

# 1. PORCELAIN PAVERS ADVANTAGES

**20mm THICKNESS**  
PORCELAIN PAVERS



## ANTISLIP

The structure and texture of the porcelain paver reduce the risk of slipperiness.



## SAVING OVER TIME

Low maintenance cost.



## RESISTANT TO MOSS AND MOLDING

Mbrico Porcelain is so dense that mold and mildew are not able to establish themselves in a permanent way making removal very easy and simple.



## RESISTANT TO ACID AND CHEMICALS

Mbrico Porcelain is made with inert ingredients that do not react or accept acids and or chemicals allowing you to make environmentally friendly cleaning decisions!



## FADE RESISTANT

Mbrico's baked on graphics are created using ingredients that are completely unaffected by the sun ensuring enjoyment of your porcelain paving investment for many years to come.



## STAIN RESISTANT

Mbrico porcelain pavers are virtually non porous. Due to the baked on glazing process nothing can be absorbed including stains.



## NO SEALING NEEDED

No sealers are needed because Mbrico Porcelain is so dense virtually nothing can stick to it!

NaCl



## RESISTANT TO SALTS

Mbrico porcelain pavers are completely unaffected by use of salts.



## EASY TO REPLACE AND REMOVE

When not mortared down or installed with adhesive Mbrico's porcelain tile can be easily removed and repositioned in a new area.



## EASY TO KEEP CLEAN

Mild environmentally friendly detergents can be used when cleaning your porcelain pavers. Pressure washers up to 1500 PSI may be used with out fear of etching or stripping.



## SCRATCH RESISTANT

Mbrico porcelain pavers are extremely hard with an equally hard surface making them virtually scratch proof.



## EASY TO INSTALL



## DRIVE OVER\*

When properly installed over concrete, Mbrico Tile's 2cm porcelain pavers are suitable for light residential vehicular traffic.

(\* When installed over reinforced concrete (4" minimum) using a thinset mortar suitable for porcelain paver.



## FROST RESISTANT

Mbrico's porcelain pavers are so dense that frost and/or freezing temperatures do not affect them.



## RESISTANT TO THERMAL SHOCK

Mbrico Tile's porcelain pavers are baked at temperatures up to 2300 degrees F which in turn causes a very strong molecular bond making for a very dense material. Due to its density it becomes very inert allowing for extreme and sudden temperature changes in the range of - 60 F +140 F.



## ECO-FRIENDLY

Mbrico's porcelain pavers are produced in our environmentally friendly complex following the strictest state and federal regulations. Because of porcelain's environment friendly commitment, we can incorporate up to 20% recycled content in our USA made porcelain pavers.

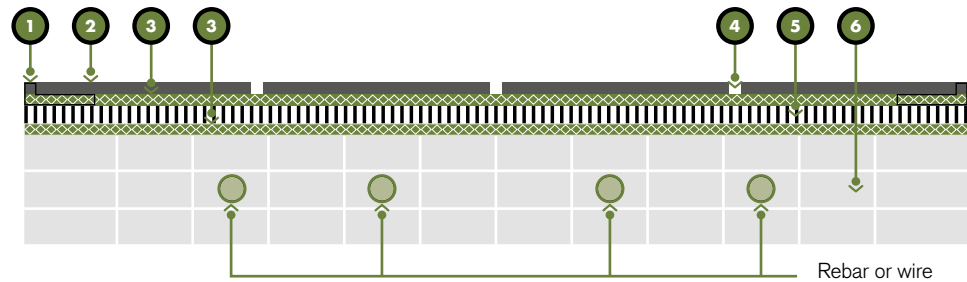
## 2.A THIN SET MORTAR APPLICATION OVER REINFORCED CONCRETE

### PRACTICAL INSTALLATION

Follow the drawing below.

- Insure that pavement is constructed with approximately 2 degree slope and that it is sloped away from any building.
- Please consult your paver supply distributor for thin set mortar suitable for porcelain paver as well as for inside or external usage.
- For cementitious adhesive and grout installation, refer to the manufacturer's technical instructions and specifically as they relate to outdoor installations.
- For concrete foundation slabs that are not large enough to require contraction/control joints, a minimum  $\frac{3}{16}$ " (4 mm) grout joint is acceptable, but for larger concrete foundation slabs that do require contraction/control joints, the control joint width should be a  $\frac{3}{8}$ " (1 cm). It is absolutely imperative that all contraction/control joints be located in the joint line of installed porcelain pavers and not beneath a paver.

