

Reed Harris
LONDON
www.reedharris.co.uk

27 Carnwath Road, London. SW6 3HR
Tel: 020 7736 7511
Fax: 020 7736 2988
Email: enquiries@reed-harris.co.uk

The Guide

This booklet has been produced to give a broad understanding of the methods and materials used in tiling. The key to a successful tiling project is in the preparation and planning. The information in this guide covers as many of the most frequently asked questions as possible. It is intended as an informal guide with domestic projects in mind. Where required, more detailed technical advice can either be given for specific projects by our experienced team or can be found in British Standard BS 5385 Wall & Floor Tiling. Always refer to the manufacturers instructions when using grouts, adhesives and preparation products, which can be found on the packaging.

Wherever possible it is always worth employing an experienced professional to carry out any type of building or renovation work. Contact the Tile Association for assistance in finding a qualified Tiler in your area. A tremendous amount of choice is available in floor and wall finishes, fittings, furniture, etc. An Interior Designer can take your requirements and present ideas for approval, saving time and cutting out the need to trawl through hundreds of options before finding the right one. An Interior Designer can also work as a project manager to ensure that renovations run smoothly. Contact the British Interior Design Association for assistance in finding an Interior Designer.

This booklet will outline the important points of preparation and give an indication of the work involved in fitting tiles, informing both the DIY customer and the experienced professional.

This "Guide" is intended for information purposes only. We can accept no responsibility for reliance placed upon the advice contained herein in any circumstances.

Contents

1	General Fitting Principles Wall Tiles Floor Tiles Expansion Joints Access Panels Cutting Drilling Selecting Adhesive & Grout Weight Allowance Chart	5	Underfloor Heating Fitting onto Concrete Floors Fitting onto Wooden Floors
2	Tile Varieties Ceramic Wall & Floor Porcelain Natural Stone Tumbled Stone Agglomerate Glass Terracotta Sheet Mosaic	6	Timber Backgrounds Preparing Timber Backgrounds Levelling Timber Floors
3	Fixing Notes Ceramic, Porcelain, Stone, Terracotta & Tumbled Stone Glass & Agglomerate Sheet Mosaic	7	Waterproofing Shower Walls
4	Sealing and Maintenance Grouting Ceramic & Porcelain Natural Stone, Terracotta & Agglomerate	8	Wet Rooms Wedi Fundo Shower Trays Fixing Wedi onto Stud Walls & Partitions Fixing Wedi onto Solid Walls Fixing Wedi onto Timber Floors Fixing Wedi onto Concrete Floors Preparing Wedi shower trays for use with Mosaic
		9	Sound Deadening
		10	Tiling Balconies Wedi Balco onto Concrete Balconies Wedi Balco onto Asphalt Balconies
		11	Fitting Product Descriptions
		12	Adhesive Selection Chart

1 General fitting principles

It is extremely unlikely that tiles will exactly fit a wall from one side of the room to another. To achieve a quality finish it is worth taking the time to prepare the areas to be tiled. Careful marking out will ensure that the fixed tiles will be properly centred and any cut tiles are of a comfortable size. Preparation will also help gauge where borders and features are best placed before it is too late for adjustments.

Preparation:

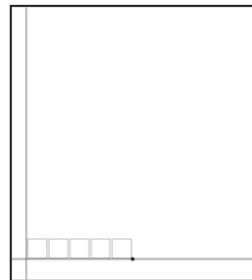
All areas to be tiled must be clean, flat, mature, dry and free from dust and any residues that may cause poor adhesion. Any irregularities in the surface prior to tiling may affect the quality of the tiled finish. To assist with the preparation work there are articles to follow that explain how different areas should be treated prior to tiling. Natural stone and Terracotta tiles may contain residual moisture from manufacture which will cause the tiles to appear darker than anticipated. Damp tiles should be unpacked and allowed to dry thoroughly before fixing. Should this not be possible they can be fixed but it will result in an extended drying time. Some tile edges may have small chips or flaws which should be reserved for cuts. Glass and Agglomerate tiles react to temperature more than other tile products. For this reason these tiles should be stored in the room in which they are to be fitted to allow them to settle. Glass tiles should be left for 24 hours and Agglomerate tiles will need 48 hours. Agglomerate tiles must also be stacked flat and not on their edges.

Inspection:

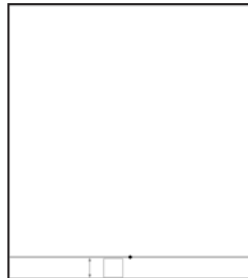
Always inspect the tiles prior to fixing, making sure that tiles are shuffled to ensure any colour and shade variations are well mixed. It is strongly advised to check that there are enough tiles to complete the work before fixing as it is not possible to match tiles from different batches. For the same reason it would be prudent to keep a few extra tiles should any need to be replaced in the future. Always handle tiles carefully as many are relatively fragile prior to installation.

Wall Tiles

In order to plan the tile layout successfully you will need two straight wooden bars. To find a level starting point mark the wall with a horizontal line at the height of one tile and grout joint from the floor or skirting board.

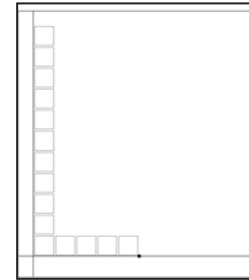


the tile and grout widths along the line from the centre point. When measuring



Make a ruler with the longest wooden bar by marking out the tile and grout widths along its length. Measure the width of the wall to find the centre and mark

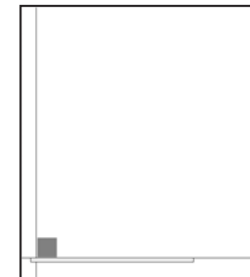
it is important to take into account any vertical feature lines that may have a different width to the main tiles.



Starting from the last whole tile marked on the horizontal line; draw a line vertically using a plumb line as a guide. Using the ruler, mark the tile spacing vertically

to determine where the last whole tile will finish. It is important to make allowances for any horizontal border tiles or mosaics that are to be incorporated into the design. If the remaining space at the top of the wall is uncomfortably small, adjust the height of the horizontal start line. The finished tiling will look better with a more generous cut at both the top and bottom of the wall, rather than a row of tiny cuts at one end.

Once any adjustments of the marking out are complete, two wooden battens can be attached to the wall. One batten should be fixed with

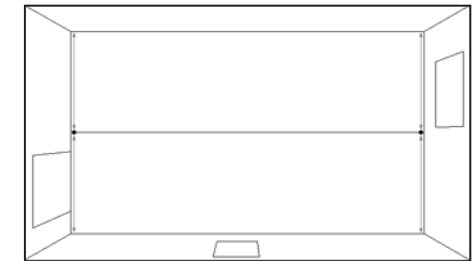


the top edge following the horizontal base line. The second batten should be fixed at 90° to the first following the vertical line. The two battens give a stable starting point to begin the wall tiling. It is important to note that where

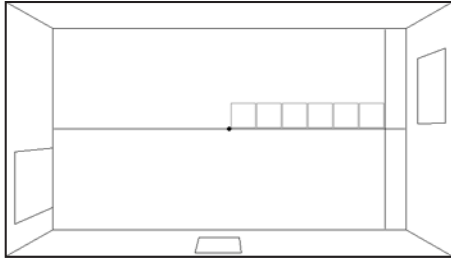
a wall has been waterproofed, battens cannot be mechanically fixed to the wall. The starting point must be made with marked lines only as any screws or nails will puncture the waterproof preparation which may result in a leak. The horizontal batten may be moved along the wall to continue as a guide, once any newly applied tiles are supported by the adhesive. Once the whole tiles have been fixed the cuts can be measured and fitted.

Floor Tiles

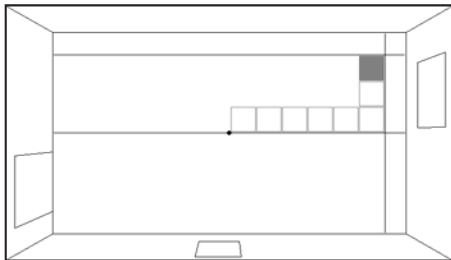
Before any marking out takes place it is important to consider where any permanent items such as a bath will sit, if not present at the time of tiling. The positioning of these pieces will determine the layout of the tiles. If there is more than one entrance to the area that will be tiled it is important to establish which will be the main access and centre the room along this axis.



Mark the centre of the floor against the wall with the main entrance in it. Do the same on the opposite side of the room. Mark a straight line across the room joining the two points to make the centre line.



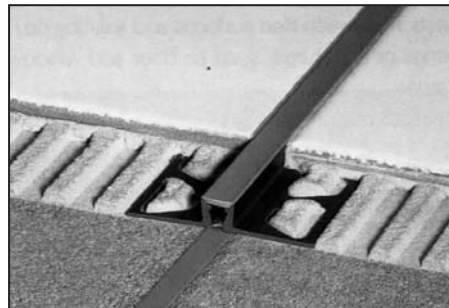
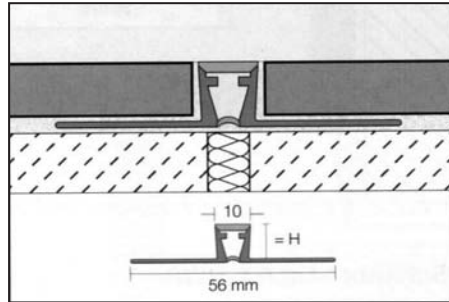
Measure the centre line to find the middle and mark it accordingly. From the centre point set out tiles towards the far wall from the entrance, until no more whole tiles will fit. Using the back edge of the furthest whole tile from the door as a guide, mark a line at 90° to the centre line across the rear of the room. Set out further tiles along the new line until no more whole tiles will fit.



Using the edge of the furthest tile from the door as a guide, mark a parallel line to the centre line along one side of the room. To ensure the new line is parallel to the centre line, take periodic measurements between them. The tile that is the furthest from the door will be the starting point. Always work back towards the door. Once the whole tiles have been fixed the cuts can be measured and fitted.

Expansion Joints

Expansion joints should be used where the surface to be tiled is made from different materials. This will most commonly be the join between a concrete and a wooden floor where the whole area is to be covered in tiles.



Different backgrounds move at differing rates during changes in temperature. If a tile is fitted across one of these stress points, it will be under great pressure which will cause it to break or cause the grout to fail around it. Expansion joints are fixed along stress lines to allow the floor on either side to behave in different ways without affecting each other.

