

INSTALL  
GUIDE

**XTERIORS™**  
ALL-WEATHER SOLUTIONS FOR EXTERIOR STYLE



**TREAD™**  
PORCELAIN PAVERS

**daltile®**  
IMAGINE WHAT'S POSSIBLE™



## 1. Preparing the substrate

- Arrange the slabs on the ground to decide the layout, and for “stepping stone” walkways, the pace length, so that the slabs are placed at regular intervals.
- Mark out the edge of each slab with the aid of a spade.
- Lift off the slab and dig out the turf to a depth of about 5-6 cm within the perimeter marked.



## 2. Laying surface

- Add a layer of gravel to provide an even, stable substrate. A layer of at least 3 cm of gravel with particle size over 4 mm is recommended.



## 3. Laying the slabs

- Position the slabs so they are 0.5-1 cm below the surface of the ground to ensure an even walkway surface.
- Flatten the edges around the slab with a rubber hammer until it is level with the ground surface.



## 4. Joints

- The gaps between the slabs should be chosen depending on the overall appearance required.



## 1. Base preparation

- Excavate to a depth of 7 ¾" to 9 ¾" for sandy soil or 9 ¾" to 13 ¾" for clay soil.
- Ensure the perimeter of the excavated area extends 6"-8" beyond the perimeter of the final pavement and that the excavated area is sloped at least 2% (1/4" per 12") away from structures.
- Compact the excavated area with small (3,000 lbs) and medium (4,000 lbs) commonly utilized.
- Install a permeable geotextile fabric to separate native soil from base material. This fabric must allow water to freely drain.
- Install a base layer of 6"-8" of ¾" clear stone (ASTM No. 57), depending on depth of excavation.



## 3. Laying the slabs

- Install Daltile ¾" 2CM porcelain pavers with a minimum joint width of 3/16" using spacers.



## 2. Laying surface

- Compact the base material to ensure void space has been minimized to prevent future settling.
- Install a bedding layer of clear 1/8" chip stone (ASTM No. 8 or No. 9).



## 4. Joints

- Joint width can be wider without spacers depending on the desired aesthetic.
- Joints can be left empty or filled with a variety of jointing material.
- For narrow joints, use fine sand or polymer-modified sand to slow joint erosion.
- To ensure joints are completely full, compact with a rubber mallet and top apply more sand as needed. **DO NOT USE A PLATE COMPACTOR ON PORCELAIN PAVERS.**
- For wider joints, the bedding layer stone can be used. If using bedding material, an optional joint stabilizing sealer can be applied to the joints to prevent joint material migration.
- An edge restraint may be placed around the perimeter to prevent horizontal movement where the pavement isn't confined by existing solid structures, though the weight of the tiles makes movement unlikely under foot traffic conditions.



1. Preparing the substrate

- Create a layer of sand at least 5-10 cm deep and level it carefully.



2. Laying surface

- The tiles are laid on the substrate.



3. Laying the slabs

- Arrange the slabs in the chosen layout.



4. Joints

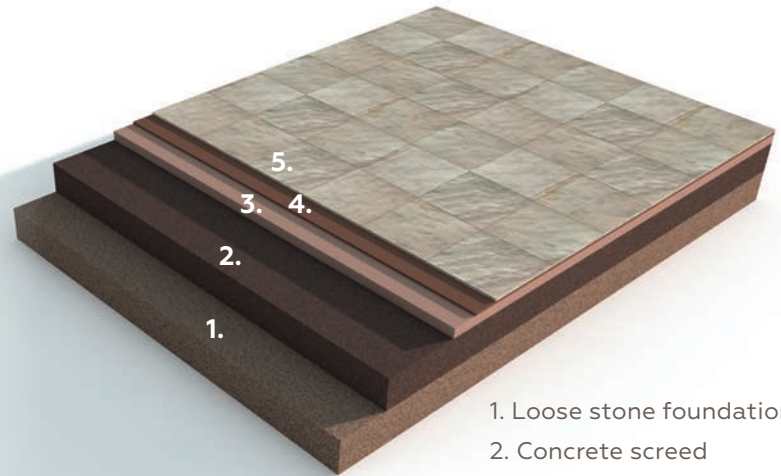
- The gaps between the slabs should be chosen depending on the overall appearance required.

Instructions for laying with adhesive -  
Non-waterproofed outdoor pavings.

## Preparing the substrate

For paving areas for use by vehicles:

- Create a substrate of compacted hard core followed by a layer of gravel, with the addition of lean concrete if wished - Loose stone foundation
- Add a levelling layer of concrete of suitable thickness. A gradient of between 1.25 and 2.5% is recommended, depending on the tile type and size, and the width and direction of the joints
- Laying surface - Reinforcing screed of suitable depth, of industrial type. Screed 8-10 cm thick with welded steel reinforcing grid laid about halfway through the layer.



