

Natural Stone Flooring

INSTALLATION & MAINTENANCE TECHNIQUES FOR INTERNAL & EXTERNAL FITTING OF NATURAL STONE FLOORING TILES

This leaflet outlines the basic principles of fitting and maintaining natural stone flooring tiles, but does not constitute a fully in depth document due to the extensiveness of this topic. We have attempted to present 'best practice' when installing natural flooring products, and to achieve the desired affect whether a seasoned professional or an absolute beginner.

For more detailed technical reports, reference can be made to British Standard BS5385 1994 Wall and Floor Tiling.

Remember to read carefully the manufacturer's instructions on any packages of adhesives, grouts and sealants.

Please follow the golden rule of tiling and keep everything meticulously clean and dry.

SUBFLOOR

The solidity of the subfloor onto which tiles are intended to be laid must be suitable for the purpose intended. The floor's surface must be level, dry, clean and free of any dust, grease or loose material. This is for both interior and exterior floors.

Sand & Cement Screed

When installing onto sand and cement screed, each 20-30mm of screed takes approximately 1 week to dry properly or longer if adverse weather conditions prevail. Fresh screed will shrink during drying which can create cracks. This may cause the tile to split if not properly dry prior to installation.

Timber Floors

Timber floors if suspended must not flex and the extra load weight of the natural stone tiles must be accounted for. A method of preventing movement would be to affix 18mm plywood or water-resistant chipboard over the floor and screw down firmly at 140mm intervals.

A flexible adhesive and grout must be used when fixing onto timber floors.

Internal installation onto existing Glazed, Clay, Stone, Vinyl, Linoleum etc.

In a perfect world all floor coverings and adhesives will have previously been taken up and surfaces properly cleaned, but if this is not the case and existing flooring is in good repair then natural stone tiles may be fixed over the existing flooring subject to all grease residues being removed.

Cork & Wooden Existing Flooring

Cork and wooden flooring should be fully removed. Any bitumen left on the floor should also be removed.

Damp

Before installation, damp proof membranes should be checked for existence or effectiveness and installed or replaced if necessary.

Unlevelled Floors

A floor with minor bumps and hollows can be levelled by applying more or less adhesive to the underside of individual tiles during installation. In the case of a very uneven floor, a levelling compound should be used.

Underfloor Heating

It is possible to lay natural stone tiles in situations where underfloor heating is utilised.

PLANNING

- It is advisable to plan your tiling from the corner furthest from the primary entrance.
- To obtain the centre line, measure and mark the middle of opposing walls AB and CD. Join these points with string to locate the centre point.
- From the midpoint of the centre line lay down tiles without fixing them, allowing for joints, to see where the last whole tile will end. Mark a line at a right angle alongside the last whole tile.
- Locate starting point along the new line in the same way as before to see where the last tile will end. Now mark the sideline at a right angle alongside the last whole tile.
- Now check that the line comprises of a perfect right angle, and that the sideline runs parallel to the centre line. Please ask for our fact sheet for a more detailed picture guide.

Grout Joints

According to personal taste, this can be between 2mm and 10mm.

FIXING

- Make sure tiles and sub floor are clean and dry.
- It is recommended that a PVA bonding agent is applied to cement screed floors, or an Acrylic bonding agent is applied to timber floors.
- Mix Tile Adhesive or Rapid Set Adhesive, making sure that only sufficient is mixed for use, as unused material should be discarded. Do not add further water.
- Apply adhesive to a floor area of around 1m² using a notched trowel. Do not exceed more than 10mm depth of adhesive. Do not screed more adhesive than can be tiled in 20 minutes.
- Fix in starting position (see planning) and press tiles firmly into place. All tiles should be firmly pushed down allowing no space for air underneath.
- Place the next tile adjacent, and so on, allowing for grouting space. Provide movement joints as required by BS5385.
- Clean any adhesive from the surface of the tile with a clean damp cloth as soon as possible. Set adhesive will prove very difficult to remove.
- Clean all tools immediately after use.
- Once the main area is completed prepare the perimeter and adhere pre-cut tiles, as long as the adhesive is adequately cured.
- The adhesive must be given a minimum of 24 hours to dry, or in accordance with manufacturer's instructions, prior to sealing and grouting.
-

CUTTING

A water-fed diamond cutter is required for the cutting of all natural stone tiles. It is advisable to hire this equipment from a local hire company. We also recommend that you advise the hirer what it is you are cutting so they can check what blade you will require.