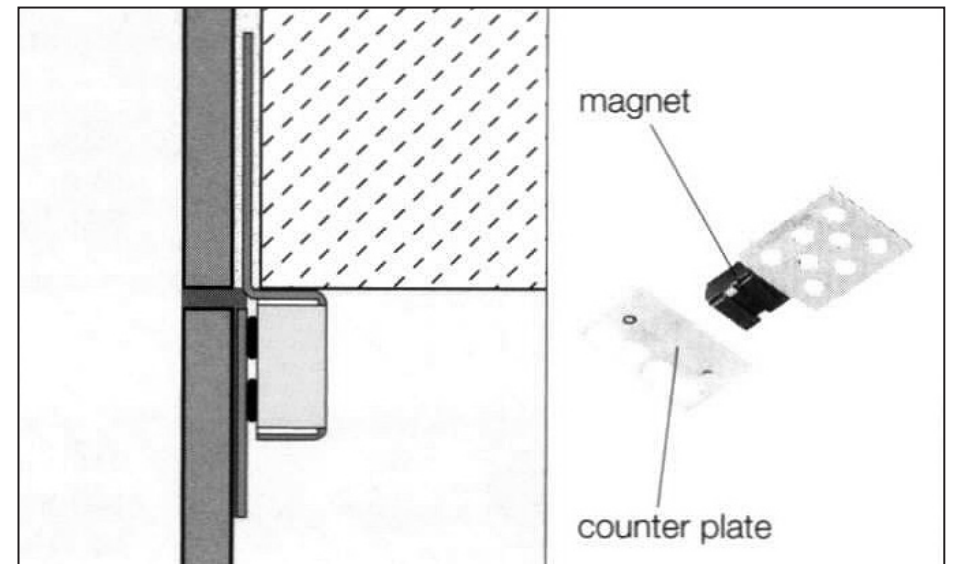
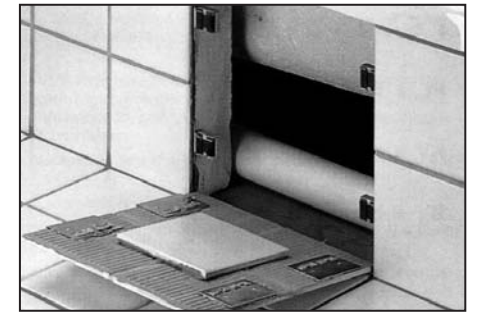
On very large floors expansion joints should be used to surround uninterrupted areas of 64 square metres. (8m x 8m)

It is less likely to install an expansion joint on the wall unless there is a movement joint already present before tiling or the area to be covered is an uninterrupted 9 square metres. Expansion joints on the wall are usually constructed with a continuous bead of silicone between the tiles. The silicone is able to deform under pressure and reduce any stresses building across the face of the wall.

Access Panels

These should be fitted where possible future access would be prevented by a tiled surface. The most common area to fit an access panel is within a tiled

bath panel. Using a set of magnets and metal plates, a panel can be made to seamlessly fit within the tiled surface. Building in an access panel can save time on future repairs if any plumbing requires maintenance. It will also cut out the need to search for replacement tiles.



Cutting

Ceramic tiles are relatively straight forward to cut. Mark the tiles where they need to be cut. Score along the line with a tile cutter using firm even pressure. If the tile cutter does not have a lever to snap the tile, place the tile on a flat surface with a nail under one end of the score line. Press firmly down on either side of the tile to separate the pieces. If a more complex shape is required, use a tile saw to follow this desired shape.

This principle is common to most varieties of tile however there are some characteristics to be aware of.

All Stone products, Terracotta and Agglomerate materials should be cut using a water cooled diamond wheel. This method ensures a smooth even cut and is safer than using an angle grinder. Porcelain tiles can also be cut using a wet wheel where the score and snap method is proving difficult or resulting in an uneven break. This can be the case with heavily textured or the weightier porcelain products of 12mm thickness.

Glass has a particular behaviour and should be treated differently to ensure a successful installation. To cut the tiles use a glasscutter (ensuring the wheel is oiled) to score the tile along the required cut line. Place the score mark directly over a small diameter piece of material, such as wire or small nail, and apply even downward pressure on either side of the required cut. It is imperative that all cut edges should be smoothed with a sanding stone to remove the stresses from the cutting process. Failure to do

so may result in the tiles cracking after being fixed which can still occur three months after installation.

Drilling

The method for drilling is common to all types of tile and does require patience. It is tempting to try and force the drill through the tile but this does not speed up the task, excessive pressure will only serve in burning out the drill bit or breaking the tile. Unfixed tiles should be placed onto cardboard upon a flat rigid surface. Drill bits should be Tungsten Carbide such as the Karat range of bits or Diamond Tipped. Mark the tile where the hole is required. Overlay with masking or electrical tape. Mark the tape to match your existing drilling point. Repeat 4 – 5 times until a sufficient guide point has been made to prevent the drill bit from slipping until it has bitten into the surface of the tile. Using a variable speed drill on a low speed rotary setting only (NOT hammer action), start to drill allowing the drill to do the work.

If the required hole through the tile needs to have a neat edge or there is a complex shape to be cut, it may be necessary to use a water jet cutting service. This method of cutting uses a precise jet of water at extremely high pressure to erode an accurate line through the tile. It is recommended to use this method where any pipes or fittings mounted through the tiled surface do not have blanking plates to mask the edges of any holes.

Weight Allowance Chart

Substrate	Weight Limitations		
Brickwork		6 Weeks prior to direct fixing or application of render/plaster finishes	
Blockwork		6 Weeks prior to direct fixing or application of render/plaster finishes	
Plaster	20 Kg/m ²	4 Weeks	Internal Only
Plasterboard	32 Kg/m ²		Internal Only
Plywood	35 Kg/m ²		Internal Only
Render	60 Kg/m ²	2 Weeks	Internal/External
Screed		3-4 Weeks	Internal/External
Wedi Tilebacker Boards	60-65 Kg/m ² (needs to be fitted correctly according to wedi guide lines to achieve this weight amount)		Internal/External

Tile and Weight Information

Tile	Weight (Kg perm ²)
Mosaics-Porcelain, Ceramic & Glass	7-11 kg
Ceramics	9-21kg
Porcelain	19-26kg
Stone	30kg at 10mm Thick 60kg at 20mm Thick

Please also allow around 2-4kg/m² for adhesive

2 Tile Varieties

Ceramic Wall & Floor

Ceramic tiles are produced from a blend of clays. The raw material is pressed into shape, dried and then glazed before being kiln fired. Some production processes allow for the tiles to be fired twice, once to fix the base glaze and secondly for fixing decoration. Ceramic tiles are available in many forms from stone effects through to highly unusual three dimensional forms.

There are several adhesive options available depending on the area and background to be tiled. Ceramic tiles are not affected by the colour of the adhesive used to fix them, with this in mind Grey adhesives will be acceptable in the majority of cases. See the chart in the back of this guide for the correct adhesive for different applications.

Porcelain Tiles

Porcelain tiles are produced from the purest raw materials and are fired to 1280°C where as most traditional tiles are fired to 1080°C. The higher kiln temperature changes the nature of the clay and causes the material to become fully vitrified. This process renders the tile impervious to water and increases strength and density. Many of our porcelain ranges are designed to resemble stone. Slight variations in colour and marking are a feature of these ranges and are to be expected.

The only adhesive type that will properly bond with porcelain tiles is a flexible cement based mix. There are several

options available depending on the area and background to be tiled. Porcelain tiles are similar to Ceramic in that they are not affected by adhesive colour, again Grey adhesives will be acceptable in the majority of cases. See the chart in the back of this guide for the correct adhesive for different applications.

Natural Stone: Honed, Polished & Riven

Stone is quarried from veins of raw material naturally occurring in the earths crust. Stone is excavated in blocks and delivered into the factories to be cut into tiles. Each tile will have a unique marking that depending on the type of stone will be anything from nearly uniform speckles to vibrant, rich veins. Tiles from our warehouse may contain residual moisture from manufacture. In these instances the tiles may look darker than anticipated due to the water inside the stone. Damp tiles should be unpacked and allowed to dry thoroughly before fixing. Where this is not possible they can be fixed but this may result in an extended drying period.

Adhesives incorporating the rapid dry formula are preferred for use with natural stone. For white or pale marble and limestone a white adhesive should always be used so that the adhesive colour does not affect the finished appearance. See the chart in the back of this guide for the correct adhesive for different applications.

Tumbled Stone and Pebbles

Tumbled stone must be treated in much the same way as any other stone tile. The only difference between this and other stone products is in the last stages of manufacture. Tiles are scrubbed with abrasive blocks and a mildly acidic formula to gain the time worn appearance. Tumbled products tend to have a broad range of colour and tone within single batches to enhance the rustic finish. As is the case with natural stone, there may be some residual moisture from manufacture which can make the tiles appear a little darker than expected.

Adhesives incorporating the rapid dry formula are preferred for use with natural products. For white or pale stone a white adhesive should always be used so that the adhesive colour does not affect the finished appearance. See the chart in the back of this guide for the correct adhesive for different applications.

Agglomerate Tiles

Agglomerate tiles comprise 95% Marble, Quartz or Glass, and 5% hard wearing polyester resin. This form of manufacture offers consistency of structure with a wear resistance greater than that of natural stone.

Its excellent appearance and versatility both in terms of finish, ease of fixing and durability make it ideal for use in any internal environment. Place tiles in the area in which they are to be fitted at least 48 hours before fitting to allow them to settle and become thermally adjusted. The tiles must be kept flat and NOT stacked on edge. Stacking the tiles on their edges can

cause them to bend which will make fitting impossible.

Agglomerate tiles can often be affected by the colour of the adhesive used to fix them. With this in mind it is preferred that white adhesive be used with this type of material. Rapid setting adhesives are also recommended to prevent moisture marks appearing on the surface of the tiles. See the chart in the back of this guide for the correct adhesive for different applications.

Glass Tiles

Glass differs from other types of tile in the unique way it reflects light. Most glass varieties have the colour fused into the back of the tile giving them a sense of depth and intense colour. Glass is not absorbent making it a practical choice for bathroom and food preparation areas.

It is recommended to store the glass tiles in the installation area at least 24 hours prior to fixing, so they are able to adjust to the room temperature.

The only types of adhesive that will successfully fix glass wall tiling are flexible white cement based adhesives. These types of adhesive are to be used depending on the type of background that is going to support the tiles. See the chart in the back of this guide for the correct adhesive for different applications. Glass floor tiles must only be fixed with white flexible rapid setting adhesive, ensuring that they are fitted with a grout joint of at least 3mm. If preparing a timber floor with Wedi boards, a minimum thickness of 20mm is required to support the tiles adequately.

3 Fixing Notes

Terracotta

Terracotta is an age old material being one of the simplest tiles to produce. Clay is quarried and set into wooden frames to form each tile. Once dried the tile is released from the wooden frame and then kiln fired. Each tile has its own unique characteristics but all have the warmth and texture of this traditional material.

Tiles from our warehouse may contain residual moisture from manufacture. In these instances the tiles may look darker than anticipated due to the water inside the clay. Damp tiles should be unpacked and allowed to dry thoroughly before fixing. Terracotta contains natural salts and minerals that can appear as a whitish marking on the surface, which is a natural occurrence that can be removed. This efflorescence is a reaction to moisture within the tile that can be prevented by keeping the tiles dry.

Adhesives incorporating the rapid dry formula are preferred for use with terracotta to ensure that moisture from the adhesive does not affect the finished appearance. Terracotta is similar to ceramic tile in that it is unlikely that the adhesive colour will affect the appearance of fitted tiles. See the chart in the back of this guide for the correct adhesive for different applications of the tile.

