



Installation Methods of Porcelain 2 CM Pavers



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Installation Methods of Porcelain 2 CM Pavers

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Course Title : Installation methods for PORCELAIN 2CM PAVER.
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Speaker : Jim Uger

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Porcelain Pavers Installation Guide: Introduction

Porcelain Pavers Contractor Installation Information PRELUDE:

This installation manual is designed to be used by professional hardscape contractors and assumes they are already familiar with the proper construction techniques; design considerations and have the required skills for the installation of interlocking paving stones. It further assumes that the contractor has access to the required tools for such construction.

INTRODUCTION:

Elegance Porcelain Pavers are formed by pressing, followed by vitrification: this process involves the total fusion into a single material made from natural raw materials (sand, quartz, feldspars, kaolin, clays and inorganic pigments) which, fired at temperatures above 2240°F, are transformed into a product with exceptional hardness, ultra-low absorption rate and unmatched mechanical characteristics. Elegance porcelain pavers are eco-compatible and ecolabel-certified. Each unit is 20mm (0.7874”) standard thickness or ¾” nominal thickness and is durable enough to withstand use in exterior applications.



Porcelain Pavers Installation Guide: Introduction

Porcelain Pavers ADVANTAGES:

- Freeze thaw resistant—they are 100% frost-free and their properties remain unaltered at temperatures ranging from -60°F to +140°F.
- Color durability—color is fused by vitrification, becomes an integral part of the porcelain surface and is not affected by elements.
- Easy installation—perfect fit and for fast installs • Low absorption rate—spills, salt and other materials will not seep into pours
- Easy to clean—household cleaners can be used to wipe down spills and dirt; can even be pressure washed with a low-pressure washing device* (see pressure washing warning below).*
- Stylish—matches what homeowners are currently doing inside the home
- Durable—high breakage loads of up to 2,200 lbs. allows for breakage reduction
- Resistant— High compressive strength and ultra-low absorption rate creates a dense surface that resists mold, moss, dirt and other staining.
- Skid-resistant—structured paver top textures create non-slip surfaces for safety; perfect for around pools/spas or in wet climates
- Modular Design—Superior accuracy in dimensional sizing and linear sides, the slabs allow for perfectly executed installations with tight and accurate lines
- Light weight—37 lbs. for the 24"x24" paver permit for easy installation, removal and serviceability and even reusability (Excluding adhered installations)
- Available in colors that have an SRI that qualifies for a LEED certification. The SRI on some units ranges between 60-80%. To receive LEED credit, the SRI must be at least 29%.
- Impermeable--deicing salt and other deicing materials can be used without concern of damage. * It is important that all pressure washing of your porcelain pavers be done with a low-pressure washer with a maximum of 1600 psi and nothing more powerful. When pressure washing your installation, care should be taken to prevent damage to the grout (adhesive and grout installations) and some re-sanding will be necessary when power washing an installation with sand or polymeric sand joints to withstand use in exterior applications.

Porcelain Pavers Installation Guide: Introduction

SPECIALTY TOOLS FOR PORCELAIN PAVER CONSTRUCTION:

- Wet cut tile saw equipped with a diamond blade manufactured for wet cutting porcelain. The saw should be designed to safely cut a porcelain paver.
- A paver clamp for easy handling, which can be used to both install and remove pavers.
- The use of gloves is highly recommended while handling and installing porcelain slabs.
- Appropriate notched trowels and grout float tools for cementitious adhesive and grout installation. The appropriate tool selection would be based on the adhesive and grout manufacturer's recommendations.

HANDLING:

- Pallets of porcelain pavers are manufactured and shipped with a Heavy Duty plastic protective pallet cover and the individual porcelain pavers are packaged in protective card board boxes. To prevent damage to your pavers, do not remove the protective card board boxes until you are ready to install them.

CAUTION: Removing pavers from their protective packaging and handling multiple loose stones together creates the possibility for chipping.

- Once the Heavy Duty plastic pallet covers have been removed from the pallet, the un-used boxed pavers should be protected from the elements to insure the integrity of the protective cardboard boxes.

