

**BORAL PAVERS**  
Build something great™



# soho®

INNOVATIVE PORCELAIN PAVING SYSTEM

2018



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## Introduction

Thank you for choosing Soho porcelain.

This manual provides valuable tips for laying Soho in order to obtain the best result in terms of appearance and quality.

Building code requirements may vary from area to area. Check with local authorities for building code requirements in your area in order to produce paving in accordance with the best working standards. We also recommend you carefully assess the characteristics of the substructure before doing any type of machining or installing.

Carefully read all information contained in the technical installation guide before proceeding with your Soho installation.

Observe all safety precautions.

### Important

It is to be understood that the requirements and methods detailed in this guide are current at the time of printing. However, they may be modified or completely changed to suit improved techniques or new designs in the future.

## Soho Porcelain

Porcelain is a material with high technical and visual performance.

Soho is manufactured by pressing, followed by a process of vitrification: i.e. the complete melting into a single material of natural raw materials (sand, quartz, feldspar, kaolin, clays, and natural dyes). Once vitrification is complete, the porcelain is cooked at temperatures in excess of 1230°C, resulting in a product of exceptional hardness, that consists ultra-low absorption rate and superior mechanical characteristics.

### Soho Porcelain Tile Information Component Information

Width	60cm	(600mm)
Length	60cm	(600mm)
Thickness	2cm	(20mm)
Weight per piece	16.45kg	
Weight per pack	33kg	(2 pieces per pack)
Pieces per m <sup>2</sup>	2.77	
Small bevel around top edge		

### Colours Available



Prince

Spring

Broome

To achieve the appearance of natural stone, each Soho colour consists of a vast number of patterns and textures within the range. Soho has a V4 Shade Variation, which is the best category available.

### Relevant Australian Standards

- AS/NZS 4586:2013
- Classification R11 (Wet Oil ramp test)
- Slip Rating AS 4586:2013 P5 (highest)
- DIN 51097 (HB197)
- Ramp Classification A+B (minimum)
- Pendulum Classification W
- V4 – Shade Variation
- Light Reflectance Values; Prince 63.35, Spring 52.71, Broome: 7.95

\*Shade variations can occur from batch to batch. Samples, brochures and displays should be viewed as a guide only. Customers should ensure that all delivered products are acceptable, and any concerns are notified to Boral prior to laying.

### Soho Porcelain Advantages



#### Colour Durability

Permanent colour that will not fade.



#### Easy Installation

Perfect fit makes for fast installation.



#### Easy to Clean

Household cleaners can be used to wipe down spills and dirt; pressure washing can even be done in select installation applications\*.



#### Stylish

Matches the very latest trends for inside and outside the home.



#### Strength

High breakage loads of up to 1000kg allows for breakage reduction.



#### Stain Resistant

High compressive strength and ultra-low absorption rate creates a dense surface that resists mould, moss, dirt and other staining.



#### Slip/Skid-resistant

Structured paver texture creates a surface for safety; perfect for around pools/spas or in wet climates. R11 classification.



#### Light Weight

16.45kg per 600x600mm paver permit for easy installation, removal, serviceability and reusability. (Excluding adhered installations)

\*It is important that all pressure washing of your Soho porcelain pavers be done with a low pressure washer, with a maximum of 1600psi and nothing more powerful. When pressure washing, care should be taken to prevent grout damage in adhesive and grout installations. Some re-sanding to joints will be necessary when power washing installations with sand or polymeric sand joints.

## Installing Soho

### Applications

Boral Soho brings you a set of solutions for installation suitable for all soils and outdoor surfaces, thereby guaranteeing the maximum application versatility.

### Uses

There are many uses for Soho, from private external areas through to public space applications, such as:

- Garden, courtyard or patio
- Footpath
- Terrace or balcony
- Swimming pool
- Driveway for light traffic
- Commercial pedestrian areas

The following table gives recommendations for the type of installation to be used according to the location of the installation, to ensure maximum effectiveness.

