

## A HELPING HAND

Now you've made the right choice in selecting CTD Porcelain Paving, we've created this guide to help you install your beautiful new paving and then to continue enjoying it for many years to come.

We highly recommend using an experienced professional tradesperson such as a hard landscaper or tiling contractor to pave outdoor areas.

The installation advice in this guide is created to help the homeowner to understand the amount of highly skilled and heavy work involved in installing vitrified porcelain paving, or to help installers, previously inexperienced with porcelain, with an easy go-to reference to get started. Some advice is specific to certain ranges but most of it broadly covers all our porcelain paving products. Experienced external porcelain installers may have slightly different methods or techniques to our suggestions that will still achieve a durable and long-lasting installation, however, we'd strongly recommend you take note of any specific advice. Our advice is don't cut corners as it will cost you in the long run! The two basic construction options, with each of their component layers, are the bare minimum you need to achieve a long-lasting area.

There is also advice on types of use, along with cleaning and maintenance tips.

This guide mainly details our advice for standard external domestic patios and pathways, using foundation bases and laying beds that are common to domestic external hard landscaped paving surfaces, however, we also have advice on page 6 for driveway construction or for sites where a concrete base is required (or is pre-existing).

**If you're in any doubt and need more guidance on any aspects of installation or after-care, please don't hesitate to give us a call on 0800 014 2994 (Mon-Fri 9am-5pm), or drop us a line at [porcelainpaving@ctd.co.uk](mailto:porcelainpaving@ctd.co.uk).**



# HEALTH & SAFETY

We strongly recommend the use of gloves, safety boots, ear defenders and protective clothing.

When cutting our products, it is essential that suitable eye, ear and respiratory protection is also worn. Always ensure that suitable respiratory protection is worn to avoid the inhalation of dust particles produced by high-speed cutting devices.

We recommend that a risk assessment is carried out prior to any works taking place. It is your responsibility to ensure that you comply with all applicable health and safety legislation and guidelines.

## Considerations

- Read this guide in full so you have a clear idea of the construction type, methods and techniques you're going to employ.
- Try and plan a layout that minimises wastage.
- Consider the type of use and traffic your area will be exposed to, in conjunction with your ground conditions; and design an appropriate construction.
- At the front of the property, consider SuDS requirements around water management and design appropriate drainage provision to avoid run off onto the public highway.
- Dig some sample holes to get an idea of your ground conditions. Knowing your ground conditions will allow you to better assess the depth and type of construction required.
- If you are removing large trees etc, consider how this may affect the eco-system and ground conditions in the area of work.
- Be aware of where services are located while excavating, e.g., drains, underground and overhead cables.
- Product specifications are available on request.

## Site preparation

- Think ahead about where you can receive the product on delivery and also where you can store and stack during installation.
- Where will you stand your mixer and aggregates?
- Don't forget your skip.

## Don't forget!

- Remember your PPE! You need safety boots, safety glasses, gloves, ear protection; and appropriate masks (for when cutting the porcelain and handling cement/aggregates).
- Have you got sufficient **BAL Priming Slurry Bond**? Please contact us for nationwide supply.
- Have you ordered enough of our great jointing product, **BAL Terrace Grout**?
- You need an appropriate specialist porcelain cutting blade. We have a range of choices to suit your requirements available online, in-store, or by contacting your sales representative.

## Before you start

- If the homeowner is going to be away during install, then ensure each involved party has a clear understanding of what is required. Do not lay product that is not to expectations. Once product is laid it is not returnable and costs will be the responsibility of the user.
- Inspect paving on delivery to ensure you've received what you've ordered and it's not damaged.
- Ensure you have enough product to complete the project, including an extra 5-10% to allow for cuts, wastage and accidental damage. Experienced users will be aware that cutting vitrified porcelain is not as straightforward as some other paving materials.
- If you have multiple packs, check your batch codes and shade references match. It's a good idea to keep a note of them for future reference.

