

Outdoor Porcelain Pavers

Installation Guide

tilebar

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Installing outdoor porcelain pavers

Before getting started, inspect all installation materials—including tile, substrate, and joint filler—and be sure they are compatible with one another (note that today's adhesives and mortars are warrantied for most substrates).

Substrate preparation

An installation is only as good as the foundation it rests on. Exterior pavers can be installed on a few different types of substrates, but whether you're installing on grass, gravel, mortar, or raised pedestals, the substrate must be structurally sound and free from contaminants.

Different regions and climates will call for different base thicknesses for installations. We are presenting a typical base thickness for installation in this guide, but your base thickness will be determined by your specific location. To determine your base thickness, refer to your local building code.

Layout

Take careful measurements of your space and develop a layout plan. To ensure the final look will meet your expectations, dry-lay your tile or create a mockup to preview your layout and assess grout joint size. The size will depend on how the tile will be set and/or dictated by the tile measurements as described in the TCNA (Tile Council of North America) manual. Locate all cuts and adjust the layout as necessary. Confirm the final layout, the cut locations, the joints, and overall look.

TileBar Tech Tips:

- *Never compact porcelain pavers with a plate compactor.*
- *Always pre-compact and strike off your bedding course—by leveling and smoothing the layer of sand—before installing your porcelain pavers in sand-set installations.*
- *Never install porcelain pavers without the required 3/16 inch (4mm) spacing between them. Porcelain pavers should never be installed with porcelain-to-porcelain contact.*
- *Porcelain pavers should only be wet cut with a tile saw equipped with a wet cut porcelain blade.*

Installation methods and uses

Use proper equipment—wet saw, drill bits, snap cutter, or grinder—to cut your tiles. Be sure to follow all safety precautions and protections recommended by manufacturers.

1. Sand set over compacted road base

This common method is popular in areas where pavers are installed close together to create a fully paved effect. For pedestrian foot traffic only.

2. Dry installation on gravel

This common method is another popular option for areas where pavers are installed close together to create a fully paved effect. This method is very similar to sand-set, but it offers better drainage. It's also known as **permeable over open-graded aggregate installation**. For pedestrian foot traffic only.

3. Dry installation on grass

This steppingstone method is perfect for installing pavers in grassy or landscaped areas where a walkway is needed. For pedestrian foot traffic only.

4. Mortar installation

This method is preferred in areas with heavier pedestrian traffic, or in areas where you do not want tiles to move or shift. It's also known as **cementitious adhesive overlay** or **concrete base installation**. This method is recommended for light vehicle traffic when combined with a reinforced concrete slab and the right setting materials.