Table 1: **Installation Recommendation**  
Installation Type Recommendation According To Location

Installation Location	Installation Type		
	On Sand	On Pedestals	Adhesive method
Garden*	Yes	Yes	Yes
Courtyard	Yes	Yes	Yes
Patio*	Yes	Yes	Yes
Footpath*	Yes	Yes	Yes
Terrace*	Yes	Yes	Yes
Swimming Pool*	No	Yes	Yes
Driveway**	No	No	Yes
Commercial Area**	No	No	Yes

\* The garden, courtyard, patio, footpath, terrace and swimming pool bear only pedestrian and bicycle load, never vehicular loads.

\*\* The driveway and the commercial area provide only light vehicular load (< 8500 kg). Road squares are not included in this application.

### Cutting Ceramic Pavers

Due to the size, thickness, weight and strength of the Soho pavers it is recommended a good quality, wet, electrically powered saw be used when pavers need to be trimmed.

Wet saws similar to the DT-250 EVOLUTION Wet Tile are considered suitable. They are characterised with having a 10 inch diamond cutting wheel, 15 amp motor and a plunging head.

### Verification of the Sub-Bed

Please ensure floor is assessed as suitable prior to installation.

Before beginning the task of laying Soho it is fundamental for the clients/designer to ensure compliance of the characteristics of the soil, and its compaction according to the forecasts of the loads to which the paving must respond.

To avoid stagnation of water and a possible early deterioration of the area, under no circumstances must paving be installed with slopes of less than 1:100. The minimum slope recommendation is 2:100.

Boral recommends carrying out a careful assessment of the sub-bed characteristics before doing any type of installation.

### Compaction

It is necessary to compact backfill layers (such as soil, gravel or sand) in order to improve their mechanical properties; it is possible to increase the density of the material by reducing any air pockets between the aggregates and limit settling to increase its load bearing capacity.

### What you need

- Vibro Compactor Plate
- Compactor Roller
- Rake

For compaction you can use a vibratory plate compactor or a roller compactor to compact the layer according to the procedure described below:

- Start out by compacting around the perimeter, starting at the sides.
- Continue working in straight lines from the perimeter to the middle.
- Repeat once or twice using the same technique, but in the opposite direction.
- Use a rake to spread out the material for an even surface. You can use the back of the rake to level out the layer.

#### Note:

*Never compact the porcelain stoneware paving. Compact only the indicated layers. The compaction plate or roller could damage the surface of the tile, even if fitted with appropriate rubber protectors.*

## Laying Soho - on Sand

Dry laying on sand is recommended for applications such as in a garden, patio, courtyard, walkways and terraces.

It is a versatile and rapid laying method that allows easy removal of the paving, depending on the type of joint that is chosen for installation.

### Uses

- Residential Areas
- Garden, courtyard or patio
- Footpath
- Terraces

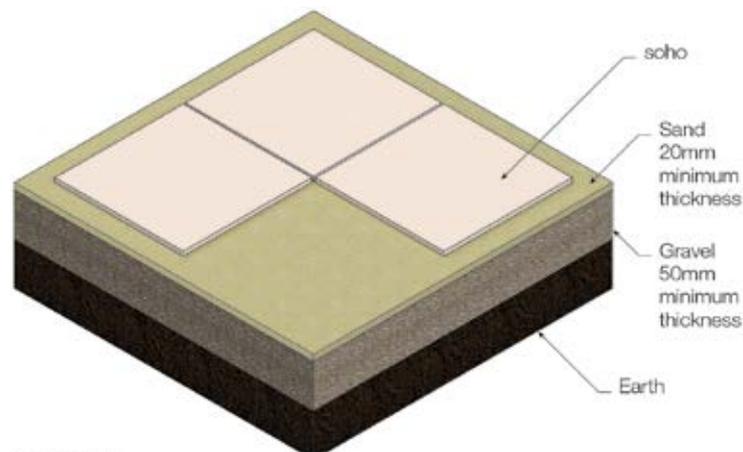
### What you need

- Soho Porcelain Stoneware
- Spacers
- Excavator
- Vibro Compactor Plate
- Geotextile
- Wheelbarrow
- Gravel (0 to 20mm sizing)
- Sand (0 to 2mm sizing)
- Rake
- Spirit Level
- Bar Grader
- Mallet
- Work Gloves

It is recommended to consult a technician to precisely calculate the thickness of the sand and gravel layers according to the intended use and resulting stressing load.

