Welcome to the Digby Stone Maintenance and Laying Guide

Designed as an easy to use, working document for anyone using Digby Stone products. This guide is a useful companion to the Digby Stone brochure and has been designed to give instructions/tips on laying our products, and also help with the maintenance and upkeep of the stone once laid.

You can also find downloadable PDF's of our laying patterns, colour charts and other useful information on our website - www.digbystone.com.

Please note: All products must be inspected prior to installation, checking the colour, veining, thickness, sizing and finish. NO claims will be accepted for any reason after the product has been installed or if the product has been altered in any way after delivery.

Please note that all recommendations/instructions are given as guidance only and Digby Trading Ltd accepts no liability for any loss, damage or injury howsoever caused as a result of following them. Please refer to our website for our full terms and conditions. Always work in a safe manner in accordance with current health & safety legislation. For advice on how to contact us tel: 0300 003 1747 or visit www.hse.gov.uk.

Digby’s Top Tips

Step-By-Step Laying Guidelines - Natural Stone

Porcelain - Benefits & FAQs

Step-By-Step Laying Guidelines - Porcelain

Patio Maintenance - Cleaning & Sealing

General Information

View as large an area of your chosen paving as possible before purchasing to ensure you are happy with your choice - contact us to find out your nearest stockist.

Inspect your product to make sure you are completely happy before you lay. We advise that dry laying products before laying them permanently is the ideal way to do this.

Always use an SBR bonding agent on the back of natural stone, and always use a Universal Slurry Primer pro, or a slurry primer equivalent, on the back of porcelain tiles.

Never use brick acid or acidic cleaning products on natural stone. Always check that cleaning products are suitable for use on porcelain.

Always mix packs whilst laying to achieve an overall blended appearance.

Never use jointing compounds on natural stone. Always check that cleaning products are suitable for use on porcelain.

Always lay paving on a full bed of mortar and never use the spot bed method - see our step by step laying guides for more advice on this.

Never butt joint paving when laying - you should always use an appropriate joint for your chosen product. Digby Stone products should be laid with a minimum 10mm joint.

Always use an SBR banding agent on the back of the natural stone, and always use a Universal Slurry Primer pro, or a slurry primer equivalent, on the back of porcelain tiles.

Ask your Digby Stone stockist for advice on sealants and jointing compounds.

Please note: All products must be inspected prior to installation, checking the colour, veining, thickness, sizing and finish. NO claims will be accepted for any reason after the product has been installed or if the product has been altered in any way after delivery.
NATURAL STONE - STEP BY STEP LAYING GUIDELINES

The following list of tools and materials are required both for laying natural stone and porcelain.

- **Tools needed:**
  - Gloves & Eye protection
  - Face mask
  - Knee pads & steel toe boots
  - Ear defenders
  - Slate marker
  - Spade
  - Pointing tool
  - Trowel

- **Materials needed:**
  - Paving slabs
  - Sharp sand
  - Mortar
  - Watering can & rose
  - Painting material
  - Universal Slurry Primer Pro
  - Or equivalent (bonding agent or mixed primer)

**IMPORTANT:** All Digby Stone products are designed for domestic landscaping use only. Contact us for information on commercial projects. Products are not designed for use on driveways - suggested - suitable products are marked in this brochure with the car symbol (domestic use only). Ensure driveway laying guidelines are followed.

**IMPORTANT INFORMATION**

Granite ice and granite frost

These products sometimes absorb colour impurities from ordinary Portland cement (OPC). We strongly recommend substituting white cement in the mortar to reduce colour leeching and staining, and using a SBR bonding agent providing a waterproof betonome. Ask the installer to provide a reference you can start laying your flags down on a full bed of slightly wet mortar mix 30-50mm deep. For the mortar mix we advise 1 part cement to 5 parts sharp sand (some contractors use a 50/50 mixture of building and sharp sand).

All products must be laid on a full bed of mortar, especially when using a driveway. A full bed of mortar is key to help reduce moisture transparency or discoloration, as well as to provide a solid base for the patio.