Sheet Mosaic

Mosaic can be made from a wide variety of materials, the most common of which are glass, porcelain and glazed ceramic. There are mosaic types for virtually any application all offering the distinctive texture and visual appeal unique to this type of covering.

Due to the nature of the small closely mounted tiles, mosaic offers good slip resistance with a practical finish ideal for most areas including wetrooms, bathrooms, showers and steam rooms.

Care should be taken to choose the correct adhesive for the project that is in hand. There are several options to choose from depending on the type of background that is to be covered. See the chart in the back of this guide for the correct adhesive for different applications.

All areas to be tiled must be clean, dry, and free from dust and any residues that may cause poor adhesion. Inspect the tiles prior to fixing and shuffle the batch to ensure that any colour and shade variations are well mixed. Some edges may have small chips or flaws, these tiles are best kept for cuts. Care must be taken when handling tiles as any broken edges may be razor sharp and will easily cut hands.

See the chart in the back of this guide for the correct adhesive for different applications and materials.

Ceramic Porcelain Stone Terracotta & Tumbled Stone

Wall tiles are relatively simple to install. A trowelled adhesive bed should be applied to the wall and the tiles pressed onto it to fix. The adhesive should achieve a minimum 50% coverage in dry locations. Depending on the depth of the tile, apply adhesive with a notched trowel between 3 – 6mm.

The backs of all floor tiles, external wall tiling, stone tiles and wet area tiling should be fixed with a solid bed of adhesive. This is essential to maintain the strength and durability of the tiles. Dot and dab fixing is unacceptable and will leave the installed tiles vulnerable to breaking or lifting. To achieve a solid bed of adhesive it is important to cover the back of the tiles in a fine layer of adhesive before applying into a trowelled adhesive bed of 3 - 6mm depending on the background and thickness of the tile.

Stone and Terracotta products may require a thicker adhesive bed between 3 – 20mm depending on the substrate and calibration of the tile.

Ensure that all combed adhesive lines are parallel. If the combed lines are not parallel there is a good chance of trapping air underneath the tile during fixing. Any air pockets within the adhesive can result in a weak spot that may allow the fixed tiles to crack. Tap the tiles into place with a rubber mallet, using spacers where required. For tiles larger than 450x450mm a pourable adhesive is recommended to ensure good contact between the tile and adhesive.

Glass & Agglomerate

It is important to thinly butter the back of each tile with white adhesive to ensure both proper adhesion and an even tone of colour. Depending on the depth of the tile use a 3 or 6mm trowel to comb an adhesive bed of approximately one square metre. Press the buttered tiles firmly into the trowelled adhesive using spacers to regulate the grout joints as required. It is important to apply only as much adhesive as can be covered within its working time. Remove any excess adhesive with a damp sponge, rinsing frequently with clean water.

If the tiles are being used as a decoration and are thinner than the surrounding tiles, then layers of adhesive should be applied to build up the background to the required depth. Applying one thick bed of adhesive to fill up a depth difference will result in the tiles cracking as the adhesive dries and contracts.

Pressing the tiles into a trowelled bed of adhesive without covering the back first will result in an uneven blemished appearance. For the same reason dot and dab fixing is unacceptable and will leave the tiles prone to cracking. Glass floor tiles should be fitted with at least 3mm grout joints between each tile regardless of the edge finish. Glass reacts to temperature change more quickly than clay based materials which is why the tiles need a little more room for expansion. It is advised to use the same principle on porcelain and ceramic tiles fixed over underfloor heating.

Grouting

Grout can greatly influence the look of any tiled area and some consideration should be given to the choice of colour. There are several types of grout suited to different technical needs which may restrict the available palette but it is worth taking a little time to see the options. As a general rule of thumb the tile finish, shape and location in the project is going to govern the types of grout that can be used. For instance a large contemporary rectified tile with its square edge finish is going to look better finished with a fine grain grout in a narrow joint as opposed to a wide joint filled with a coarse granular product. Where a tile has been installed with a flexible adhesive a flexible grout will be required to finish. We have a selection of flexible grouts but should a standard grout be chosen for colour we are able to supply an additive to make the mixture flexible.

Ceramic and Porcelain

Grout should be selected to best compliment the chosen tile. As a general guide a rustic effect with irregular edges will require a wider grout joint than a more machined tile with square edges. Most fine grouts will cover a joint width of up to 4mm. If a wider joint is to be used then a coarse grained grout will be required to span joints of 2 – 15mm. Before applying grout make sure the area is clean and free from building residues. Any deposits will need to be cleaned away with a solution of Cement Away to remove oily / grease marks and light building dirt.

Natural Stone Terracotta & Agglomerate

For polished and honed finishes a fine texture grout for joint widths up to 4mm is recommended. Tumbled finishes generally have rough edges that suit a wide grout joint. A coarse grain grout is recommended that can span joint widths of 4 – 15mm. Flexible admixtures should be used in the correct proportions where appropriate. Follow the manufacturers instructions, remembering polished finishes can be scratched by hard or abrasive objects. It is recommended that grout should be applied liberally over the whole area as well as in the joints. This will minimise the 'tramlining' effect that may appear a week or two after installation. Remove excess grout with a damp sponge, making sure that it is rinsed out frequently with clean water. The Ardex MG grouts have been specifically designed using the rapidry formula for use with stone in joint widths up to 8mm. For wider joints Ardex C2 can be used up to 15mm when E101 admixture is incorporated.

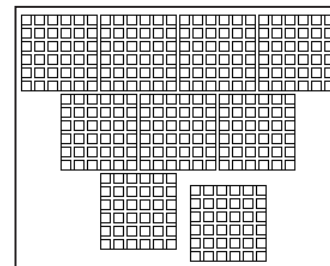
Sheet Mosaic

Mosaic can be made from a wide variety of materials, the most common of which are glass, porcelain and glazed ceramic. There are mosaic types for virtually any application all offering the distinctive texture and visual appeal unique to this type of covering.

Due to the nature of the small closely mounted tiles, mosaic offers good slip resistance with a practical finish ideal for most areas including wetrooms, bathrooms, showers and steam rooms.

Preparation

Before commencing the installation of mosaic it is important to read the following instructions carefully. The surfaces to be tiled should be smooth, flat, solid, dry and perfectly clean. It is advised to grind down any irregularities wherever possible as these will affect the smoothness of the finished mosaic.



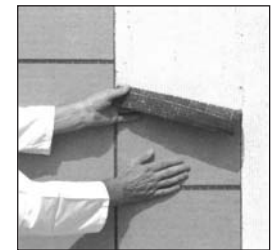
When marking out the surface to be tiled the sheets should be fixed in a staggered brick pattern, allowing for a grout joint between each sheet. This will enable fixing to be as accurate as possible using the joint widths on the sheets as a guide.

Selecting Adhesive:

Care should be taken to choose the correct adhesive for the project that is in hand. There are several options to choose from depending on the type of background that is to be tiled and the material that makes the mosaic. See the chart in the back of this guide for the correct adhesive for different applications.

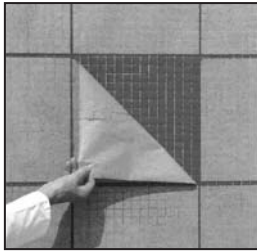
Fixing Paper Faced Mosaic

Install the mosaic with the paper sheet facing towards you working from the top of the wall down, 'hanging' each sheet. Using a 3mm trowel spread the adhesive to an area that can be tiled within the open time with the toothed edge of the trowel, keeping the comb lines parallel. Press the mosaic sheets into the adhesive, to achieve complete adhesive coverage, ensuring that any images or words printed on the paper are facing the same direction. Use the gaps between the tiles to regulate the sheet spacing and tap the sheets flat using a rubber float to ensure proper adhesion. Do not use a metal



4 Sealing and Maintenance

float. After fixing, go back to the previous fixed area and wet the sheets. Care should be taken not to wet the paper too much as the adhesive



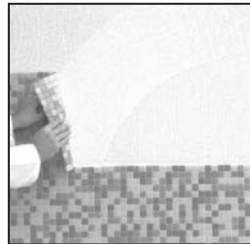
will not have hardened sufficiently. Give the moisture time to penetrate the paper and dissolve the glue, usually 5 – 10 minutes. Starting from one corner, carefully pull the paper off the mosaic diagonally keeping close to the surface. This must be done carefully so not to dislodge any of the tiles. If this is difficult, stop, wet the paper again and leave for a further 5 minutes. Once the paper is free from the mosaic, correct any alignment faults using a small spatula remove any excess adhesive from the grout joints and allow to dry for the prescribed time before grouting. Do not allow adhesive to harden before the paper facing is removed as any adjustments will be impossible.

Where the sheets are faced with a plastic sheet, soaking will not be necessary. Any alignment adjustments can be made by cutting the plastic with a sharp blade to free the individual tiles. The adhesive must be fully set before attempting to remove the plastic sheet. The sheet should be removed by cutting it into strips along the grout spacing and carefully pulling the strips off working close to the surface.

The above method is generally the most popular; however the British Standard method requires that the paper faced mosaic sheets are grouted before being applied to the adhesive.

Fixing Mesh Mounted Mosaic

Install the mosaic sheets with the mesh backing being pressed into the adhesive, using a rubber float to ensure complete adhesive coverage. It is important that the grout joints between the sheets are the same as the joints between each tile. Wipe any excess adhesive out of the grout joints and allow to dry for the prescribed time before grouting.



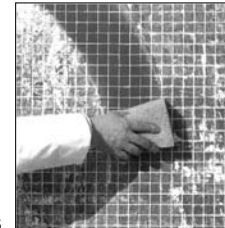
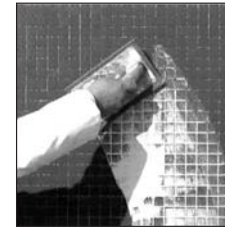
Cutting Mosaic

Individual tiles can be cut with a pair of mosaic nippers. The nippers should be applied so that the edge of the tile is in the middle of the jaws. The tile should be arranged so that the jaws are parallel with the direction of the desired cut before pressure is applied.

A whole sheet can be cut by scoring with a tile cutter and breaking the individual pieces to separate the required shape.

Grouting

In most cases a fine texture grout will be suitable. Where the mosaic has been installed in a wet area or on a floor, a flexible admixture should be added to the mix or a ready flexible grout should be used. In swimming pools or heated spas an epoxy grout should be used. Epoxy offers a higher resistance to the chemicals necessary for water maintenance in these areas.



The area to be grouted should be clean and dry. It is recommended that the grout should be applied over the whole area, taking off any large excess with the edge of the grout float. Remove any excess grout with a damp sponge, rinsing it out frequently with clean water. Once the grout is dry, remove any residue with a solution of Powerclean.

Epoxy grout should be applied in a similar manner, removing any large excess with the edge of the rubber float. Remove excess epoxy grout immediately. Clean with a thoroughly soaked scotchbrite pad ensuring that any residue has been emulsified and suspended within the cleaning water.

