

BESWICK STONE

CIRENCESTER

Best Practise Guide:

Natural Stone Installation: Internal - screed/concrete subfloors

Preface

It is important to preface this Best Practise Document (hereafter referred to as BPD) with the fact that every installation will have its own unique set of challenges & unknown obstacles. This could be anything from old, crumbling screeds through to damp issues. Every challenge or obstacle likely has a remedy, but it is not the purpose of this BPD to address these issues. We make assumptions that each base, be it timber or screed, has been correctly prepared/installed/updated to receive the floor covering chosen. We do, however, make mention of some key points that we believe are important to highlight.

Please note this is a guide only and does not replace the need to employ a competent, experienced & insured installer who can advise on your specific installation. Beswick Stone is a supply only company and is not liable for any installation claim that may arise.

Introduction

Irrespective of the sub-floor your stone will be installed upon, the actual process of installing the tiles is exactly the same, the differences lay in the way each sub-floor is prepared to receive the stone. Therefore, this BPD first runs through the common sub-floors and the best practise preparatory steps involved and then, starting on page 5, describes the actual stone tile installation process.

Contents:

Page 2	List of Adhesive Colour and our Stones
Page 2	Extant Sand & Cement Screed or Concrete sub-floor no UFH <i>Inspection – Priming the Sub-floor</i>
Page 3	New Sand & Cement Screed or Concrete sub-floor no UFH <i>Curing</i>
Page 3	Anhydrite/Gypsum Screed no UFH <i>Curing – Scabbling - Priming</i>
Page 4	Heated Screeds <i>Decoupling Membrane - Flexible Adhesive & Grout</i>
Page 5	TILING BEST PRACTISE
Page 5	Readying the Stone
Page 5	Adhesive
Page 5	Joints Between Tiles

Page 6 Sealing Step 1

Page 6 Grout

Page 6 Sealing Step 2

List of Adhesive Colour and our Stones

It is essential that the correct coloured (white or grey) adhesive is specified when installing stone. Whilst white adhesive can be used for installing ALL our stones, grey adhesive cannot and can only be used on the stones specified.

Grey Adhesive Stone List:

Ashton Grey	Raj Beige	Raj Black
Raj Grey	Jaipur	Old Heritage
Pewter	Slade	Windsor

Stones where White Adhesive must be used:

Abbey	Avignon (all types)	Castile (all types)	Cavendish
Cirencester Gold	Clyde	Dayton	Dijon
Hebron Cream	Keynes Mix	London White	Mixed Seam (all types)
Provence	Regent	Silver	Velvet Beige
Villiers Grey			

Installing onto an extant sand & cement screed or concrete floor with no underfloor heating (UFH)

Inspection & Remedial Action:

The sub-floor must be inspected prior to tile installation to ensure that it is stable & level. By stable we mean that there are no loose, wide-cracked or crumbling areas. These must be addressed before tile installation by a suitable method such as repairing failing areas with new screed, concrete or similar (be sure to follow the manufacturer's guidelines). Uneven floors can be levelled by using a floor levelling compound. Once any remedial or levelling works are complete and dry the floor must be thoroughly vacuumed & swept to be clear of all debris and dust.

Priming the sub-floor:

Your extant floor, whether or not any remedial works were undertaken, must be primed before installation with an acrylic primer specifically manufactured for the job. We recommend Rocatex Acrylic Primer for this purpose. The Acrylic Primer is diluted 1:1 with clean water and applied to the clean & dry floor surface following the manufacturer's instructions on the tin. Two coats must be applied.

Installing onto a new sand & cement screed or concrete floor with no UFH

Curing:

When installing onto a new sand & cement screed or concrete floor the only difference to what is described under the previous section (“Installing onto an extant sand & cement screed or concrete floor with no underfloor heating”) is that these new floors must cure to a level before the inspection*, any necessary remedial works and priming can be carried out. A sand & cement screed will generally be cured for tiling 3weeks after pouring whilst a concrete floor will generally be ready after 6weeks.

*One might expect that with a newly installed sub-floor an inspection would not be necessary & certainly remedial works not required. However, we have seen numerous poorly installed new screeds, particularly uneven and unlevel screeds, to know that this isn’t the case.