**CAUTION: if a porcelain paver is installed over a control joint, the paver will reflectively crack along the contraction/control joint beneath it. Utilization of an uncoupling membrane can help minimize the potential issue.**



1. Edge restraint trim piece.
2. Mbrico's porcelain  $\frac{3}{4}$ " nominal (20 mm) pavers.
3. Thinset
4.  $\frac{3}{16}$ " minimum grout joint.
5. Uncoupling membrane.
6. Existing or new concrete (reinforced). 4" minimum.



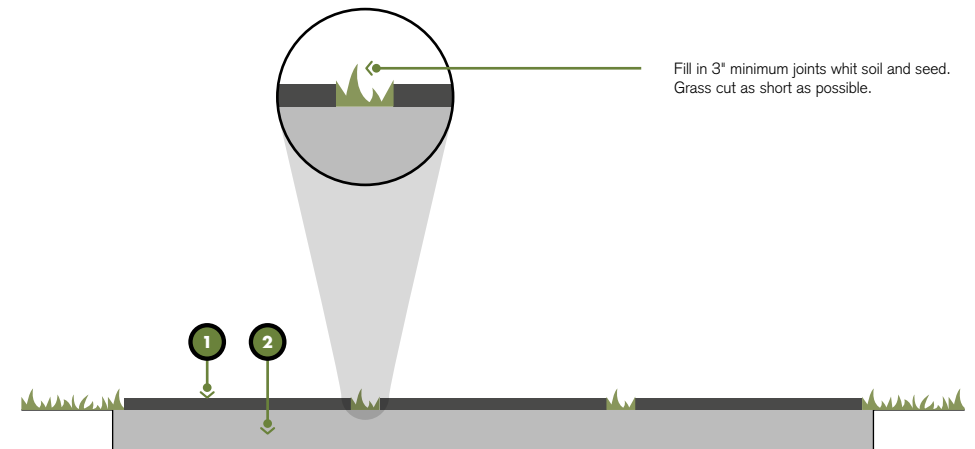
NOTES:  
Never compact porcelain pavers with a plate compactor.  
Never install porcelain pavers without spacers (min 4mm -  $\frac{5}{32}$ ").  
Please note that the above section drawing is meant to be an example only.  
Project and site evaluation, structural design must be performed by a qualified professional engineer.

## 2.B DRY LAY OVER GRASS (PEDESTRIAN FOOT TRAFFIC)

### PRACTICAL INSTALLATION

Follow the drawing below.

- Cut grass in desired area as short as possible. remove any debris.
- Using a landscape rake scratch up top 1 inch of soil and level.
- Insure sub grade is graded to a 1" in 10' slope and that it is pitched away from any building.



Fill in 3" minimum joints with soil and seed. Grass cut as short as possible.

1. Mbrico's porcelain  $\frac{3}{4}$ " nominal (20 mm) pavers.
2. Bare soil is best. Scratch and layel with a rake.



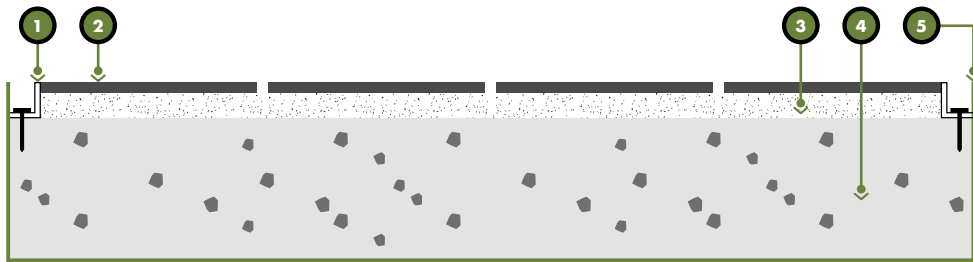
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**2.C TYPICAL FLEXIBLE BASE INSTALLATION**  
(PEDESTRIAN FOOT TRAFFIC)

**PRACTICAL INSTALLATION**

Follow the drawing below.