5. Pedestal installation

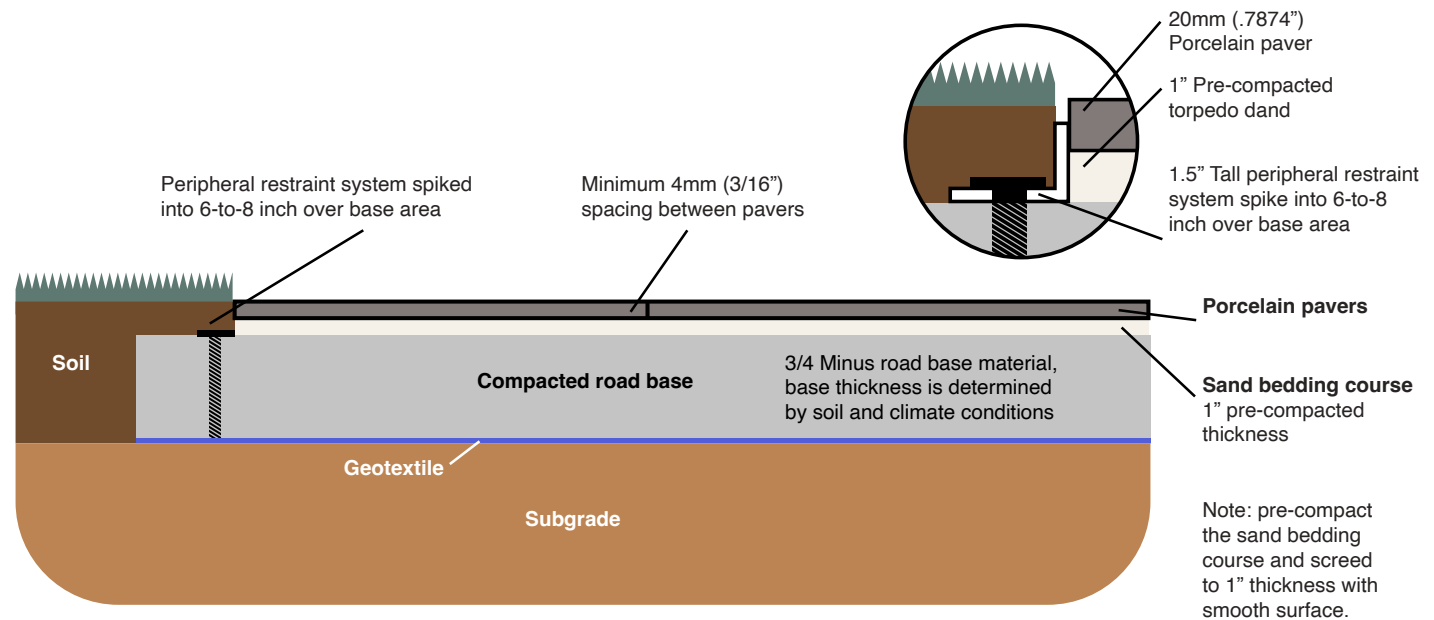
This method requires the use of a pedestal system over a concrete substrate or properly engineered roof. It is a good option for hiding systems and correcting level changes. For pedestrian foot traffic only.

Installation Notes

Sand set over compacted road base

Installing porcelain pavers requires the bedding course sand to be pre-compacted before being struck off with a screed to the required thickness. Porcelain pavers are not compacted, and therefore the sand layer beneath them requires pre-compaction. Do not compact dry sand. The sand must have 5-to-6 percent moisture content to ensure it will compact cohesively and allow for a smooth strike-off finish. To test the moisture content of the sand, roll the sand into a ball. If the sand holds this shape without dripping water, the sand is ready to compact.

- Refer to the detailed diagram.
- Base material should extend 6-to-8 inches beyond the edge of the pavement.
- Optimum depth for compacted road base is 4 inches; sand beds: 1 inch.
- The required edge restraint system is low-profile, with a height of 1.5 inches as shown.
- Be certain that pavement is constructed with a slope of 1.5 to 2 degrees, and is pitched away from any building.
- Install 3/16-inch (4mm) plastic spacers at all joints and corners of the installed pavers.



Never use a plate compactor on tiles

Always use a 3/16" space between all units

Joint in-filling information

When porcelain pavers are installed as sand-set or dry gravel installations, the 3/16-inch (4mm) paver joints may be filled out with:

Sand: Dry traditional sand is swept into the open joints until they are filled. Excess sand should be swept off the pavement. Keep in mind that sand joints may in time have to be re-sanded as wind and rain can cause erosion.

