

FIRED EARTH

Wall Tiling Installation Guide

July 2017

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Important Notes

The purpose of this booklet is to outline the basic principles of installing Fired Earth wall tiles. This is intended as a guide, we would always recommend you refer to British Standard BS 5385 Wall and Floor Tiling for more detailed technical information.

Prior to installation please ensure the tiles purchased are suitable for the application and thoroughly inspected. Ensure your tiler is aware of the expected finish of the tiles and there are sufficient tiles for the area. The tiles must be well shuffled by drawing tiles from all the boxes. Dry lay an area in suitable light as a final check before installation.

For further information or if any doubt exists, please telephone your local showroom for advice prior to commencing any tiling.

Fired Earth have tested our range of adhesives, grout and sealants to ensure compatibility with all of our tiles (see our Product Selector on pages 25 to 31).

We recommend that you treat a spare tile with the appropriate sealer and/or finisher prior to installation to ensure you have achieved your desired appearance.

Read the instructions on the packaging of Adhesives, Grouts and Sealants very carefully. Keep everything meticulously clean and orderly as work progresses.

No complaints regarding the appearance of the product will be accepted by the company once the tiles have been installed.

Website - www.firedearth.com

All our installation guides are available to download from our website: Floor Tiling, Underfloor Heating, Wood Flooring and Waterproofing Showers and Bathrooms.

Useful Contact Numbers

UK & Export Sales	0845 366 0400
Delivery Planning	01295 814313
Customer Care	01295 814396
Lithofin Technical	01962 732126
Norcros Adhesives & Grout	01782 524140

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.

Internal Wall Substrates

Surface preparation:

Tiles can be fixed to most walls. The surface must be properly prepared, suitably level, sound, clean, dry, and free of dust, grease or any loose material. All surfaces must be completely secure without any obvious deflection and capable of carrying the additional load.

Special care must be taken when tiling areas which may become damp or wet. See our Waterproofing Showers and Bathrooms Installation guide.

When tiling onto walls with floor tiles consideration must be given to weight, as floor tiles are often heavier than wall tiles. Our sales teams will be happy to confirm the weight of the tiles so you can confirm suitability. Please include 3kg per m² in your calculation to allow for the weight of the adhesive and grout.

Plaster (Gypsum) skimmed walls or plasterboard - (Maximum weight loading 20kg/m²):

Backing coat and skim coat plaster must be allowed to dry for at least four weeks prior to tiling. New plaster skim coat on top of plaster board must be allowed to dry for at least 7 days prior to tiling. All plaster surfaces should be primed with undiluted Norcros Prime Bond. If the plaster is dusty, porous or hard and shiny it must be thoroughly brushed with a dry, stiff bristled brush before being primed with Norcros Prime Bond diluted at 1:4 with water. The diluted primer must be allowed to completely dry before an additional coat of undiluted Norcros Prime Bond is applied. All surfaces must be completely dry prior to tiling.

Bare Plasterboard - (Maximum weight loading 32kg/m²):

Plasterboard can be tiled over provided it is firmly braced and fixed. No deflection should be evident in any of the boards. Plasterboard must be sealed with undiluted Norcros Prime Bond. The primer must be completely dry prior to tiling.

Timber - (Maximum weight loading 30kg/m²):

Timber should be a good quality WBP plywood minimum of 12.5mm. All timber must be dry, firmly braced and fixed. No deflection should be evident in any of the boards. Seal the reverse, front, and edges with undiluted Norcros Prime Bond. It is important to prime the reverse and the edges of the boards, particularly in a wet area to avoid the boards swelling and warping due to water ingress. The primer must be completely dry prior to tiling.

Existing tiles - (Weight dependent on substrate type and existing tile weight):

Tiles often provide a good base for tiling provided they are flat and in good condition. Make sure they are entirely clean, degreased and are firmly fixed to the wall. Any damaged or loose areas should be made good. Check that the surface to which the existing tiles are fixed will take the weight of the additional layer of tiles you are adding. Brush apply a slurry bonding coat consisting of 2 parts cement-based adhesive to 1 part Norcros Prime Bond and allow to dry before fixing commences. This surface preparation will provide a key for the tile adhesive to bond to.

Rendered walls - (Maximum weight loading 40kg – 50kg/m²):

Tiles can be fixed directly onto sand and cement renders this is an ideal base particularly for very thick handmade tiles and natural materials such as slate and stone etc. New render must be at least 14 days old (21 days in total immersion areas), or until suitably dry, prior to tiling. Dusty surfaces must be thoroughly dry brushed. Porous renders must be primed with Norcros Prime Bond diluted 1:4 with water. The primer must be completely dry prior to tiling.

Unrendered walls - (Maximum weight loading 40kg – 50kg/m²):

Most bricks and blocks can be tiled directly onto provided they are sufficiently flat to receive the tiled finish. Lightweight and medium dense block-work must be primed with Norcros Prime Bond diluted 1:4 with water. In areas which will be subjected to wetting, a render coat must be applied to lightweight and medium dense block-work. The primer must be completely dry prior to tiling.

Papered and painted walls:

Fired Earth does not recommend tiling onto papered or painted surfaces. The paper or paint should be completely removed and the substrate primed with Norcros Prime Bond diluted 1:4 with water. The primer must be completely dry prior to tiling.

Tile Backer Board - (Max weight loading 40kg - 60kg/m²):

Ensure the board is correctly installed according to manufacturer's specifications prior to tiling.

Bumps, hollows, irregularities, uneven surfaces etc.:

Defects likely to affect the standard of finished tiling should be rectified prior to tiling. Any hollows should be filled with a suitable filler and then allowed to dry. Old adhesive must be removed. In severe cases, the wall finish may require total replacement. Walls should not deviate by +/- 3mm along a 2 metre straight edge.

Hearths and fireplaces:

Care should be exercised when tiling into hearths or fire surrounds. Ensure that the tiles are kept a minimum of 300mm away from direct contact with the flames or the main heat source. Not all tiles are suitable for use in this area. Check with our Sales Team as to which tiles are.

Showers:

Extra care must be exercised when tiling domestic showers. Read and follow our recommendations in our Waterproofing Showers and Bathrooms Installation guide. Fired Earth sell Shower Liner for walls and Fleximat for floors, which can be used successfully to prevent problems with water ingress. If you require any additional information on projects of this type please contact your local showroom.

Showers should not be used for at least 14 days after the tiling has been completed.

Be led by your professional installer.**Major Heat Sources:**

After the tiling has been completed please consult your professional installer before switching on major heat sources e.g. an Aga / Range Cooker etc

Planning

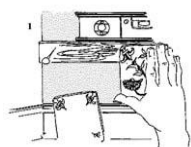
Allow time to study the room and to plan your work. There will always be alternatives and equally successful ways to tile the same area.

Whenever possible, all furniture, basins etc. should be removed prior to tiling, in order to obtain the best possible finish.

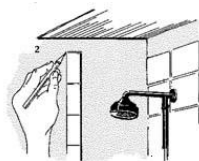
As a general guide, consider the natural focal point of the area to be tiled, and plan the tile layout and the starting point with this in mind.

You will require a measuring stick, some timber battens and a spirit level or a laser guide. The measuring stick can be made easily using a straight edged timber batten measuring approximately 1000 x 30 x 25 mm. Mark the width of a tile plus a grout joint along the length of the stick. For example, for a tile of 150mm and assuming a joint width of 3mm, mark off equal distances of 153mm. Our recommended grout joint widths are published in our price list.

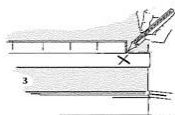
Step 1: Fix your straight length of timber batten to the wall you are going to tile. The batten should run the full length of the wall and be positioned with the top edge one tile width plus one grout joint width above the floor or work surface. Use a spirit level to check that the batten is absolutely horizontal. This batten will provide a level from which to start the tiling and will ensure that the tiling lines are straight, even though the floor or work surface may be uneven.



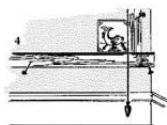
Step 2: Hold the measuring stick vertically against the wall and check that you will not be left with a difficult row of very small cut tiles at the top. If necessary reposition the timber batten further down the wall to even out the cut tiles at the top and bottom.



Step 3: Measure and mark the midpoint of the wall. From this point use the measuring stick horizontally to determine where the last whole tile will finish. Mark this point 'X' on the batten.



Step 4: Drop a plumb line from the top of the wall to coincide with point 'X'. Mark the position of the plumb line onto the wall and using the measuring stick as a ruler, draw in this line. Fix another timber batten alongside this line and check with a spirit level that it is absolutely vertical.



Grout Joints

It is important to have a joint between tiles to allow for movement in the structure. Grout joint widths can be 3mm wide and upwards, depending on the type of tile being installed.

General information – Applicable to the installation of all wall tiles.

