

EVERBLUE™ INSTALLATION GUIDE



Tools and Handling

CUTS AND HOLES

- It is possible to cut the material both in damp or dry conditions.
- It is essential to use **ONLY** specific diamond cutting wheels for porcelain stoneware.
- To make holes in the slabs, use diamond drill bits for porcelain stoneware.



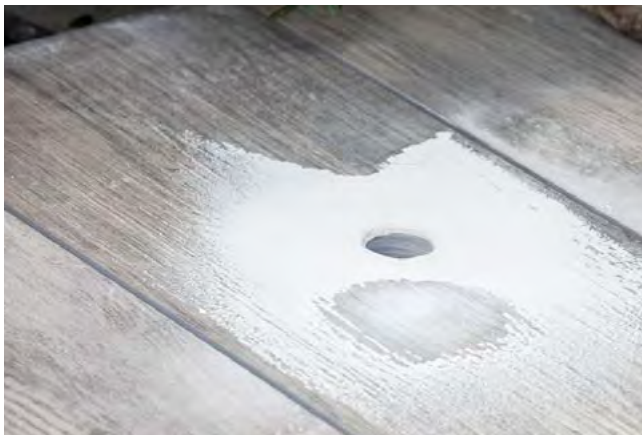
DRY GRINDING MACHINE



DIAMOND BLADE



TILE CUTTER





Installation Options

General Information

- 6 A1. - DRY LAYING ON SAND, ON A COMPACTED GRAVEL SUBSTRATE (ROAD BASE)
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General Information

SUBSTRATE

- Level the substrate and compact it with care before proceeding with installation consisting of resting the slabs on the substrate.
- It is advisable to lay a separating cloth (geotextile) to stabilize the substrate in order to limit any washing away along the gaps/joints between the pavers and to minimize the growth of weeds and possible dens of insects in between the joints.
- In the event of a sandy substrate, before compacting it, make sure that the level of moisture of the sand is sufficient to guarantee the best possible compacting.



SPACERS BETWEEN PAVERS

When laying porcelain pavers by resting them directly on the substrate, they **must never be laid so that they touch each other**, as this would drastically increase the risk of chipping caused by micro-movements while the pavers are settling into place.

DO NOT USE A PLATE COMPACTOR AFTER LAYING

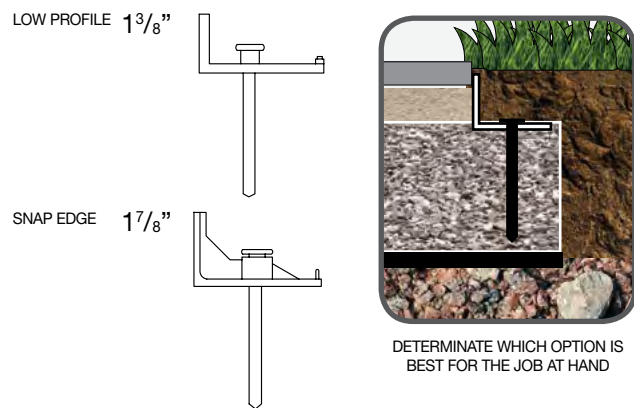
To avoid any risk of chipping the material, never use a plate compactor once the porcelain paver slabs have been laid.



EDGE RESTRAINTS

When pavers are laid on draining sand or gravel, always prepare an edge restraint system to hold the substrate material used and prevent any washing away of sand or gravel, therefore keep the paver slabs in place. It is possible to use different types of restraint systems:

- invisible edging, lower than the thickness of the slab plus that of the base; this must be suitably fixed to the ground.
- visible edging, with a strip of concrete, stone, porcelain stoneware or other material.



SUBSTRATE

To ensure the necessary stability in time, **the area provided as a substrate must always be larger than the actual paved area**. It's size will have to be defined depending on the type of substrate used and on the characteristics of the site. Generally speaking, an extra space of about 8 to 9" on each side is sufficient.

SLOPES AND DISTANCES FROM BUILDINGS

In order to prevent water from collecting and to facilitate drainage, the surface must always have the appropriate slope, the extent of which has to be defined on the basis of the specific features of the site and on a job to job basis (indicatively, 2° degree). It is advisable to leave a suitable draining distance between the paved areas and any building wall.