Porcelain Pavers Installation Guide: Introduction

INSTALLATION INFORMATION:

Each of the following option details will include specific information relative to the selected installation. Base thicknesses vary between different geographical and climatic locations and the contractor will be installing typical base thicknesses for paving installations in their location.

IMPORTANT:

Installing porcelain pavers requires the bedding course sand to be pre-compacted and then struck off with a screed to the required thickness as shown in the detail drawings. The porcelain pavers are not compacted and therefore the sand layer beneath them requires pre-compaction. Do not compact dry sand, but insure the sand has a 5 to 6% moisture content so that it will compact cohesively and allow for a smooth strike off finish.

INSTALLATION INFORMATION THAT MUST BE FOLLOWED :

- NEVER compact porcelain pavers with a plate compactor.
- ALWAYS pre-compact and strike off your sand leveling course before installing your porcelain pavers in sand set installations.
- Porcelain pavers should only be wet cut with a tile saw equipped with a wet cut porcelain blade.
- NEVER install porcelain pavers without the recommended ~ 4 mm / 3/16” spacing between them. The porcelain pavers should never be installed with a porcelain to porcelain contact. Plastic spacers can be used on Sand Set and Permeable installations.

Porcelain Pavers Installation Guide: Introduction

JOINT INFILLING INFORMATION:

When porcelain pavers are installed as sand set installations, you may fill the 4mm paver joints with:

Traditional Sand:

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

Cement Blended Sand:

Dry cement blended sand (typical 3 parts sand to 1 part cement) is swept into the open joints until they are completely filled. Excess cement blended sand is swept off of the pavement. It is extremely important that all of the excess sand and dust be swept from the surface (blowers can be used for final dust removal), as any residual dust or sand can stain the surface. After joints are full 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 which hardens when subjected to moisture. The sand is swept into the open joints until they are completely filled. Like cement blended sand, it is extremely important that all excess sand and dust be swept from the surface (blowers can be used for final dust removal), as any residual dust or sand can stain the surface. After joints are full and the surface is clean, the pavement is misted with water to activate the polymer and curing of the mixture. Make sure the polymeric sand suitable for use with porcelain pavers, as porcelain pavers are non-porous.

IMPORTANT NOTES:

- i. When selecting sand for a traditional sand or cement blended sand infill, insure the gradation of the sand is fine enough to pass through and fill the 4 mm joints.
- ii. When using Polymeric Sand it is important to follow the manufacturer's instructions to insure there is no surface staining.
- iii. Cement blended sand and polymeric sand can both contribute to a reduction in joint plant growth and insect infiltration within the joint infill material.

Porcelain Pavers Installation Guide: Installation Options

INSTALLATION OPTIONS:

1. Sand Set over Compacted Road Base Installation..... (Pedestrian Foot Traffic)
2. Sand Set over Concrete Overlay Installation (Pedestrian Foot Traffic)
3. Cementitious Adhesive Overlay, Concrete Base Installation..... (Light Vehicle Traffic)
4. Permeable Over Open Graded Aggregate Installation..... (Pedestrian Foot Traffic)
5. Stepping Stone Sand Set on Compacted Road Base Installation..... (Pedestrian Foot Traffic)
6. Fixed Pedestal Installation on Concrete Floor..... (Pedestrian Foot Traffic)