Care should be taken not to remove the grout from the joints. Wipe the cleaning water away with a sponge, rinsing it out frequently with clean water. Inspect the area closely to ensure no residue has been missed. No residue should be left on the mosaic as the epoxy grout will be extremely hard to remove once dry.

Maintenance

Mosaic by nature carries a larger volume of grout than larger tiles. In the case of glass mosaic, the tiles themselves are highly resistant to chemicals and are not porous. Cement based grouts will require some protection to repel water and oil based stains. KF Grout protector can be applied to the whole area, with any visible excess being wiped off the tiles before drying. This will assist with general maintenance by repelling any staining agents, allowing them to be easily wiped from the surface of the grout.

4 Sealing and Maintenance

Sealing

Ceramic

The vast majority of ceramic tiles have a glaze finish and as such do not require sealing. There are a few ranges that use unglazed ceramic pieces which must be sealed before any grouting takes place. Failure to seal will result in the grout residue becoming extremely difficult to remove. KF Stainstop should be used to protect the unglazed tiles without changing their appearance while providing a resistance to staining and an aid to grout residue removal. It is recommended to clean away any adhesive residues and general dirt with a solution of Cement Away before sealing.

Porcelain

Porcelain has an extremely low porosity that enables it to resist staining without assistance from sealing products. Most porcelain products can be left untreated and will not discolour or pick up stains provided they receive regular cleaning. Some unglazed porcelain tiles are designed to resemble stone and are produced with a deeply pitted or textured surface. This type of surface can trap grout residues and over time general dirt. It is advised to treat heavily textured porcelain with FZ Protective Impregnator. This is a one time only treatment that will act as a releasing agent for general dirt and building deposits. Before using FZ Protective Impregnator, the whole area of treatment should be free from adhesive

and dirt deposits. A solution of Cement Away should be used to remove any residues and allowed to dry thoroughly before sealing. Always seal tiles before grouting.

Natural Stone

Before sealing takes place the area should be inspected for adhesive residues and general dirt deposits. The areas must be perfectly clean and dry before applying sealant as any dirt or other deposits may interfere or become more permanent, with the sealing process. It is recommended that all areas that require sealing are cleaned. There are a few different products that will protect stone. Each has its own characteristics and has been designed to give a required finish or to be used with a specific stone.

Agglomerate

Agglomerates that incorporate stone chippings should be thoroughly dry and sealed before grouting. Once the tiles have been fixed it is advisable to clean the whole area with Powerclean diluted 1:10, to remove any residues of adhesive, builders dust, fingerprints, etc. To prepare for grouting it is important to reduce the porosity of the stone to ease the removal of grout residues. As a guide, apply half the required amount of MN Stainstop to the tiled area. Apply with a gentle even motion to minimize the sealant frothing. Should any foam appear, wipe it away before it dries as it can leave a residual

mark. Allow to dry for 24 hours. The average coverage of MN Stainstop on resin bonded conglomerates is 5–6 square metres per litre. This is intended as a guide only, the porosity of the stone will vary from batch to batch and also by type. The area is now ready for grouting.

Once the grouted area is thoroughly dry and all residues have been removed, the final treatment with MN Stainstop can take place. Apply in the same manner as before, being careful to keep foaming to a minimum. Keep applying coats until the area is saturated, it is not the number of coats that is important but the completeness of the coverage. Once the area is fully covered, remove any excess puddles from the surface and allow to dry.

Terracotta




Before sealing takes place the area should be inspected for adhesive residues, efflorescence and general dirt deposits. It is recommended that all areas that require sealing are cleaned and left until they are thoroughly dry. The areas must be perfectly clean and dry before applying sealant as any dirt or efflorescence may interfere with or become more permanent, with the sealing process. There are two systems for protecting and maintaining terracotta. Each has its own characteristics and has been designed to give a specific finish. It is advised that a cool terracotta floor is not sealed in direct sunlight or that a floor is not heated during sealing.




Maintenance

Installing tiles can be expensive and after works have been completed it is important to look after your investment. The materials used to make tiles have different care needs to ensure they continue looking their best for many years to come.




Sealing



Below are the recommended products to keep your tiles in pristine condition.



Polished Marble, Limestone & Granite		
Cleaning prior to sealing:	Power Clean	
Persistent soiling	Wexa	
Sealant options	MN Stainstop for invisible protection plus Care Seal to maintain shine	




Honed Marble & Limestone		
Cleaning prior to sealing:	Power Clean	
Persistent soiling	Wexa	
Sealant options	Colour Intensifier to deepen colour and/or MN Stainstop invisible impregnator plus Care Seal to provide sheen	

Sealing

Slate		
Cleaning prior to sealing	Cement away	
Persistent soiling	Cement away	
Sealant options	MN Stainstop for invisible protection or Colour Intensifier to deepen colour or Slate Seal to deepen colour and provide sheen	

Tumbled Stone		
Cleaning prior to sealing	Cement away	
Sealant options	MN Stainstop for invisible protection or Colour Intensifier to deepen colour or Cobble Wax to deepen colour with sheen	

Pebble Mosaic		
Cleaning prior to sealing	Cement away	
Sealant options	MN Stainstop for invisible protection or Colour Intensifier to deepen colour	

Terracotta		
Cleaning prior to sealing	Cement away	
Sealant options	Classic System - Classic Primer Synthetic System - Terracotta Impregnator	
Finishing options applied after grouting	Classic System - Classic Wax Synthetic System - Terracotta Sealant	

Maintenance

Ceramic & Glass Tiles	
Regular cleaning of all surfaces	Easycare
Glazed & Glass tiles	
Additional cleaning for bath / shower areas	Ceramic Clean
Unglazed tiles	
Special cleaning unglazed tiles	Wexa
Sealing unglazed ceramic tiles	KF Stainstop
Additional care for treated surfaces	Tile Polish

Porcelain Tiles	
Regular cleaning of all surfaces leaves a streak free surface without forming a film	FZ Conditioning Cleaner
Special cleaning of all surfaces	FZ Intensive Cleaner Removes particularly oily, greasy marks and also generally stubborn dirt. For regular cleaning in areas subject to heavy levels of wear and soiling.
Heavily Soiled Areas on all surfaces	Ceramic Clean Removes cement films, light mortar and grout residues, rust and lime deposits.

Maintenance

Honed Marble & Limestone		
Regular maintenance	Easycare	All surfaces
Heavy soiling	Wexa Removes oil / grease spots, soot, rubber and tar stains.	

Slate		
Regular maintenance	Easycare	All surfaces
Heavy soiling	Wexa Removes oil / grease spots, soot, rubber and tar stains.	

Tumbled Stone & Pebbles		
Regular maintenance	Easycare	All surfaces
Heavy soiling	Wexa Removes oil / grease spots, soot, rubber and tar stains.	

Polished Marble, Limestone & Granite		
Regular maintenance	Easy Care	All surfaces
Additional care	Care Sheen	All surfaces maintaining shine finish
Revive shine in worn areas	Care Seal	All surfaces where the shine is worn
Restore gloss in dull areas	Polish	All surfaces that are heavily worn and dull
Heavy soiling	Wexa	Removes oil / grease spots, soot, rubber and tar stains.

5 Underfloor Heating

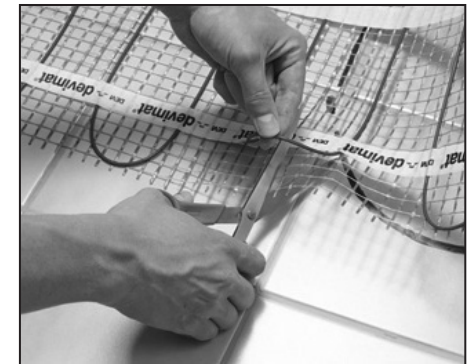
Maintenance

Agglomerate Tiles	
Regular cleaning	Easycare Cleaner.
Special cleaning	Powerclean. Oil/Grease marks, Glossy films, Residue from floor care materials, light films of wax and general soiling.
Special cleaning	Care Seal General cleaner for polished surfaces that enhances the shine of the tiles. For the freshening of areas that have become dull with use.
Heavy Soiling	Wexa Removes old layers of wax, polishes, floor care products, sealing substances, permanent shine emulsions, oil / grease spots, soot, rubber and tar stains. Dirt is suspended in a solution so that it can be washed away with water.

Terracotta		
Regular maintenance for both Classic and Synthetic Systems	Easycare Ever-Sheen	maintains the tiled surface as new cleans and enhances the surface shine
Classic System	Classic Wax	use when old wax layers have become dull

DEVI underfloor heating has been designed as a floor warming system to enhance the comfort of a tiled floor. It can help reduce heating costs where it is installed but is not intended as a replacement for radiators.

Before ordering the heating mat, it is advisable to sketch out the room including any permanent fixtures like baths, pipes, kitchen units, fridge, etc. The sketch will indicate the area that can be walked on and from that the size of the required mat can be determined. It is important to keep in mind that the heating mats cannot be shortened, overlapped or the elements pushed closer together. The heating element is spaced on a mesh roll to ensure optimum heat distribution and efficiency. Should the elements cross over or be pushed closer together, the element can be irreparably damaged. The position of the connection cable should also be taken into account when planning out the mat layout, ensuring that it is able to reach a convenient point for a connection box or the control thermostat.



Fitting onto Concrete Floors

Concrete must be dry clean and free from dust and loose material. Any pits or large cracks should be filled to provide a level surface. If in doubt use a self levelling screed to refinish the floor area. Cut a channel into the concrete approximately 10mm deep and wide to house the temperature sensor, making sure that the end of the sensor is at least

6 Timber Backgrounds

300mm into the heated area and away from any walls. Once the element has been circuit tested the self adhesive mat should be rolled out onto the floor. At the end of a mat run, cut the mesh, turn the mat and lay the next piece beside the first. On concrete floors it may be necessary to secure the mat with nails, being sure not to damage the red element wire. The red wire must not be cut or damaged at any stage during installation. Once the mat is in position the elements should be covered by a layer of appropriate flexible adhesive. To protect the element from damage spread the adhesive with a rubber grout float to make a smooth even surface that just covers the red wire. This first adhesive bed should be left to dry properly before applying the adhesive to fix the tiles.

Fitting onto Wooden Floors

Under no circumstances should the DEVI underfloor warming system be fitted directly to a timber based floor when covering with tiles. Prepare wooden floors as described in Preparing Timber Backgrounds. The heating mat fitting procedure is the same as for a concrete floor except for the points below.

Wooden Floor Prepared with Wedi Board

To fit the temperature sensor a channel must be cut into the Wedi board to house the sensor tube which should then be covered over with either waterproof or standard jointing tape depending on the use of the room.

Wooden Floor Prepared with Ditra Matting

The sensor tube must be rebated into the Ditra matting and covered with Kerdi jointing tape. If the Ditra has been used over an uneven wooden floor, then it may be possible to fit the sensor within the Arditex Levelling Layer. Nails and screws should be avoided as they will compromise the effectiveness of the waterproof membrane. Once the Ditra matting has been fitted, an adhesive layer should be smoothed over the top at 2 – 3mm thick prior to fitting the heating element.

