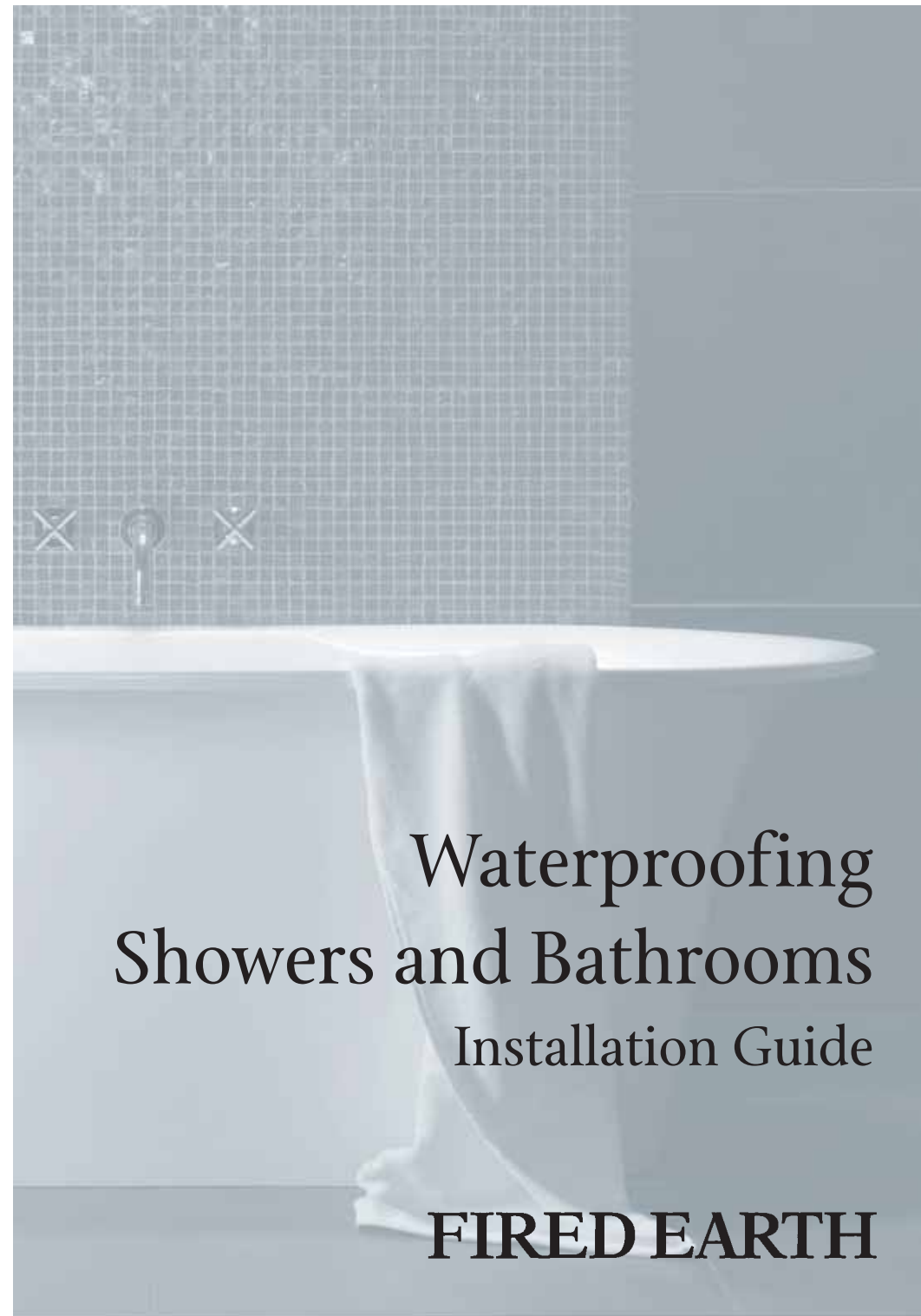


## **FIRED EARTH**

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# Waterproofing Showers and Bathrooms Installation Guide

## **FIRED EARTH**

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# Waterproofing Showers and Bathrooms Installation Guide

The purpose of this booklet is to set out clear guidelines on how showers can be successfully tiled with the abundant tile types available through Fired Earth. The requirement for skilled and careful installation is paramount if the tiling is to be successful. Remember to read very carefully the instructions on the packaging of adhesives, grouts and sealants etc.