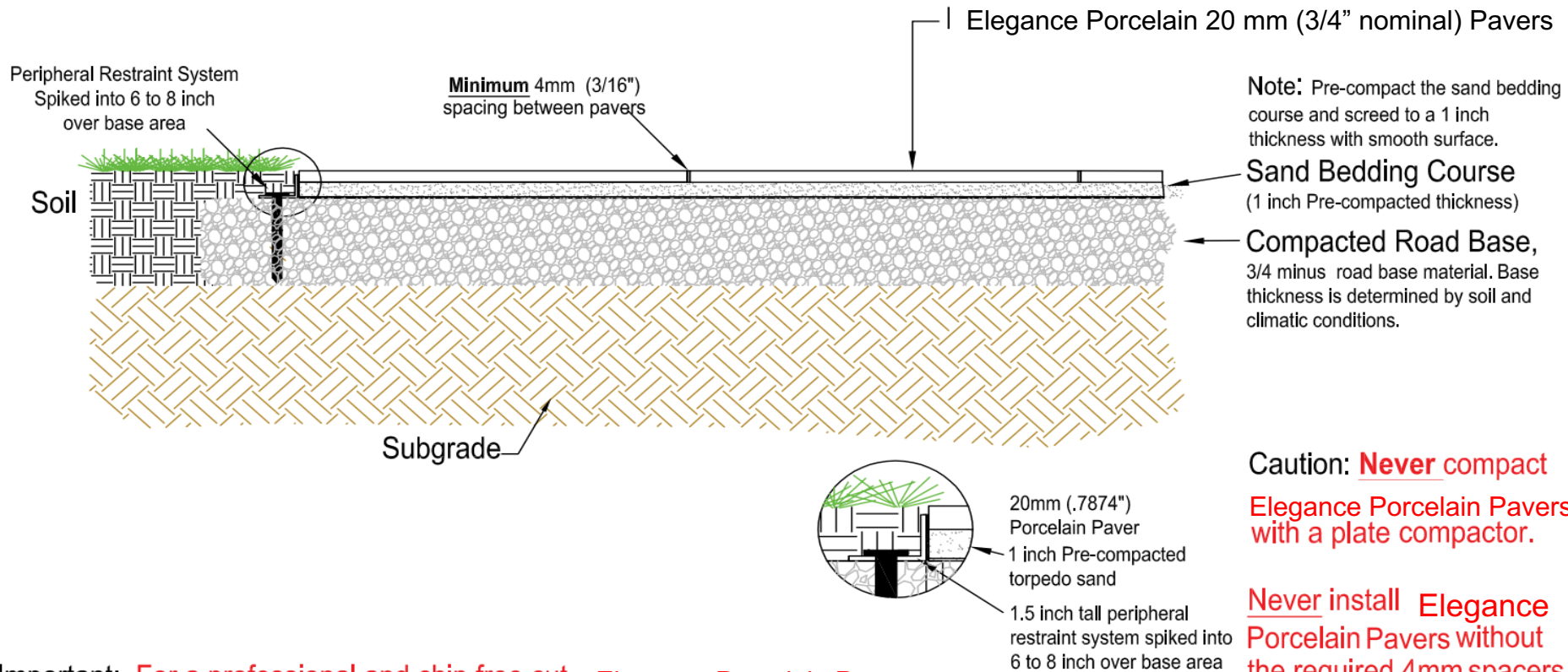
Roof Top and Commercial Raised Pedestal Installations require additional technical and engineering design. For more support in these applications, please contact Jim Uger at ju@eleganceus.com



Porcelain Pavers Installation Guide: Installation Options

1. Sand Set over Compacted Road Base Installation – (Pedestrian Foot Traffic)

- Follow the detail drawing below.
- Base material is to be over based 6 to 8 inches beyond the edge of the pavement.
- The required edge restraint system is a low profile edge restraint with a vertical height of 1 ½ inches as shown in the drawing.
- Insure that pavement is constructed with a 1 ½ to 2 degree slope that it is pitched away from any building.
- Insure the recommended 4mm spacing for all corners of the installed pavers.



Important: For a professional and chip free cut, **Elegance Porcelain Pavers should only be cut with a tile saw equipped with a wet cut porcelain blade.**