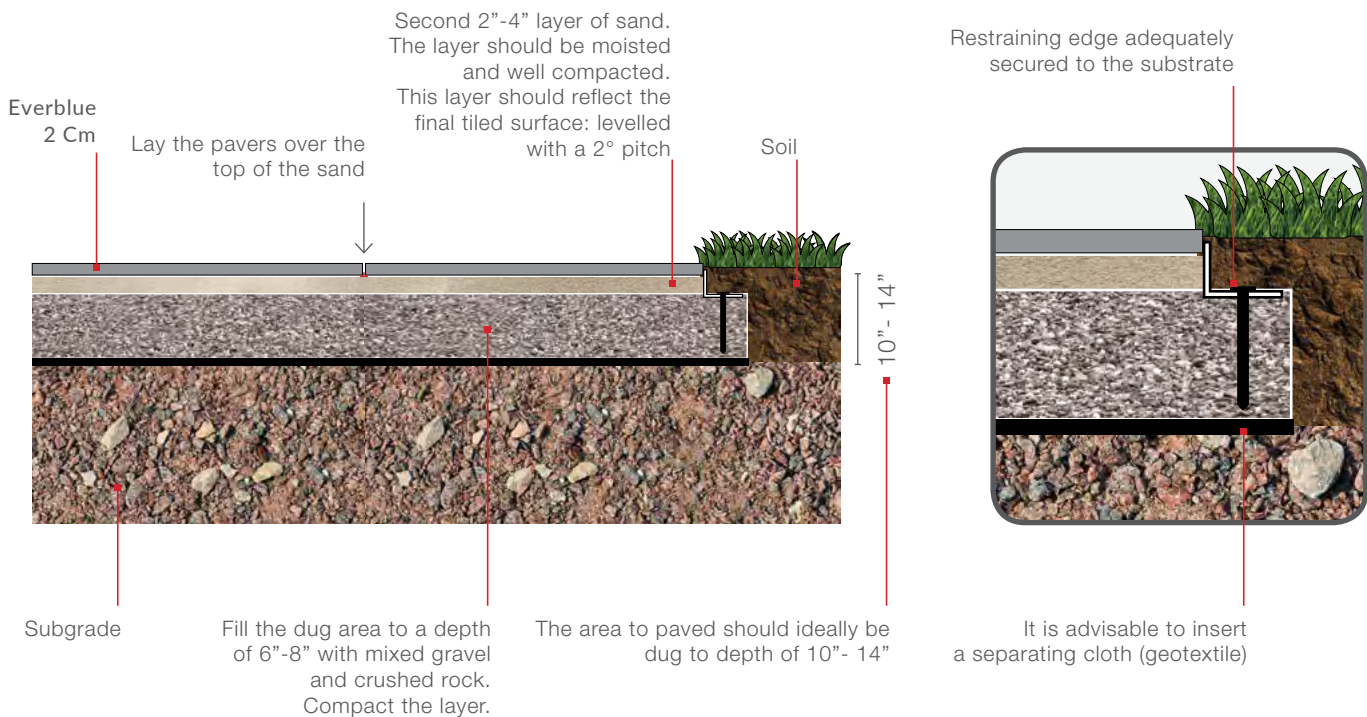


A1. Dry Laying On Sand, On A Compacted Gravel Substrate (road base)

With the following illustrations we show a cross-section of a typical installation.

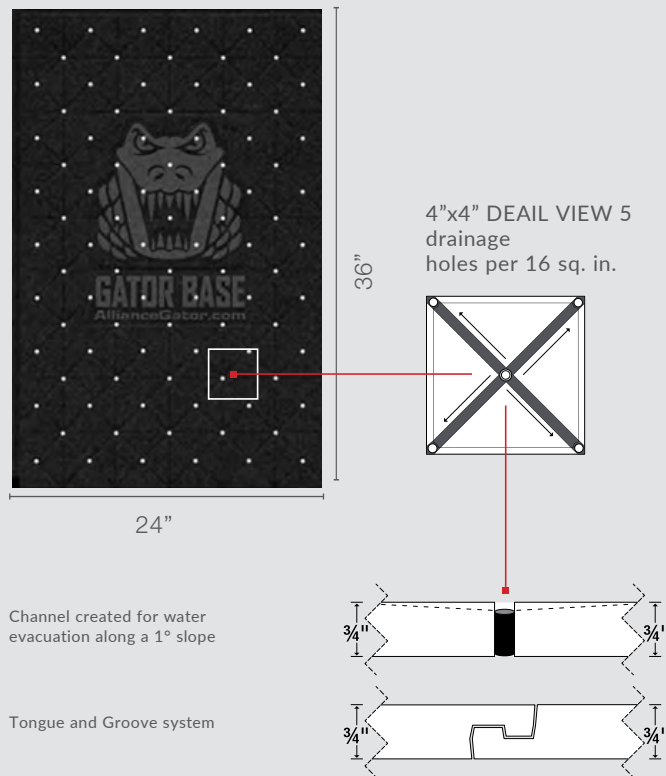
In practical applications, all the considerations will have to be reviewed by a qualified and experienced professional staff in relation to the specific nature of the site and to the regulations in force at the site.