Preparation:

Please check your substrates suitability for tiling before proceeding, see pages 4 and 5

It is important to establish which way the tiles are to be laid before any tiling is started. Make sure the person fitting the tiles knows what the tiles should look like. **'Shuffle' the batch to ensure that any colour and tonal variations are well mixed.** Minor chips and blemishes should be expected and are best used for cuts or well mixed on the wall.

Pre-cleaning:

Brush off any loose grit or dust.

Fixing the Tiles:

Before commencing tiling please ensure you are familiar with the important notes on page 3.

Due to the transparent characteristics of some of our glass tiles, it is imperative that the following instructions are followed. The substrate should be uniform in colour and pale or neutral. A dark substrate and/or poor adhesive coverage will affect the overall finish of the tiling when using transparent glass.

All Norcros S1 Tile adhesives and grouts are cement based, flexible and designed for fixing our full range of tiles. They are water resistant and suitable for both internal and external applications. We recommend using white standard set or fast-set adhesive with our glass, glass & slate mosaics and all light coloured tiles. Grey can be used for darker coloured tiles. For all installations, be certain that the tiles are suitable for the intended application and that you have purchased the most appropriate adhesive.

Carefully follow the mixing recommendations supplied on the reverse of the adhesive product.

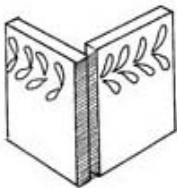
External corners and exposed tile edges:

Where two tiled surfaces meet at right angles to form an external corner, finishing will be required to dress or hide the exposed edges of the corner tiles.

Some of our tile ranges have glazed edges and the simplest solution is to overlap and carefully grout as shown.

In the case of glass, rough edges can be overcome by building up the grout so as to cover the exposed edge.

When using thicker, rustic and handmade tiles with partially or unglazed edges, a corner grouted in this way may leave unglazed edges exposed. In this case it may be necessary to mitre.



Alternatively trims are available which complement many of our tile ranges.

Dados, rails & slips:

These tiles should not be fixed in alignment with the rows of tiles above and below. They are intended to give emphasis to the horizontal axis and should be staggered or brick bonded relative to the surrounding tiles. When tiling into internal and external angles and also when forming a right angle, these tiles will need to be carefully mitred.



Random decorated tiles:

As a general guide, we suggest that the decorated tiles are used in a minimum ratio of 1:10, and a maximum ratio of 1:6 to the plain tiles.

Cutting Tools:

There are various tile cutting tools available from retailers. The design and quality of the tool selected will always determine how successful the cut through the tile will be.

Please note: correct health and safety procedures must be followed at all times when using tile cutting equipment. Please consult the tile cutting tool supplier for specific health and safety requirements.

Examples of tile cutters (Images are examples only)

Manual hand cutter.



Table type wet cutter.



Bridge or sliding rail type wet cutter.



Installing Glass tiles & Glass Tiles with painted backs / protective layers.

Preparation:

Some of our Glass tiles are painted on the back of the tile (Liquid Glass, Glass Elements) or have a protective layer attached (Deco Glass).

For the optimum fixing of these tiles we would recommend that a slurry bonding coat consisting of 2 parts adhesive to 1 part Norcros Prime Bond is applied to the back of the tile and allowed to dry before fixing the tiles to the substrate.

Fixing Glass Tiles:

Carefully follow the mixing recommendations supplied on the reverse of the adhesive product.

Using a suitable notched trowel, spread Norcros White S1 adhesive onto the substrate. Spread only enough adhesive that remains workable. Take the flat side of the trowel and smooth over the adhesive to produce a uniform, ridge-free bed. This will avoid unsightly adhesive ridges, voids and colour variation appearing through the glass tile. The tiles can now be pressed firmly into the adhesive.

Place the first tile from the centre line formed by the timber battens (see Planning on page 6) and push the tile home firmly with a slight twisting action. Place the next tile adjacent to the first, allowing for a grout joint, and so on sideways and upwards over the prepared area. Ensure your tiles are installed flat and level, all tiles must be installed in to a full bed of adhesive, do not 'spot bed' any tiles.

Once you have completed the wall using whole tiles and the adhesive has set, remove the timber battens and tile the perimeter with cut tiles.

Cutting Glass tiles with painted backs / protective layers:

We would recommend that appropriate safety goggles or glasses are used and safety instructions supplied are followed. As with all aspects of an installation the quality of the tools will have a bearing on the end result so we do recommend new blades are used. Your professional installer will be able to advise on appropriate tools for cutting your chosen tile.

Cutting straight cuts in glass tiles, including those with a painted back (excluding Deco Glass tiles):

To produce straight cuts in glass tiles, the combined use of both manual and wet type cutters is suggested.

Pre-score the front of the tile along the line of the intended cut, this can be achieved by using a manual cutter with a sharp tungsten carbide wheel.

Please note, the back of the tile should not be scored.

Place packing tape or similar over the scored line on the front and along the back of the tile, ensuring the tape is pressed firmly into the tile.

For the next stage of the cutting process, it will be necessary to use a bridge type wet cutter fitted with a diamond blade suitable for glass. A suggestion is to place some cement backer board beneath the tile which will add further support to the tile back, however, please check with the tile cutter supplier before doing so. From the front of the tile, position the blade on the wet cutter so that it is inside the scored line, and on the 'waste' side of the cut. When cutting, allow the blade to gently cut through the glass without force. Continue to pass the blade fully along the scored line to complete the cut.

Cutting notched cuts in glass tiles including painted back tiles (excluding Deco glass tiles):

Sometimes it will be necessary to cut out a section of tile to fit around (for example) electrical back boxes or window reveals. This cut is often referred to as a 'notched cut'.

To begin the notched cutting process, the measurements for the cut must first be determined using a measuring tape. The measurements should then be marked onto the back of the tile using a soft pencil. To avoid a feathered cut, the internal corner of the cut must be drilled out using a 6mm diamond hole cutter.

The 6mm hole cutter must be introduced from the back of the tile first to a depth of approximately 3mm. The use of a suitable template and some water would normally be required to facilitate the cut with the hole saw. The outside edge of the hole should be positioned between the intended score lines of the cut.

Following the shallow hole being cut into the back of the tile, it will then be necessary to cut the hole through from the front in exactly the same position; the use of the hole saw template and water will again be required here.

With the hole completed, score the outline of the notched cut using a manual tile cutter. Ensure that the scribed lines align with the outside edge of the 6mm hole.

Using the same method as for straight cuts, press packing tape or similar over the score line on the front of the tile, and across the area on the back of the tile. Cut along the score lines with a bridge type wet cutter up to the edge of the 6mm hole. Following this, flip the tile over and complete the cut with the wet cutter up to the edge of the hole. The cut piece should now be carefully removed from the tile. Any small ridges can be dressed using a fine diamond file.

Cutting straight cuts in Deco Glass tiles:

Deco glass tiles have a different backing. The use of a wet cutter may produce a frayed edge to the backing therefore, a cutting method combining both manual and wet cutting techniques should be applied.

Pre - score the front of the tile along the line of the intended cut. This could be achieved by using a manual cutter with a sharp tungsten carbide wheel. The tile can be carefully separated by using either the breaking method on the cutter or a tile snapping tool. Following this, the backing will require cutting with a sharp craft knife along the edge of the cut.

Cutting notched cuts in Deco Glass tiles:

The setting out and drilling of the internal corner is the same procedure used on glass tiles described earlier. The hole size cut into the internal corner is 6mm.

Glass tile nippers should be used to remove the bevelled corner of the tile. A wet cutter can then be used to produce a diagonal cut from the corner to the 6mm hole.

The shape of the notched cut is then scored into the tile using a hand wheel cutter. The segments either side of the diagonal cut can then be broken away to produce a clean notch. The mirrored backing should be carefully cut away using a sharp craft knife blade. A diamond file should be used to smooth any sharp edges.

Drilling Glass Tiles:

Measure carefully and mark the hole position on both the front and back of the tile. Using a diamond core drill bit designed for glass and a variable speed portable hand drill, drill the hole 2-3mm wider than required to avoid fixtures putting pressure on the glass tile. Do not apply excess pressure, but allow the drill to gradually drill the hole

Securely clamp down the tile.

Using a diamond core drill bit designed for glass and a variable speed portable hand drill; begin drilling from the back of the tile whilst continuously cooling the surface with water.

Do not apply excess pressure, but allow the drill to gradually drill the hole.

Drill no more than 5mm deep before flipping the tile over.

Continue drilling from the front, attempting to drill the glass from one side only will cause the tile to crack.

Once the drill is through gently run the drill around the hole edge to smooth the edge.

When using wall plugs drill the hole bigger than the plug to ensure the plug can be pushed through the tile. It is important that the plug is not in contact with the glass and is firmly secured in the substrate of the wall. This will prevent the glass tile splitting when the plug expands.

Grouting Glass Tiles:

It is important to have a grout joint between tiles to allow for movement in the structure.

All Norcros Grout is suitable for internal and external applications and in fully immersed situations such as pools. It is water resistant but not impervious to the passage of water. In situations where the background needs to be protected against water ingress the use of a suitable tanking membrane should be considered.