IMPORTANT: As this guide is a ‘Best Practise’ guide it does not cover the use of decoupling matting on green (new) screeds with no UFH. This is a widespread accepted practise however, so information on this is available in our ‘General laying procedure - stone onto NEW screed (not cured) no underfloor heating (UFH)’ guide which can also be downloaded from our website.

Installing onto a new Anhydrite or Gypsum Screed no UFH

For the purpose of this BPD we assume that any Anhydrite or Gypsum Screed is a new screed, specified and installed for your project. You will need to confirm information with the screed installers that is vital for your stone installer.

Curing:

Anhydrite screed drying times must be followed. This type of screed will dry at approximately 1mm per day up to 40mm thick and 1mm every 2days for every mm of thickness above the 40mm. For example, a 65mm thick screed would take 90 days to dry. Once the drying time has been reached the moisture content of the floor needs to be tested. This test requires specialist equipment (hygrometer) and it would be recommended to ensure your builder or their subcontractor be made responsible for signing off on the screed being ready for tiling. Tiling can begin once the moisture level is 0.5% or lower by volume or 2% if you use a decoupling matting/membrance such as Ditra-matting.

Scabbling:

These types of screeds often produce a thin, white laitance which is loosely bonded to the surface and which dries to a crust. This crust must be removed to reveal the aggregated material underneath. Scabbling machines are available from some plant hire places and are really the only way to absolutely ensure the screed is scabbled correctly. Scabbling by hand is not considered best practice. Alternatively, you may want to instruct a specialist to undertake this essential work to ensure it is done correctly.

Priming:

You cannot use cement-based tile adhesives directly onto these types of screeds as a chemical reaction will occur which will destroy the bonding capabilities of the adhesive. Once the screed is

dry and scabbled, it needs to be primed with a minimum of 2 coats of neat acrylic primer – we recommend Rocatex Acrylic Primer for this purpose.

Installing onto Heated (warm water system) new Sand & Cement and Anhydrite/Gypsum Screeds

Once all the unique preparatory work is done there is no difference to the tiling stages and products used whether your sub-floor is sand & cement or anhydrite/gypsum. IT IS important however that the following is followed:

Heating system:

Your UFH system must have been commissioned and tested before tiling commences in accordance with the UFH manufacturer's recommended process of heating & cooling. This will be different based on your type & depth of screed, so we'd advocate strong & clear communication with both the screed manufacturer/installer and the UFH manufacturer/installer.

Once your screed is cured & primed, the UFH is commissioned & tested, and a decoupling membrane installed (see below) tiling can commence but only after the UFH has been off for 2weeks to allow the floor to cool. NB: once the tiling has been completed the UFH should NOT be switched on for 14days and then only at 2degree increments up to a maximum of 28°C surface temperature.

Decoupling Membrane:

It is absolutely best practice to use a decoupling membrane on all UFH systems. This product essentially decouples the stone tile from the sub-floor, allowing absorption of some movement & stress that may occur in the screed, to not be transferred to the stone floor. Decoupling matting should be installed following the manufacturer's guidelines – generally this would be fleece side down, into a bed of grey adhesive and only after the screed has cooled.

Flexible Adhesive & Grout:

It is essential that flexible adhesives are used in both the installation of the decoupling matting and the stone tiles. For the decoupling matting a GREY S1 grade flexible adhesive can be used (we recommend Rocatex S1 Grey rapid set adhesive). Depending on the type of stone tile (please refer to page 2 of this guide) either a WHITE S1 grade or GREY S1 grade flexible adhesive needs to be used (we recommend Rocatex S1 White or Grey rapid set adhesive). Grouts must be both a suitable wide joint grout and flexible – we recommend Ardex FL grout.

END OF SECTION

TILING BEST PRACTISE

Readying the stone:

This section is very often omitted and almost certainly the cleaning part would not be included in any normal quote or estimate from a natural stone installer. It is, however, best practise and hence included here. As a homeowner if you do not want to undertake this step yourself ensure you ask your potential installers to include it in their works quote.

Unload your stone from the crates carefully paying attention to the corners when removing from the crate & carrying and setting them down. Store them in the dry. Stone tiles should always be stacked upright, face to face, taking care to protect the edges – use a softening material such as dry timber battens to place them on.