- Prepare a **substrate** about 8" to 10" wider than the perimeter of the paved area. The paved area must remain at a distance from any buildings.
- Compact the substrate and lay a **separating cloth** (geotextile) to stabilize the substrate, limit the removal of material from the gaps between the pavers and minimize the occurrence of plants or insects.
- Always insert a **restraining edge**, fixing it suitably to the substrate in accordance with the manufacturer's indications depending on the type of material used for the substrate.
- It is advisable to arrange an approximate 2° slope for the flooring.



Alternative Laying With Gator Base Panels

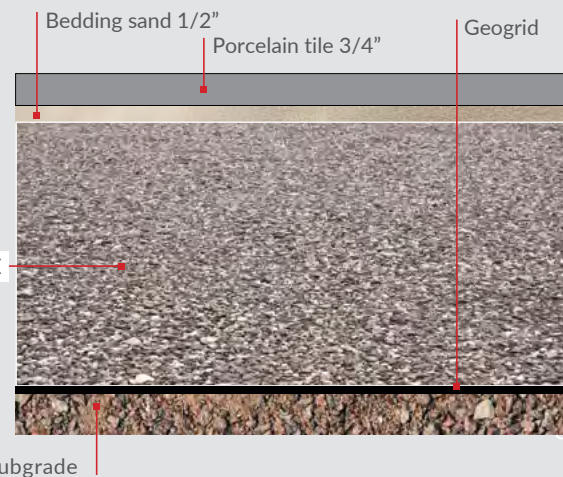
Gator Base panels, $\frac{3}{4}$ " thick, can be used to replace a 6" layer of pressed gravel. They are usable immediately.



GATOR BASE WAY



TRADITIONAL WAY



- Save 6 inches of needless excavation
- Save 6 inches of crushed stone
- Save the cost of truck and driver on the road
- Save on costly dumping fees
- Save wear and tear on machinery
- Save on labor costs
- Save overall installation time
- Increase profit
- For pedestrian use only

Features

- Built to Last
- Better Load Transfer
- Better Freeze and Thaw Protection

MORE INFO: www.alliancegator.com/products/gator-base

Material For Filling The Joints Between The Pavers

In the case of pavers resting on the ground, there are several solutions for filling the gaps between them.

LAYING ON SAND

- Fill the gaps between the pavers with sand and eliminate the excess material. In time, rain, wind and cleaning activities may remove the sand, therefore calling for some occasional re-filling when necessary.

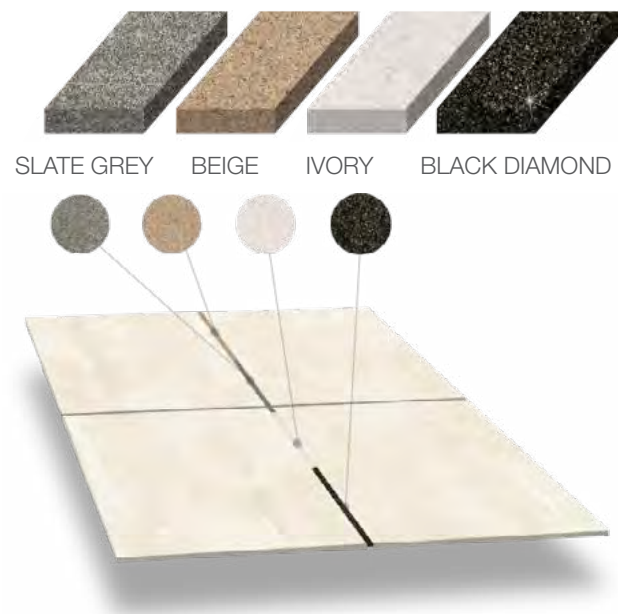
LAYING ON SAND WITH ADDED CEMENT

- Prepare a dry mixture of sand and cement (indicatively the cement will be $\frac{1}{4}$ of the total) and fill the gaps between the pavers with it.
- Eliminate any excess material carefully, making sure that none remains on the slabs.
- Lastly, wet the gaps with water so as to consolidate the filling material by activating the cement contained in it.

LAYING POLYMERIC SAND OR GRAVEL

- Polymeric sand is a composition created specifically for making joints in outdoor paving. It is important to use specific sand for porcelain stoneware (which absorbs small quantities of water). This sand, available in several different colours and grain sizes, has polymeric substances that bind together in the presence of water added to it.
- Once the polymeric sand has been compacted, it will prevent the growth of weeds and the removal of the filling material by the action of rain and wind or due to cleaning activities.
- Once the gaps have been filled with polymeric sand, eliminate with great care all the excess material, removing any residues of sand from the surface, even using mechanical blowers.
- Lastly, wet the gaps between the pavers with water to activate the reaction of the polymers that will transform the sand into a compact body.