### Laying in Place

- 1 Designate the area to be covered in Soho by marking out the perimeter of the area with marker posts and string line. Allow a lateral strip of land in excess of the marked edge that can be removed during the excavation.
- 2 Remove the soil inside the marked area using a shovel or excavator. The depth of excavation should be decided during the planning stage and depends on various factors that the technician should assess with due care, including:
  - the load on the paving; a larger service load corresponds to a greater thickness required in the layers
  - the existing conditions of the soil; undisturbed ground has a greater bearing capacity than backfill
  - drainage capacity of the soil; a greater ability to drain water corresponds with a greater bearing capacity of the ground
- 3 Once the excavation is completed, use a rake or shovel to level the excavated area making sure there is at least 2:100 slope (to facilitate water drainage). Before proceeding with the implementation of the upper layers, compact the soil with a vibro compaction machine.
- 4 It is advisable to lay a sheet of geotextile on top of the compacted soil. This is a layer of synthetic material whose main purpose is to prevent the soil from mixing with the gravel and increasing the lifetime of the paving.
- 5 Arrange a layer of gravel with a thickness of typically 50mm minimum, depending on the planned type of load and engineer specifications. The main purpose of this layer is to withstand the load on the paving and serves as the load bearing element. This layer also has to be compacted and levelled with a resulting gradient of approximately 2:100 (to facilitate water drainage).



Not to scale

## » Laying Soho - on Sand

- 6 Edge restraints or curb stones have the basic purpose of preventing any horizontal movements of the paving by eliminating any instability of the paved plane. These must be fitted along the entire perimeter of the paving, unless it is in direct contact with a footpath, wall or an existing edge that is sufficiently rigid.

**Tip:**

*It is recommended to install the containing edges in the stage prior to laying the bed of sand on which to lay the paving*

The containing edge must be fixed to the ground with a casting of concrete at the base, or by mechanical anchors according to manufacturer specifications, and according to the material of which the containing edges are made. If possible, at least half the height of the curb should be covered with soil on the external side of the paving.

- 7 It is advisable to lay a sheet of geotextile on top of the compacted soil. This is a layer of synthetic material whose main purpose is to prevent the soil from mixing with the gravel and increasing the lifetime of the paving.
- 8 The sandy material recommended for the laying of Soho is the sand with particle size 0 to 2mm when dry. Make sure the thickness of the layer of sand is between 20mm and 50mm and perform compaction with a vibro compactor plate.
- 9 When the layer of sand is sufficiently dense, level the surface by sliding a wooden or steel board appropriately placed on two runners. Finally, use a spirit level to check the gradient of the surface: the optimum final gradient is around 2:100.
- 10 Taking care not to damage the planar surface of the sand bed, start laying Soho with a joint space of 4mm. Use a rubber mallet to stabilise the Soho tiles on the bed of sand by delicately tapping their surface.
- 11 For information on types of joining that can be used, see information on page 10.

It is recommended not to use any type of vibro-compactor plate on the Soho tiles, as they may become damaged.