A SBR bonding agent should be used to help the slabs adhere to the mortar bed and provide a waterproof banter. Always use a SBR bonding agent to use our Universal Slurry Primer Pro (or a Slurry Primer mix using cement powder, water and an outdoor based SBR bonding agent to a consistency of grout). When mixed, paint on to the back of each slab with a thickness of 1-2mm before laying when using natural stone. Use a rubber mallet to gently tap down the slabs. Always check the flags are level to the finished patio level, being careful to check you follow your slope level as you go along. To provide suitable run-off during wet weather a fall angle must be considered. Falls must be angled away from buildings or structures at an incline of 1:60 or steeper. For advice, telephone 0300 003 1747 or visit www.hse.gov.uk

For demos and helpful advice, check out the videos section of our website - we cover a range of topics including how to determine the right side of the slab and variations in natural stone.

1. **Before any work is carried out, each piece of natural stone should be inspected prior to laying as pieces will vary.** No returns can be accepted once the product is installed, so it is important to confirm you are happy with your product before proceeding. Work begins, ensure the area is cleared of all vegetation and debris. Then, ideally using a scorched drawing of your planned area, you can start pointing by marking out the space using pegs and a string line.

2. **Dig the ground to a depth of approximately 150mm below the finished patio level (or 200mm deep below the finished driveway level).** Making sure the soil is compact.

3. **In the now excavated area, spread a layer approximately 100mm deep of drainage hardcore (or 125mm deep). Remember to leave room for the thickness of the flags and 30-50mm of mortar. Compact the layer of hardcore thoroughly, ideally using a plate compactor.** Foundation must not be laid on water saturated ground as they may sink in time, creating uneven paving. Extra drainage may be required.

4. **Once happy with the layout, using your line and pegs as a reference you can start laying your flags down on a full bed of slightly wet mortar mix 30-50mm deep.** For the mortar mix we advise 1 part cement to 5 parts sharp sand (some contractors use a 50/50 mixture of building and sharp sand).

5. **All products are designed to be butt jointed, and a suggested joint of approx 4mm should be used.** For products with an aged variation. Due to the composition of natural stone, colour variations may occur after installation.

6. **Some delamination (when riven parts of the stone flake off) variation. Due to the composition of natural stone, colour variations may occur after installation.**

7. **As with all Digby Stone products the spot-laying method is not suitable - always use a full bed of mortar.**

8. **It is important to note that Digby Stone products are not designed to be but jointed, and a suggested joint of approx 10mm should be used.** For products with an aged finish we suggest to increase the joint size accordingly in order to accommodate for any potential variations in edges (between 15 - 20mm approx).

9. **Once the area of the patio is laid down and there are slabs that need cutting, in the case of natural stone a disc cutter with a bi-metal blade or a hammer and chisel is needed to shape your flags effectively.** Please see our porcelain laying advice overleaf for specific guidance on how best to shape your flags with the shapes shown below. The now cut flags you may lay them down (refer to step 4) on a full bed of slightly wet mortar mix. Using a rubber mallet, gently tap down the slabs with a fall of 1:60 to check for a uniform flatness (taking into account a fall).

10. **Once the patio has been fully laid, ideally allow a few days for the mortar to set. There are several ways of sealing the joints between paving slabs - the installer must determine the most appropriate method to use.** Some use a cement based mortar mix and so create a solid, inflexible joint. Others use a modern jointing compound (made from bitumen and sand) commonly known as paving jointing compound. See the porcelain laying guide overleaf for specific porcelain laying instructions. When using any jointing products always follow manufacturer’s instructions.

When laying a driveway

A minimum of 150mm compressed hardcore foundation must be used before laying products for a driveway (only suitable products to be used). It is essential that products are laid on a full bed of wet mortar for driveways.

Circle features

These should be dry laid before final positioning on a full bed of mortar, starting from the centre of the circle outward.

Calibrated products are subject to a minimum of ±4 mm variation. Due to the composition of natural stone, colour variations may occur after installation.

Some delamination may occur after laying - this is perfectly normal and tends to happen near the river part of the slab.