In all cases a qualified electrician should be engaged to connect the heating mat system to the electrical supply.

Preparing Timber Backgrounds

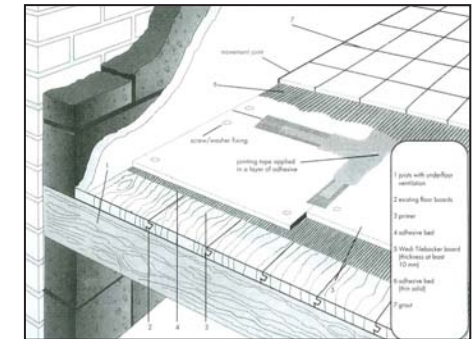
Timber will always move to a certain extent through thermal expansion, deflection, vibration or differential movement. In addition, where movement of the top surface of the timber is restricted by means of solidly fixed tiles, the movement within the body of the timber will cause stresses to build resulting in the tiled surface or the grout cracking. There are a variety of covering systems available that allow wooden backgrounds to move without affecting the tiles on the surface while maintaining a strong bond, but in all cases timber must be properly secured before further work takes place.

Walls

It is essential to ensure that all wooden backgrounds are fully sealed against moisture. Some types of marine ply have a dye in them that will cause a reddish /orange stain to be drawn through adhesive which can bleed through to the surface of natural stone or blemish the appearance of glass tiles. This can only appear if moisture is able to absorb into the wood surface. Seal plywood with Ardex P82 primer in dry areas, or Ardex S1-K Waterproof Coating on intermittently wet wall areas. It is essential to use a flexible adhesive when tiling onto primed timber surfaces. Ardex-flex 5000, 5001 or 6001 are recommended.

Floors

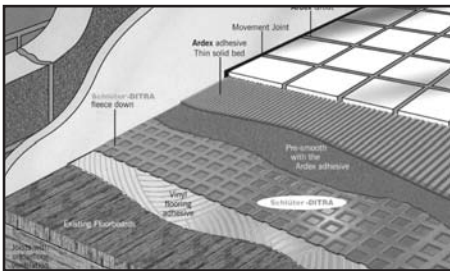
Chipboard or hardboard is not an acceptable background for tiling. If chipboard or hardboard has been installed or is in situ it will need to be replaced or covered with a suitable material for tiling. Any plywood flooring should be a minimum of 18mm thick, cross laid over existing floors and screw fixed at a maximum of 300mm apart. Floors prepared with timber sheet material should be flat, level and in a sound, stable condition. Floorboards must be secured with twin screw fixings as they cross each joist.



The timber floor should be primed with P51 primer before fixing Wedi boards, in a brick pattern, with a 3-4mm solid bed of Ardex-flex 7001. The boards should be screw fixed at a rate of 5 fixings per square metre, remembering to use washers to prevent the screw heads tearing into the board. In wet areas the screw and washer fixings should be covered with waterproof jointing tape. The joints between the Wedi boards should be strengthened with TT25

jointing tape in dry areas or Waterproof Jointing Tape in wet areas. Both tapes are fixed in a fine bed of Ardex-flex 5000, 5001 or 6001 to provide a suitable seal.

In areas over 20 square metres GF matting should be fixed over the whole area in a fine layer of Ardex-flex 5000, 5001 or 6001. This will not be necessary if Devi underfloor heating is to be installed.

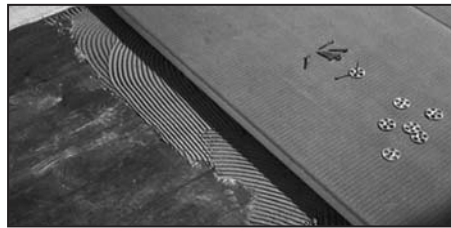


Ditra matting performs a similar function to Wedi board without using any mechanical fixings. The wooden floor should be secured in the same manner prior to fitting Wedi board. Ditra matting is attached to the floor with the fleece side facing down using Ardex AF200 adhesive. Any joints between rows of matting should be covered with Kerdi-Keba band fixed with Ardex-flex 5000, 5001 or 6001. Once the joints have cured and hardened an even layer of adhesive should be spread over the Ditra matting to smooth it ready for tile fixing. Once the smoothing layer has been completed and is dry, the tiles can be fixed using a thin solid bed of adhesive. It is important to note that the chosen tiles must be 50x50mm or larger when using Ditra

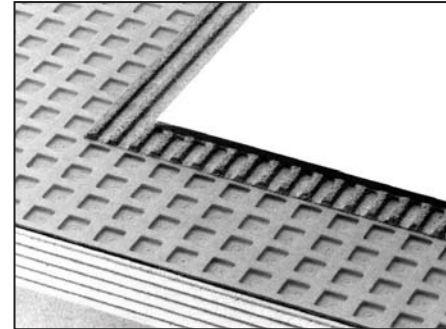
Matting. If smaller mosaic tiles are to be used on the floor then the timber will need to be prepared with Wedi board. In all cases the final adhesive depth over Ditra matting must not exceed 10mm.

Levelling Timber Floors

Once the floor has been secured using the above methods it should be checked to see if it is out of level. The following method may be used to achieve a level floor.



Any gaps between timber sheets or floorboards should be filled and badly worn or damaged floorboards replaced. ArditeX levelling compound can be applied from a feather edge up to 12mm thick as required. Once the ArditeX has thoroughly cured an overlay of 10mm Wedi board may be laid across the surface and screw fixed through the ArditeX and into the timber floor. It is important to use the PW60 washers when using screws with Wedi as they stop the screw heads tearing through the board and provide a secure fixing. The screw fixings must not be further apart than 300mm, with care being taken to ensure the corners and edges are securely braced. ArditeX levelling Compound should never be used on timber unless covered with an overlay.



The levelling method is slightly different when using Ditra matting. Once the timber floor has been secured, attach the Ditra matting using Ardex AF200 adhesive. The Ardex AF200 adhesive will cover approximately 3 square metres per litre using a 2x6mm vinyl notch trowel. Seal any joints in the Ditra by fixing Kerdi Keba jointing tape with Ardex-flex 5000, 5001 or 6001. ArditeX levelling Compound may be applied on top of the Ditra matting to provide a level floor surface. Unlike the previous method there is no need to overlay the ArditeX with boards before tiling.

Ditra Matting requires filling to make a smooth surface for tiling. As a guide the following amounts of adhesive or levelling compound should be allowed for when working out the required quantities.

Ardex-flex Adhesives:
approx. 2 kilos per square metre

ArditeX levelling compound:
2.6 kilos per square metre

If a securely fastened timber floor is too uneven for Ditra matting to directly follow the contours then it may be necessary to apply ArditeX levelling compound first. Ditra matting can be used to overlay levelling compound in the same manner as Wedi board but without the need to use screw fixings. The Ditra matting can be fixed to the ArditeX with Ardex AF200, once the levelling compound has cured and hardened. Kerdi-Keba band should be used to dress the joints in the matting and a smoothing layer of adhesive is required before tile fixing takes place.

7 Waterproofing Shower Walls

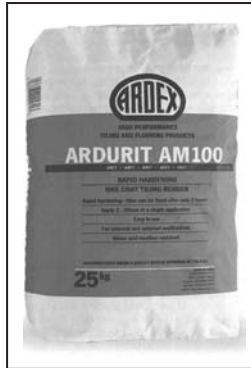
There is no such thing as watertight cement based grout or adhesive. Most flexible grouts and adhesives are described as water resistant which means that moisture will still get through. The practical aim of tiling a shower area is to make the wall waterproof and provide a reliable seal against a bath or shower tray. To ensure that the water within the shower is properly contained, a waterproof membrane must be used on the wall areas to protect any absorbent surfaces from water damage.

It is essential to use a waterproofing material over plaster, plasterboard, brickwork, blockwork, concrete or wooden backgrounds. Failure to install a moisture barrier will result in water building up behind the tiles and soaking into the background which, over time, will cause the adhesive to detach allowing the tiles to buckle, crack or come off completely.

Where the basic construction of shower walls is studwork, the simplest form of waterproofing is to use the Wedi board system fitted directly onto the studs. See Wet Rooms for the fitting procedure.

Existing shower areas should be made ready by smoothing all the surfaces that will take tiles. Plaster needs priming with P51 primer before applying Ardex S1-K Waterproof Coating. New plaster must be at least 4 weeks old before applying the primer and coating.

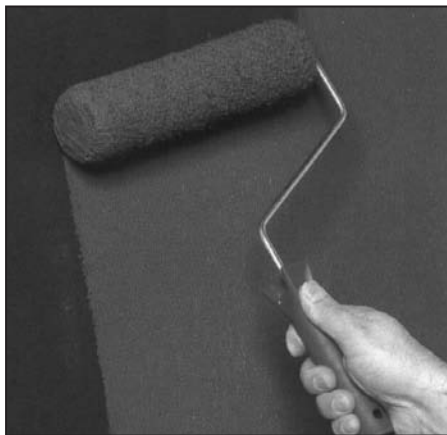
Uneven surfaces can be flattened by rendering with Ardex AM100 rapid setting render. The area must be dry, clean and free from dust and any oil / grease deposits before applying the render. In



situ concrete walls, brickwork and blockwork should be at least 6 weeks old to allow for drying and shrinkage to occur. A thin skim coat of render should be applied to the wall before

spreading the required thickness of render over the top. The render can be smoothed with a wood float 40mins – 1 hour after application at 20°C. The waterproof coating can be applied after 2 hours at 20°C.

The first coat of S1-K Waterproof Coating can be applied with a brush or roller. Make sure that the coating is applied evenly, has made a full contact into any corners and is applied below the level of the shower tray.



Any joints in timber panels should be covered by self adhesive jointing tape and secured with the waterproof coating. (see fig.1)

Any gaps around pipes that emerge through the boards should be filled with a stiff mix of the S1-K Waterproof Coating. The second layer of waterproof coating can be applied approximately 2 hours after the first. (see fig.2)

Where walls meet a shower base, a flexible joint should be created to seal any fine gaps around the tray. Run a bead of silicone around the shower base ensuring proper contact between the wall and tray. The silicone should then be smoothed down in between the walls and tray. To help create clean edges, apply masking tape on the top sides of the shower tray before applying the silicone, leaving a margin from the wall that is equal to the thickness of the tiles. Carefully remove the masking tape before the silicone has cured. Once the silicone has set, fitting the tiles can begin. Room should be left between the lowest tiles and the shower tray for a further silicone seal.