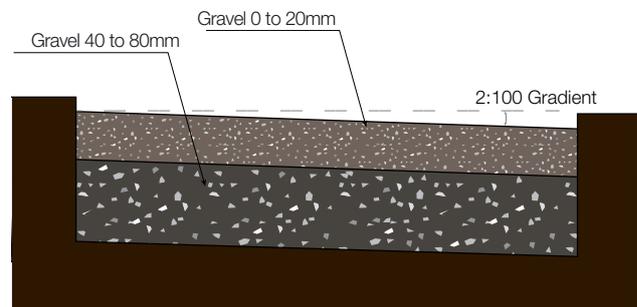


Figure 1: Soho on Sand, Preparation of Area

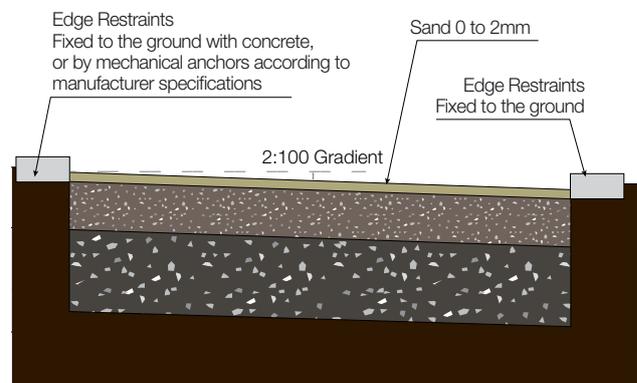


Figure 2: Soho on Sand, Containing Edge/Curb

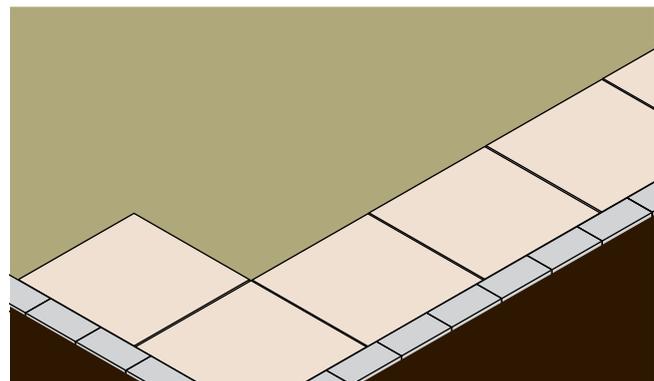


Figure 3: Soho on Sand, Laying Soho

## Laying Soho - on Pedestals

Raised outdoor floors exploits the conventional system of floating or raised floors. With this laying system, all the pipes and wiring systems laid beneath the tiled surface can be inspected at any time. It offers instant accessibility, by allowing the lifting and removal of the tiles.

### Uses

- Residential Areas
- Commercial Areas
- Garden, courtyard or patio
- Terraces

### What you need

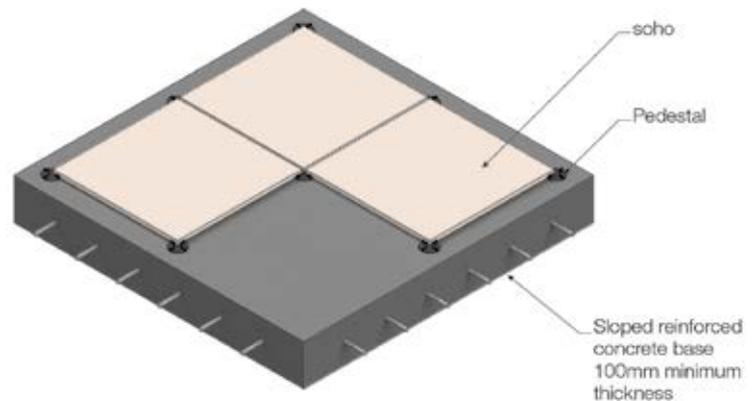
- Soho Porcelain Stoneware
- Soho Lifting Tong
- Pedestals
- Spirit Level
- Adjusting Wrench
- Broom
- Dustpan
- Work Gloves

A slope of 1:100 and a maximum laying height of 100mm is recommended.

Raised outdoor flooring is used mainly on rather large regular surfaces, or overlapping the previous floor, provided the previous floor shows no signs of infiltration.