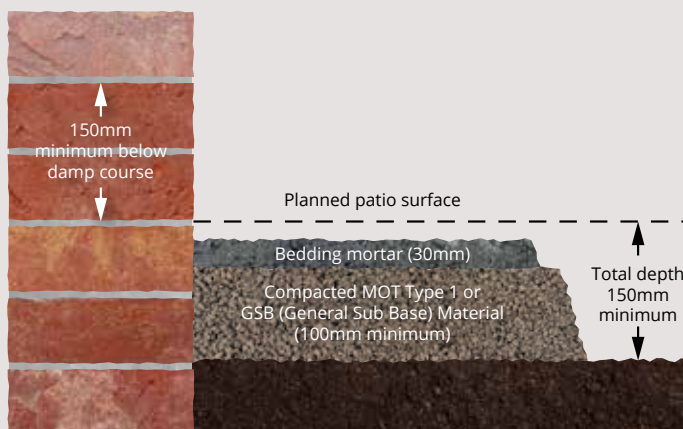
## Vacuum lifters

- We recommend that larger format sizes are lifted by two people. You may wish to look into buying or hiring vacuum lifting equipment to help with installation.
- Even with smaller plan sizes, regular porcelain installers use these types of vacuum tools. They're particularly useful when installing with small 3-5mm joints.
- We have an easy solution for you, look at the **Rubi Suction Cup** available online, in-store, or by contacting your sales representative.



## Foundations and levels

- Important: the finished level of your paving should always be a minimum of 150mm/two bricks, below the damp course membrane (DPC) if your paving is installed up to the house.
- Always install with a fall away to appropriate drainage. This should be a minimum of 1:80, for most settings, 1:60 may be more appropriate to avoid potential ice build-up in winter conditions.
- The finished gradient should also be incorporated into the entire construction, without it, you may have insufficient sub-base when you get to the edge of the area.
- Excavate sufficient depth to allow for your paving tile + laying bed depth + sub-base depth.
- Generally in the UK, for most domestic patios and pathways, a compacted sub-base needs to be a minimum of 100mm, though for many settings, a 150mm compacted sub-base may be more appropriate.
- Saturated ground may need to be allowed to dry out, or you may need to excavate deeper until you get to solid ground. Clay substrates may need special consideration.
- It's best practice to line your ground with a non-woven geo-textile membrane to help with ground stabilisation and stop migration of your sub-base into your soil substrate. Non-woven is better than woven.
- Place and compact your sub-base. MOT Type 1 (DTp1) is commonly used and is aggregated to compact down to a stable, flexible sub-base. Place in layers (maximum 75mm) and compact, repeating until you achieve your desired depth.
- Certain site conditions, or uses, may be better suited to a fully rigid installation using Hydraulically Bound Material — or concrete — rather than just Type 1.



# DOMESTIC PATIO LAYING GUIDE

## Things to remember

- Don't lay product that doesn't meet expectations.
- If laying from multiple packs, even when batch matched, mix the product from the packs as you lay. This will create a natural blend in shades. Even product with the same shade reference and batch number may have a very subtle difference that may only display in bands of colour once laid.
- Protect the edges of the tiles once removed from the packaging if stored on hard standing.
- We recommend you do not lay in temperatures of 5°C and falling.

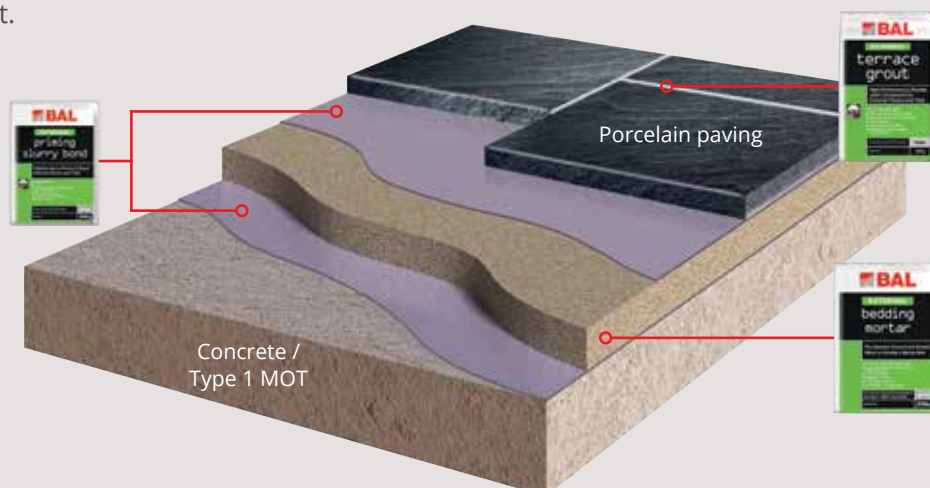
## Laying

Nowadays, there are proprietary bedding mortars available that comply to BS7533. You can still use the traditional mortar mix too. Below we describe both options:

- Set out tight stringlines to act as your guide as you lay.
- **Traditional mortar method** - mix your mortar in a standard tip-up mixer. Five parts sharp sand to one part cement which is appropriate for patios and pathways. Consider using a plasticiser in your water to help with workability. Create a mix that is wet enough to be moulded into a ball without falling apart. Remember it shouldn't be so wet that it cannot support the weight of the tile.