POLYMERIC SAND OR GRAVEL



Installation Summary

Stages of installation:



Excavation of the new area



Levelling of the base



Compacting the Base



Addition of geo-fabric



Levelling the Bedding Sand



Compacting the Bedding Sand

GATOR BASE OPTION



3A

Installation of the Gator Base



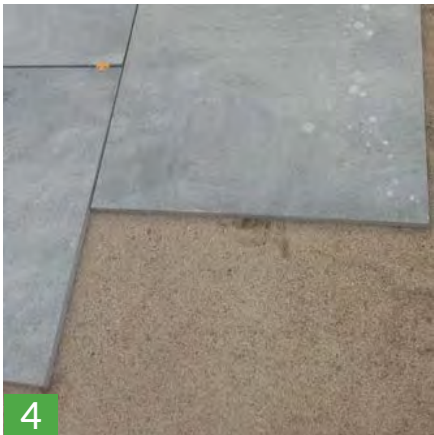
3B

Installation of Everblue Tile and
Gator Spacer



3C

Installation of Gator Edge and Screws



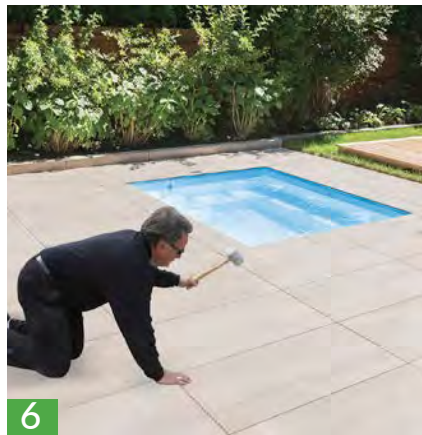
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Installation of Everblue tile



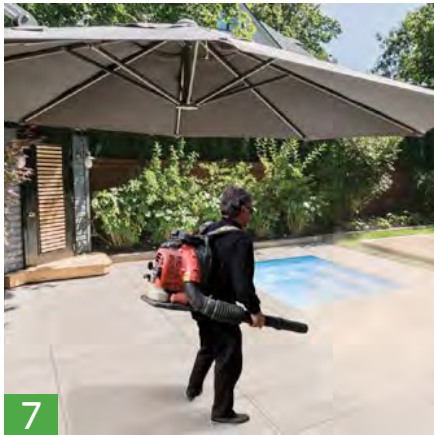
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Spacer Sweeping



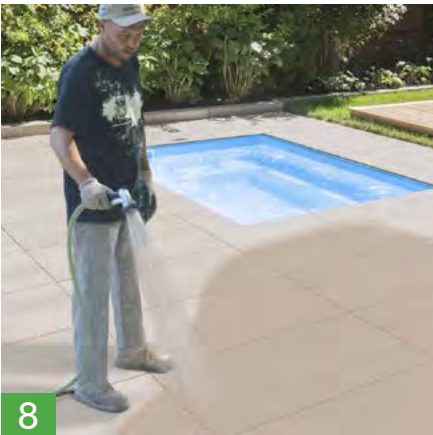
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Compacting the tile



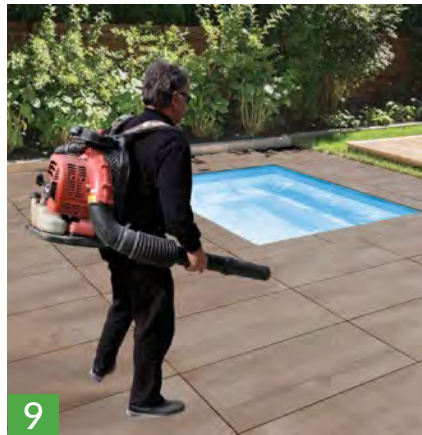
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Blowing the tile sand