As with all Digby Stone products the spot-laying method is not suitable - always use a full bed of mortar.
**Frequently Asked Questions**

**What are the benefits of using Digby Stone Porcelain?**

Porcelain is the most innovative new product in the world of landscaping. Fired at up to 1400°C, this product offers an exceptional durability alongside high performance technology which allows you to have a low maintenance landscape combined with the beautiful aesthetic of natural paving.

It has numerous beneficial attributes, including:

- Resistant to fading, meaning that the patio will retain its colour
- Easy to clean - porcelain tiles are non-porous, meaning that they are stain resistant
- Little to no moisture absorption
- Slightly textured which provides a slip resistant finish
- Frost/salt* resistant due to its minimal moisture absorption rate
- Designed for exterior use (tiles are 18/20mm thick depending on range)

*When using salt, please use sparingly. Do not leave the salt on the patio for a prolonged period of time - ensure salt is swept away once frost has lifted.

**Porcelain Laying Diagram**

- Porcelain tile
- 1 - 2mm of Universal Slurry Primer Pro painted onto back of tile to assist bonding
- Mortar bed 30-50mm (do not use spot laying method)
- Compressed hardcore - sub-base 50-100mm (type 1 material)
- Ground dug out 150mm deep

**Remember:** To provide suitable run-off during wet weather a fall angle must be considered. Falls must be angled away from buildings or structures at an incline of 1:60 or steeper. An adequate drainage outlet source should be present at the end of the patio’s run off edge. A planning officer may need to be consulted for further advice.

For more advice on cleaning our porcelain tiles, our series of videos includes two helpful guides which demonstrate a series of stain removals from porcelain tiles. The Homeowner video shows stains such as tea, coffee, red wine and barbecue food; and the Landscaper video shows stains which may occur on site including mortar and slurry primer.

Check out the videos section of our website to find out more - scan the code opposite using a QR scanner to view our videos on mobile or visit www.digbystone.com/videos to see our full range of helpful guide videos.
Porcelain - Step by Step Laying Guidelines

We have created a step-by-step laying guide for porcelain products in order to help you get the best results when laying. Please ensure that you follow guidelines when laying Digby Stone porcelain products. Please refer to our natural stone laying guidelines on pages 4 - 5 for a list of tools and materials required for laying porcelain.

1. CHECK YOUR PRODUCT

Ensure that you check your product before laying - we recommend dry laying a random selection of your tiles (from more than one pallet where applicable) to ensure that you are satisfied with the colour variation in the tiles. Claims or returns based on colour variation will not be accepted once the product has been laid. Ensure whilst working with porcelain tiles that they are rested on wooden battens to prevent any edge chipping.

2. PREPARE YOUR BASE

Prior to installation, all necessary ground work should be completed. This includes ensuring there is a sub-base of at least 50 - 100mm thick of type 1 material (hard-core) which has been sufficiently compacted down, with a suitable water drainage fall (a fall of 1:60 is usually adequate).

3. PRIME YOUR SLABS

Apply Digby Stone Universal Slurry Primer Pro (or a Slurry Primer mixed using cement powder, water and an outdoor based SBR bonding agent to a creamy consistency) to the back of each tile before it is laid to help the paving adhere to the bed.

Paving slabs may need to be handled by 2 people (in particular the larger sized slabs). When applying slurry primer, ensure that you rest the tile on wooden battens to prevent any chipping.

4. USE A FULL BED OF MORTAR

Just like our natural stone products, Digby Stone porcelain must be laid on a full wet bed of mortar. We recommend a mixture of a most consistency (rather than runny) with approx. 4:1 sand to cement.

5. LAY YOUR SLABS

It is essential that each tile is tapped down to ensure as much of the tile as possible comes into contact with the mortar. When laying your project, ensure that you mix tiles to achieve an overall blended appearance. While the finishes of porcelain have less surface variation than natural stone, they are still designed with a level of variation to add a range of texture to their surface. If within the selection of tiles you encounter any repeat patterns, we suggest that you rotate slabs 90/180 degrees in order to minimise this when purchasing for the same project on separate occasions. In order to ensure that your patio will have an overall blended appearance, always mix from multiple pallets when laying rather than laying one pallet at a time.