- Base material is to be over dug 6" to 8" beyond the edge of the pavement.
- The required edge restraint system is a low profile edge restraint with a vertical height of 1.5" (4 cm) as shown in the drawing.
- Insure that pavement is constructed with a 1" in 10' slope that it is pitched away from any building.
- Insure the plastic  $\frac{3}{16}$ " (4 mm) spacers are installed at all corners of the installed pavers, in order to prevent pavers from touching each other (and potentially chipping) and to allow better water drainage.



- 1. Paver edging.
- 2. Mbrico's porcelain  $\frac{3}{4}$ " nominal (20 mm) pavers.
- 3.  $\frac{3}{4}$ " uncompacted bedding sand.
- 4. 4-6" crusher run/road base.
- 5. Filter fabric.



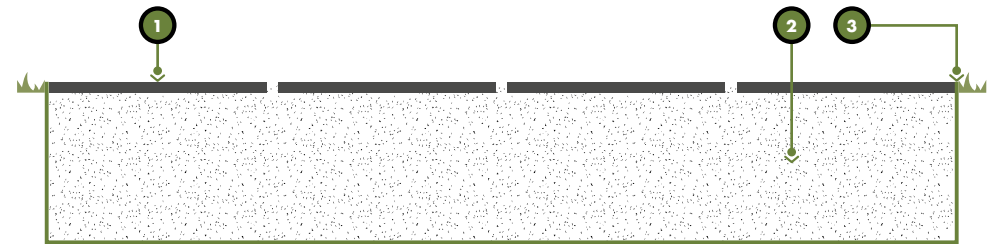
NOTES:  
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**2.D OVER SAND BASE INSTALLATION**  
(PEDESTRIAN FOOT TRAFFIC)

**PRACTICAL INSTALLATION**

Follow the drawing below.

- Filter fabric is recommended as it allows water to pass but not the particles of sand.
- 2-4" of a compactable sand is recommended. You can go with more however it will not offer any distinct advantage. Going with less than 2" may offer a less desirable effect as it will tend to hold more water and become "mushy" when super saturated.
- The use of an edge restraint is ideal but not necessary. It becomes more necessary if your desired paving area is above the surrounding native soil, as it will help aid in the minimization of sand migration or erosion.
- Insure the plastic  $\frac{3}{16}$ " (4 mm) spacers are installed at all corners of the installed pavers, in order to prevent pavers from touching each other (and potentially chipping) and to allow better water drainage.



- 1. Mbrico's porcelain  $\frac{3}{4}$ " nominal (20 mm) pavers.
- 2. Approx. 4" of bedding sand.
- 3. Filter fabric.



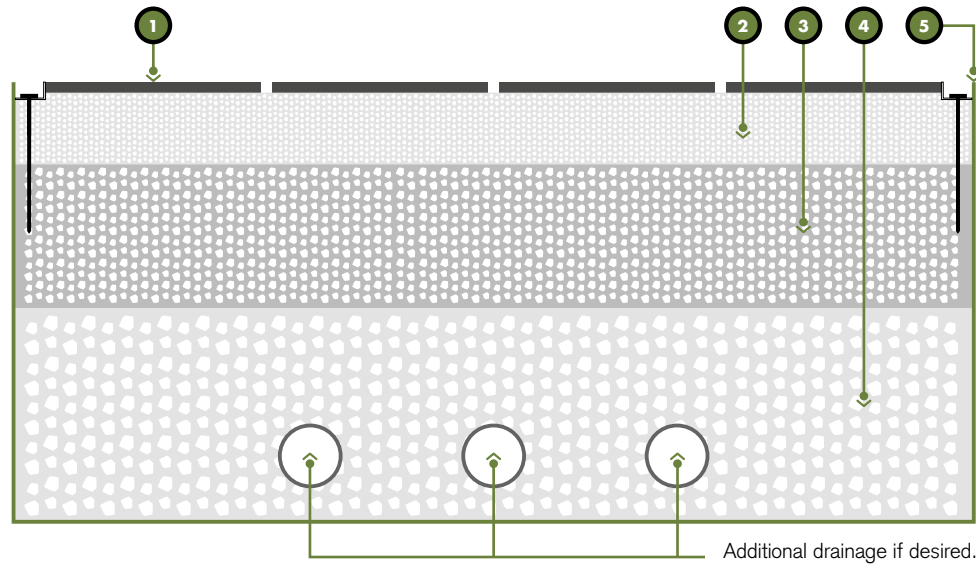
NOTES:  
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Never install porcelain pavers without spacers (min 4mm -  $\frac{5}{32}$ ").  
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**2.E PERMEABLE APPLICATION**  
(PEDESTRIAN FOOT TRAFFIC)