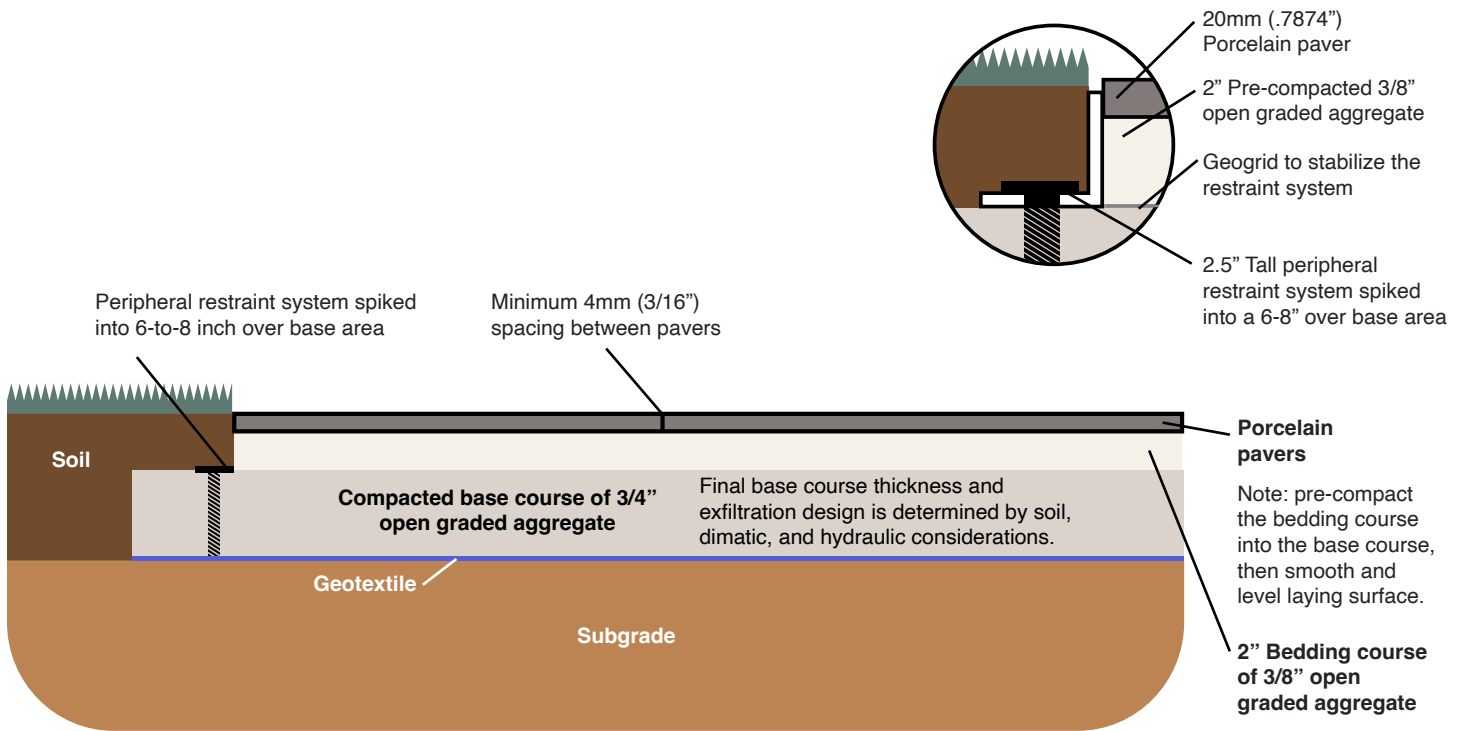
Cement-blended sand: Dry cement blended sand (typically 3 parts sand to 1 part cement) is swept into the open joints until they are filled. Excess cement-blended sand is swept off the pavement. It is extremely important that all the excess sand and dust be swept from the surface, as any residual dust or sand can stain the

surface. A blower can be used for final dust removal. After joints are filled, and the surface is clean, the pavement is misted with water to activate the cement and the curing of the mixture.

Polymeric sand: Polymeric sand is a manufactured sand that is blended with polymers, so it hardens when subjected to moisture. The sand is swept into the open joints until they are filled. Like cement-blended sand, it is extremely important that all excess sand and dust be swept from the surface, as any residual dust or sand can stain the surface. After joints are filled and the surface is clean, the pavement is misted with water to activate the polymer and curing of the mixture.

Dry installation on gravel

- Refer to the detailed diagram.
- The required edge restraint system for this installation has a height of 2 ½ inches, as shown.
- Follow manufacturer’s recommendations to maintain the performance of edge restraints in permeable applications.
- Be sure that pavement is constructed with a 2-degree slope and is pitched away from any building.
- Install 3/16-inch (4mm) spacers between all pavers.