8

Shower to eliminate any residue



9

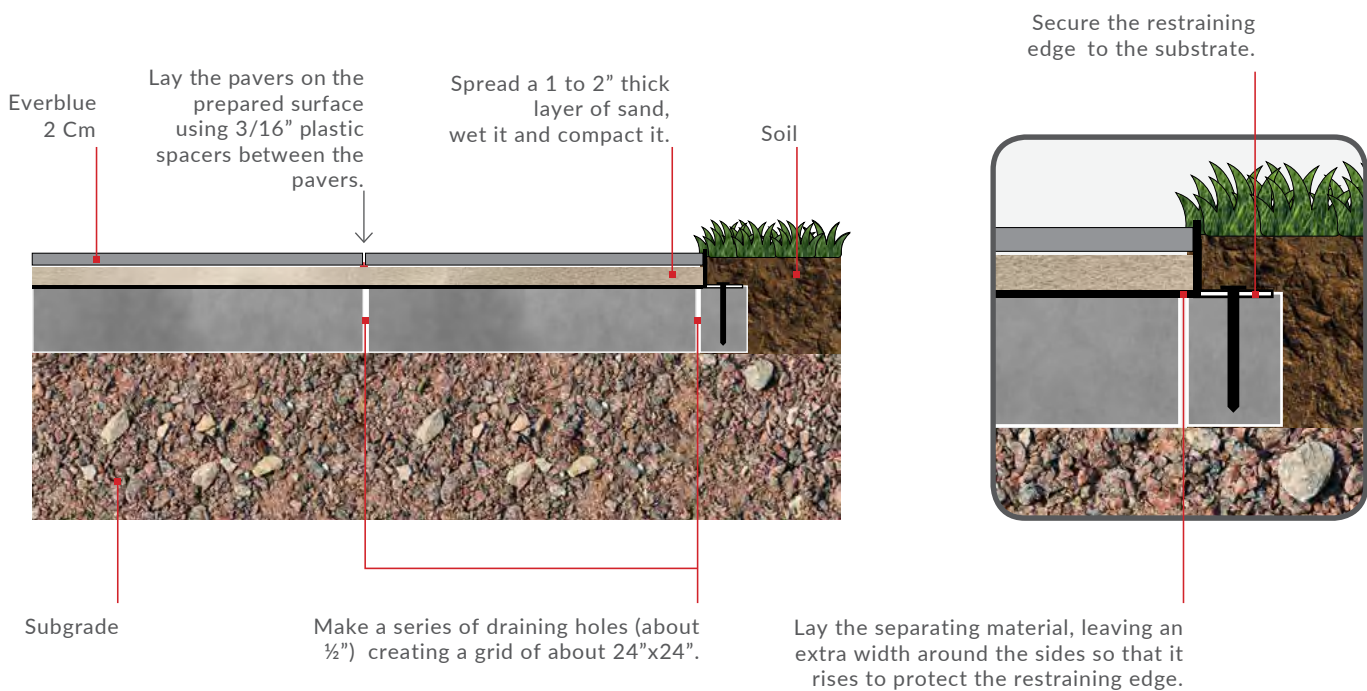
Blowing the tile sand

A2. Dry Laying On A (Pedestrian) Concrete Platform

With the following illustrations we show a cross-section of a typical installation.

In practical applications, all the considerations will have to be reviewed by a qualified and experienced professional, in relation to the specific features of the site and according to the regulations in force at the specific job site.

- Prepare a **substrate** about 6" wider than the perimeter of the area to be paved.
The paved area has to remain at a distance from any buildings.
- Make sure that there are no substantial / structural cracks in the concrete surface that would compromise its stability.
- It is advisable to arrange for the upper surface to have a slope of about 1° to 2°.
- Install a **restraining edge** of an adequate height, fixing it to the substrate.
- Cover the concrete surface with a **separating sheet** (geotextile) to limit the washing away of the layer of sand.

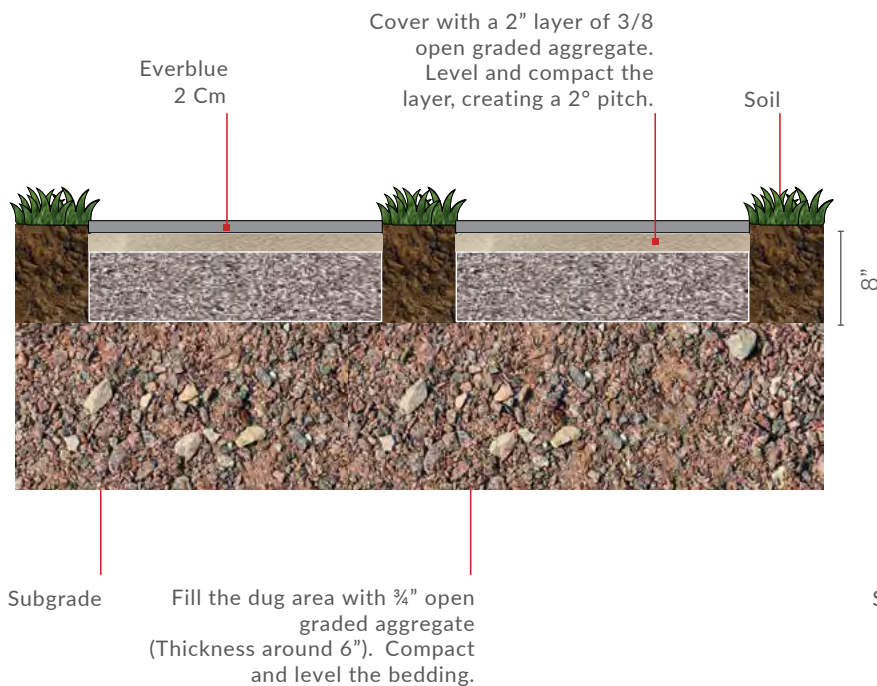


A3. Laying “Oriental Garden” Style, Directly On Lawn (For Pedestrian Use)

With the following illustrations we show a cross-section of a typical installation.