**PRACTICAL INSTALLATION**

Follow the drawing below.

- The required edge restraint system for this installation has a vertical height of 2" (5 cm) as shown in the drawing.
- Insure that pavement is constructed with a 1" in 10' and that it is pitched away from any building.
- Insure the  $\frac{3}{16}$ " (4 mm) spacers are installed between all pavers, in order to prevent pavers from touching each other (and potentially chipping) and to allow better water drainage.



- |   |  |
|---|--|
| 1. Mbrico porcelain $\frac{3}{4}$ " nominal (20 mm) pavers.           | 4. Coarseness of gravel 6" - 3 s' - 4 s' if desired. |
| 2. Coarseness of gravel 2" - 8 s' and 9 s' ( $\frac{1}{2}$ " + less). | 5. Filter fabric.                                    |
| 3. Coarseness of gravel 4" - #57 ( $\frac{3}{4}$ ").                  |  |



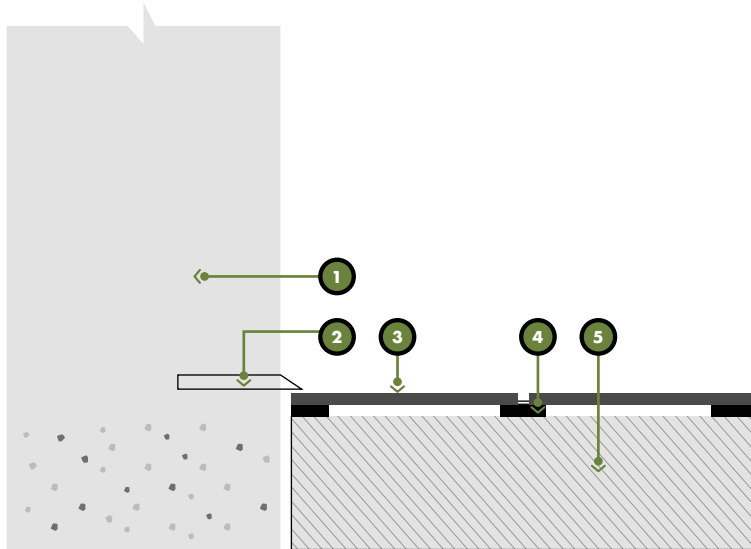
**NOTES:**  
 Never compact porcelain pavers with a plate compactor.  
 Never install porcelain pavers without spacers (min 4mm -  $\frac{5}{32}$ ").  
 Please note that the above section drawing is meant to be an example only.  
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**2.G LOW HEIGHT SUPPORTS (UP TO 3/4" - 20 MM)  
PEDESTAL INSTALLATION OVER EXISTING SUBSTRATE \***  
(PEDESTRIAN FOOT TRAFFIC)

**PRACTICAL INSTALLATION**

Follow the drawing below.

- Ensure concrete slab is in stable condition and has a 1" in 10' slope to divert water away from structure.
- Ensure spacer tabs are intact in the corners where the porcelain pavers might come to contact.



- 1. House or structure.
- 2. Threshold for door.
- 3. Mbrico's porcelain 3/4" nominal (20 mm) pavers.

- 4. Pedestal.
- 5. Existing slab or substraight.