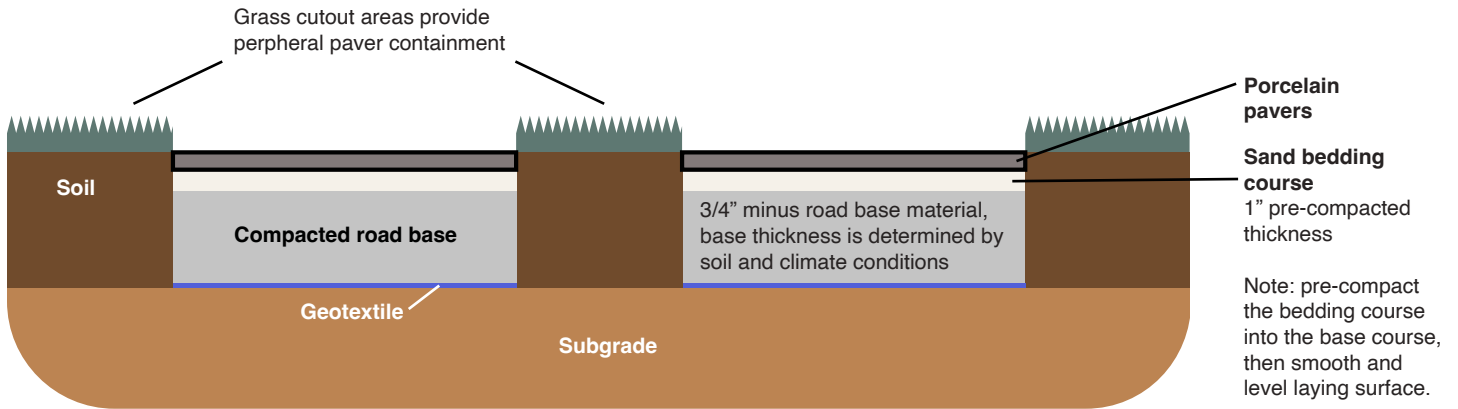


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Dry installation on grass

- Refer to the detailed diagram.
- Cut out grass for the paver area.
- Optimum depth for compacted road base is 4 inches; sand beds: 1 inch.
- No edge restraint system or grout is required for this installation.