In practical applications, all the considerations will have to be reviewed by a qualified and experienced professional, in relation to the specific features of the site and to the regulations in force at the place concerned.

- Lay out the pavers on the ground to determine the number of steps needed for the garden path, making sure the slabs are placed at equal distance from each other.
- Mark the perimeter of each slab with a spade and then remove the slabs.
- Remove the turf up to a depth of 5 cm.
- Create a stable and uniform bed using gravel.
- Lay the slabs so there is a fall of about 0.5 cm between the slab and the ground.
- Use a rubber hammer to bring the slabs to the same level of the turf.



Start by removing the grass and dig to a depth of around 8".

B1. Laying With Adhesive On A Full Mortar Bed

HEALTH AND SAFETY INFORMATION

During the construction process, safety procedures and safe working practices should be executed at all times, alongside the necessary protective equipment. The size of the paved area, it may become necessary to provide expansion joints in the underlying screed. It is essential for the screed joints to be created in correspondence of the joints of the ceramic slabs.

PAVEMENT DESIGN

For most domestic/private applications, the ground should be prepared and a sub-base of about 100mm, the most suitable for a patio, is dug out. The ground is then compacted and prepared based on the type of tile that will be installed.

EXCAVATION

For a correct installation of the new paving, the ground may require to be excavated to a certain extent. The depth of the excavation depends on the thickness of the mandatory sub-base, the sand and adhesive. In order to work out the correct depth for the excavation, the level of the finished surface must be at least 150mm below the Damp Proof Course to restrict problems of increasing damp in the structure.

EDGE RESTRAINTS

The edge restraints of the tiles must be adequately robust to prevent the lateral displacement from loadings placed on the paving surface, and are laid down before the sub-base installation. The edge restraints provide a steady vertical face to a level below the laying course material. When working with steep inclines or gradients, intermediate restraints should always be considered, their spacing is related to the severity/harshness of the incline.

SUB-BASE MATERIAL SELECTION

The granular sub-base material should be at least of Type 1 quality, any inferior quality may be bound to failure upon loading and prone to frost or moisture movement.

Materials incorporating organic matter are not recommended, while recycled materials, such as crushed masonry or concrete, as long as it is well graded and able to compact in order to give a close textured finish.

SUB-BASE CONSTRUCTION

The layers of the sub-base material should not exceed 75mm in thickness, it is recommended that each layer is fully compacted prior to the next layer being placed/deposited. In order to prevent migration of finer material, each surface must be clean and close textured when placed/deposited.

RIGIDLY LAID PAVING – MATERIALS SELECTION

Everblue makes every effort in order to ensure the consistency in color and shade in our pavers, but it is inevitable for there to be some variation between different batches. Everblue recommends mixing the contents of the packets in order to ensure an acceptable blend. When ordering further material at a later date, it is recommended to make a note of the shade reference number, making it easier to locate the appropriate material.

Everblue Pavers are recommended to be installed on a full mortar bed and never on a five spot bed or alternative. The installation of Everblue Pavers is recommended on a full mortar bed, never on a five spot bed or alternative.

A full 'wet' workable mix mortar bed should support the pavers. The mortar bedding should have a thickness between 15mm and 30mm, furthermore a slurry primer or a similar bonding agent should be applied to the back of the paver to increase adhesion to the mortar bed and prevent separation. Adjustment may be necessary to ensure that the pavers are fully supported and do not move.

JOINTING

The width of the joints should be 5-8 mm wide and spacers may be used to obtain uniform joints. Every joint should be filled with polymeric sand. Dry or semi-dry sand/cement mixes must never be brushed into the joints, as it leads to the staining of the paving and is not a true rigid point. Before applying the polymeric sand in between the joints in a diagonal movement, the paved area should be saturated with water.

Important: To ensure the polymeric sand fills all joints to the entire depth and width, once the paving has been laid on the mortar bed, the excess mortar must be raked out with a suitable tool.

B2. Laying With Adhesive On A Full Mortar Bed

TIP

During the construction process, safety procedures and safe working practices should be executed at all times, alongside the necessary protective equipment. the size of the paved area, it may become necessary to provide expansion joints in the underlying screed. It is essential for the screed joints to be created in correspondence of the joints of the ceramic slabs.

To easily help the polymeric sand into the joint, one option is to form slurry by adding water, which allows the jointing material to easily flow into the joint.