Our range of Grout is available in a selection of colours. Please ensure you have the correct colour for your tile project. We would suggest grouting a small test area of tiles to ensure the colour of the grout is as you expect, before grouting the whole area.

Please note wherever one plane of tiling meets another or another material, or where a waterproof sealer is required, silicone sealer must be used as opposed to grout.

Preparation for Grouting:

Prior to grouting, the adhesive bed should be thoroughly dry and fully cured and the grout joints clean, dry and free from adhesive residues, dirt, dust and other loose debris. Various factors including: adhesive type, substrate, tile type, temperature etc. will affect the drying time of the adhesive.

Grouts can contain strong colour pigments and this should be taken into consideration when selecting the colour. If you are using a mixture of dark and light tiles we would recommend using limestone or cream coloured grout.

Always test a small area of tiles prior to grouting the entire area.

Mixing:

Carefully follow the mixing recommendations supplied on the reverse of the product.

Application:

Using a soft rubber squeegee or float apply with diagonal sweeping movements to the grout joints taking care to fully compress the grout into the full depth of the grout joints so that no air pockets exist and the joints are fully filled. A timber dowel of an appropriate diameter can be used to compact the grout within the joints.

Work in manageable areas and clean off any residues when the grout has begun to firm up in the joints, but before it sets on the tile face. Cleaning with a damp but not overly wet fine textured foam sponge will provide the best results. Do not over wash the grout as this may cause a white bloom (efflorescence) and discolour the grout. Ensure your grouting is completed in one continuous sequence, particularly with mosaics, to avoid colour variation. Changing the cleaning water regularly will also aid cleaning. When the grout has set, any remaining grout dust can be removed from the surface with a clean, damp cloth. Finish by polishing with a soft, clean, dry cloth once the grout has set.

Due to the impervious nature of glass the grout will take longer to set than with more porous materials.

Should efflorescence form, these salts can be removed once the grout has fully dried and cured by frequent washing with clean water or suitable efflorescence cleaner, once the grout has been allowed to fully cure.

The surface of some tiles can be easily scratched so the application and cleaning of the grout must be carried out carefully.

Ensure that any tools used for grouting are completely clean and free of any hardened grout etc.

All perimeter joints must be finished with a good quality silicone sealer and not with grout. This will allow for expansion and contraction in the tiles during normal heating and cooling cycles.

Sealing:

We would recommend sealing the grout joints with KF Grout Protector. This will render the grout joints oil and water resistant. This can be applied once the grout is completely dry, **be led by your professional installer.**

Cleaning and Maintenance:

Clean and maintain your tiles with Lithofin Easy Care.

Fixing Glass Mosaic Tiles:

Fixing Brown paper faced Glass mosaics:

These must be tiled with the paper side facing outwards towards the installer.

Carefully follow the mixing recommendations supplied on the reverse of the adhesive product.

Due to the transparent nature of glass we recommend using Norcros White S1 adhesive. Using a suitable notched trowel apply the adhesive onto the substrate, spreading only enough adhesive that remains workable. Take the flat side of the trowel and smooth over the adhesive to produce a uniform, ridge-free bed. This will avoid unsightly adhesive ridges, voids and colour variation appearing through the glass tile.

The sheets should be placed so that all joints match. With mosaics it is important that individual sheets cannot be distinguished. This may be easier to achieve by laying the sheets 'brickbond'.

Use a wooden beating block and carefully tap across the entirety of each sheet, thereby achieving a flat and uniform surface whilst ensuring the mosaics are firmly and fully embedded into the adhesive.

The adhesive should be allowed to partially set, but before the tiles have become fully bonded, the paper should be removed. Setting time will vary according to wetness of the mix, ambient temperature, type of substrate etc.

The paper is secured with a water soluble glue and can be removed by wetting. Moisten the paper with a damp sponge, do not use a spray bottle as the water does not penetrate as thoroughly making the paper removal more difficult. Dampen a few times prior to peeling it off. If removal is difficult, dampen further and leave for another 5 to 10 minutes before trying again.

Any adjustments can now be carried out. Check, and if necessary, eliminate any sheet lines, adjust any crooked pieces, remove any damaged pieces, or any unacceptable colour variation, check the background for colour uniformity etc.

The adhesive must be fully cured and set before any further work is undertaken. **Be led by your professional installer.**

Any glue residue from the brown paper must be removed from the surface of the tile prior to grouting by using a small nylon scrubbing brush and water, then wiped clean with a damp sponge. This will avoid any residue darkening the intended colour of the mosaic.

Some of the glass mosaics, Iridescent Glass Mosaics Prose for example, have their own particular style. They have been specifically designed with very tight grout joints and for this reason, to familiarise yourself with the product and installation, we would recommend dry laying a few of the sheets prior to full installation. You may encounter resistance in interlocking the sheets due to these tight grout joints, so we suggest softly forcing the sheets together. If you still experience difficulty then slightly moisten the paper with a damp sponge, this will allow some movement in the tile enabling you to interlock the sheets.

Additional notes: Iridescent Glass Kaleidoscope Mosaics:

To ensure the correct placement of each sheet all arrows printed on the paper facing must be placed in the same direction. Prior to installation it is the responsibility of the installer to check the reverse of the tile to ensure correct placement.

Fixing Cellophane faced Glass mosaics:

These should be tiled with the cellophane side facing outwards towards the installer.

Due to the transparent nature of glass we recommend using Norcros White S1 adhesive. Using a suitable notched trowel apply the adhesive onto the substrate, spreading only enough adhesive that remains workable. Take the flat side of the trowel and smooth over the adhesive to produce a uniform, ridge-free bed. This will avoid unsightly adhesive ridges, voids and colour variation appearing through the glass tile.

The sheets should be placed so that all joints match. With mosaics it is important that individual sheets cannot be distinguished. This may be easier to achieve by laying the sheets brickbond. Use a wooden beating block and carefully tap across the entirety of each sheet, thereby achieving a flat and uniform surface whilst ensuring the mosaics are firmly and fully embedded into the adhesive.

The cellophane is clear so the tiles can be checked quite easily as they are installed. Damaged or unacceptable mosaic pieces can be cut out of the sheet with a sharp knife and replaced.

The adhesive **MUST** be allowed to cure prior to peeling off the cellophane film, no water is required. If the film is peeled off before the adhesive has set correctly, the bond will be severely weakened which can cause tiling failure.

The glue residue must be removed from the surface of the tile prior to grouting by using a small nylon scrubbing brush and water, then wipe clean with a damp sponge. Alternatively white spirit can be used sparingly over limited areas and then rinsed with warm soapy water however; care should be taken to avoid contact with surrounding surfaces. **The mosaic pieces cannot be adjusted once the adhesive has set.**

Additional notes: High Society Glass:

Given the extreme thinness of this tile use a 6mm square notched trowel. The trowel should be kept as shallow as possible to the surface to keep the adhesive bed as thin as workably possible. The trowel lines should then be smoothed over with the flat edge, the tile can then be fixed to the adhesive. Apply light pressure to bed the tile into the adhesive, ensuring no bleeding to the surrounding grout joint.

The mosaic pieces cannot be adjusted once the adhesive has set.

Cutting Glass Mosaics:

We would recommend that appropriate safety goggles or glasses are used and safety instructions supplied are followed.

As with all aspects of an installation the quality of the tools will have a bearing on the end result so we do recommend new blades are used. Your professional installer will be able to advise on appropriate tools for cutting your chosen tile.

The process for cutting glass mosaics (excluding glass/slate mosaics) is likely to be slower and more intricate compared to fixing larger tiles, therefore consideration should be given to the length of time required to install them.

Always consult your professional fitter regarding installation.

The glass mosaic sheets should be fixed as close to the intended area of the cut as possible. To do this, it may be necessary to cut through the sheet support with a sharp knife and then fix as many complete pieces in position as possible. Glass tile nippers, as shown below, can be used to cut the remaining individual mosaic pieces that require cutting to complete the tiled area.



The nipper is usually equipped with two tungsten carbide wheels as jaws and to operate, the nipper would be held in one hand in much the same way as a pair of pliers. A firm squeeze of the handle would usually result in the tile separating in the required position.

Cutting Glass & Slate Mosaics:

The process for cutting glass & slate mosaics is likely to be slower and more intricate compared to fixing larger tiles, therefore consideration should be given to the length of time required to install these tiles. Always consult your professional fitter regarding installation.

These should be cut with a wet cutter using a glass blade. To minimise water contact with the brown mounting paper the cutter base should be covered with a piece of 6mm cement board. This will provide a continuous surface that supports the tile sheet during cutting and prevents the individual tesserae pieces from falling into the cutting channel. The height of the blade should be adjusted so that it cuts through half of the cement board thickness.

Another piece of 6mm cement board, larger than the tile sheet, should then be cut and a strip of self-adhesive, compressible, foam weather-strip applied to one edge of the cement board. With the cutter turned off place the mosaic sheet, paper side up, on the cement board covered cutter tray and align the cut. Place the second piece of cement board on top of the mosaic sheet. Cover the portion of the sheet that is to be installed with the weather strip side down and against the blade.