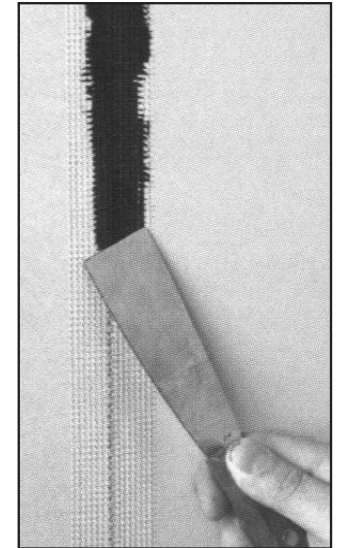


Figure 1



Figure 2

8 Wet Rooms

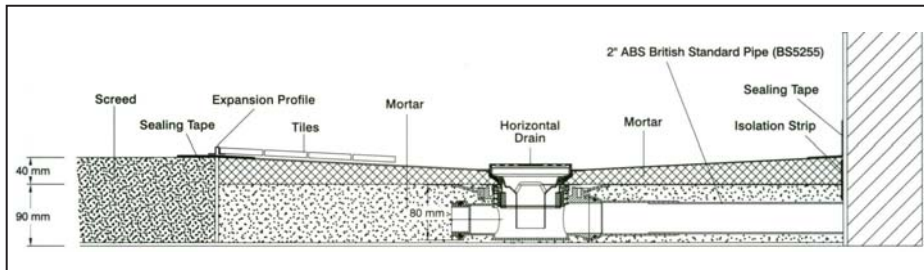
Wet rooms are increasingly popular as they dispense with the need to install a visible shower tray, creating a seamless uncluttered space. The general aim in preparing a wet room is to turn the room into a stable waterproof box with a drain in the floor. This can be achieved relatively simply by using the Wedi system.

There are several differing methods to installing Wedi depending on the existing walls, floor and type of tile being fitted as a covering. Wedi boards should be fitted without leaving gaps between the boards. All joints should be covered with standard or waterproof tape depending on the final use of the area. The tape is applied into a skim coat of adhesive over all the joints between the boards so that it is firmly bedded and free from trapped air bubbles. Immediately

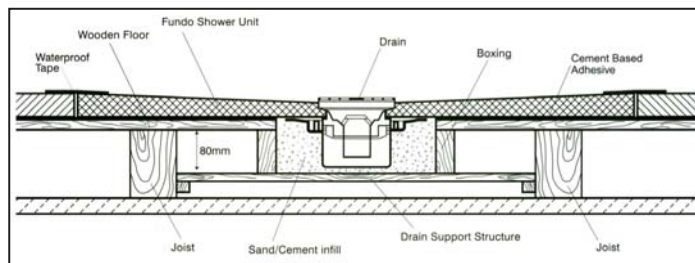
after the tape has been fixed another coat of adhesive is applied over the top of the tape and feathered off with the surface of the board. Once the tape fitting is fully dry the tiles may be fixed.

Wedi Fundo Shower Trays

The Fundo shower trays are supplied with a drain kit with either a horizontal or vertical drainage coupling to fit a 2" British Standard Pipe. The trays can be installed onto wooden or concrete floors but in each case there must be a solid support underneath the tray, as they are not strong enough for use directly onto timber joists. A solid bed of an appropriate flexible adhesive should be used to secure the trays in position. On a wooden floor, a box for the drain will need to be constructed between the joists to provide adequate support for the trap.



The Fundo tray can be inset into a concrete floor in areas where it is not possible to increase the floor height.



Fixing Wedi onto Stud Walls and Partitions

The distance between the upright timbers in the wooden framework will dictate the thickness of Wedi board required. A general guide is as follows:

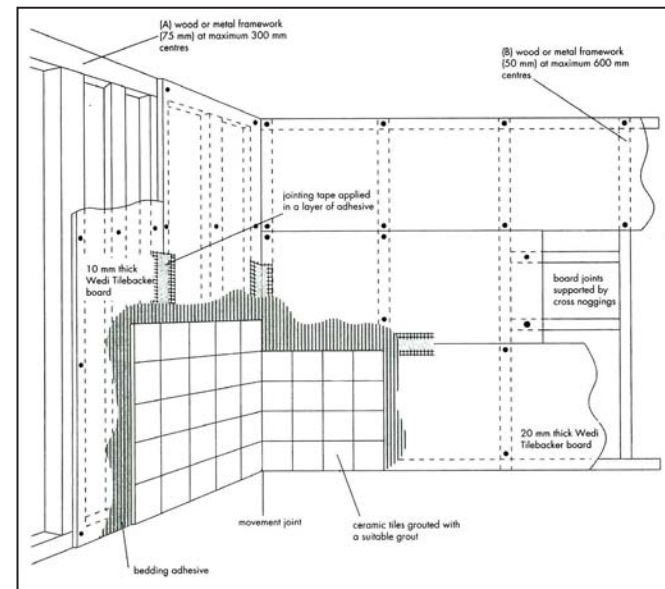
Wedi Board Thickness	Maximum Distance Between Uprights
10mm	300mm
12.5mm	400mm
20mm	600mm

The boards are fixed to the framework using a screw fixing with a Wedi washer. These are fixed at a rate of five per square metre for glass mosaic

and ceramic tiles and eight per square metre for natural stone. The fixings must be a minimum of 30mm from the edge of the board. It is recommended to prime the fixing holes with silicone sealant or cover the screw head and washer with waterproof jointing tape. The screw/washer fixing must be tightened up to the surface of the board. Tap the washer with a rubber mallet so that it is flush with the surface of the board and re-tighten the screw. All joints between the boards should be dressed with waterproof jointing tape.

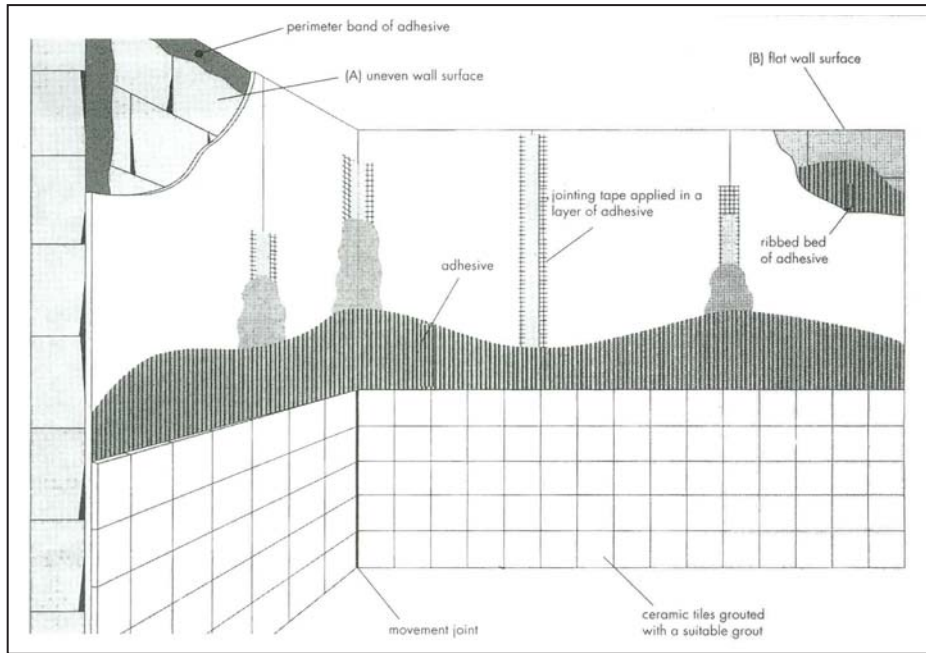
Fixing Wedi onto Solid Walls

On flat walls the procedure is straightforward. PD80 Plastic dowels should be used to fix the boards directly to the wall. The dowels should be used



at a frequency of five fixings per square metre when preparing for ceramic tiles, or eight fixings per square metre when preparing for stone. Once the wall area is covered, the joints between the boards and fixing points can be dressed with waterproof jointing tape.

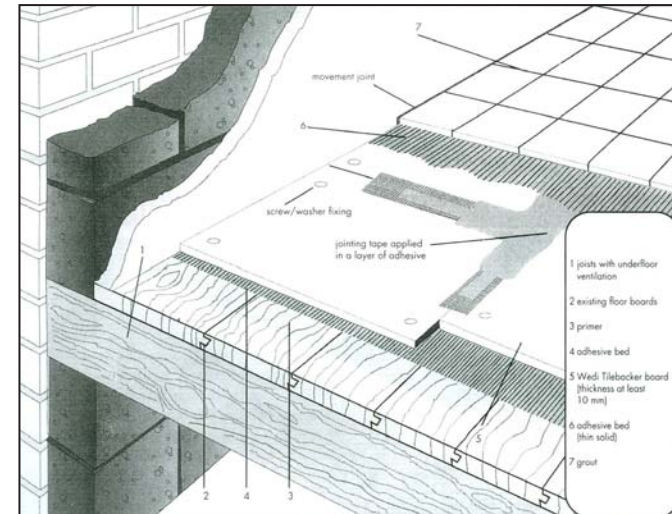
On uneven wall surfaces or on walls where the integrity of the background is in doubt, a minimum of 10mm board



should be used. Adhesive is applied to the wall to provide perimeter strips or dabs. Whilst the adhesive is still fresh the board is placed into position and tamped into place using a timber batten, ensuring good all round contact is made and a true surface achieved. Once the adhesive is fully dry, drill holes through the board and dabs with an 8mm bit. Drive PD80 dowels into the holes and hammer flush into the board surface, ensuring that the dowel is embedded into the structure of the wall. All joints between the boards and fixing points must be dressed with waterproof jointing tape, once the adhesive holding the boards is fully dry and has hardened.

Fixing Wedi onto Timber Floors

Suspended timber floors should be level and securely fixed as described in Preparing Timber Backgrounds. The outside edge of the Wedi shower trays is 40mm thick. To achieve a seamless surface the depth of the Wedi board continuing across the floor should also be 40mm thick. Prime the wooden floor with P51 primer and fix the Wedi boards in a staggered formation in a solid bed of Ardex-flex 7001. For rooms that will not have a Wedi shower tray, a minimum thickness of 10mm Wedi board should be used to prepare the floor, unless glass floor tiles have been



chosen. If glass floor tiles are going to be used then a minimum thickness of 20mm Wedi board is required. Once the adhesive has cured screw and washer fixings should be secured at five per square metre. Once the adhesive has set and hardened, the joints and fixing points can be dressed with waterproof jointing tape embedded in Ardex-flex 5000, 5001 or 6001. It is important to dress the perimeter of the room with waterproof jointing tape to provide a seal against the wall, using Wedi pre-formed corner seals where necessary. If there are 15mm pipes rising through the floor, Wedi pipe sealing collars should be fitted. Larger pipes or fittings that penetrate the Wedi floor should be fitted with Wedi drain sealing collars. All corner pieces and collars should be fixed with Ardex-flex 5000, 5001 or 6001. Areas over 20 square metres should be covered with a layer of GF matting bedded in a skim coat

compound before fitting the Wedi floor. Any preparation screed or levelling compound must be left to dry thoroughly and have enough time for any shrinkage to occur.

The Wedi boards should be bedded in a solid bed of Ardex-flex 5000, 5001 or 6001. The adhesive can be spread using an 8mm notched trowel. The boards must be fixed in a staggered formation and the adhesive must be allowed to set and harden before dressing the board joints with waterproof jointing tape.