6. CUTTING PORCELAIN

Porcelain can be cut with a disc cutter fitted with a suitable-for-porcelain diamond blade (this must be a petrol disc cutter as you must feed the disc with water to cut). However, for nearest accurate cutting, we recommend using a suitable water-fed tile bridge saw. Ensure that appropriate protective clothing is worn while operating machinery.

7. CHECK YOUR JOINTS

Allow for 10-12mm+/- approx joints when laying the tiles. We suggest an outdoor jointing compound (suitable for porcelain) should be used with our porcelain products - please speak to your landscaper or local supplier for the most appropriate jointing compound for your project. As previously stated, Digby Stone porcelain products are not designed to be butt jointed.

8. IMPORTANT - CLEAN THE JOB

If particularly important to work cleanly when laying porcelain, both during and after installation. Once the job is completed, additional cleaning may be required if any residue remains, particularly from jointing compounds. Ensure that the jointing compound has set sufficiently and then clean the tiles with a suitable residue remover (depending upon which jointing compound has been used). Any residue left over from the laying process must be removed as soon as possible - failure to do so may result in staining on the surface of the tile. If your porcelain has been laid in conjunction with any natural stone, ensure that the porcelain cleaner/residue remover you are using does not contain any acid. Any cleaners containing acid will cause damage to natural stone.

9. IMPORTANT INFORMATION

Due to the nature of the production of porcelain, there is a limit to the number of repeated surface textures which are produced for each colour (with the number of repeats varying depending upon range). Whilst we endeavour to maximise the variety of textures within each order, there may be a number of repeats within your order, particularly if you are laying a large area of porcelain. Refer to step 5 for advice on reducing the appearance of repeated slabs.

In porcelain tiles, there may be slight subtle differences in surface texture and finish between tiles. These differences may affect the slip rating or durability of the product and is purely aesthetic.

There will be subtle variation in our porcelain products, intended to mirror the variations found in natural stone products. Porcelain products, much like any other manufactured product, are made in batches. There can be slight shade variations between batches - please consider this when purchasing for the same project on separate occasions. In order to ensure that your patio will have an overall blended appearance, always mix from multiple pallets when laying rather than laying one pallet at a time.

For a full list of tools and materials required for laying porcelain, please visit our website to find out more.

www.digbystone.com/videos

Our porcelain videos provide helpful advice on mixing and applying slurry primer, as well as demonstrating how to clean a range of porcelain surface finishes. Check out our website to find out more.

We would strongly recommend that goggles, eye protection, face mask, knee pads, steel toe boots, suitable protective clothing & ear defenders are used accordingly.

Always check the suitability of ANY cleaning solution with the manufacturer prior to use. Failure to do so may result in permanent damage to the product. Porcelain should not be cleaned with acid or erosive cleaners. In cases where porcelain is cleaned in conjunction with natural stone e.g. borders or sets, acid based cleaner should never be used as this will damage the natural stone. Acid based cleaner should never be used on glazed porcelain.

If your porcelain has been laid in conjunction with any natural stone, be sure to mix from multiple pallets when laying rather than laying one pallet at a time.
In order to help you keep your Digby Stone patio in great condition, we have put together a list of helpful guidelines to follow. Please ensure that suitable safety clothing and equipment is used when cleaning or sealing.

**Cleaning Equipment and Chemicals**

When using a pressure washer, keep the nozzle approximately 15-30cm away from the patio and at a shallow angle (approx. 30 degrees) so that jointing material is not dislodged.

Pressure washers are a good method to remove algae and moss from natural stone but will not remove all stains (such as oil stains). While using a pressure washer, the user must not wear any rings or loose clothing. Pressure not to cause injury.

Kneeling mats or kneepads should be used so as not to disturb the joints of your patio.

The simplest and safest way to clean a patio is to scrub it with a stiff brush and warm soapy water (do not use soap solutions with any sign of acid content). Once dirt and foreign objects are removed from the flags, a watering can or a watering hose can be used to swill the residue away (care must be taken so as not to disturb the jointing materials in both the scrubbing and rinsing of the patio).