The polymeric sand needs to be compressed into the void to ensure a solid joint, if there are any exposed or hungry joints, extra polymeric sand can be swept over them to ensure a compact and full joint.

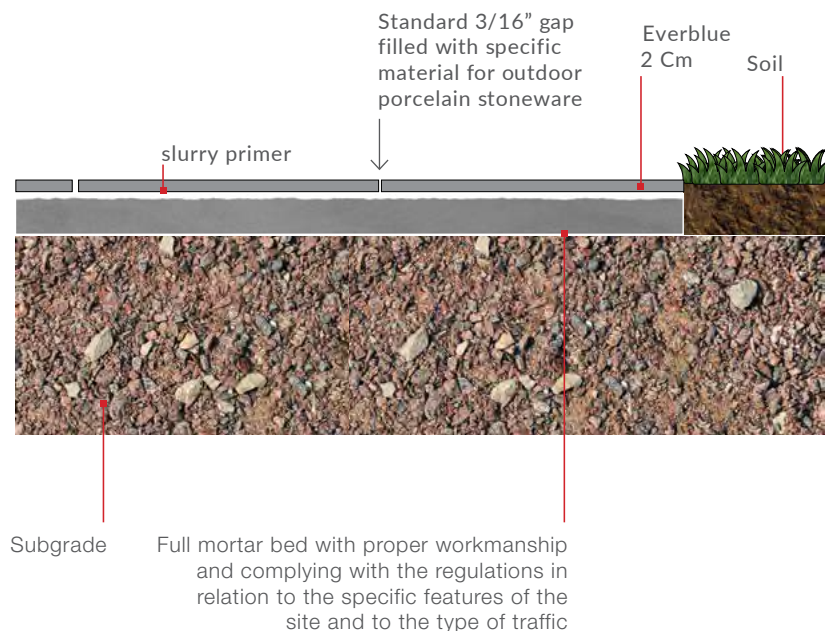
Ensure that the polymeric sand is fully compacted into the joint after following the instructions above and on the tub.

CLEANING

After installing the Everblue Pavers, quickly spray the surface with water, to prevent the polymeric sand from hardening and making it more difficult to come off, and sweep off any excess with a soft bristled brush. The remaining polymeric sand can be stored in a tub for up to 6-12 months provided that the tub is filled to the maximum with water so that air cannot enter and ruin it. (The Everblue Pavers are very low maintenance and easy to clean).

INCLEMENT WEATHER

If the weather conditions may jeopardize the performance of the paving, the laying and jointing operations should be discontinued. To prevent saturation all the unfinished areas and stockpiles of materials should be covered in the occurrence of inclement weather.



B3. FAQ

1. Are spacers required for installations in gravel or sand? Can sand be installed in between the tiles, similar to grout?

The answer varies depending on the pavers being rectified or not. As general rule, there must be some space between pavers since otherwise they could easily chip.

Gator spacers are all rectified therefore the recommended space is 3 mm = 1/8".

It can obviously be more than 3 mm if preferred for better water drainage (in fact the recommended space in between raised installation pavers is 4-5 mm).

Two kinds of spacers are used depending on the installation.

2. Can it be installed "buted" against each other? It is not recommended. It is not doable if the pavers are pressed and not rectified because of the different dimension/calibration of the pieces.

Even if the product is rectified, although it theoretically could be done, it is not recommended because the tiles could chip by friction of one against the other.

3. Does the product get hot in the sun? Are there any tests available or specifications available?

Porcelain gets hot in the sun. Sri is the measurement of it. Solar index refraction is available for every Everblue product. Depending on the color, most of them are ≥ 29 therefore do not significantly increase any urban heat island effect (7.1) And do not contribute to change the energy balance of the environment where they are installed.

As a result, some Everblue pavers (lighter colors) contribute to the achievement of one sustainable sites credit as per the us green building council standards. Please refer to the attached chart for sri values.

4. Does this product expand or contract over time due to the chance of temperature?

Everblue pavers coefficient of linear thermal expansion is very limited @ $6.3 \times 10^{-6} \text{ } ^\circ\text{C}^{-1}$ exceeding the required standard of $< 9 \times 10^{-6} \text{ } ^\circ\text{C}^{-1}$ applied to porcelain tiles as per iso 10545-8

5. Are there any maintenance requirements? Sealing, etc.

No maintenance other than periodic cleaning is required. No sealing is necessary on porcelain. Running water by a hose is usually the best way to keep the pavers cleaned. Water sitting on the tiles may leave residue of lime/calcium that can be eliminated with a rubber brush. When hosing down pavers installed with drain mortar in between, it is important not to concentrate the stream on the joint since that could wash the sand grout away. Everblue porcelain pavers are "class 5" as per en 10545-14 stain resistance test. That means that any stain can be removed with brush and hot water.

