 50 and 60 are levelling smoothing compounds for straightening and levelling.

PlaneMix 25 exterior is a levelling, water-resistant smoothing compound.

PlaneMix 80 is a fast-track screeding mortar for building up wet room floors.

PlaneMix 100 is a fast-setting, water-resistant screeding mortar for building up wet room floors.



Surface preparation

Wet room Primer for moisture protection of absorbent surfaces.

Polymer dispersion added pink tracer.

Sealings

Drain Mat for waterproof tanking around floor drains.

Seal-Strip is a self-adhesive sealing tape for elastic sealing of joints.

Reinforcing Strip for overbridging of cracks and reinforcement of wall junctions.



Tanking

1K Sealing Membrane, liquid 1-part tanking system for waterproofing substrates.

2K Sealing Membrane, liquid 2-part tanking system for waterproofing substrates.

Tile fixing

CombiFix and **LetFix** are flexible tile adhesives for fixing ceramic tiles, quarry tiles, mosaics, natural stone, and large-sized tiles.

LetFix Universal is a white tile adhesive for fixing marble, ceramic tiles, quarry tiles, and mosaics.

Grouting

CeraFill 5 colour for grouting of ceramic tiles and highly absorbent tiles.

CeraFill 10 colour for grouting of both absorbent and non-absorbent tiles.

CeraFill 15 quick for fast-track grouting of non-absorbent floor tiles.

CeraFill 20 for grouting of ceramic and rustic tiles.

M-Silicon is a high-elastic silicone sealant for ceramic tiles, marble and natural stone.

S-Silicon is a high-elastic silicone sealant for ceramic tiles.





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Alfix develops, produces and markets a complete range of high performance tanking systems, adhesives, grouts, and levelling compounds for the construction industry.

Every task is solved with dedication and competency in close co-operation with our business partners.



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