For more detailed technical information on subjects such as expansion joints etc., refer to British Standard BS5385 wall and floor tiling.

## How to use this guide

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Domestic showers are becoming increasingly powerful in terms of the intensity and volume of water. Whereas in a conventional gravity fed shower, normal tile fixing with dispersion-based adhesives and cement-based grout is more than adequate, modern power and steam showers can lead to tile failure as a result of the ingress of water into the structure.

In addition, the types of substrates used can be highly moisture sensitive e.g. plasterboard. The tiles may be unglazed, highly cracked or mosaics which will all greatly increase the risk of water or moisture penetration. Moisture sensitive substrates and absorbent tiles or joints place further demands on the installation.

**Finally a word of caution:** - It is essential that a professional plumber, tiler and builder (if required) are employed

## Shower Design

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Most showers will be built in a cubicle form, with one to three walls being tiled. Shower curtains or screens complete the cubicle which retains water in the cubicle, and the water exits harmlessly via a waste outlet. Some showers/bathrooms are designed to allow water on to the floor outside the shower area. These are often referred to as a 'wet bathroom'. With this type of design, both the shower and the bathroom floor must be fully waterproofed and have waste water outlets. This procedure for preparing

in the design and installation of a wet shower/bathroom as the process is highly complex; it is important to ensure that the fall within a wet shower is sufficient to allow the water to drain effectively. This will be dependent on the size of the waste and the rate of the flow of the shower selected.

It is also critical that where frameless glass shower screens/enclosures are to be fitted, the tiled areas are even and grouting is flush with the surface of the tiles to allow perfect contact between the tile and the screen to make the shower as waterproof as possible.

We also recommend the fitting of an additional drain within close proximity of the shower screens/enclosures to drain any water escaping from the cubicle.

a floor to be fully waterproofed is also referred to as 'tanking'. There are also many types of shower systems available; from single rose gravity fed instant showers to multi jet, high pressure and steam showers. For the sake of clarity, Fired Earth has divided showers in to the following categories:

1. Gravity fed or pump assisted domestic showers.
2. Power/Steam or High Water volume domestic showers eg 150mm or larger shower roses or multi jet systems.

In most circumstances, shower cubicles are already built and the walls are made from plaster, plasterboard, plywood or existing tiles. In other instances the shower is still to be built and therefore the aim of this guide is to advise the most suitable products and methods, in each case.

### Building a cubicle

As showers are always wet areas the best products to use will always be dimensionally stable even when wet. We recommend *Wedi Tilebacker Board* which is a fibre meshed reinforced cement faced tilebacker board.

This can be fitted on to a stud work or batten system to provide the ideal surface for tiling. When fitted with the correct washers, screws and joint reinforcing tape, *Wedi Tilebacker Board* is unaffected by moisture. Always fit *Wedi Tilebacker Board* correctly by following

the manufacturer's recommendations. With a weight loading over 40kg per m<sup>2</sup>, it can be used successfully even when fitting most floor tiles on to the walls. *Wedi Tilebacker Board* can also be used for making bath panels, lining walls and preparing floors ready for tiling.

For further advice on *Wedi Tilebacker Board* or for the number of a local stockist, ring 01706 647333 or Fax 01706 759819.

When curved walls are required (i.e. when using Fired Earth's circular shower trays) suitable stud work should be formed using treated timber. Flexi-ply is then used to form a continuous smooth and flat curve. If necessary, use two overlapping layers to provide a rigid surface for tiling. This surface should then be water proofed (see Waterproofing page 8). For information on Shower Doors see page 12.

## Gravity Fed or Pump Assisted Showers

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Most surfaces, provided they are clean, dry, dust free, flat, smooth and sound are suitable for tiling. They must be able to carry the additional load and be non flexing. (See *Fired Earth Tiling Guides*).

### Glazed wall tiles

Provided the tiles are suitable for use in showers then they can be fixed using *Fired Earth Wall Tile Adhesive*. All tiles must be fully bedded into the adhesive before grouting with *Fired Earth Floor and Wall Grout*. All the joints must be completely filled

with grout which must be flush with the surface of the tiles.