The board will protect the mounting paper from cutter over-spray.

Place sufficient downward pressure on the top layer of cement board to compress the weather strip. This will prevent water from flowing under the board and stabilise the mosaic tiles during cutting. Turn the cutter on and slowly proceed with cutting. Once cutting is complete turn the cutter off and carefully remove the top layer of cement board and quickly towel dry the mounting paper and the back of the tile and install the sheet as normal.

Drilling Glass:

Measure carefully and mark the hole position on both the front and back of the tile. Using a diamond core drill bit designed for glass and a variable speed portable hand drill, drill the hole 2-3mm wider than required to avoid fixtures putting pressure on the glass tile. Do not apply excess pressure, but allow the drill to gradually drill the hole

Always drill the hole 2-3mm wider than required to avoid fixtures putting pressure on the glass tile.

Securely clamp down the tile.

Using a diamond core drill bit designed for glass and a variable speed portable hand drill; begin drilling from the back of the tile whilst continuously cooling the surface with water.

Do not apply excess pressure, but allow the drill to gradually drill the hole.

Drill no more than 5mm deep before flipping the tile over.

Continue drilling from the front, attempting to drill the glass from one side only will cause the tile to crack.

Once the drill is through gently run the drill around the hole edge to smooth the edge.

When using wall plugs drill the hole bigger than the plug to ensure the plug can be pushed through the tile. It is important that the plug is not in contact with the glass and is firmly secured in the substrate of the wall. This will prevent the glass tile splitting when the plug expands.

Grouting Glass Mosaics / Glass & Slate Mosaics / Glass & Stone Mosaics.:

It is important to have a grout joint between tiles to allow for movement in the structure.

All Norcros Grout is suitable for internal and external applications and in fully immersed situations such as pools. It is water resistant but not impervious to the passage of water. In situations where the background needs to be protected against water ingress the use of a suitable tanking membrane should be considered.

Our range of Grout is available in a selection of colours. Please ensure you have the correct colour for your tile project. We would suggest grouting a small test area of tiles to ensure the colour of the grout is as you expect, before grouting the whole area.

Please note wherever one plane of tiling meets another or another material, or where a waterproof sealer is required, silicone sealer must be used as opposed to grout.

Preparation for Grouting:

Before grouting the adhesive bed should be dry and the grout joints clean, dry and free from adhesive residues, dirt, dust and other loose debris. Various factors including: adhesive type, substrate, tile type, temperature etc. will affect the drying time of the adhesive.

Prior to grouting glass & slate mosaics seal with MN Stain Stop (this product will not alter the surface appearance). Ensure that faces and edges are sealed and all excess removed. We would recommend allowing 24 hours for curing prior to grouting.

Grouts can contain strong colour pigments and this should be taken into consideration when selecting the colour. If you are using a mixture of dark and light tiles we would recommend using limestone or cream coloured grout.

Always test a small area of tiles prior to grouting the entire area.

Mixing:

Carefully follow the mixing recommendations supplied on the reverse of the product.

Application:

Using a soft rubber squeegee or float apply with diagonal sweeping movements to the grout joints taking care to fully compress the grout into the full depth of the grout joints so that no air pockets exist and the joints are fully filled. A timber dowel of an appropriate diameter can be used to compact the grout within the joints.

Work in manageable areas and clean off any residues when the grout has begun to firm up in the joints, but before it sets on the tile face. Cleaning with a damp but not overly wet fine textured foam sponge will provide the best results. Do not over wash the grout as this may cause a white bloom (efflorescence) and discolour the grout. Ensure your grouting is completed in one continuous sequence, particularly with mosaics, to avoid colour variation. Changing the cleaning water regularly will also aid cleaning. When the grout has set, any remaining grout dust can be removed from the surface with a clean, damp cloth. Finish by polishing with a soft, clean, dry cloth once the grout has set.

Due to the impervious nature of glass the grout will take longer to set than with more porous materials.

Should efflorescence form, these salts can be removed once the grout has fully dried and cured by frequent washing with clean water or suitable efflorescence cleaner, once the grout has been allowed to fully cure.

The surface of some tiles can be easily scratched so the application and cleaning of the grout must be carried out carefully.

Ensure that any tools used for grouting are completely clean and free of any hardened grout etc.

All perimeter joints must be finished with a good quality silicone sealer and not with grout. This will allow for expansion and contraction in the tiles during normal heating and cooling cycles.

Sealing:**Glass mosaics:**

We would recommend sealing the grout joints with KF Grout Protector. This will render the grout joints oil and water resistant. This can be applied once the grout is completely dry, be led by your professional installer.

Glass and Slate /Glass and Stone mosaics:

Once the grout is completely dry we would recommend a further application of MN Stain Stop to protect the slate, stone and grout.

Cleaning and Maintenance:

Clean and maintain your tiles with Lithofin Easy Care.

Installing Crackle Glaze tiles subject to crazing

Fixing Crackle Glazed Tiles:

Using a suitable notched trowel spread the appropriate adhesive (see Product Selector on pages 25 to 31) onto the fixing surface. Spread only enough adhesive that remains workable, we would recommend an area of approximately 1 square metre. The adhesive should completely cover the back area. A minimum of 2mm should be applied up to a maximum of 6mm. When installing dados, trims and slips please ensure any void at the back is filled with adhesive to prevent air pockets forming which may lead to a weakness in the installation.

Place the first tile in the corner formed by the timber battens (see Planning on pages 6) and push the tile home firmly with a slight twisting action. Place the next tile adjacent to the first, allowing for a grout joint, and so on sideways and upwards over the prepared area. Ensure your tiles are installed flat and level taking into consideration the variable depth and rustic handmade nature of our tiles. All tiles must be installed in to a full bed of adhesive, do not 'spot bed' any tiles.

Once you have completed the wall using whole tiles and the adhesive has set, remove the timber battens and tile the perimeter with cut tiles.

Cutting Crackle Glazed Tiles:

All crackle glazed tiles which will require cutting must be sealed with Lithofin KF Stain-Stop. Apply the product to the face and edges of the tiles to be cut. Using a soft cloth wipe any surplus KF Stain Stop off the tiles after 10-15 minutes and before it dries. Your professional installer will be able to advise on the appropriate tools for cutting your chosen tile.

We would recommend that appropriate safety goggles or glasses are used and safety instructions supplied are followed.

Crackle glaze tiles are best cut using a 'Bridge' type wet cutter. Unlike the 'Table' type wet cutter, where the cutting blade is introduced from beneath the tile, the Bridge cutter's blade is introduced from above the tile; this can sometimes facilitate the cutting of delicate glazes due to the angle of the rotating blade.

The Bridge wet cutter is used to achieve accurate straight and angled cuts including mitring. The blades used are diamond edged and should be of high quality.

The spinning blade is attached to a motor that slides along a fixed rail. Water is also introduced onto the blade to cool and assist the cutting process. The water feed system must be cleaned regularly to maintain performance. This mechanism enables clean and accurate cuts along the tile length.

Other cutters similar to this utilize a sliding bed or base rather than a sliding rail.

To complete the cut on crackle glaze tiles, it may be necessary to lightly dress the cut edge with a fine diamond file.

Sealing Crackle Glazed Tiles:

Prior to sealing, the adhesive bed should be dry and the grout joints clean, dry and free from adhesive residues, dirt, dust and other loose debris.

Grouts may lodge in the crackled surface of the tiles, which will highlight the crackle effect - ideal if an 'antique look' is required. If not, the tiles should be sealed on the face and edges with 1- 2 applications of KF Stain-Stop, this is in addition to any applied before cutting. Using a soft cloth wipe any surplus KF Stain Stop off the tiles after 10-15 minutes before it dries. Leave to fully cure for a minimum of 48 hours prior to grouting. Be led by your professional installer.

Grouting Crackle Glazed Tiles:

It is important to have a grout joint between tiles to allow for movement in the structure.

All Fired Earth Grout is suitable for internal and external applications and in fully immersed situations such as pools. It is water resistant but not impervious to the passage of water. In situations where the background needs to be protected against water ingress the use of a suitable tanking membrane should be considered.

Our range of Grout is available in a selection of colours. Please ensure you have the correct colour for your tile project. We would suggest grouting a small test area of tiles to ensure the colour of the grout is as you expect, before grouting the whole area.

Please note wherever one plane of tiling meets another or another material, or where a waterproof sealer is required, silicone sealer must be used as opposed to grout.

Preparation for Grouting:

Prior to grouting the adhesive bed should be dry and the grout joints clean, dry and free from adhesive residues, dirt, dust and other loose debris. Various factors including: adhesive type, substrate, tile type, temperature etc. will affect the drying time of the adhesive.

Grouts can contain strong colour pigments and this should be taken into consideration when selecting the colour.