GROUTING

- Before grouting all adhesive must have dried properly. Normally drying time is 12-24 hours, unless fast set adhesive is used then a drying time of 4 hours is normally adequate. Thicker beds of adhesive and cooler temperatures will all slow down the drying times.
- Make sure all joints are clean and dry & the tile surface is free from any dust residue.
- Leave to dry for 24 Hours or until fully dried before sealing.
- A thin layer of a recommended Sealant should be applied with a lint free cloth or a small sponge roller; this will act as an impregnator and stop the grout from staining the tiles. One coat should be applied depending on the porosity of the stone; a second application may be required.

- This undercoat treatment absorbs into the stone reducing its porosity, but will help to protect against staining.
- We advise the joints be filled by a spreading or 'slurry process'. The tile surface must be kept clean at all times.
- Grout must be pushed down firmly and all joints well filled as no air should be allowed to remain in the joints. The more grout used means it will set harder.
- It is essential that excess grout is removed with a damp cloth or sponge continually, to ensure the floor is as clean from grout residue as possible.
- Leave to dry for a minimum of 24 hours.
- After grouting, ensure that the floor is both perfectly clean and dry.
- Clean the finished floor with **clean luke warm tap water** to remove any stubborn grout stains, leaving to fully dry before applying a second coat **SEALANT**.

The overall strength of the floor is dependant on the quality of grouting, which must support all the tile edges.

SEALING

Natural stone is virtually maintenance free when sealed correctly. It is strongly recommended that all natural stone floorings are sealed and allowed to dry before use. Tiles are sold untreated, therefore, may look different to any samples or printed matter.

- Prior to sealing ensure that all areas are clean and dry otherwise dirt and damp will be sealed in.
- Apply the recommended Sealant 24 hours after grouting and apply using a small sponge roller or a lint free cloth, firstly applying in a left to right motion than up & down. Do not pour sealant on, as an even spread will create a better appearance. The tiles will quickly absorb the first coat.
- It is advised to work on an area of 1m² at a time.
- We suggest 1-2 applications depending on porosity of the stone. Leave to dry for approximately 2 hours.
- Repeat the application if required. Leave to dry for approximately 24 hours depending on room temperatures.

Exterior Installation

For exterior installations use the recommended sealant, available on request.

Natural stone tiles are porous hence when laid outside there is a risk that moisture will be absorbed and the tiles may be susceptible to frost damage if an extremely cold temperature persists. By using the correct sealer the risk of damage is minimised.

MAINTENANCE

The above sealants protect the stone by forming a barrier against dirt and stains but are not a stain proofing system.

All Sealer's on the market will usually protect stone flooring up to 4 – 8 hours before stain damage occurs. It is vital that acidic liquids/foodstuffs be wiped up straight away, i.e. Red Wine, Orange juice, Vinegar, Oils, Tea, Coffee, otherwise they may stain the floor.

It is vital that the protection is maintained. **Harsh cleaners will erode the finish and should not be used.**

The appropriate recommended MAINTENANCE CLEANER will both clean and prolong the life of the protective surface finish applied.

We recommend the floor be cleaned with a light brush & not a Vacuum Cleaner as this may scratch the surface of the tiles & we also recommend the floor be mopped once a month depending on the foot traffic.

When mopping try to clean out the mop bucket as often as possible, as highly textured stone will hold dirt & grime more so than any smooth finished products.

The cleaner the water, the better the appearance of the floor in the long run.

If the recommended floor-cleaning products are used then this will help you achieve the best looking floor and also keep the floor looking beautiful for years to come.