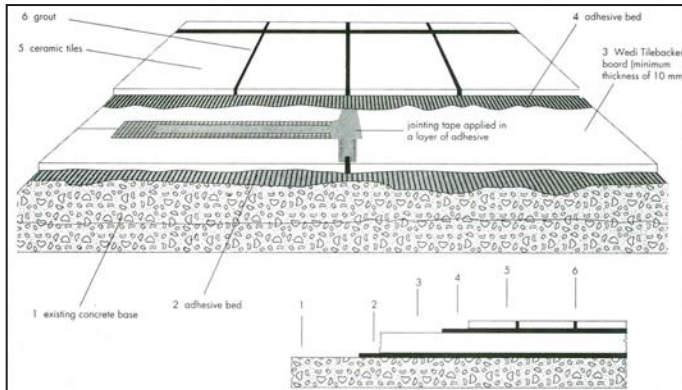
It is important to dress the perimeter of the room with waterproof jointing tape to provide a seal against the wall, using Wedi pre-formed corner seals where necessary. If there are 15mm pipes rising through the floor, Wedi pipe sealing collars should be fitted. Larger pipes or fittings that penetrate the Wedi floor should be fitted with Wedi drain sealing collars. All corner

of Ardex-flex 5000, 5001 or 6001. The GF matting will not be necessary if Devi underfloor heating is to be installed.

Fixing Wedi onto Concrete Floors

Concrete floors should be dry, clean and free from grease / oil deposits. If the floor is not level, it can be prepared with Arditex levelling

9 Sound Deadening



joints can be sealed with Ardex WPC Waterproof Coating. Tiling can begin once the waterproof coating is fully dry.

Glass mosaic tiles are often only 4mm thick. The grid frame to Fundo is designed for 6 – 8 mm tiles. Using 4

pieces and collars should be fixed with Ardex-flex 5000, 5001 or 6001. Areas over 20 square metres should be covered with a layer of GF matting, bedded in a skim coat of Ardex-flex 5000, 5001 or 6001. The GF matting will not be necessary if Devi underfloor heating is to be installed.

Preparing Wedi Shower Trays for use with Mosaic

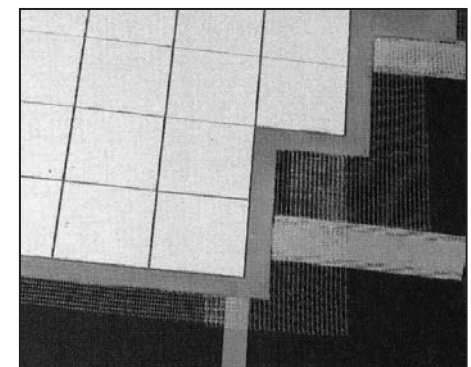
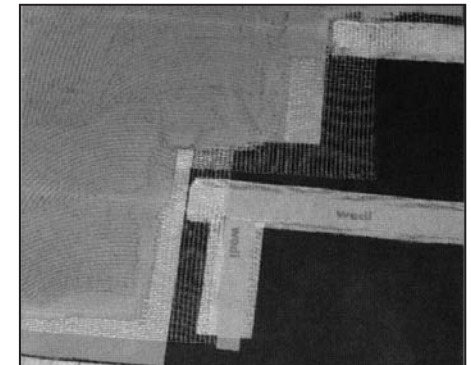
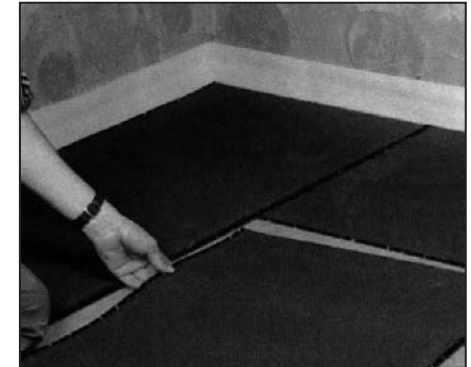
Mosaic by nature is very thin and will reflect any bumps and imperfections that it is fixed to. The waterproof jointing tape used to seal all joints between Wedi boards has a thickness that can affect a mosaic covering. In order to ensure that the Wedi system is fully waterproof and flat enough not to interfere with a mosaic finish the standard jointing tape should be used in lieu of the waterproof. Once the appropriate areas are fitted with Wedi board, the joints between boards should be sealed with standard jointing tape fixed in place with waterproof coating. Joints on wall areas can be sealed with Ardex S1-K Waterproof Coating. Floor and wall area

mm tiles will require the area immediately around the grid frame to be 'built up' to ensure the 4mm tile finishes 'flush' with the top of the frame and the Fundo unit drains correctly. The height difference can be adjusted by carefully applying a layer of adhesive to the area immediately surrounding the grid frame. Once this layer has fully set and hardened, the adhesive bed that will attach the mosaic can be applied. The 'build up' layer must be applied separately rather than using an extra thick layer to attach the mosaic. Thick adhesive will be harder to control when applying the mosaic and is likely to squeeze through the grout joints to the surface of the tiles. There is also the possibility that the thick adhesive bed will shrink enough during hardening that it will detach from individual mosaic tiles or even split them.

Sound deadening is generally used over timber and concrete floors to reduce the amount of foot traffic noise travelling through to the space below. The system also reduces impact noise in the areas where it is installed. There are two sound deadening options available that will suit particular flooring needs.

Non Step Plan is a 6mm thick flexible material that can reduce surface impact noise by 14 dB. With its flexible nature it can easily adapt to slight irregularities in the prepared floor. All timber floors should be made ready as described in **Preparing Timber Backgrounds**. Lay the Non Step Plan panels on the floor in a staggered pattern. The joints should be secured with masking tape to keep the Non Step Plan in place while further work is carried out. If the floor is part of a wet area, the joints should be reinforced with waterproof jointing tape fixed with Ardex-flex 5000, 5001 or 6001. Cover the floor area in GF reinforcement matting being sure to overlap the matting lengths by 5 – 6 cm. Cover the GF reinforcement matting with a bed of Ardex-flex 5000, 5001 or 6001. The tiles can now be fixed. It is recommended that tiles are at least 200x200mm or larger when using Non Step Plan. Flexible grout must be used to finish the tiles, Ardex-flex FS or FL grouts are ideally suited to this application.

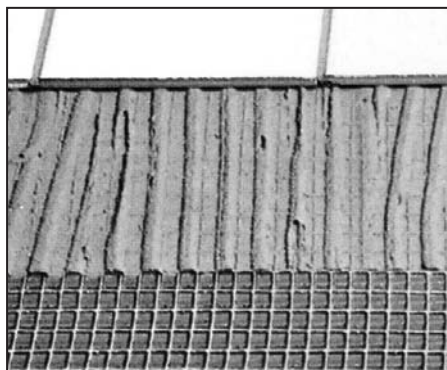
If the installation is over a slightly sprung floor, epoxy grout must be used to finish the tiles, eg: Ardex WA Epoxide Grout.



10 Tiling Balconies

Non Step Plus is thicker at 12mm, requiring the floor to be both level and rigid prior to fitting. Non Step Plus is made from the same material as Non Step Plan but includes an offset 6mm Wedi board bonded onto one surface. Non Step Plus can reduce impact noise by 16dB. The boards are arranged together loose in a staggered pattern, ensuring that an isolation strip is used around all wall joints. If the floor is part of a wet area, the joints should be reinforced with waterproof jointing tape fixed with Ardex-flex 5000, 5001 or 6001. Cover the whole area with GF reinforcement matting, making sure that all matting edges overlap by 5 – 6 cm. Cover the reinforcement matting in a bed of Ardex-flex 5000, 5001 or 6001. The tiles may now be fixed. As the Non Step Plus is fitted over rigid floors and is a stiff board, there is no size restriction on the choice of tile to be fitted. Where mosaic is to be fitted in a wet area, waterproof jointing tape should not be used. The floor should be covered in GF reinforcement matting. Ardex WPC Waterproof coating must be applied to all the joints between the boards to ensure a proper seal is achieved, prior to bedding the remaining GF reinforcement matting in flexible adhesive. Flexible grout must be used to finish the tiles, Ardex-flex FS or FL grouts are ideally suited to this application.

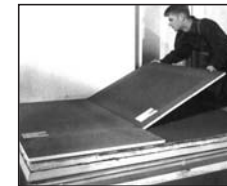
It is important to note that mechanical fixings are not recommended for use with either of the Non Step systems. Any screw fixings or nails that penetrate Non Step will act as vibration conductors, allowing sounds to be transferred into the sub-floor which will defeat the purpose of the sound deadening layer.



There are a few points that should be considered before choosing a method for tiling a balcony. If the existing balcony has a covering of asphalt or other bituminous substance, then the Wedi Balco system should be used with a specialist primer. To refinish a concrete balcony or cover existing sound tiles, Wedi Balco can be used, to provide a fully waterproof covering onto which tiles can be fixed. Under no circumstances should an attempt be made to tile directly onto asphalt. Asphalt is not a stable covering, being prone to softening in warm temperatures. If tiles are fixed directly, they will not be properly supported in warmer weather causing grout joints to fail or the tiles to become uneven or crack.

Wedi Balco onto Concrete Balconies

Old tiling on the concrete should be made good by removing any loose material and filling any voids with a standard mortar. Ardex S21 will be suitable for most applications. If not already carried out, the surface must be clean, dry and free from any grease or oil deposits prior to installing the Balco boards. Using an 8 or 10mm trowel comb a bed of Ardex-flex 6001 and apply the Balco board, ensuring a solid contact is achieved and maintaining a minimum 1.5% fall gradient. Balco boards must be fitted directly next to each other without gaps between them. When the balcony is fully covered with the boards they must be finished with the Balco sealing set over all joints between boards and joints between the walls and boards. The sealing set comprises of the sealing tape and specially designed adhesive to ensure a waterproof seal. The exposed edges of the boarded balcony should be seamlessly



fitted with the Pro Balco EKL stainless steel edging profile for protection and to provide an elegant finish. The Pro Balco EKL profile is fixed through the adhesive that fixes the tiles which in most cases will be Ardex-flex 6001. The tiles may be finished with a suitable flexible external grade grout either Ardex-flex FL or Ardex C2 with E101 flexible additive.







11 Fitting Product Descriptions





Wedi Balco onto Asphalt Balconies





Any existing tiling or loose material should be taken back until a flat asphalt surface remains. This system should not be used where asphalt is in excess of 20mm thick. Roofing felt should be fully bonded, sealed and secure to the supporting substrate. The asphalt / roofing felt should first be primed with Combite Epoxy Primer. A quartz sand blinding is applied whilst the epoxy is wet. When dry the excess un-bonded sand should be removed. The Balco boards may be fixed with Ardex-flex 6001 adhesive or in the case of an uneven surface, Balco MBM Mortar can be used to build up / level and bond the Balco to the prepared balcony, ensuring a minimum gradient of 1.5% is maintained. Once the boards have been fixed and the adhesive has been allowed to set properly, the joints may be sealed in the same manner as before using the Balco sealing set, covering all joints between the boards and between boards and walls.