Lighter coloured tiles can be affected by dark coloured grouts bleeding into the tiles resulting in dark patches around tile edge or possibly over tile face if slurry grouted which may permanently stain the tile.

If you are using a mixture of dark and light tiles we would recommend using limestone or cream.

Always test a small area of tiles prior to grouting the entire area.

Mixing:

Carefully follow the mixing recommendations supplied on the reverse of the product.

Application:

Using a soft rubber squeegee or float apply with diagonal sweeping movements to the grout joints taking care to fully compress the grout into the full depth of the grout joints so that no air pockets exist and the joints are fully filled. A timber dowel of an appropriate diameter can be used to compact the grout within the joints.

Work in manageable areas and clean off any residues when the grout has begun to firm up in the joints, but before it sets on the tile face. Cleaning with a damp but not overly wet fine textured foam sponge will provide the best results. Do not over wash the grout as this may cause a white bloom (efflorescence) and discolour the grout. Ensure your grouting is completed in one continuous sequence, particularly with mosaics, to avoid colour variation. Changing the cleaning water regularly will also aid cleaning. When the grout has set, any remaining grout dust can be removed from the surface with a clean, damp cloth. Finish by polishing with a soft, clean, dry cloth.

Should efflorescence form, these salts can be removed once the grout has fully dried and cured by frequent washing with clean water or suitable efflorescence cleaner.

The surface of some tiles can be easily scratched so the application and cleaning of the grout must be carried out carefully.

Ensure that any tools used for grouting are completely clean and free of any hardened grout etc.

All perimeter joints must be finished with a good quality silicone sealer and not with grout. This will allow for expansion and contraction in the tiles during normal heating and cooling cycles.

Further Sealing of Crackle Glazed Tiles:

Once grouting is complete and fully cured, apply a further application of KF Stain Stop to the front face of the tiles and the grout, in the same way as before. Using a soft cloth wipe any surplus KF Stain Stop off the tiles after 10-15 minutes before it dries.

Cleaning and Maintenance:

Clean and maintain your tiles with Lithofin Easy Care.

Installing Glazed Ceramic / Porcelain Tiles with the exception of Crackle Glaze.

Fixing the Glazed Ceramic / Porcelain Tiles:

Some ranges of glazed ceramic tile can temporarily darken due to moisture being present behind the glaze. This darker appearance can be widespread across large areas of tiling, or apparent in only a limited number of tiles on the wall. The reason for moisture being present behind the tiles on a new installation could be due to materials within the wall still drying out. It is therefore imperative that any substrate material within the wall is allowed to fully dry prior to fixing the tiles. Information on drying times for internal substrates can be found on page 4 of this document. Tiles that have become darker must be allowed to dry prior to grouting, this will minimise trapping further moisture and allow the tile to return to it's original shade. **Please be led by your professional installer here.**

Using a suitable notched trowel spread the appropriate adhesive (see Product Selector on pages 25 to 31) onto the fixing surface. Spread only enough adhesive that remains workable, we would recommend an area of approximately 1 square metre. The adhesive should completely cover the back area. A minimum of 2mm should be applied up to a maximum of 6mm. When installing dados, trims and slips please ensure any void at the back is filled with adhesive to prevent air pockets forming which may lead to a weakness in the installation.

Place the first tile in the corner formed by the timber battens (see Planning on pages 6) and push the tile home firmly with a slight twisting action. Place the next tile adjacent to the first, allowing for a grout joint, and so on sideways and upwards over the prepared area. Ensure your tiles are installed flat and level taking into consideration the variable depth and rustic handmade nature of our tiles. All tiles must be installed in to a full bed of adhesive, do not 'spot bed' any tiles.

Once you have completed the wall using whole tiles and the adhesive has set, remove the timber battens and tile the perimeter with cut tiles.

Cutting Glazed Ceramic / Porcelain:

We would recommend that appropriate safety goggles or glasses are used and safety instructions supplied are followed.

Many of the Fired Earth glazed ceramic and porcelain tiles can be cut using a manual hand cutter; the glaze is simply scored with a small tungsten carbide cutting wheel and then snapped using the cutter's breaking mechanism. However, there are many different designs of cutter available and some may be more suitable for cutting a particular tile than others. Cutting narrow cuts may be difficult to achieve with this type of cutter.

Using a wet cutter on glazed ceramic and porcelain tiles would produce a more consistent result. This is providing a high quality blade is fitted and the blade is appropriate for the material being cut. Often the best results are achieved using the Bridge type wet cutter where the rotating blade is fitted to a sliding rail. On this cutter, the blade is introduced to the top of the tile. Other cutters similar to the Bridge type wet cutter utilize a sliding bed or base rather than a sliding rail mechanism. As with all cutting machinery, correct operating instructions should be adhered to at all times.

The dimensions for the cut should be carefully marked onto the front of the tile using a soft pencil. To produce an accurate cut, the blade from the wet cutter should then be introduced along the waste side of the cut line. If the blade were to cut along the center of the cut line, then this is likely to cause inaccuracies.

Cutting notched cuts in glazed ceramic and porcelain tiles:

A wet cutter should be used to cut notched cuts in glazed ceramic and porcelain tiles. The principle for cutting is similar to the above information.

Sealing Glazed Ceramic / Porcelain:

Only UNGLAZED Porcelain will require sealing with KF Protective Impregnator prior to grouting.

Prior to sealing, the adhesive bed should be dry and the grout joints clean, dry and free from adhesive residues, dirt, dust and other loose debris.

Apply the Lithofin KF Protective Impregnator to the face and edges of the tiles using a suitable applicator. Working in small controllable sections, keep the product 'wet' and moving across the tiles for 10 - 15 minutes to allow the product to penetrate in to the tiles. Using a soft cloth wipe any surplus KF Stain Stop off the tiles after 10-15 minutes and before it dries. **Be led by your professional installer.**

Grouting Glazed Ceramic / Porcelain:

It is important to have a grout joint between tiles to allow for movement in the structure.

All Fired Earth Grout is suitable for internal and external applications and in fully immersed situations such as pools. It is water resistant but not impervious to the passage of water. In situations where the background needs to be protected against water ingress the use of a suitable tanking membrane should be considered.

Our range of Grout is available in a selection of colours. Please ensure you have the correct colour for your tile project. We would suggest grouting a small test area of tiles to ensure the colour of the grout is as you expect, before grouting the whole area.

Please note wherever one plane of tiling meets another or another material, or where a waterproof sealer is required, silicone sealer must be used as opposed to grout.

Preparation for Grouting:

Prior to grouting the adhesive bed should be dry and the grout joints clean, dry and free from adhesive residues, dirt, dust and other loose debris. Various factors including: adhesive type, substrate, tile type, temperature etc. will affect the drying time of the adhesive.

Grouts can contain strong colour pigments and this should be taken into consideration when selecting the colour. Lighter coloured tiles can be affected by dark coloured grouts bleeding into the tiles resulting in dark patches around tile edge or possibly over tile face if slurry grouted which may permanently stain the tile. If you are using a mixture of dark and light tiles we would recommend using limestone or cream.

Always test a small area of tiles prior to grouting the entire area.

Mixing:

Carefully follow the mixing recommendations supplied on the reverse of the product.

Application:

Using a soft rubber squeegee or float apply with diagonal sweeping movements to the grout joints taking care to fully compress the grout into the full depth of the grout joints so that no air pockets exist and the joints are fully filled. A timber dowel of an appropriate diameter can be used to compact the grout within the joints.

Work in manageable areas and clean off any residues when the grout has begun to firm up in the joints, but before it sets on the tile face. Cleaning with a damp but not overly wet fine textured foam sponge will provide the best results. Do not over wash the grout as this may cause a white bloom (efflorescence) and discolour the grout. Ensure your grouting is completed in one continuous sequence, particularly with mosaics, to avoid colour variation. Changing the cleaning water regularly will also aid cleaning. When the grout has set, any remaining grout dust can be removed from the surface with a clean, damp cloth. Finish by polishing with a soft, clean, dry cloth.

Should efflorescence form, these salts can be removed once the grout has fully dried and cured by frequent washing with clean water or suitable efflorescence cleaner.

The surface of some tiles can be easily scratched so the application and cleaning of the grout must be carried out carefully.

Ensure that any tools used for grouting are completely clean and free of any hardened grout etc.

All perimeter joints must be finished with a good quality silicone sealer and not with grout. This will allow for expansion and contraction in the tiles during normal heating and cooling cycles.

Further Sealing of Glazed Ceramic / Porcelain:

Unglazed Porcelain:

Once grouting is complete and fully cured, apply a further application of KF Protective Impregnator to the front face of the tiles and the grout, in the same way as the first application. Using a soft cloth wipe any surplus KF Protective Impregnator off the tiles after 10-15 minutes before it dries.

Glazed Porcelain & Ceramic:

Once grouting is complete and fully cured, we would recommend that the grout joints are protected with 2 x separate coats of Lithofin KF Grout Protector. This will render the grout joints oil and water resistant.