The tiles should be clean and dry before any installation. The tiles will likely need cleaning as it is common for them to be packed wet and in some cases residues from the cutting process will need to be washed off with clean water.

Adhesive Type & Application:

A good quality powdered adhesive suitable for use with natural stone must be used. We stock Rocatex S1 rapid set adhesives in both Grey and White. As an average guide a 20kg bag of powdered adhesive will cover 2.5 to 3.5sqm depending on the thickness of the stone tile & evenness of the sub-floor. Adhesive is applied to the floor aiming for 100% total coverage using a notched trowel. The size of the notched trowel depends on various factors such as the thickness of your tile, the evenness of your sub-floor etc. The tile is then embedded onto the adhesive ensuring a level surface – a clean white rubber mallet & a clean spirit level are good tools for this. Clean off any excess adhesive that may squeeze up and onto the top of the tiles immediately with clean water. Follow this process for all tiles ensuring your cleaning water is replaced frequently. Cleaning the floor as tiling progresses is essential to achieving the best result, avoiding dried on adhesive which will be an enormous challenge to remove. Once the whole floor is laid and the adhesive set (refer to the manufacturer's instructions) the floor should be thoroughly cleaned once more using clean water and a stone cleaner (we recommend Rocatex Tile & Stone Cleaner for this purpose). If adhesive has been allowed to dry on the surface of the tiles you may require a stronger cleaner than the standard Tile & Stone Cleaner. In this case we'd recommend Rocatex Tile & Stone Renovator.

Joints between tiles:

Many experienced natural stone installers tend only to use tile spaces on square edge tiles. Certainly, for all the stones covered here, they can be more of a hindrance than a help as the stones have tumbled or aged edges. Laying is therefore often done by eye but the minimum gap appropriate for all these stones is 3mm. This is measured at the square base of the tile, not the upper, aged edge. A tile with a gently aged edge spaced at 3mm therefore, will result in a visual grout line of approximately 4 to 6mm whereas a tile with a heavy, distressed edge will result in a visual grout line of 6-12mm+.

Sealing Step 1:

All our natural stones covered in this BPD require sealing. It is best practise to apply sealant before grouting (sealing step 1) and then again after grouting (sealing step 2). Sealants can be solvent based or water based; generally, the solvent-based sealers will darken the stone, enhancing the inherent characteristics whilst a water-based sealer will keep the stone close to its raw, dry colour. For the purpose of this BPD, when we refer to 'sealant' or 'sealer' we mean an impregnating sealer and NOT a surface waxed-based sealer. There are many sealers on the market but we stock only the brand leader Lithofin Stainstop in both its solvent based MN form and the water based W form and Rocatex Sealant, again in the solvent based Natural Finish Sealer and the water based C-10 Ultimate Sealer. The first application of sealer is the most important and this is where the stone will take up quite a bit of sealer depending on its porosity. Apply following the manufacturer's directions on the tin.

Grout Type & Application:

Grouting should only be started once the whole floor is installed, the adhesive has cured, the first application of sealant has been done and the tiles are clean & dry. Stone tiles are to be installed with what is commonly known as a wide joint grout which also must be flexible if you are installing onto a heated screed. We stock Ardex FL grout in 5 popular colours for all our natural stone. Mixing must be done following the manufacturer's guidelines printed on the bag. Application is commonly done using a grout rubber squeegee, grouting in an alternating diagonal direction across the joint will ensure the grout gets forced down fully into the joint. As per adhesive, it is important to clean any grout residue of the face of the tiles as your progress – dried grout is also an enormous challenge to remove. Use clean water, clean sponges and change the water very frequently as it will hold a lot of grout in suspension. Be careful not to wipe out grout from the actual joints. Again, as per adhesive, once the grout has set (refer to the packaging) the whole stone floor should be cleaned using clean water and a stone cleaner.

Sealing Step 2:

Once the grout is set and the floor is clean and dry, the next application of sealer can be done. The application is exactly the same as Step 1 – just follow the manufacturer's instructions on the tin.

NB: Solvent based sealers will dry after approximately 2hours & Water based sealers after 1hour but they BOTH do not become fully cured nor protective for a further 70hours. DO NOT cover the floor with anything during this time and be sure that any spills of any type of product are wiped up immediately. If possible, in your schedule of works, avoid scheduling any works in the room/s of the new floor for 3days.