The edges of the balcony must be seamlessly fitted with Pro Balco EKL stainless steel profile which can be bonded in place with the adhesive bed that fixes the tiles. Ardex-flex 6001 will be suitable in most cases. The tiles can be finished using a suitable flexible external grade grout. E 101 must be incorporated where Ardex C2 grouts are selected. Ardex-flex FL grouts are suitable for use without the need for an additive.










Cement-Based Adhesives		
	Ardex X7	Extremely versatile adhesive for internal / external applications, swimming pools, etc., suitable for walls and floors. Available in Grey or White. Can receive light traffic after 24 hours and will be fully hardened after 3 days. Coverage: 1.3kg / sqm / mm of bed thickness. Pot Life: 5 hours Open Time: 20 minutes Adjustment Time: 10 minutes Grout After: at least 24 hours (Swimming Pools 3 days)
	Ardex S16	Grey rapid hardening and drying wall and floor tile or natural stone trafficked 2-3 hours after fixing. Coverage: 1.4kg / sqm / mm of bed thickness. Pot Life: 30 minutes Open Time: 10 minutes Grout After: 2 hours
	Ardex S16W	White rapid hardening and drying wall and floor tile or natural stone adhesive for internal use in dry or intermittently damp locations. Can be trafficked 2-3 hours after fixing. Ideal for fixing translucent marble and glass tile and mosaics when E90 admixture incorporated. Coverage: 1.4kg / sqm / mm of bed thickness. Pot Life: 30 minutes Open Time: 10 minutes Grout After: 2 hours
	Ardex S20	Grey, flexible rapid hardening and rapid drying natural stone tile adhesive, reduced risk of water staining. Depth of bed from 5mm to 20mm thick, ideal for uncalibrated natural stones. Can be trafficked 3 hours after fixing. Coverage: 1.2kg / sqm / mm of bed thickness. Pot Life: 45 to 60 minutes Open Time: 10 minutes Grout After: 3 hours



Cement-Based Adhesives		
	Ardex S20W	White, flexible rapid hardening and rapid drying natural stone tile adhesive, reduced risk of water staining. Depth of bed from 5mm to 20mm thick, ideal for uncalibrated natural stones and translucent marble. Can be trafficked 3 hours after fixing. Coverage: 1.2kg / sqm / mm of bed thickness. Pot Life: 45 to 60 minutes Open Time: 10 minutes Grout After: 3 hours
	Ardex-flex 5000	White, flexible tile adhesive for internal / external use, swimming pools, etc. For use with all tile types including fully vitrified, porcelain, glass and mosaics. Suitable for walls and floors. Can be trafficked after 24 hours. Coverage: 1.2kg / sqm / mm of bed thickness. Pot Life: 90 minutes Open Time: 15 minutes Adjustment Time: 20 minutes Grout After: 4 – 8 hours
	Ardex-flex 5001	Grey, flexible tile adhesive for internal / external use, swimming pools, etc. For use with all tile types including fully vitrified, porcelain and mosaics. Suitable for walls and floors. Can be trafficked after 24 hours Coverage: 1.1kg / sqm / mm of bed thickness. Pot Life: 5 hours Open Time: 10 minutes Adjustment Time: 20 minutes Grout After: 4 – 8 hours
	Ardex-flex 6001	Grey, flexible rapid hardening and rapid drying natural stone tile adhesive, reduced risk of water staining. Depth of bed from 5mm to 20mm thick, ideal for uncalibrated natural stones. Can be trafficked 3 hours after fixing. Coverage: 1.2kg / sqm / mm of bed thickness. Pot Life: 45 to 60 minutes Open Time: 10 minutes Grout After: 3 hours

Cement-Based Adhesives		
	Ardex-flex 7001	Grey or White, rapid hardening and drying, flexible cement-based tile adhesive for internal use. Specifically designed for fixing all types of floor tiles, including porcelain to wood-based sheets and boards. Surfaces must be prepared with P51 primer prior to applying adhesive. Can be trafficked after 2 hours. Coverage: 1.4kg / sqm / mm of bed thickness. Pot Life: 60 minutes Open Time: 15 minutes Adjustment Time: 15 minutes Grout After: 2 hours
	Ardex D20	Ready mixed adhesive for fixing ceramic tiles and mosaic to internal walls in dry or intermittently damp locations. Either the tile or the wall should be porous. Coverage: 1 litre / sqm / mm of bed thickness. Pot Life: n/a Open Time: 20 minutes Adjustment Time: 40 minutes Grout After: 24 hours
Bedding Mortars		
	Ardex S21	Rapid hardening pourable floor tile bedding mortar for large format tiles. May be used to smooth rough bases and make up screed levels. For internal / external applications. Tiles can be trafficked 3 hours after fixing. Coverage: 1.8kg / sqm / mm of bed thickness. Pot Life: 30 minutes Open Time: 10 minutes Grout After: 3 hours
	Ardex-flex S38	Rapid hardening pourable floor tile bedding mortar for fixing all types of ceramic floor tiles, mosaics, etc. Its enhanced adhesion properties and pourable consistency make it ideal for solid bedding, fully vitrified and porcelain large format tiles. For internal / external applications. Tiles can be trafficked 5 hours after fixing. Coverage: 1.3kg / sqm / mm of bed thickness. Pot Life: 2 hours Open Time: 30 minutes Adjustment Time: 30 minutes Grout After: 5 hours

Epoxide Adhesive		
	Ardex WA	<p>White or Grey solvent free adhesive where high standards of hygiene, chemical resistance and cleanliness are required. Suitable for use in hospitals, abattoirs, dairies, steam rooms, hydrotherapy and spa baths, swimming pools and commercial showers. For internal / external use to fix wall and floor tiles. Tiles can be trafficked after 12 hours and are subject to full loads after 2 days. WA becomes chemically resistant after curing for 7 days. Apply at temperatures above 10°C.</p> <p>Coverage: 4kg / 1.4 sqm fixing tile 4kg / 2.2 sqm fixing mosaic</p> <p>Pot Life: 85 minutes Open Time: included in above Adjustment Time: included in above Grout After: 12 hours</p>
Grout		
	Ardex C2	<p>Coarse wall and floor grout for internal / external locations, including swimming pools. Ideal for use with tumbled marble and other rustic finish tiles. Incorporate E101 additive for use in wet or intermittently damp areas.</p> <p>Joint Width: 2mm upwards</p>
	Ardex-flex FS	<p>Water and dirt repellent, flexible tile grout. Suitable for use in internal / external locations, including swimming pools. Fine texture is ideal for use with rectified tiles, glass, mosaic and other high gloss finishes.</p> <p>Joint Width: Up to 4mm</p>
	Ardex-flex FL	<p>Rapid setting, flexible and water repellent grout for wall and floor. Suitable for both internal and external locations, including swimming pools. Coarse texture is ideal for tumbled marble and other rustic finishes.</p> <p>Joint Width: 3mm to 15mm</p>

Grout		
	Ardex GK	<p>Rapid setting and hardening grout for internal and external use. Suitable for floors and walls. Incorporate E101 admixture when using in wet or intermittently damp locations.</p> <p>Joint Width: 3mm upwards</p>
	Ardex MG	<p>Rapid drying marble and natural stone grout that virtually eliminates the risk of water staining on the edges of moisture sensitive stone tiles. E101 must not be incorporated into MG grout. MG has been specifically designed for use with stone fixed to concrete or screeds.</p> <p>Joint Width: Up to 8mm</p>
Epoxide Grout		
	Ardex WA	<p>White or Grey solvent free grout where high standards of hygiene, chemical resistance and cleanliness are required. Suitable for use in hospitals, abattoirs, dairies, steam rooms, hydrotherapy and spa baths, swimming pools and commercial showers. For internal / external use to finish wall and floor tiles. WA becomes chemically resistant after curing for 7 days. Apply at temperatures above 10°C. Some surface discolouration or scratching may occur when used with natural stone or soft glazed ceramic tiles. If in doubt carry out a trial application.</p> <p>Joint Width: 2mm to 12mm</p>
Admixtures		
	Ardex E101	<p>Gives elastic and water repellent properties to Ardex grouts as well as improving adhesion. Gives additional protection to moisture sensitive backgrounds in bathrooms, showers and kitchens. Provides flexible joints between tiles fixed to backings subject to movement such as plasterboard, plywood, etc. Makes joints more elastic between tiles fixed to heated sub-floors and to substrates still subject to drying shrinkage.</p> <p>Is not required with Ardex-flex products and must not be used with Ardex MG products.</p>

Admixtures		
	Ardex E90	Produces a mortar that has high adhesive strength, elastic and water repellent properties once set and hardened. Suitable for use with Ardex X7, S16 and S21 mortar. Ideal for use when fixing large flat backed tiles and slabs as well as smooth backed, dense and impervious ceramics, porcelains, mosaics, etc. It is also useful to improve adhesion when direct fixing tiles onto existing glazed surfaces and for improved protection of moisture sensitive backgrounds. Is not required with Ardex-flex products.
Primers		
	Ardex P51	This product is used diluted with water, to prepare internal surfaces to receive cement-based levelling compounds, adhesives, screeds as well as plaster-based materials and Ardex S1-K Waterproof Coating, improving adhesion and inhibiting penetration of water. It is used as a pore sealer on cementitious or plaster surfaces. It can only be used to prepare timber, undiluted, prior to applying Ardex-flex 7001. Coverage: 1kg diluted 1:3 with water / 20 sqm on plaster 1kg undiluted / 3.5 sqm on timber
	Ardex P82	Two part water based synthetic primer and bonding agent for the preparation of smooth, dense or impervious surfaces to take cement-based adhesive. It is also suitable for priming wood-based backgrounds such as marine ply, except when using Ardex-flex 7001. Coverage: 1kg / 5 to 10 sqm pending on surface Tile After: 3 to 6 hours Repeat application if left longer than 4 days Waterproof Coatings

Waterproof Coatings		
	Ardex S1-K Ready Mixed Waterproof Coating	For sealing internal domestic wall areas prior to fixing tiles. Can be applied directly to rigidly fixed wood-based boards of a type suitable for supporting tiles. P51 must be used on plaster walls prior to applying S1-K Waterproof Coating. It can be used to reinforce Wedi standard jointing tape in preparation for mosaic tiling. S1-K is applied with a brush or roller. Two coats required with at least 2 hours between coats. It can be used as filler into corners and around pipes. Coverage: 8kg / 7.2 sqm Fix Tile After: at least 12 hours
	Ardex WPC Waterproof Coating	A two component waterproof protection component for use on both domestic and commercial walls and floors in preparation for cement-based adhesives. Priming is not required before using WPC Waterproof Coating. It can be used to reinforce Wedi standard jointing tape in preparation for mosaic tiling. WPC is applied with a brush or roller and can be mixed to a thicker consistency to act as filler around pipes, holes and board joints. Two coats required with approximately 1 hour between coats. Pot Life: 45 minutes Coverage: 10kg / 6.6 sqm Fix Tile After: 2 hours