Or:

- **BS7533 conforming pre-blended bedding mortar method** – we recommend **BAL Bedding Mortar**. For full detail and instruction, please contact us.
- Prepare an individual full mortar bed for each tile. It's important that it is as close to a 100% full contact bed as possible. 30mm depth is generally adequate for a domestic patio.
- Spot beds or ring beds are not appropriate.
- It is essential that you use a high-quality priming slurry to ensure you achieve enough adhesion between the tile and the mortar bed. Apply immediately prior to laying. Please contact us for nationwide supply of **BAL Priming Slurry Bond**.
- Tap the tile down onto the bed using a rubber mallet to achieve your desired level, checking the level to your stringlines or spirit level.
- To achieve consistent joint widths, use spacers. For advice on recommended joint widths, please refer to our Jointing section below.
- Never butt joint.



## Cutting

Cutting external porcelain paving is more challenging than other paving products. Use one of our range of specialist porcelain blades to achieve the best quality cut possible. Blunt blades will affect the quality of the cut.

If you have a lot of cuts on your project, it may be worth considering hiring or purchasing a bench cutter. Otherwise, using a powered disc cutter is appropriate. Use a cutter with a water feed if possible. This will help lengthen the life of the blade, keep the blade cooler and importantly, suppress dust.

### Top tips

- If doing a straight cut, cut through the entire tile at each end of the cut first for a length of 50-75mm. This helps stress relieve the tile.
- Keep vibration to a minimum, in both the blade and the tile. If not cutting on a bench cutter, consider G-clamping the tile to a pallet or cutting on a bed of sand or a piece of old carpet or artificial grass.
- Let the blade do the work, don't apply undue pressure whilst cutting. Do not expect to cut through the tile in one sweep as you might do with some paving types.

## Once laying is finished

Do not walk on the paving for a minimum of 24 hours to allow the mortar bed to sufficiently cure, and then fill the joints with **BAL Terrace Grout** or an alternative high quality jointing solution.



## Jointing

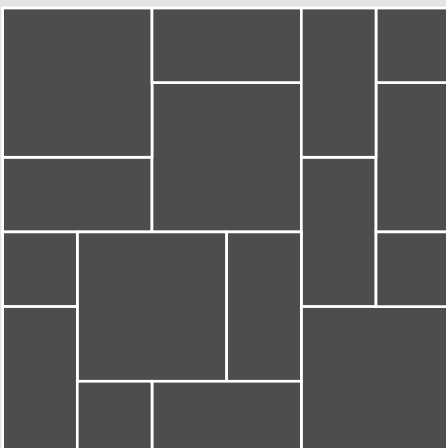
- All our ranges, apart from the *Sandstone* range, can be laid with a minimum joint of 3mm and up to 15mm.
- The *Sandstone* range should be laid with a 5mm joint.

## General principles for multi-size layouts

Try and use the slabs in the quantities as supplied in the pack configuration. Consider whether a coursed layout or more 'random' layout is the look you're after. For random layouts, avoid four slab corners coming together, or two identical slabs laid side by side. Try and avoid 'cross-joints', keep straight lines to a reasonable length, never across the whole area.

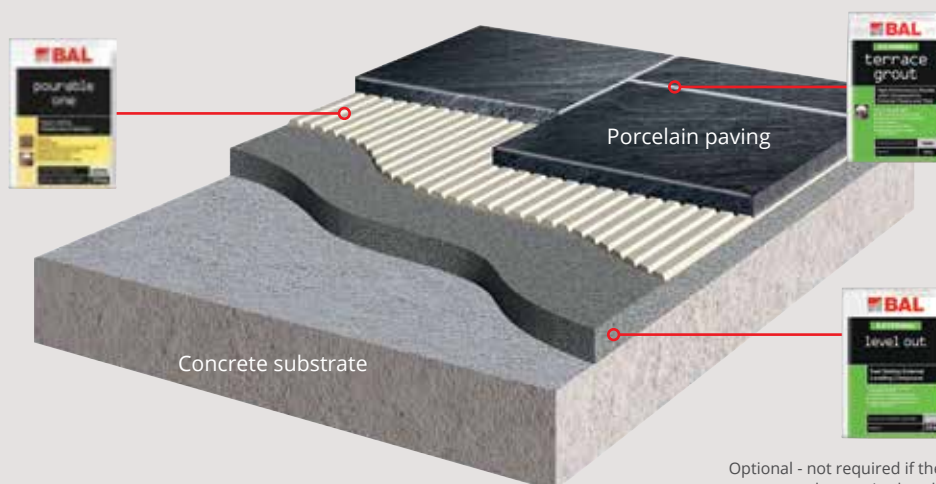
## *Sandstone* collection recommended layout

Please refer to our recommended opus layout, as shown below.