Cleaning and Maintenance:

Clean and maintain your tiles with Lithofin Easy Care.

Installing Mother of Pearl & Palermo

Fixing Mother of Pearl & Palermo Tiles:

These are supplied on a sheet with mesh backing to provide support to the individual tesserae pieces.

Given the extreme thinness of these tiles use a 6mm square notched trowel which should be kept as shallow as possible to the surface to keep the adhesive bed as thin as workably possible. The trowel lines should then be smoothed over with the flat edge and then by applying light pressure the tile can be bedded into the adhesive, ensuring no bleeding to the surrounding grout joint.

Cutting Mother of Pearl & Palermo Tiles:

The process for cutting these tiles is likely to be slower and more intricate compared to fixing larger tiles, therefore consideration should be given to the length of time required to install them.

When cutting, the mosaic sheets should be fixed as close to the intended area of the cut as possible. To do this, it may be necessary to cut through the sheet support with a sharp knife and then fix as many complete pieces in position as possible. The remaining pieces can then be cut as required. The tile bodies are extremely thin, (approximately 2mm for Mother Of Pearl and 3mm for Palermo), so they can be snapped using either long nosed pliers or tile nippers.

Always consult your professional fitter regarding installation.

Grouting Mother of Pearl & Palermo Tiles:

It is important to have a grout joint between tiles to allow for movement in the structure.

All Fired Earth Grout is suitable for internal and external applications and in fully immersed situations such as pools. It is water resistant but not impervious to the passage of water. In situations where the background needs to be protected against water ingress the use of a suitable tanking membrane should be considered.

Our range of Grout is available in a selection of colours. Please ensure you have the correct colour for your tile project.

Please note wherever one plane of tiling meets another or another material, or where a waterproof sealer is required, silicone sealer must be used as opposed to grout.

Preparation for grouting:

Prior to grouting the adhesive bed should be dry and the grout joints clean, dry and free from adhesive residues, dirt, dust and other loose debris. Various factors including: adhesive type, substrate, tile type, temperature etc. will affect the drying time of the adhesive.

Grouts can contain strong colour pigments and this should be taken into consideration when selecting the colour. Lighter coloured tiles can be affected by dark coloured grouts bleeding into the tiles resulting in dark patches around tile edge or possibly over tile face if slurry grouted which may permanently stain the tile. If you are using a mixture of dark and light tiles we would recommend using limestone or cream.

Always test a small area of tiles prior to grouting the entire area.

Mixing:

Carefully follow the mixing recommendations supplied on the reverse of the product.

Application:

Using a soft squeegee or float apply with diagonal sweeping movements to the grout joints taking care to fully compress the grout into the full depth of the grout joints so that no air pockets exist and the joints are fully filled. A timber dowel of an appropriate diameter can be used to compact the grout within the joints.

Work in manageable areas and clean off any residues when the grout has begun to firm up in the joints, but before it sets on the tile face. Cleaning with a damp but not overly wet fine textured foam sponge will provide the best results. Do not over wash the grout as this may cause a white bloom (efflorescence) and discolour the grout. Ensure your grouting is completed in one continuous sequence, particularly with mosaics, to avoid colour variation. Changing the cleaning water regularly will also aid cleaning. When the grout has set, any remaining grout dust can be removed from the surface with a clean, damp cloth. Finish by polishing with a soft, clean, dry cloth.

Should efflorescence form, these salts can be removed once the grout has fully dried and cured by frequent washing with clean water or suitable efflorescence cleaner.

The surface of some tiles can be easily scratched so the application and cleaning of the grout must be carried out carefully.

Ensure that any tools used for grouting are completely clean and free of any hardened grout etc.

All perimeter joints must be finished with a good quality silicone sealer and not with grout. This will allow for expansion and contraction in the tiles during normal heating and cooling cycles.

Sealing:

We would recommend sealing the grout joints with KF Grout Protector. This will render the grout joints oil and water resistant. This can be applied once the grout is completely dry, be led by your professional installer.

Cleaning and Maintenance:

Clean and maintain your tiles with Lithofin Easy Care.

Installing Floor tiles on a wall

When installing floor tiles on a wall consideration must be given to weight, as floor tiles are often heavier than wall tiles. Our sales teams will be happy to confirm the weight of the tiles per m² so you can confirm suitability. Please include 3kg per m² in your calculation to allow for the weight of the adhesive and grout.

For the following tile ranges please refer to their dedicated Floor Tiling Guides on the Fired Earth website for guidance on how to install.

Encaustic
Geometric and Quarry
Glazed and un-glazed Porcelain and Ceramic
Natural Stone and Stone Mosaics
Slate

Product Notes

Chips and blemishes:

In particular, handmade tiles will display various chips and blemishes which should either be placed in less conspicuous areas or be used for cut tiles.

Colour variation:

To ensure tonal variations are well mixed, tiles should be shuffled by drawing from all boxes prior to installation.

Crazing (or tiny cracks):

These occur in many glazed tiles prior to, during or after installation. This is a normal characteristic and will not affect the longevity or durability of the tile. Crazed tiles should be sealed with KF Stain Stop prior to cutting and again prior to grouting.

Decorated Panels:

Grout joints must be included in panels which may affect the accuracy of the picture.

External tiling:

Should you wish to tile externally please contact your local showroom for tile suitability.

Floor tiles:

When fixing suitable floor tiles onto walls please refer to our Floor Tiling Installation Guide.

Pinholes:

These are tiny imperfections in the glaze of the tile. These tiles are unsuitable for use in wet areas.

Size variation:

Our handmade tiles will be subject to size variation. This variation can be accommodated by using a wider grout joint.

Glossary

Adhesion –	The ability to stick
Adhesive Spreader –	Tool used to apply measured depth of adhesive
Bedding –	Depth of material to seat tiles
Butter –	Applying a thin bed of adhesive to the back of the tile
Chipboard –	A composition of fibrous wood material
Coatings –	Material applied to a surface
Compacting –	Pressing material firmly into position
Crazing –	Tiny hairline fractures in a glaze
Curing –	Improvement in strength, hardness, durability and other properties of a material
Damp Proof Membrane (DPM) –	Material to prevent ingress of damp
Diamond Cutter –	Electrical tile cutting tool
Expansion Joints –	A space allowed for movement
Efflorescence –	The formation of soluble salts on the surface of tiles or grout
Norcros Prime Bond –	A liquid used as a primer or sealer
Grout Float –	Tool used to apply grout
Grout Joints –	Channel formed between tiles to be filled with grout material
MDF –	Medium density fibre board
Mitre –	Cutting two angles to form a joint
Pinholes –	Tiny imperfections in a glaze
Primed –	Providing a treatment to aid adhesion
Sealing –	Applying a liquid to prevent ingress of moisture
Shadowing –	Light refraction where two panes of glass abut; or where water has seeped behind clear glass tiles that is visible through the tiles
Silicone Sealer –	An elastic material to seal joints
Slurry Coating –	A system used to prepare a surface for the application of a floor adhesive
Squeegee –	Rubber edged tool to aid application and removal of excess grout
Stud Partition –	Non load bearing wall built of timber construction
Substrate –	The surface onto which the tiles are to be laid
Tile Backer Board –	Mortar faced glass reinforced board.
Wet Locations –	Showers, steam rooms, etc.
WPB Plywood-	High quality water resistant board.

Substrate Preparation Guide

Substrate	Gypsum Plaster	Bare Plasterboard	Timber - WBP / Marine Grade Plywood	Existing Tiles	Render / Unrendered / Brick	Papered and Painted Surfaces	Tile Backer Board
Weight Loading	Maximum weight 20kg per m ² *	Maximum weight 32kg per m ² *	Maximum weight 30kg per m ² *	See notes on page 5 **	Weight 40kg – 50kg per m ² +	See notes on page 6 **	Weight 40kg – 60kg per m ²
Watch Points	Backing coat and skim coat plaster must be allowed to dry for at least 4 weeks. New plaster skim coat on top of plasterboard must be allowed to dry for at least 7 days.	Ensure rigid and non-flexing	Ensure rigid and non-flexing	Ensure tiles are firmly bonded.	New render must be allowed to dry for at least 2 weeks. New brickwork or blockwork must be at least 6 weeks old before a render coat is applied or tiles are fixed	Must be mechanically removed.	Must be securely fixed according to manufacturer's instructions
Preparation dry areas	Surface must be clean and dry. On new plaster, thoroughly dry brush with a stiff bristled brush before priming with Prime Bond diluted 1:4 with water. The Primer must be completely dry prior to an additional coat of undiluted FE Primer.	Surface must be thoroughly clean and dry. Prime with undiluted Prime Bond.	Surface must be thoroughly clean and dry. Prime the underside, edges and face of the board with neat Prime Bond.	Surface must be thoroughly clean, dry and de-greased. Apply slurry bonding coat as below	Surface must be thoroughly clean and dry. Prime porous/dusty surfaces with Prime Bond diluted 1:4 with clean water	Prime exposed underlying substrate with undiluted Prime Bond.	Surface must be clean and dry
Preparation for wet areas	Follow instructions above and follow with FE Shower liner fitted in accordance with our Waterproofing Guide						n/a
Primer (NORCROS PRIMER1L)	Diluted 1:4, 1 litre covers approximately 60m ² , used neat 1 litre covers approximately 12m ²	Undiluted 1 litre covers 12m ²		Mix 2 parts cement based adhesive with 1 part Prime Bond and apply to the tiles using a soft bristled brush and allow to dry. 1 litre covers approximately 3m ²	Diluted 1:4 1Litre covers 60m ²	Undiluted 1litre covers approximately 12m ²	n/a

* Please pay particular attention to the weight loading of your substrate if you intend using floor tiles for wall tiling.