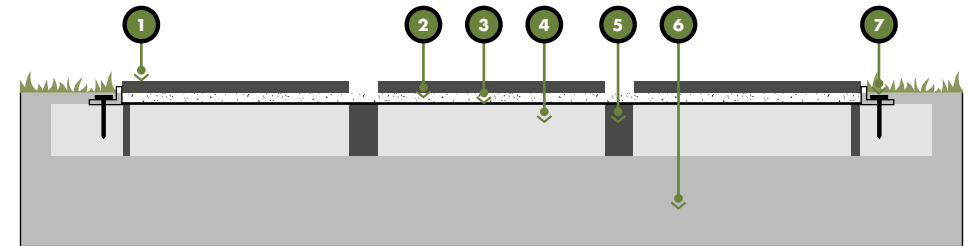
NOTES:  
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Never install porcelain pavers without spacers (min 4mm - 5/32").  
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**2.H SAND SET OVER CONCRETE**  
(PEDESTRIAN FOOT TRAFFIC)

**PRACTICAL INSTALLATION**

Follow the drawing below.

- The edge restraint system is 1 1/2" - 2" height profile.
- Ensure edge restraint into the concrete base made.
- Lay fabric directly on top of the concrete to contain sand and fold it up the front of the edging.
- Insure that pavement is constructed with a 1" in 10' and that it is pitched away from any building.
- Insure the 3/16" (4 mm) spacers are installed between all pavers, in order to prevent pavers from touching each other (and potentially chipping) and to allow better water drainage.



- 1. Mbrico's porcelain 3/4" nominal (20 mm) pavers.
- 2. Sand bedding course 1".
- 3. Fabric.
- 4. Existing or new concrete 4" minimum.

- 5. 1/2" 1" inch drainage holes drilled 24 inch on center.
- 6. Subgrade.
- 7. Peripheral restraint system.



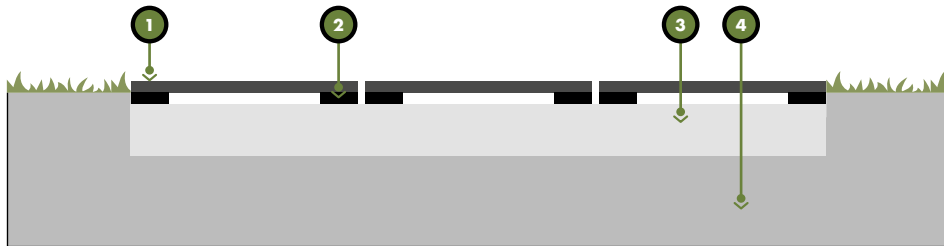
NOTES:  
Never compact porcelain pavers with a plate compactor.  
Never install porcelain pavers without spacers (min 4mm - 5/32").  
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**2.1 INSTALLTION OVER ¾" PEDESTAL ON CONCRETE**  
(PEDESTRIAN FOOT TRAFFIC)

**PRACTICAL INSTALLATION**

Follow the drawing below.

- Make sure the concrete slab is properly built and smooth and has 1 ½ - 2 degree pitch and that it is pitched away from any building.
- Plastic ¾" pedestal support must be placed and installed all corners of the pavers.



- 1. Mbrico porcelain ¾" nominal (20 mm) pavers.
- 2. ¾" pedestal.

- 3. Concrete base.
- 4. Subgrade.



**NOTES:**

Never compact porcelan pavers with a plate compactor.  
Never install porcelain pavers without spacers (min 4mm - 5/32").

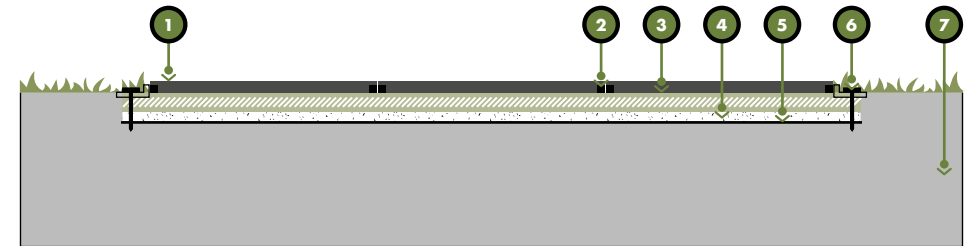
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**2.2 INSTALLATION WITH HIGH DENSITY PANELS**  
(PEDESTRIAN FOOT TRAFFIC)

**PRACTICAL INSTALLATION**

Follow the drawing below.