The open joints between the tiles allow rain water to flow into the cavity that is created under the panels. Thus a planar floor is obtained, while the underlying waterproof layer will have all the slopes required to thoroughly drain off the rain water.

The load bearing structure is made of polypropylene supports with a wide base and rounded edges to prevent damage to the insulating sheath. This solution allows for any underlying elements to be inspected and offers a practical passage for pipes and wiring.



#### Note:

*The proposed measures are only indicative of the type of application. It is recommended to refer to the Standards relevant to your area, to achieve a flooring job according to the best working standards. Boral also recommends carrying out a careful assessment of the existing floor characteristics before doing any type of machining or laying.*

### Pedestal Types

Typical Low Profile Adjustable Pedestal

Typical Pedestal With Tilt Adjustment



### Technical Characteristics of the Pedestals

- Resistant to acids and alkalis
- Resistant to atmospheric agents
- Resistant to temperatures from -30°C to +120°C (-90°F to +250°F)

## » Laying Soho - on Pedestals

In order to avoid the risk of damage to persons or things, the manufacturer recommends that:

- If the application provides for raised laying, take into account that a tile may break due to a heavy object falling on it.
- With reference to the flooring, and/or any dry-laid system, observe the specific Standards for the rules, regulations and local use conditions regarding, the action of the wind, the structural load, seismic actions, etc.
- Failure to comply with the recommendations above may lead to an improper use of the product and possibly cause serious damage/injuries to persons or things.

To ensure drainage of the tread surface, appropriate transversal or longitudinal gradients should be included during levelling and compaction.

Bear in mind, however, that in the light of the distinctive advantages of porcelain, Soho has ultra-low absorption rate, a characteristic that makes it frost-proof. This may lead to localised water pooling, mainly on the edges of the tiles, regardless of the high standard laying.

It is also recommended to lay the tiles with a minimum joint of 3mm.



## Laying in Place

- 1 When laying on supports, the sub-bed and any electrical cables or conduits must be fully waterproofed.
- 2 Before laying, clean the sub-bed carefully.
- 3 String line the area, ensuring the base layer the pedestals will rest on consists of a slope  $\geq 1:100$ .
- 4 It is advisable to start laying from a corner, if one is available.
- 5 Place the supports in relation to the dimensions of the tile intended to be used. Use the string lines to ensure the slope created by the pedestals is maintaining the required slope of  $\geq 1:100$ .
- 6 A maximum laying height of 100mm is recommended.
- 7 Begin placing the Soho tiles on the pedestal, verify the proper levelling of the laid tiles ( $\geq 1:100$ ) is maintained throughout the laying of the Soho tiles.
- 8 Adjust the supports where required in order to maintain the proper levelling. The appropriate adjustment wrench is available.
- 9 Maintain the joint line, keeping the Soho tiles parallel and joint line consistent throughout the laying process.

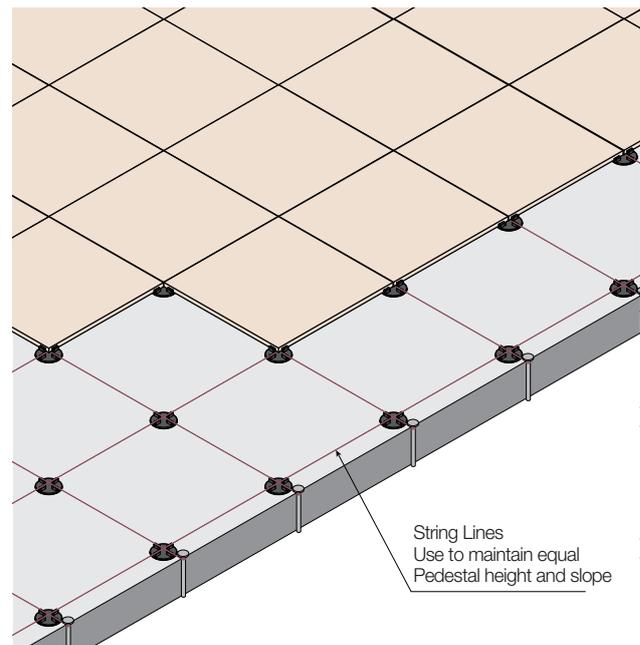


Figure 4: Soho on Pedestals, String Line Area

## Laying Soho - Adhesive Method

Ideal laying solution for outdoor driveways, car parks, garage ramps, as the laid surface is extremely resistant to both dynamic and concentrated loads. Expansion joints are required and the joints between the tiles must be filled with cement-based grout.