### Unglazed, natural stone and glass wall tiles

Due to the nature of the tiles in this group, all fixing should be carried out with *Fired Earth White Floor Tile Adhesive* with *Fired Earth Flexibond* included at the correct ratio mixed 1:1 with clean water. All tiles must be fully bedded into the adhesive before grouting with *Fired Earth Floor and Wall Grout* with *Fired Earth Flexibond* included at the correct

ratio mixed 1:2 with clean water. All the joints must be completely filled with grout which must be flush with the surface of the tiles. (See *Fired Earth Wall Tiling Guide*) Ensure the tiles are sealed correctly where applicable (See *Fired Earth Floor Tiling Guide*).

### Glazed floor tiles

Fired Earth glazed floor tiles are fully vitrified and therefore ideal for use in wet areas. They must however be fixed with *Fired Earth White Floor Tile Adhesive* with *Fired Earth Flexibond* included at the correct ratio mixed 1:1 with clean water. All tiles must be fully bedded into the adhesive before grouting with *Fired Earth Floor and Wall Grout*. All the joints must be completely filled with grout which must be flush with the surface of the tiles. Ideal surfaces

for tiling on to are sand and cement render, *Wedi Tilebacker board* or directly onto brick or block. Other surfaces may be suitable but be sure that the surface can support the additional weight of the tiles etc.

### Unglazed floor tiles

Unglazed floor tiles are not ideally suited to showers because it can be difficult to seal them effectively. However they can be used but may become wet and look damp, and will require adequate time to dry out after use. Provided they are correctly fitted this should not lead to a tile failure.

(Refer to *Waterproofing Walls* page 8 for wall preparation instructions. See important notes on *Silicon Sealant* page 12).

## Power/Steam and High Water Volume Showers

Extra care is required when tiling showers in this category as the risk of moisture/water penetrating and damaging the fabric of the shower is much higher. Therefore *Fired Earth* recommends that all installations of this type are water proofed to prevent failure of the tiling. (See *Waterproofing* page 8).

In all cases the surfaces must be clean, dry, dust free, flat, smooth and sound. They must also be able to carry the additional load and be non-flexing. (See our *Wall and Floor Tiling Guides*).

### Some of the main points to remember:

1. The surfaces to which the tiles are being applied must be able to carry additional load.
2. The surfaces must be free of any flexing.
3. The surfaces must be suitable for the type of adhesive being used.
4. The surfaces must be correctly prepared for the adhesive being used.
5. All water must drain off any tiled surface freely.

6. *Fired Earth Shower Liner* must be installed correctly.
7. Always use the correct adhesives and grouts, including add mixtures.
8. Use silicon sealant in all corners, abutments, plumbing etc.

9. Seal the tiles where appropriate.
  10. Do not use the shower for at least a week after tiling is completed and thoroughly dry.
- (See also, important notes on *Silicon Sealant* page 12).

## Tiling Shower Floors

### All Showers

In most showers a floor tray is used which is pre-formed and waterproofed ready for installation. If you are using a shower tray always follow the manufacturer's instructions.

When fitting a *Fired Earth Stone Shower Tray*, always waterproof the area prior to installation. (See *Waterproofing* page 8). If you wish to tile the floor in the shower area rather than using a pre-formed shower tray the two most common methods are:

- a) Tiling the shower and bathroom floor as one.
- b) Forming a shower tray suitable for tiling. (See *Waterproofing* page 9).

There are various methods that can be used to form a shower tray or even a complete floor. This must be carefully considered at the design stage as various factors will need to be taken into consideration; such as access to plumbing, services, waste water, and very importantly adequate falls etc.

## Fired Earth Floor Waste

### (Suitable for use in screed and suspended timber floors)

These instructions are an overall guide to installing a *Fired Earth Floor Waste* in to a screeded or timber floor, where timber floor boards are set on joists. If your installation differs from this, please ask for advice.

It is important to ensure that the fall within the shower is sufficient to allow water to drain effectively and this will be dependent on the size of waste and rate of flow of the shower selected.

### Screeded Floors

1. The *Fired Earth Waste & Trap* must be set in to the concrete sub floor.
2. Position the floor waste in the desired position and connect the waste water outlet. Test for leaks.
3. When setting the screed height, ensure there will be a sufficient 'fall' in the screed to the waste.