- The edge restraint system is 0.75" - 1" height profile.
- Attach the edge restraint into the panel.
- Lay fabric directly on top of the subgrade to contain sand.
- Install panel onto sand bed course 1".
- Insure the 3/16" (4 mm) spacers are installed between all pavers, in order to prevent pavers from touching each other (and potentially chipping) and to allow better water drainage.



- 1. Mbrico porcelain ¾" nominal (20 mm) pavers.
- 2. Spacers.
- 3. High density panels.
- 4. Sand ½" - 1"

- 5. Fabric.
- 6. 1" inch peripheral anchor.
- 7. Subgrade.



**NOTES:**

Never compact porcelan pavers with a plate compactor.  
Never install porcelain pavers without spacers (min 4mm - 5/32").

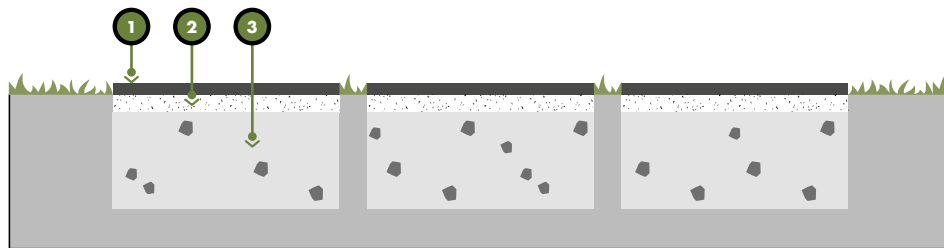
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## 2.K DRY LAY OVER GRASS ON COMPACTED ROAD BASE INSTALLATION (PEDESTRIAN FOOT TRAFFIC)

### PRACTICAL INSTALLATION

Follow the drawing below.

- Compacted base road is composed of  $\frac{3}{4}$  compacted gravel.
- Sand bed course poured onto compacted gravel and screed to have smooth surface.



1. Mbrico porcelain  $\frac{3}{4}$ " nominal (20 mm) pavers.
2. 1" Sand bedding course screed with smooth surface.

3. Compacted road.



**NOTES:**

Never compact porcelain pavers with a plate compactor.  
Never install porcelain pavers without spacers (min 4mm -  $\frac{5}{32}$ ").

Please note that the above section drawing is meant to be an example only.  
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**NOTE**

IF THE APPLICATION OF THE 20 MM ( $\frac{3}{4}$ ") SLABS FORESEES THE CERAMIC PRODUCT USED IN STRUCTURAL INSTALLATIONS, THE PROJECT ENGINEER AND/OR CUSTOMER MUST CAREFULLY ASSESS THE PROJECT REQUIREMENTS WITH REGARD TO THE TECHNICAL SPECIFICATIONS OF THE SLABS.

TO PREVENT THE RISK OF DAMAGE OR INJURY, THE MANUFACTURER RECOMMENDS:

- WITH REGARD TO A RAISED FLOOR INSTALLATION A CERAMIC SLAB MAY FRACTURE ON IMPACT IF A HEAVY OBJECT FALLS ON IT FROM ANY SIGNIFICANT HEIGHT. THEREFORE THE MANUFACTURER RECOMMENDS TO CHECK THE SPECIFIC INTENDED USE BEFORE STARTING THE INSTALLATION AND TO FOLLOW TABLE FOR RAISED INSTALLATION PROVIDED BELOW. IN CERTAIN CONDITIONS, REINFORCING MUST BE APPLIED ON THE BACK OF THE SLABS (MESH PLUS OR GALVANIZED STEEL SHEET) SUPPLIED AND APPLIED BY THE MANUFACTURER;
- WITH REFERENCE TO ANY DRY INSTALLATION SYSTEM OF FLOORING ABOVE THE GROUND LEVEL, THE MANUFACTURER RECOMMENDS TO COMPLY WITH LOCAL REGULATIONS AND CONDITIONS OF USE WITH REGARD TO WIND-LOAD, LOADBEARING, SEISMIC EVENTS, ETC.  
FAILURE TO COMPLY WITH THESE RECOMMENDATIONS MAY LEAD TO IMPROPER USE OF THE PRODUCT AND COULD CAUSE SERIOUS DAMAGE OR INJURY.