6. Are Everblue pavers chemical-resistant?

Everblue pavers are chemical resistant as below, following the standards of iso 10545 13.2000.

Ua = resistance to domestic and thermal + swimming pool salts

UI = low concentration acids (i.e. 3% Hydrocloridric acid + others)

Uh = high concentration acids (i.e. 18% Hydrocloridric acid + others)

7. Does this product stain or fade in the sun over time?

Porcelain does not fade in the sun as resulting from din 51094 test results.

8. What technical specifications are available?

The specs provided are a mix of different regulations and standards.

- ASTM is the standard applied to porcelain tiles in the United States.
- Din are the standards applied to porcelain tiles in Germany.

Copy of the following performed tests are available
Specifically:

- Bending strength/breaking load
(20122372/5)
(20111615/5)
- Frost resistance + desalting ice
(20122372/2)(20111615/5)
- Thermal shock resistance (20122372/1)
(20111615/5)
- Slip resistance = usrv (20111615/3)
- Resistance to abrasion (20111615/4)
- Shock test on hard bodies with metal basket
(20124267/1)

9. Are Everblue pavers water resistant?

Yes, they are, as any porcelain tiles, the rating class is a1 as per en13501-1 standard.

10. What is the thermal shock resistance of Everblue pavers? What is the temperature above/below which it is not recommended to install porcelain pavers?

Everblue pavers pass the thermal shock resistance test iso 10545-8 and can be safely installed in temperature between -40 c (-40 f) and +80 cent (175 f).

Pedestals have a good thermal shock resistance (i.e. Ivica measures 18.7 Kn frost/ defrost) and overall are safely suitable for installation at the above temperatures (please refer to manufacturers specs)

TECHNICAL CHARACTERISTICS

STANDARDS	CHARACTERISTICS OR PROPERTIES	COMPLIANCE WITH STANDARDS UNI EN 14411 G ASTM	DECLARED VALUE
ISO - 10545-3 ASTM - C 373-88	Water absorption	E < = 0.5 %	< 0.1 %
ISO - 10545-9 ASTM - C 484	Thermal shock resistance	Requested	Complies with standard
ISO - 10545-12 ASTM - C 1026	Frost resistance	Requested	Complies with standard
ISO - 10545-6 ASTM C - 1243-93	Abrasive wear	<175 mm ²	139 mm ²
ISO - 10545-2	Straightness / ASTM - C 485	+/- 0.75 % (+/- 1.8 mm)	Complies with standard
	Straightness / ISO - 10545-2	+/- 0.5 % (+/- 1.5 mm)	Complies with standard
	Thickness / ASTM - C 499	+/- 1.02 mm	Complies with standard
	Thickness / ISO - 10545-2	+/- 0.5 % (+/- 0.5 mm)	Complies with standard
	Length and width / ASTM - C 499	+/- 0.5 % (+/- 2.0 mm)	Complies with standard
	Length and width / ISO - 10545-2	+/- 0.6 % (+/- 2.0 mm)	Complies with standard
ISO - 10545-4 Bending strength in N (thickness > = 7.5 mm)	ASTM - C 648	> = 250 LBF Average	> = 225 LBF Individual
	ISO - 10545-4	> = 1300 Newton	> 13000
ASTM - C 650	Chemical resistance	As reported	Resistant
ISO 10545-14	Resistance to stain	-	5
ISO 10545-13	Chemical resistance	UB min.	UA ULA UHA
ISO 10545-8	Coefficient of linear thermal-expansion	-	$\alpha = 6.3 \times 10^{-6} \text{ } ^\circ\text{C}^{-1}$
ISO 10545-5	Impact resistance	-	0.88
EN 12825	Static load	-	Center 9.6 Kn Center point of sides 6.5 Kn Diagonal 8.19 Kn (CLASSE 3)
	Dynamic load capacity - hard object impact test	-	Test not passed
	Dynamic load capacity - soft object impact test	-	Test passed
EN 1339	Bending strength - breaking force in N the data measured lead to the presumed attribution not less than Class U11 for load	Kn 14.38	class 14
ENV 12633	Slip resistance	> / = CL1	CL 2
DIN 51130	Slip resistance	-	R11
DIN 51097	Slip resistance	-	A + B + C min.
DM 236/89 B.C.R.A.	Slip resistance	-	> 0.40
Static coefficient of friction ASTM 1028-07 BOT 3000 Dynamic coefficient of friction (section 9.6 ANSIA 137.1 2012)	Slip resistance	-	> 0.60 WET > 0.60 DRY
			> = 0.42
EN 13501-1	Fire resistance	-	A1 - A1 FL