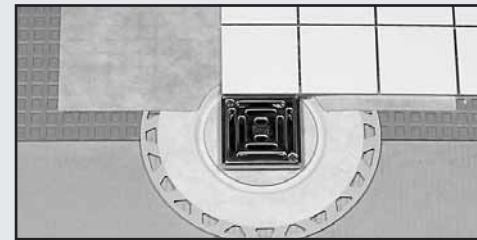
4. Once the screed height is known, cut the *Fired Earth Waste Bonding Flange* to the desired length to ensure a suitable fall.
5. Fit the yellow spacer ring in the waste body.
6. Screed the floor ensuring the screed forms a fall uniformly to the *Fired Earth Waste Bonding Flange*.
7. Remove the yellow spacer ring and discard.
8. Once suitably dry, fit *Fired Earth Shower Liner* on to the screeded floor where water proofing is required. (See *Waterproofing Shower Walls* page 8).
9. Fit *Fired Earth Shower Liner Collar* over the *Fired Earth Waste Bonding Flange* to ensure a water proof seal.
10. Fit the height adjustable spigot in to the lateral adjustable collar and check the height against the finished height of the tiled surface. Cut the grey plastic spigot if required.
11. Lay the tiles and adjust the grate horizontally and vertically to suit tiles. Adjusting collar should be set in tile adhesive as required.

### Timber Floors

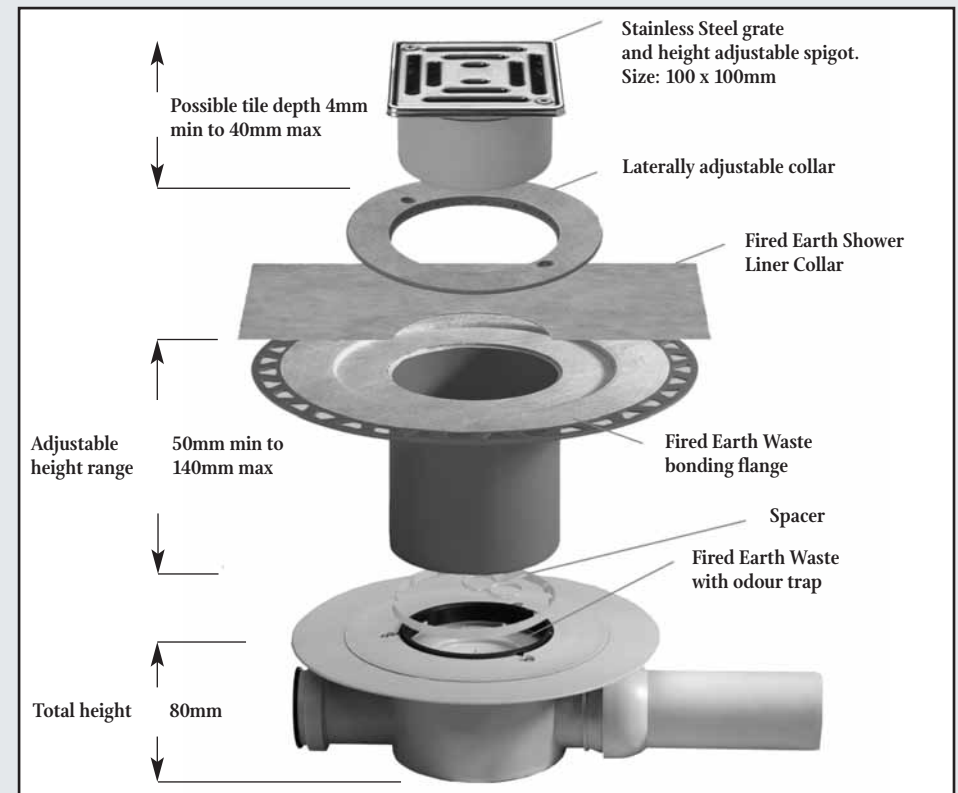
1. Set out the *Fired Earth Waste & Trap*, taking account of the location of the waste pipe and the desired falls of the finished floor. We recommend a new *22mm WBP Plywood* deck is installed with noggins to support cut ends and screwed down at 150mm centres.