### Uses

- Residential Areas
- Commercial Areas
- Driveway Paving
- Swimming Pool
- Outdoor Stairs
- Terraces

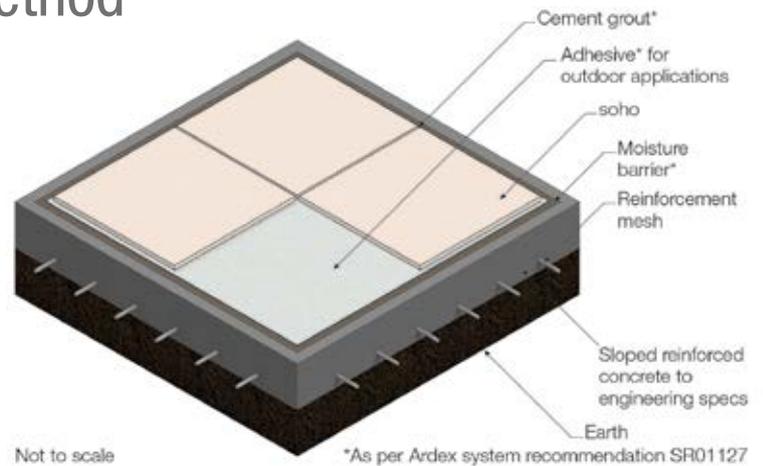
### What you need

- Soho Porcelain Stoneware & Soho Spacers
- Spirit Level
- Glue for Tiles
- Cement Grout
- Buffering Acid Detergents
- Trowel & Notched Spatula
- Bucket & Wash Tub
- Sponge Float
- Drill Mixer
- Work Gloves

The subbase and screed are to be designed to support the intended traffic. Please consult your engineering advisor for specifications.

The screed must follow recommended gradient guidelines and exceed 1.5:100. Ideally, the screed must be 28 days, or older, to minimise issues related to screed shrinkage. If the pavers need to be installed before 28 days, special "green" screed adhesives can be used 24 hours after the pour.

To adhere pavers to the substrate Boral recommend ARDEX X77. If the pavers are likely to have vehicular traffic, or if temperatures fluctuate from negative to positive during the day, ARDEX recommend adding E90 to X77 for added strength and flexibility. Please follow the manufacture's recommendation for installation.



### Note:

*The stratigraphies, shims and the proposed measures are only indicative of the type of application. It is recommended to refer to the Standards relevant to your area, to achieve a paving job according to the best working standards. Boral also recommends carrying out a careful assessment of the sub-bed characteristics before doing any type of machining or laying.*

### Laying in Place

- 1 After having made the screed according to the best working standards, the surface needs a thorough cleaning before proceeding with laying Soho.
- 2 Spread the adhesive evenly to ensure a perfectly plane surface.
- 3 When laying Soho, it is recommended to check that the tile has adhered correctly to the glue layer.
- 4 Soho is squared and single work size and can therefore be laid with a 3mm plus spacer.
- 5 After laying, grout the paving.
- 6 Wash the first layer of grout residue carefully after grouting.
- 7 A final buffered acid wash must be done to remove any invisible grout residues.

Efflorescence is always a risk where concrete screed and cement based adhesives are used. Efflorescence generally reduces over time and can sometimes be removed if it does occur by using ARDEX after care products. To minimise the risk of efflorescence a waterproof membrane should be used on the screed. This reduces moisture flow from the substrate to the paver surface and therefore reduces the risk of efflorescence. It is recommended that ARDEX WPM300 plus sand be used. Follow the manufacturer's recommendation for membrane application.