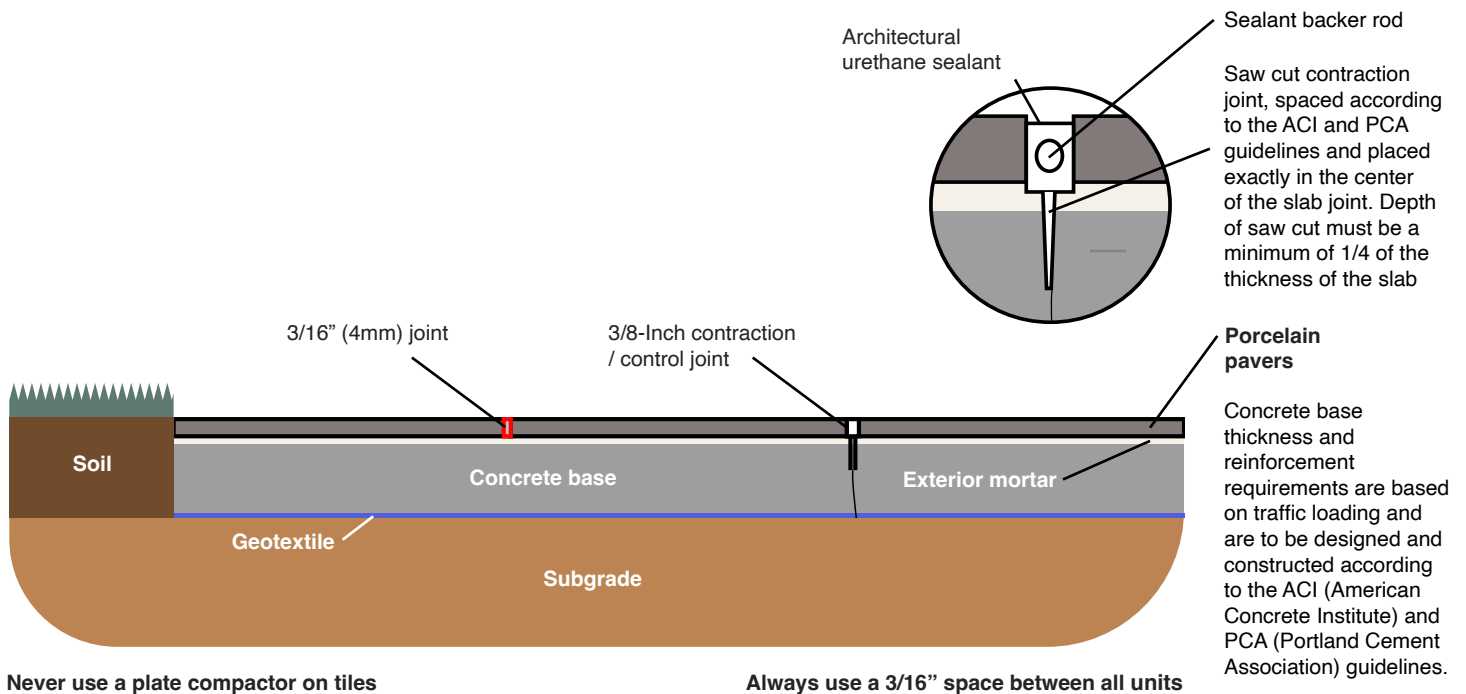


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Mortar installation

- Refer to the detailed diagram.
- Be certain that pavement is constructed with a 2-degree slope and is pitched away from any building.
- For concrete foundation slabs that are not large enough to require contraction/control joints, a minimum 3/16-inch (4mm) grout joint is acceptable. For larger concrete foundation slabs that do require contraction/control joints, these joints should be 3/8-inch; use a flexible sealant.
- All contraction/control joints should be in the joint line of installed pavers and not beneath a paver. Caution: If a porcelain paver is installed over a control joint, the paver will reflect any crack along the contraction/ control joint beneath it.



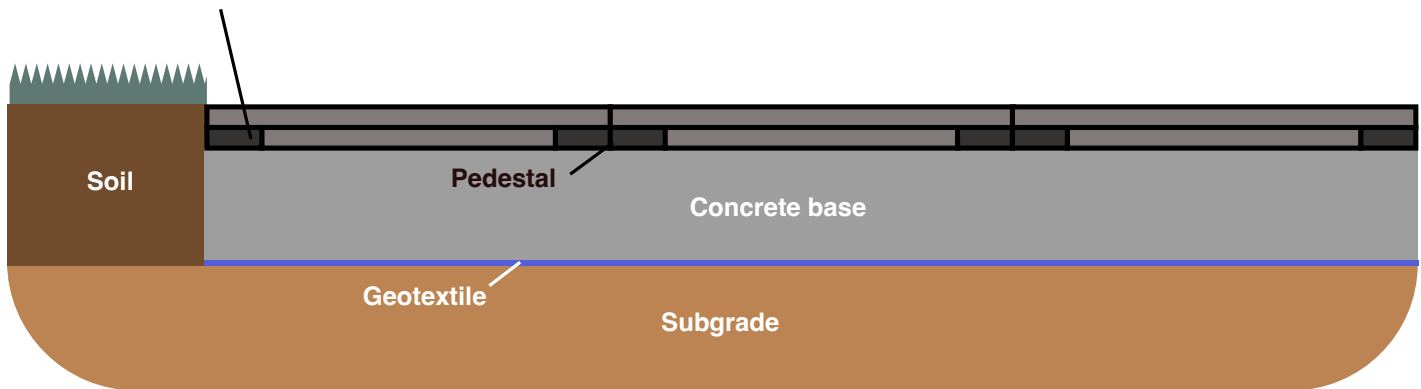
Grout notes for mortar installations

Cleaning and sealing grout can make or break a new tile project. A great grout job can aesthetically enhance the project, while a poor one can undermine even the best work. First choose the appropriate grout joint size; remember smaller is not always better. The grout joint size depends on how consistent the edge of your tile is. The recommended paver joint is 3/16-inch.

Pedestal installation

- Refer to the detailed diagram and pedestal manufacturer's directions.
- Be certain your concrete slab is smooth, even across the surface and is constructed with a 2-degree slope and is pitched away from any building.
- Be certain plastic pedestal supports are installed at all corners of the installed pavers, noting this system may need more support in other places as well.
- To ensure the sustainability of this installation method (whether on a roof or concrete), a consultation with an engineer is strongly recommended.

Sectioned pedestal anchored or adhesively bonded to concrete base



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Always use a 3/16" space between all units