** It is important to identify the underlying substrate and check the relevant weight loading before tiling

Tile Essentials Product Selector – Glazed Wall Tiles.

Product Range	Tile Size	Adhesive		Sealant	Grout		Maintenance
		Most suitable adhesive	Approximate Coverage		Most suitable grout	Approximate Coverage	
Acapulco	10 x 10	Norcross S1 Adhesive: Standard Set White or Fast Set White.	3.3kg per m ²	KF Stain Stop	4 in to 1 Grouts	0.9kg per m ²	Clean with a soft cloth and Lithofin Easy Care.
Andalucia	10 x 10					0.9kg per m ²	
	20 x 20					0.5kg per m ²	
	10 x 20					0.7kg per m ²	
Arabesque	6.5 x 10			1.0kg per m ²			
Architecture	6 x 25			0.8kg per m ²			
	10 x 10			1.0kg per m ²			
	10 x 20			0.8kg per m ²			
	10 x 30			0.8kg per m ²			
	15 x 15			0.8kg per m ²			
	7.5 x 15			1.0kg per m ²			
Bilbao	23 x 33			0.5kg per m ²			
	30 x 60			0.3kg per m ²			
	20 x 50			0.5kg per m ²			
	25 x 75			0.5kg per m			
Boho Soho	15 x 15			0.8kg per m ²			
Bon Bon	7.5 x 15			0.7kg per m ²			
Botanical Garden Botanical Blue Panels	13 x 13			0.8kg per m ²			
Botany	17 x 17			1.0kg per m ²			
Carnival	7.5x15	0.7kg per m ²					
Cinema	10x20	0.8kg per m ²					
Domino	7.5 x 15	1.0kg per m ²					
	5 x 10 Mosaic	1.3kg per m ²					

All coverages stated are approximate and should be considered as a guideline only.

4 IN TO 1 GROUT is suitable for grout widths up to 8mm. Floor and Wall Grout is suitable for grout widths up to 20mm.

Tile Essentials Product Selector – Glazed Wall Tiles (continued).

Product Range	Tile Size	Adhesive		Sealant	Grout		Maintenance
		Most suitable adhesive	Approximate Coverage		Most suitable grout	Approximate Coverage	
Early English Delft	12.5 x 12.5	Norcross S1 Adhesive: Standard Set White or Fast Set White.	3.3kg per m ²	KF Stain Stop	4 in to 1 Grouts	1.4kg per m ²	Clean with a soft cloth and Lithofin Easy Care.
Edwardian	15.2 x 22.8					0.7kg per m ²	
Empress	15.2 x 15.2					0.7kg per m ²	
	7.5 x 15.2					0.7kg per m ²	
Fenlands	10 x 10					1.0kg per m ²	
	7.5 x 15					1.0kg per m ²	
Forecast	7.5 x 15					1.0kg per m ²	
	13 x 13					1.3kg per m ²	
Futurism	5 x 23 x 0.7					1.0kg per m ²	
Giralda	7.5 x 15					0.8kg per m ²	
Marrakech and Paris	Hexagon 12.7 x 14.7			1.2kg per m ²			
	Paris Shaped			1.95kg per m ²			
	11.75 x 11.75			2.8kg per m ²			
	17 x 17			1.5kg per m ²			
Metropolis	7.5 x 15			1.0kg per m ²			
Metropolitan	7.5 x 22.5			0.5kg per m ²			
	15 x 7.5			0.7kg per m ²			
	7.5 x 7.5			1.0kg per m ²			
Neisha Crosland Atlas	15.24 x 15.24			2.1kg per m ²			
	17.1 x 17.1			1.5kg per m ²			
	19.4 x 19.4	1.6kg per m ²					
Potteries	12.5 x 12.5	1.3kg per m ²					
Ravello & Ravello Mosaic	20 x 40	0.7kg per m ²					
	21.3 x 31.9	1.5kg per m ²					
Retro Deco	10 x 20	KF Grout Protector	0.8kg per m ²				
Retro Metro	5 x 20	KF Stain Stop	0.8kg per m ²				
	7.5 x 15		0.8kg per m ²				
	10 x 30		0.7kg per m ²				

All coverages stated are approximate and should be considered as a guideline only.

4 IN TO 1 GROUT is suitable for grout widths up to 8mm. Floor and Wall Grout is suitable for grout widths up to 20mm.

Tile Essentials Product Selector – Glazed Wall Tiles (continued).

Product Range	Tile Size	Adhesive		Sealant	Grout		Maintenance	
		Most suitable adhesive	Approximate Coverage		Most suitable grout	Approximate Coverage		
Riviera	11.2 x 11.2	Norcross S1 Adhesive: Standard Set White or Fast Set White.	3.3kg per m ²	KF Stain Stop	4 in to 1 Grouts	1.0kg per m ²	Clean with a soft cloth and Lithofin Easy Care.	
Stonelustre	13 x 13					1.3kg per m ²		
Suede	10 x 20					0.7kg per m ²		
Toledo Brick	6.3 x 25.5 x 0.9			1.0kg per m ²				
Trellis Wall	14.8 x 14.8			0.9kg per m ²				
Tuscania Mosaic	30 x 60 x 1			KF Grout Protector		1.0kg per m ²		KF conditioning Cleaner
Valencia	12.5 x 12.5					KF Stain Stop	1.3kg per m ²	Clean with a soft cloth and Lithofin Easy Care.
	7.2 x 15						1.6kg per m ²	
	10 x 30	1.1kg per m ²						
Woodland Animals	12.6 x 12.6				1.3kg per m ²			

All coverages stated are approximate and should be considered as a guideline only.

4 IN TO 1 GROUT is suitable for grout widths up to 8mm. Floor and Wall Grout is suitable for grout widths up to 20mm.

Tile Essentials Product Selector – Stone & Slate Wall Tiles. Including Mother of Pearl Wall Tiles.

Product Range	Tile Size	Adhesive		Sealant	Grout		Maintenance	
		Most suitable adhesive	Approximate Coverage		Most suitable grout	Approximate Coverage		
East Hampton	Hexagon Mosaic	Norcros S1 Adhesive: Standard Set White or Fast Set White.	3.3kg per m ²	MN Stain Stop	4 in to 1 Grouts or Floor & Wall Grout	1.6kg per m ²	Clean with a soft cloth and Lithofin Easy Care.	
	2.3 x 4.8 Mosaic					2.3kg per m ²		
	7.3 x 15					0.8kg per m ²		
	4.8 x 19.8					0.7kg per m ²		
	9.9 x 30.5					0.8kg per m ²		
	30.5 x 30.5					0.7kg per m ²		
	30.5 x 61					0.4kg per m ²		
Exhibition	61 x 30					0.4kg per m ²		
Hartington Mosaics	28.4 x 30					0.6kg per m ²		
	30 x 31					0.5kg per m ²		
Hampton Bays	7.3 x 15					0.8kg per m ²		
	9.9 x 30.5					0.8kg per m ²		
	30.5 x 30.5					0.7kg per m ²		
	61 x 30.5					0.4kg per m ²		
	Hexagon Mosaic					1.6kg per m ²		
	Brick Mosaic					2.3kg per m ²		
	Herringbone Mosaic					2.3kg per m ²		
High Society Marble	Rockefeller 30.2 x 26.1					1kg per m ²		
	Guggenheim 27.6 x 27.6					1kg per m ²		
	Astor 28.5 x 28.5					1kg per m ²		
Library	61 x 30			0.4kg per m ²				
Mother of Pearl Mosaics	Both Brick and Rectangle sheets				KF Grout Protector	4 in to 1 Grouts		0.8kg per m ²
North Haven Mosaics	BasketWeave 31.7 x 31.7				MN Stain Stop	4 in to 1 Grouts or Floor & Wall Grout		1.2kg per m ²
	Chevron 29.8 x 29.7							1.2kg per m ²
	Penny 30 x 30.5							1.2kg per m ²
Offset Mosaics	22.7 x 30							0.7kg per m ²
	30.1 x 31.1							0.7kg per m ²

All coverages stated are approximate and should be considered as a guideline only.

4 IN TO 1 GROUT is suitable for grout widths up to 8mm. Floor and Wall Grout is suitable for grout widths up to 20mm.

Tile Essentials Product Selector – Stone & Slate Wall Tiles (continued).