2. Cut a suitable section of flooring which will span the joists, the *Fired Earth Waste & Trap* will be fitted in to this before the floor is re-laid.
3. Drill a 125mm diameter hole in this section of flooring, preferably in the centre.
4. Accurately chamfer the edge on the upper side of the hole to allow the *Fired Earth Waste Bonding Flange* to sit flat on the flooring and the 'step down' to be set in the rebate formed. Do not fit the *Fired Earth Waste & Bonding Flange* at this stage.
5. Fit the yellow spacer ring in the drain body.
6. Screw through flange of waste body to underside of floor with rubber seal central in 125mm diameter hole. Ensure the outlet is lined up for connection to the waste pipe.
7. Set section of flooring (including waste body) onto joists. Ensure all four sides are properly supported.
8. Connect waste pipe and check for leaks.
9. The *Fired Earth Waste & Bonding Flange* can now be fitted in to the drain body, resting on the yellow spacer. Shorten so the flange sits flush on the floor. Apply a suitable mastic to the rebate only pressing the flange firmly in to place. Secure the flange in to place with 4 equidistant counter sunk screws.

10. Remove the yellow spacer ring and discard.
11. Lay *Fired Earth Fleximat* to remaining floor area (see *Waterproofing Shower Floors* page 9).
12. Fit *Fired Earth Shower Liner Collar* over the *Fired Earth Waste Bonding Flange* to ensure a water proof seal.
13. Fit the height adjustable spigot in to the lateral adjustable collar and check the height against the finished height of the tiles surface. Cut the grey plastic spigot if required.
14. Lay the tiles and adjust grate horizontally and vertically to suit tiles. Adjusting collar should be set in tile adhesive as required.



Suitable for use in screed and suspended timber floors



# Waterproofing Walls and Floors

## (Wet Bathrooms/Tanking)

When a waterproof shower or bathroom floor is required the correct products must be used and installed. For these purposes Fired Earth has products available which can be quickly and easily installed.

### Waterproofing Shower Walls

N.B. Shower Liner can also be used to waterproof sound, stable, dry and crack-free floor screeds.

#### Substrates

*Fired Earth Shower Liner* can be used in conjunction with *Fired Earth Floor Tile Adhesive*, on the following substrates.

(However the walls must be suitable for tiling i.e. flat, level, dry, free of dust or grease, secure and without obvious deflection).

1. Plaster (gypsum) skimmed walls.
2. Plasterboard.

#### How to use a Fired Earth Shower Liner



1. Prime the surface with *Fired Earth Universal Bonding Agent* as directed on the bottle.
2. Apply *Fired Earth Floor Adhesive* with *Fired Earth Flexibond* included at the correct ratio of 1:1 with clean water.

3. Timber – plywood.
4. Existing tiles.
5. Smooth rendered walls.
6. Screeded floors.

NOTE: The surface to be tiled must be capable of carrying the additional load.

#### Fired Earth Shower Liner

Made from polyethylene and covered with a special anchoring fleece on both sides, the *Fired Earth Shower Liner* has been developed as a waterproofing membrane to be used in combination with all our floor and wall tiles. Once adhered to the shower wall, tiling can commence immediately without the delays experienced with liquid applied systems.

Wait overnight if possible before starting to tile with heavy floor tiles.

(*Fired Earth Fastset* is usually preferred for speed of installation) using a 4mm x 4mm notched trowel. Ensure that the adhesive remains 'open' while fitting the *Fired Earth Shower Liner*.

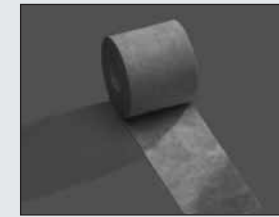
Roll out and press the liner into the adhesive using a flat trowel. Work the liner into the adhesive by applying pressure to the membrane in smooth, diagonal sweeps. Air bubbles must be worked out from under the membrane. Trim the membrane to fit as required.

3. Each sheet of *Fired Earth Shower Liner* must overlap the next by a minimum of 5cm. Alternatively, *Fired Earth Shower Liner Tape* can be adhered over the join between each sheet.
4. Where it is necessary to seal around corners and edges etc., *Fired Earth Shower Liner or Tape* can be cut and fitted ensuring a 5cm overlap is achieved.
5. If tiling over a shower tray *Fired Earth Shower Liner* must overlap on to the tray. The liner must then be bonded to the tray with *KERDI FIX*.



6. If the floor is also being water proofed, then the intersection of the floor and wall must be sealed using *Fired Earth Shower Liner Tape*.

7. Seal around plumbing etc with *KERDI FIX*.



8. Once all the surfaces are covered correctly by the membrane the shower walls are waterproof and tiling can begin.

N.B. If floor tiles over 15mm in depth are being fitted, leave the membrane to dry over night.