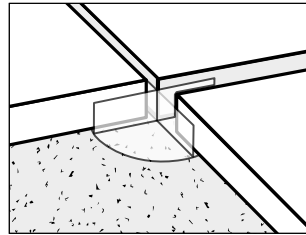


## INSTALLATION INFORMATION AND RECOMMENDATIONS

Specific details and instructions are given for each of the following installation options. Different climates and geographical locations will affect the thickness of the base. Depending on the location, contractors will install the standard base thickness to install porcelain pavers for the needs of the area. When installing porcelain pavers, the bedding course sand must be pre-compacted and then struck off with a screed to the required thickness as shown in the drawings. Before the laying of the porcelain pavers, the sand layer underneath must be pre-compacted. The sand layer needs a 5 to 6% moisture content to insure a smooth strike off finish.

### Compacting dry sand will not give the desired results.

- Only use a paver saw with a wet cut porcelain blade to wet cut porcelain pavers.
- Before installing your porcelain pavers in sand set installations, pre-compact and strike off your sand leveling course.
- Plastic  $\frac{3}{16}$ " (4 mm) spacers must always be used to install pavers on sand set and permeable installations. The photo on the right illustrates the use of the  $\frac{3}{16}$ " spacer to support and space the 4 paver corners.
- Never install pavers with porcelain to porcelain contact.
- The use of plate compactors is not recommended to be used on the porcelain pavers.



## JOINT FILLING

When installing porcelain paver on sand set base, fill the 4 mm (approx  $\frac{3}{16}$ " ) paver joints with these options:

### Traditional sand

Fill the open joints with traditional dry sand until completely filled. Sweep any excess sand off the pavers. Refilling of the joints with sand may be needed in the future due to wind and rain erosion.

### Polymeric sand

Polymeric sand is a blend of polymers which harden when subjected to moisture.

Sweep the sand into the open joints until completely filled. All excess sand and dust must be swept from the surface. Use a blower for the final dust removal to make certain all excess sand is removed. Any residual sand or dust can result in staining of the surface.

Once the filling of the joints and the cleaning of the surface is complete, mist the pavement with water which activates the polymer and cures the mixture.

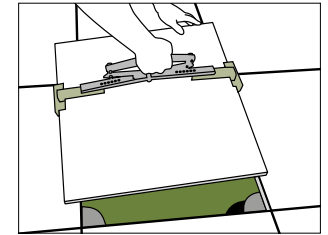
#### IMPORTANT NOTE: LEGAL DISCLAIMER

The nominal measurements include 4 mm for product spacers which are sold separately. Although extreme care has been taken to ensure the accuracy of all measurements set forth herein, manufacturer assumes no liability relating thereto.

## HANDLING AND SPECIALTY TOOLS

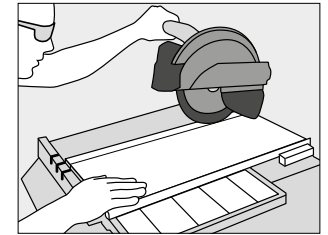
Porcelain paver pallets are shipped with a very strong plastic covering and the individual units are packaged in protective cardboard boxes. The protective cardboard boxes guard them from the possibility of chipping.

The handling of multiple loose stones can result in damaging or chipping of the pavers. Protect any un-used boxed pavers from the elements once the plastic shipping cover is removed. This insures the integrity of the protective cardboard boxes.



Wet cut paver saw is used to cut paver accurately and cleanly to fit around edges and corners. The saw must be equipped with a diamond blade manufactured for wet cutting porcelain and designed to safely cut a 24" (60 cm) length porcelain paver.

A paver clamp to easily handle the installation and removal of pavers. Gloves are highly recommended while handling and installing porcelain slabs to protect the hands from injury. Notched trowels and grout float tools for cementitious adhesive and grout Installation. Follow the adhesive and grout manufacturer's recommendations to select the appropriate tools needed for application.



#### IMPORTANT NOTES:

1. Use the manufacturer's instructions when choosing polymeric sand for your project.
2. The use of cement blended sand and polymeric sand can reduce plant growth and insect infiltration within the joint infill material.
3. Whether using traditional sand or a cemented blended sand, ensure the gradation of the sand is fine enough to pass through and fill the  $\frac{3}{16}$ " (4 mm) joints.