All joints should be grouted to reduce the risk of fretting and efflorescence. Boral recommends ARDEX FG8. Please follow the manufacture's recommendation for installation. Expansion and contraction joints need to be designed in accordance with AS 3958. Please consult your engineering advisor for specifications.

## Joints in Soho

Joints spacing recommended for Soho paving is minimum 3mm. In addition to improving the aesthetics, the joint has the function of absorbing any movement of the tile, thereby preventing breakage. To create a joint of suitable width, use the spacers having a thickness of 4mm, which are positioned respectively at the intersections between the tiles.

There are five different types of joints, depending on the paving methods, and each joint type needs the correct filler:

- Empty joint
- Joint with normal sand
- Joint with polymer sand
- Joint with cement sand
- Joint with grout

### Soho Joint Type

Table 2: **Joint Filler**  
Joint Gap Fill Recommendation According to Installation Type

Joint Gap Filled With	Installation Type		
	On Sand	On Pedestals	On Screed
Empty Gap	Yes	Yes	No
Normal Sand	Yes	No	No
Pave-Lok	Yes	No	No
Cement Sand	Yes	No	No
Cement	No	No	Yes

### Empty Joint

The empty joint is such that it does not include any material in its interior between one tile and the other. For this reason it cannot absorb the relative movements between the tiles, and therefore risks movement in some cases.

Weeds can grow in empty joints and insects and ants will be able to nest there.

While it is a type of joint that is simple to implement, it needs routine maintenance (cleaning weeds, etc).

### Standard Sand

The joints are filled with dry sand having a 0 to 2mm grain size. This joint has good mechanical properties, partially absorbing any relative movement between the Soho tiles.

Joints with standard sand do not prevent the formation of grass or plants. Insects and ants can nest there and may damage the paving.

If the paving is in an area that is very windy, on slopes or subject to heavy rain, the joints could become empty due to erosion. Grouting with normal sand requires routine maintenance to fill the joints.

#### Tip:

*Spread enough sand over the paving surface and use a soft brush that will not damage the tiles to distribute the sand in the joints to fill them completely.*

### Pave-Lok

Pave-Lok is composed of a mixture of polymer binders and calibrated sand. Once the sand is wet, it hardens becoming very solid and locking the joints of the paving. It is equally efficient both on flat surfaces and on slopes (garage access ramps, etc.).

These features make it ideal for applications in areas with excess water or steep slopes. The joints are filled with a sandy material that solidifies (draining or non-draining polymeric sand). These joints have excellent mechanical properties, absorbing the relative movements between the tiles because they are rigid at the top and flexible at the bottom.

Weeds will not grow in joints filled with polymeric sand and insects and ants will not be able to make their nests there. The paving is totally impermeable if the sand used does not allow draining and the joints remain intact, unaffected by erosion throughout time.

#### Tip:

*Spread enough Pave-Lok over the paving surface and use a soft brush that will not damage the tiles to distribute the sand in the joints to fill them completely.*

It is essential to remove any excess sand on the surface once the joints have been filled (using a leaf blower if possible).

When the surface is perfectly clean, spray the sand with water to start the process of polymerisation. The spray of water must be like "rainfall" from a height of 1.5 metres, without applying too much water. Spray again in the same way 5-10 minutes later.

If there are other sand particles on the surface, use a leaf blower to remove them before the paving dries out.

In dry weather, the polymerisation process will be complete in a few hours and so the paving becomes serviceable in about 24 hours.

## » Joints in Soho

### Tip:

*Joints greater than 4mm are not recommended. Pave-Lok does not polymerise at temperatures below 0°C or in rainy or very damp conditions. If so, before laying, consult the manufacturer of the sand.*

### Cement Sand

This type of joint has excellent mechanical properties. Since cement sand is harder wearing and more resistant than polymeric sand, it is also more difficult to remove.