### Waterproofing Shower Floors

#### Fired Earth Fleximat

Made from polyethylene, moulded in to a grid structure of square cavities with a special anchoring fleece laminated to its underside, *Fired Earth Fleximat* can be used to waterproof shower and bathroom floors.

Once correctly installed, *Fired Earth Fleximat* can be tiled immediately with suitable tiles which must be larger than 5cm x 5cm in size. *Fired Earth* mosaic tiles fitted onto sheets must be fixed onto *Fired Earth Shower Liner* (not suitable for use over timber floors).

# Fired Earth Fleximat

## Where to use Fired Earth Fleximat

### Substrates

*Fired Earth Fleximat* can be used to waterproof floors and prepare timber floors for tiling. The following surfaces are suitable when using *Fired Earth Fleximat* in conjunction with *Fired Earth Shower Liner Tape* and *Fired Earth Floor Adhesives*.

1. Sand & cement screed – must be suitably dry
2. Timber – plywood
3. Tongue and groove floor boards

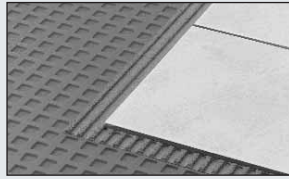
However the floor must be suitable for tiling ie have suitable falls to ensure water can freely drain, be flat, be free of dust or grease, be secure and without obvious deflection.

NOTE: The surface to be tiled must be capable of carrying the additional load.

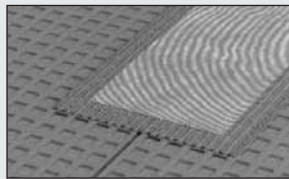
## How to use Fired Earth Fleximat

1. Prime the surface with *Fired Earth Universal Bonding Agent* as directed on the bottle.
2. Apply *Fired Earth Fastset Floor Adhesive* using a 4mm x 4mm notched trowel. Ensure the adhesive remains 'open' while fitting the *Fired Earth Fleximat*. Roll out, lightly stretch and press the *Fired Earth Fleximat* into the adhesive using a flat trowel. Work the *Fired Earth Fleximat* into the adhesive by applying pressure to the membrane in smooth, diagonal sweeps. Air bubbles must be

worked out from under the membrane.



3. Each sheet of *Fired Earth Fleximat* must be butted against the next ready for sealing with *Fired Earth Shower Liner Tape*. Apply *Fired Earth Floor Adhesive* with *Fired Earth Flexibond* included at the correct ratio of 1:1 with clean water over the join to enable *Fired Earth Shower Liner Tape* to be firmly adhered and to provide a waterproof seal.

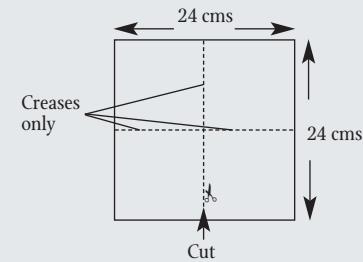


4. *Fired Earth Shower Liner Tape* must also be installed so that it overlaps the *Fired Earth Fleximat* and perimeter walls and all fixtures. There should be no voids remaining in the floor which could allow the ingress of moisture. Where the shower walls are also being waterproofed, the *Fired Earth Shower Liner Tape* can be used to form a seamless water proof barrier.
5. Where an internal corner is required a simple 'patch' can be made to simplify installation.

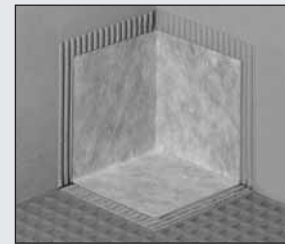
## Internal and External Corners

### Internal Corners

1. Cut out a square piece of *Fired Earth Shower Liner* measuring 24 x 24 cm.
2. Fold the square in half and then into quarter and press the edges firmly to produce a crease in the fabric. The smaller squares should now be 12 x 12 cm in size.



3. Cut down the length of one of the creases to the centre only.
4. Fit as shown in picture.

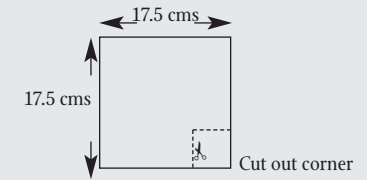


### External Corners

Where an external corner is required, a second patch is also required.