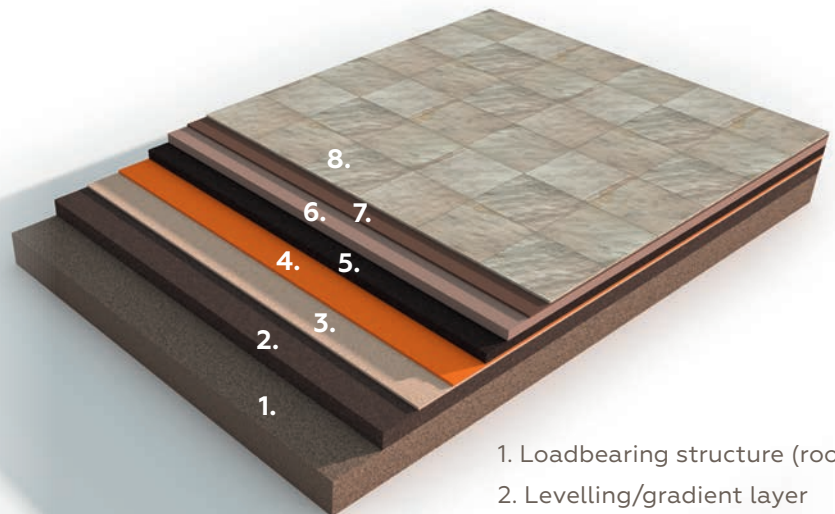
1. Loose stone foundation
2. Concrete screed
3. Screed reinforcing layer
4. Laying surface
5. Ceramic slabs

Instructions for laying with adhesive -  
Waterproofed outdoor pavings

## Preparing the substrate

This type of paving is designed to prevent rainwater from reaching the room underneath.

- A bitumen waterproofing membrane and a barrier material (polyethylene membrane) are placed on top of the levelling layer. A drainage layer is created on top of the barrier membrane.
- Laying surface - Reinforcing screed of suitable depth, of industrial type. Screed 8-10 cm thick with welded steel reinforcing grid laid about halfway through the layer.



1. Loadbearing structure (roof)
2. Levelling/gradient layer
3. Waterproofing layer
4. Barrier layer
5. Drainage layer
6. Reinforcing and load spreading area
7. Laying surface
8. Ceramic slabs



## 1. Laying the slabs

Install the slabs using an outdoor adhesive, following the specific instructions for the adhesive used (C2S2 under EN 12004). To ensure that the laying material is evenly compacted, the double coating method should be used (this method is necessary for pavings exposed to high levels of stress).



## 2. Joints

Slabs must be laid with open joints of variable width of no less than 5 mm.

Class 2 cement grouting materials must be used (CG2 under EN 13888).



## 3. Structural joints

- Expansion joints are compulsory: they must be at least 5 mm wide (except for structural joints) and must reach up to the top of the paving surface.
- Seismic joints must form a square or rectangular grid across the surface, with ratio between the sides not exceeding 1.5 m. Grid sizes are normally between 3 x 3 m and 4 x 2.5 m.
- Perimeter joints must be provided at points where the paving meets walls, steps, raised areas, pillars etc., where compressible material (e.g. polystyrene) must be added.



## 4. Initial cleaning

Cleaning after laying is of fundamental importance for all subsequent procedures and to allow correct maintenance of the paving.

Paver tile applications on raised pedestals comprise the following basic components:

2CM porcelain paver tile, pedestals and various additional parts (edging profiles, anti-fragmentation systems and others).

Raised paver tile assemblies on pedestals can be installed in a variety of applications including on and above grade concrete floors, over roof decks in conjunction with certified roofing membranes, plaza decks, pool decks and a variety of other possibilities.

PORCELAIN PAVER TILE

2CM (3/4") thick stoneware porcelain-bodied tile with anti-slip properties and heavy load bearing capabilities.

PEDESTALS

Pedestal systems for exterior raised floors, generally made of recycled plastics, are designed to withstand significant loading and can withstand the demands of all North American climate conditions with temperature tolerance of -30 to 75 degrees celcius. They are height adjustable varying from 12.5 mm (1/2") to unlimited and can adapt to gradient variations of up to 5%.

ANTI-FRAGMENTATION SYSTEMS

To prevent possible injury from tile collapse on higher pedestal applications an anti-fragmentation membrane or other similar systems are available.



20 mm slab



Adjustable pedestals

Instructions for installing raised pavings

Over existing living areas, assure waterproofed roof assembly has been constructed as per building code (a link to our Mapei instructions for waterproofing would be good here) Place pedestals directly on to the waterproof layer and place tiles with appropriate joint spacers on to pedestals.



- 1. 20mm porcelain paver tile
- 2. Pedestals
- 3. Waterproofing layer
- 4. Substrate

Possible pedestal layouts

	60x60 cm	80x80 cm	40x120 cm	50x100 cm
	With central pedestal	Pedestal in center of sides and center	Pedestals in center of sides and 2 in center of slab Preferable for public places and heavy loads	Pedestals in center of sides and 2 in center of slab Preferable for public places and heavy loads
Pedestal counts in pcs/sf	1.9	1.7	1.3	1.4

Note

Pedestal counts are a guideline. Results are rounded down and may vary depending on the size of the area and the regularity of the perimeter.

There are no specific standards for outdoor raised porcelain paver applications so the architect and/or customer is urged to assess the project's requirements.

Pedestal heights that exceed 4" (10 cm), should include additional pedestals according to the preceding diagram for more even distribution of the load applied to the raised paving surface.

Architects must also pay special attention to the design data relating to the conditions of use, such as weather (assessing

factors such as wind strength and frequency), exposure to direct sunlight, type of zone (e.g. urban, industrial etc.), type of use (e.g. pedestrian, vehicles, etc.) and level of traffic, expected static and dynamic loads, any water or other fluids on the surface, and any chemicals on the surface. This information should be used to assess the expected level of mechanical stresses (surface and mass) and chemical and temperature-humidity stresses on the tiling, and any other specific needs with regard to safety or other additional performances.