## DOMESTIC DRIVEWAYS

- All our products can be used on domestic driveways, for vehicles up to and including 4x4's and Transit-sized vans (maximum 3.5T), if it is installed on an appropriate concrete, fully bound construction. The tiles should be adhered to the concrete base using an appropriate high performance cementitious tile adhesive.
- Our **BAL Terrace Grout** and **BAL Porable One Floor Adhesive** products are suitable for driveway use.
- Please note, as with all paving products, our products may exhibit tyre marks and particularly in areas of braking and power steering. These surfaces, particularly lighter shades, may require regular cleaning.
- You may need to seek local expert advice on the exact base specification required for your construction.



Optional - not required if the concrete substrate is already fully suitable for direct tiling

## WALL CLADDING

We have several cladding options to either stylishly complement or attractively contrast with your paving options.

For a full installation guide on our cladding products please contact us.

For fixing method, we'd recommend using **BAL Quickset Render** and **BAL Rapid-Flex One**. Please contact us for supply.



## PEDESTAL PRIME

Our **Pedestal Prime Raised Pedestal System** is simple to use. For a detailed guide on how to install it, please refer to our Pedestal Prime Installation Guide available upon request.

## GUIDELINES

### Dimensions

All dimensions are nominal and subject to industry standard tolerances, as per BS EN 14411:2016. All our paving ranges are rectified.

## **Batching and colour variation**

All packs/pallets are identified with a batch reference. You should take care that all your project requirements are ordered together to ensure you receive packs all from the same batch and, therefore, with the same shade reference. However, even when laying from multiple packs of the same batch reference, we still recommend mixing the packs as you install.

Keep note of your shade and batch references. If you ever wish to extend your area in the future, we may be able to help you find as good a match as possible.

Please note, our ranges are reproductions of natural stone or concrete so are designed to have some variation in colouring and/or pattern and/or texture from tile-to-tile.

The images in our marketing literature and sources are for guidance purposes only and are merely indicative of finished shadings and variations.

## **Surface finishes**

All our ranges are classified as having low risk potential for slipperiness and fit for external use. Internal and external paving specifications may vary in surface finish, be assured, both options are tested to the appropriate anti-slip ratings.

## **WEATHERING AND MAINTENANCE**

CTD Porcelain Paving has a high resistance to staining compared to many other external paving types so is easily maintained. However, all external areas are subject to some soiling, therefore need maintenance and cleaning with some sites requiring more than others. Regular maintenance is easily carried out using appropriate products from the Lithofin range. Alternatively, for most domestic settings, scrubbing with soapy water or using a pressure washer on an appropriate setting (we'd recommend with a rotary patio cleaner head) is usually adequate. Please note, inappropriate pressure washing though unlikely to damage your tile, may damage your jointing and other hard landscaping.

During the autumn months, clear up fallen leaves as regularly as you can to avoid more arduous maintenance later on. Leaves can leach tannins that can discolour all your hard landscaping products and may need a little more work to clean up. Gathered leaves will also encourage algae bloom and other organic growths.

## **LEGAL NOTICE**

The information in this Document or on CTD's website is for guidance purposes only and intended to assist you in your purchase and use of the product. CTD will accept no responsibility or liability for reliance on the information provided in this guidance. CTD's sole liability in respect of any products shall be as outlined in the terms and conditions of purchase or in any express guarantee relating to the product purchased. Whilst we work closely with our partners, any arrangement you make or advice you take from them will be subject to your contract with them and CTD has no liability in respect of any act or omission of any third party. Every effort has been taken to ensure that the information contained in the guidance is accurate. All the above generic advice is for guidance purposes only, and only with domestic projects in mind. If in doubt, ask a local expert. Local building and environmental regulations should be always adhered to. The responsibility for designing and specifying an appropriate construction lies solely with the user.