1. Cut 'internal corner patch' as described above.

2. Cut a second patch 17.5 x 17.5 cms. Then in one corner, mark and cut out a square section measuring 5 x 5 cms.



3. Fit the 'internal corner patch' first, wrapping it around the wall.
4. Then fit the second 'L shaped patch' on the floor around the corner (See picture).
5. Where extra protection may be required in small inaccessible areas, use a silicon sealant.
6. Once all the surfaces are covered correctly by the membrane and the floor is waterproof, tiling can begin immediately.

**If the membrane is breached for any reason e.g. holes drilled for fittings etc, then the hole must be filled with silicon during installation to ensure that the area remains waterproof.**

**N.B. Fired Earth Shower Liner and Shower Liner Tape must always be overlapped by a minimum of 5cm to ensure a waterproof seal.**

## Silicon Sealant

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Wherever one plane of tiling meets another, or another material, there is a risk that cement based grouts will crack and allow moisture to penetrate the tiling. Therefore a suitable silicon sealant must be used which will allow for minimal movement by remaining pliable. All fixtures and fittings

must also be sealed using the same technique to prevent similar problems.

**Once the work has been completed the shower should not be used for a minimum period of one week.**

## Frameless Shower Screens and Enclosures

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When using glass screens and doors for a shower, you need to consider the following before ordering:

### 1. Be clear about the exact dimensions

Once ordered, we cannot change the size of the screen doors, as they are special orders. Dimensions must be accurate to the millimetre.

### 2. Which way you want the door to open

Inward or outwards this will effect the seal fitted. If no seal is fitted, the spring-loaded hinges allow opening through 180°, always returning to the centre.

### 3. Surface mounted or recessed

The screens/doors can either be surface fitted to the wall or be fitted into the tiles/wall. Surface mounting is recommended for ease of installation. Recessing a shower screen

requires absolute precision when measuring and installing the channels. Even the slightest error will result in the screen not fitting.

### 4. How waterproof you want the shower enclosure to be

Frameless showers, by their nature, may allow a small amount of water to escape under normal operating conditions. If you require a 100% watertight shower enclosure, a framed enclosure must be installed.

### 5. Tiling of cubicle walls

The cubicle walls must be at right angles in order for the screens to be fitted properly. Therefore the tiling must be smooth, without lipping between tiles. The grout needs to be flush with the tile surfaces, in order to minimise the risk of water escaping.

## Glossary

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**Falls** – A gradient set in a surface to ensure water freely drains to a waste water outlet.

**Floor Waste** – A complete unit/system provided by Fired Earth to provide a waterproof water outlet within a ‘tanking’ system.

**Gravity Fed Shower** – Shower relying on the weight/height of the water to provide pressure and flow.

**Multi-Jet System** – More than one shower rose/jet.

**Power Shower** – A pumped water supply providing high pressure water at the shower rose.

**Pump Assisted Shower** – A pumped water supply to provide adequate water flow and pressure at the shower rose – not high pressure as above.

**Steam Shower** – Usually includes a unit to provide steam within an enclosure.

**Tanking** – Waterproofing floors & walls.

**KERDI FIX** – A sealing compound also used as an adhesive for Fired Earth Shower Liner.

**WBP Plywood** – Water & boil proof plywood.

**Wedi Tile Backer Board** – A fibre meshed re-inforced cement-faced tile backer board.

**Wet Bathroom** – A room which is waterproofed, all water exits harmlessly via a waste water outlet.

## Ancillary Products

A full range of high quality fixing and sealing products, researched and developed to meet Fired Earth standards, are available for both professional and DIY use.

## Website - [www.firedearth.com](http://www.firedearth.com)

All our installation guides are available to download from our website.

## Useful Numbers

UK Sales	0845 366 0400
Export Sales	+44 (0)1295 814316
Installations	01295 814310
Technical	01295 814271
Home Deliveries	01295 814313

## Other Guides Available

Wall Tiling, Floor Tiling and Underfloor Heating and Fine Oak Flooring.

## Disclaimer

The specifications and technical information given in this publication are intended for guidance and although they are to the best of our knowledge correct, they are given without warranty.

We cannot accept any responsibility for reliance placed upon the advice contained herein since practical expertise and site conditions are outside of our control. Neither do we accept liability for the performance of the product arising from such use. This does not affect your statutory rights.