For more accurately stained areas, a toothbrush can be used with warm soapy water to help aid in removing more awkward dirt deposits (it is advised that cleaning on your knees is prohibited as this can be very uncomfortable). Always check with the manufacturer’s suitability on your stone appearance to the stone. The choice of sealer to use is entirely personal preference depending upon the desired finish.

**Sealants and Coatings**

It is not necessary to use a sealant on natural stone. However, if it is important to consider which type of sealant to use as different manufacturers specify different enhancements depending upon the product. Some sealers will provide either a permanently “wet”/glassy or a permanently dry appearance to the stone. The choice of sealant to use is entirely a personal preference depending upon the desired finish.

Always check with the manufacturer’s suitability on your stone choice and test on a small area first. When applying sealants always, a kneepads or kneepads should be used so as not to cause injury.

Before using any chemicals, the manufacturer of the chemical should be consulted about its suitability on natural stone. Under no circumstances should brick acid or acid based cleaners be used on natural stone.

Before any chemical is applied to a patio it is advised to see our natural stone laying guidelines for advice (when laying ceramic tiles for a driveway please ensure the advice in our natural stone laying guidelines for laying a driveway is followed).

**Use Around Swimming Pools**

Advice from Digby Trading Ltd should be sought about suitability for use of products around swimming pools. Some products react to the chemicals used to treat pool water, and bonding agents can react to heat from fireplaces.

**Coatings/Sealants**

Sealants is not necessary to use sealants on porcelain paving. If you do wish to use a sealant on porcelain paving, please note that you need to use a sealant that is specifically designed for use on porcelain - sealants which are specific for outdoor use.

Always check with the manufacturer’s suitability on your stone appearance to the stone. The choice of sealer to use is entirely personal preference depending upon the desired finish.

Always check with the manufacturer’s suitability on your stone choice and test on a small area first. When applying sealants always, a kneepads or kneepads should be used so as not to cause injury.

Before using any chemicals, the manufacturer of the chemical should be consulted about its suitability on natural stone. Under no circumstances should brick acid or acid based cleaners be used on natural stone.

Before any chemical is applied to a patio it is advised to see our natural stone laying guidelines for advice (when laying ceramic tiles for a driveway please ensure the advice in our natural stone laying guidelines for laying a driveway is followed).

**Driveways**

Products which are suitable for use on driveways are marked in our product brochure with the car symbol. For further advice please check with your stockist or call us for advice on installation of driveways. It is essential that driveways are laid on a full bed of mortar - please see our natural stone laying guidelines for advice (when laying porcelain cobbles for a driveway please ensure the advice in our natural stone laying guidelines for laying a driveway is followed).

**Indoor Use**

For indoor use, a coating is advised to reduce dusting and make cleaning easier. Always seal the products to avoid staining.

Always seek advice from the chemical manufacturers and ensure you follow manufacturer’s instructions when using sealants.

**Dusting**

Some dusting and dirt marks may be visible on some of our products, due to transportation, which is unavoidable.

**Dimensions**

All dimensions given are nominal and subject to manufacturing tolerances. The quoted sizes and coverages of our paving ranges, except where using minimal joints, are for the overall areas including appropriate jointing, making it easier for you to plan a project and order the right quantities. For a more general guide in tolerances of our products, measure several product samples at a stockist.

**Manual Handling**

Please note: Care should be taken whilst manually handling Digby Stone products to prevent injury and/or damage. Extra assistance may be required.

**Terms & Conditions**

Digby Stone cannot accept any liability if products are used for purposes other than those for which they were intended, or they are laid other than in accordance with recommendations.

The recommendations we provide are for guidance purposes only and any applicable building regulations or planning requirements should be followed at all times.

**Health & Safety**

Always work in a safe manner in accordance with current health and safety legislation.

For advice, telephone 0300 003 1747 or visit www.hse.gov.uk
Please note that all recommendations/instructions are given as guidance only and Digby Trading Ltd accepts no liability for any loss, damage or injury howsoever caused as a result of following them. Please refer to our website for full terms & conditions: www.digbstone.com

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