Product Range	Tile Size	Adhesive		Sealant	Grout Grout Coverage		Maintenance
		Most suitable adhesive	Approximate Coverage		Most suitable grout	Approximate Coverage	
Palazzo	24 x 24	Norcross S1 Adhesive: Standard Set White or Fast Set White.	3.3kg per m ²	MN Stain Stop	We recommend 4 in to 1 White Grout or White Floor & Wall Tile Grout with these tiles	0.5kg per m ²	Clean with a soft cloth and Lithofin Easy Care.
	10 x 30					0.7kg per m ²	
Palio	10 x 20					0.9kg per m ²	
	7 x 30					1.0kg per m ²	
	Herring Bone Mosaic					2.0kg per m ²	
	1.5 x 1.5 Mosaic					4.5kg per m ²	
	Hexagon Mosaic					1.6kg per m ²	
Shelter Island	Dome Mosaic					n/a	
	Harbour View 31.2 x 27.5					1.2kg per m ²	
	Island Heights 30.2 x 30.2					1.2kg per m ²	
	Montclair 26.5 x 27.5					1.2kg per m ²	
	Westmoreland/Smith Cove 28 x 31.2					1.2kg per m ²	
Temple Wall	Dering and Silver Beach 27.4 x 27.4					1.2kg per m ²	
	10 x 20					1kg per m ²	
Venetian Stone Mosaics	2.3cm mosaic sheets					4.1kg per m ²	
	10 x 10					1.8kg per m ²	
	4.8cm mosaic sheets					2.2kg per m ²	
Urban Slate	10 x 10	2.7kg per m ²					
	12 x 60	1kg per m ²					
	20 x 40	0.7kg per m ²					
All other ranges	All sizes - only suitable for wall tiling if 12.5mm thick or less			Please refer to the relevant floor tiling guide	Please refer to the relevant floor tiling guide	Please refer to the relevant floor tiling guide	

All coverages stated are approximate and should be considered as a guideline only

4 IN TO 1 GROUT is suitable for grout widths up to 8mm. Floor and Wall Grout is suitable for grout widths up to 20mm.

Tile Essentials Product Selector – Glass Wall Tiles and Floor Tiles

Product Range	Preparation	Tile Size	Adhesive		Sealant	Grout		Maintenance
			Most suitable adhesive	Approximate Coverage		Most suitable grout	Approximate Coverage	
GLASS								
Arabian Sea Mosaics	Prepare substrate as per guide	Mosaic sheet	Norcross S1 Adhesive: Standard Set White or Fast Set White.	3.3kg per m ²	Seal grout joints with KF Grout Protector	4 in to 1 Grouts	1.1kg per m ²	Clean with a soft cloth and Lithofin Easy Care
Aurora Glass & Nordic Glass Rectangles	Prepare substrate as per guide. Brush apply slurry bonding coat consisting of 2 parts adhesive to 1 part Prime Bond to back of tile and allow to dry.	15 x 30					0.7kg per m ²	
Nordic Glass Mosaics: Nb. No need to slurry grout		Mosaic Sheets					1.2kg per m ²	
Deco Glass		10 x 20					1.1kg per m ²	
Glass Elements		7.5 x 15					1.2kg per m ²	
High Society Glass	Prepare substrate as per guide	Kennedy, Forbes and Gatsby					0.8kg per m ²	
Indian Ocean		Johnson, Lowell and Cabot					2kg per m ²	
Indian Ocean	Prepare substrate as per guide.	Mosaic Sheets					1.1kg per m ²	
Indian Ocean	Prepare substrate as per guide	Square Mosaics					2.95kg per m ²	
		Fusion Mosaics					2kg per m ²	
		Spectrum Mosaic					2.95kg per m ²	
		Hexagon Mosaics					2.5kg per m ²	
		Prose/Stick Mosaics					2kg per m ²	
		Kaleidoscope mosaic					2.5kg per m ²	
		San Diego					1.25kg per m ²	
Iridescent Glass / slate Mosaics Iridescent Glass / slate Mosaics		Square Mosaics	2.95 per m ²					
Liquid Glass Liquid Glass	Prepare substrate as per guide. Brush apply slurry bonding coat consisting of 2 parts adhesive to 1 part Prime Bond to back of tile and allow to dry.	11 x 11	1.1kg per m ²					
		7.5 x 15	1.2kg per m ²					
		10 x 30	0.8kg per m ²					
Malacassa Squares and Mini Bricks Malacassa Squares and Mini Bricks	Prepare substrate as per guide	Mosaic sheets	4.0 kg per m ²					
			2.5kg per m ²					
					MN Stain Stop			
					Seal grout joints with KF Grout Protector			

Malacassa Bricks Oyster Mosaics		Square Mosaics					2.8kg per m ²	
		Rectangle Mosaics					2.1kg per m ²	
Product Range	Preparation	Tile Size	Adhesive		Sealant	Grout		Maintenance
Product Range			Most suitable adhesive	Approximate Coverage		Most suitable grout	Approximate Coverage	
GLASS								
GLASS	Prepare substrate as per guide	Mosaic sheets	Norcross S1 Adhesive: Standard Set White or Fast Set White.	3.3 kg per m ²	Seal grout joints with KF Grout Protector	4 in to 1 Grouts	1.65kg per m ²	Clean with a soft cloth and Lithofin Easy Care
Palermo					Seal tiles and grout joints with MN Stain Stop		1.1kg per m ²	
Tahiti Mosaics								
FLOOR TILES - ONLY SUITABLE FOR WALL TILING IF 12.5MM THICK OR LESS	Prepare substrate as per guide paying particular attention to the maximum tile weight	n/a	Norcross S1 Adhesive: Standard Set White or Fast Set White.	3.3kg per m ²	Please refer to the relevant floor tiling guide	Please refer to the relevant floor tiling guide	Please refer to the relevant floor tiling guide	Please refer to the relevant floor tiling guide
All ranges								

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4 IN TO 1 GROUT is suitable for grout widths up to 8mm. Floor and Wall Grout is suitable for grout widths up to 20mm.

Sealants and Finishes

Product	Preparatory Product	Impregurator / Sealant	Finishing Product	Day to Day Cleaner	Occasional / Intensive Cleaner	Comments
Stone	MN Power Clean	MN COLOUR Intensifier (if desired) and MN Stain Stop.ECO	MN Cobble Wax (If desired) Excludes Roman Mosaics	Easy Care	Wexa	If a sheen is required, finish with MN Cobble Wax. This finish is not suitable for Roman Mosaics, external or wet areas. If colour intensifier is required apply MN Colour prior to MN Stain Stop. MN ECO is not suitable for use with MN Colour
Slate	MN Builder's Clean or MN Power Clean on acid sensitive	MN COLOUR Intensifier (if desired) and MN Stain Stop.ECO	Multi Seal if desired	Easy Care	Wexa	If a sheen is required, finish with Multi Seal. This finish is not suitable for wet or external areas. If colour intensifier is required apply MN Colour prior to MN Stain Stop. MN ECO is not suitable for use with MN Colour
Terracotta	KF Cement Residue Remover (if required)	TC Classic Primer	TC Classic Wax (and TC Eversheen if desired)	Easy Care	Wexa	Apply TC Eversheen over TC Classic Wax for easy maintenance. Initial sheen will dull over time
Pre-Sealed Terracotta	Not required	Not required	TC Classic Wax (and TC Eversheen if desired)	Easy Care	Wexa	Apply TC Eversheen over TC Classic Wax for easy maintenance. Initial sheen will dull over time
Marrakech, Casablanca, Paris, Neisha Crosland Atlas Glazed Terracotta	Not required	KF Stain Stop	KF Stain Stop	Easy Care	Not required	
Unglazed Porcelain	KF Cement Residue Remover (if required)	KF Protective Impregurator	KF Protective Impregurator	KF Conditioning Cleaner	KF Intensive Cleaner	Unglazed porcelain tiles – Arboreto, Festival, Lombardia, Milan, Moderna, Neutrals, North Beach, Riverbed, Skyline, South Beach
Glazed Porcelain	Not required	Not required	KF Grout Protector	KF Conditioning Cleaner	KF Intensive Cleaner	Abbey*, Almeria, Amalfi Coast, Barbican, Casino, Cotto, Furnace, Giotto, Hex, Malmo, Masini, Mono, Newlyn, Obelisk, Patisserie*, Reykjavik, Rhombus, Rye Harbour, Trellis*, Tuscania, Umbria, York
Geometric	Not required	KF Stain Stop	KF Stain Stop	Easy Care	Wexa	
Glass	Not required	Not required	KF Grout Protector	Easy Care	Not required	
Wall Tiles	Not required	KF Stain Stop*	KF Stain Stop* or KF Grout Protector	Easy Care	Not required	*Crackle glazed tiles only

Application of sealants and finishes:

Please refer to the appropriate section of the relevant tile guide for correct application procedures.