Weeds will not grow in joints filled with cement sand and insects and ants will not make their nests there, thereby avoiding the potential to damage the paving.

This paving is totally impermeable. Once the joints have been filled they are not affected by erosion and remain intact over time.

One of the advantages of cement sand is its rapid solidification, so the paving becomes serviceable in a few hours.

### Tip:

*The method of installation is the same as that of polymeric sand. It is extremely important to remove any traces of cement sand after spraying with water as it will solidify on the surface of the Soho tiles.*

### Tip:

*Joints greater than 4mm are not recommended. Unlike polymeric sand, cement sand also solidifies in rainy conditions and with high levels of humidity, but not at temperatures below 0°C.*

### Cement Grout

This joint has excellent mechanical properties, absorbing any relative movement between the paving tiles and supporting the stresses induced by any differential movements. It also helps to distribute the surface load, safeguarding maximum stability.

Weeds will not grow in joints filled with cement grout and insects and ants will not make their nests there.

### Tip:

*Once the adhesive is dry, prepare the cement grout for outdoor applications using an appropriate mixer, according to the instructions and safety warnings on the product label.*

Check that the joints are free of glue residues and clean them if necessary, then apply the grout near the joints with a trowel.

Spread the grout into the joints using a rubber spatula, making sure they are filled completely. Move the spatula diagonally across the joint to remove any excess product.

Use a damp sponge to remove any residue on the surface immediately after filling the joints.

The grout should be completely dry in about 24 hours. At this point, finish removing any tiling residue on the surface with a water and buffered acid solution. Finally, rinse with plenty of water.

## Warnings

Outdoor pavings installed unglued above the ground level are subject to the action of the wind, with the risk, in some cases, of becoming airborne.

The manufacturer recommends the installer confirm specifications with a qualified professional in order to check the suitability of the installation system above the ground, and to install in accordance with the local laws and regulations and the conditions of use.

Failure to do so could result in serious injury or property damage.

A ceramic tile installed on a raised pedestal system may fracture on impact if a heavy object is dropped onto it from a height, with a risk of injury to anyone standing or walking on the tiles.

Failure to adhere to the manufacturer's instructions for installation of tiles on raised pedestal systems may result in serious injury.

## Colour & Texture Specifications

### 1. Stock Colours

Lead times apply to non-stock colours. A surcharge may apply to these colours.  
Lead times vary depending on project size and product type.

### 2. Textures

Finishes including Honing, Polishing and Shot-blasting are produced on a “made to order” basis.  
Lead times apply as the product must be cured for six weeks to harden sufficiently before processing.  
Contact your nearest Boral Masonry office for approximate lead times and premiums on special textured finishes.

Allow 6-8 weeks for honed and polished units.

### 3. Colour and Texture Variation

The supply of raw materials can vary over time. In addition, variation can occur between product types and production batches. Variations in colour and texture can occur between product types and production batches. Customers should ensure that all delivered products are acceptable and any concerns about products should be made known prior to laying.

### 4. Terms and Conditions

We reserve the right to change the details in this publication without notice.  
For a full set of Terms and Conditions of Sale please contact your nearest Boral Masonry sales office.

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Shade variations occur from batch to batch. Samples, brochures and displays should be viewed as a guide only. Colours shown are indicative only and this brochure should not be used for final selection. Not all colours are available in every region for each product. See your retailer for colours available in your region. Products ordered should be chosen from actual samples current at the time of order and are subject to availability. Photographs in this brochure are only representative of Boral products and the appearance and effect that may be achieved by their use. Customers should ensure all delivered products are acceptable, and any concerns about products are made prior to laying. Correct as of May 2018. BCC1718\_5/18.

For orders, samples and sales enquiries:

Call **1300 134 002**

For technical assistance:

Call **1300 360 255**

Visit **[www.boral.com.au/pavers](http://www.boral.com.au/pavers)**