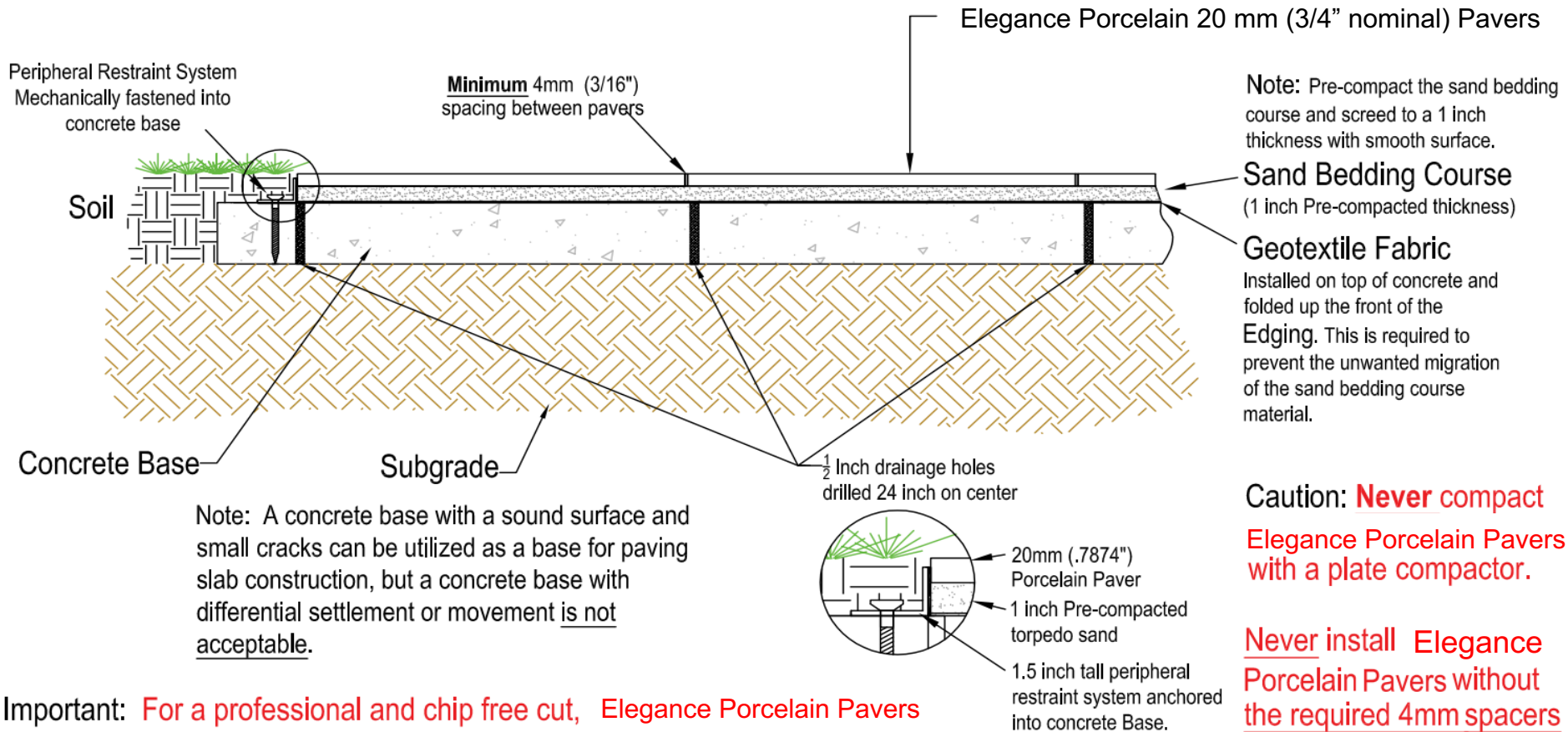
Caution: **Never compact Elegance Porcelain Pavers with a plate compactor.**

Never install Elegance Porcelain Pavers without the required 4mm spacers between all units.

Porcelain Pavers Installation Guide: Installation Options

2. Sand Set over Concrete Overlay Installation (Pedestrian Foot Traffic)

- Follow the detail drawing below.
- The required edge restraint system is a low profile edge restraint with a vertical height of 1 ½ inches as shown in the drawing.
- Mechanically anchor edge restraint into the concrete base.
- Insure geotextile is installed directly on top of the concrete to contain the bedding sand.
- Insure that pavement is constructed with a 1 ½ to 2 degree slope and that it is pitched away from any building.
- Insure the plastic 4mm spacers are installed at all corners of the installed pavers..
- Insure that pavement is constructed with a 1 ½ to 2 degree slope that it is pitched away from any building.
- Insure the recommended 4mm spacing for all corners of the installed pavers.



Important: For a professional and chip free cut, Elegance Porcelain Pavers should only be cut with a tile saw equipped with a wet cut porcelain blade.

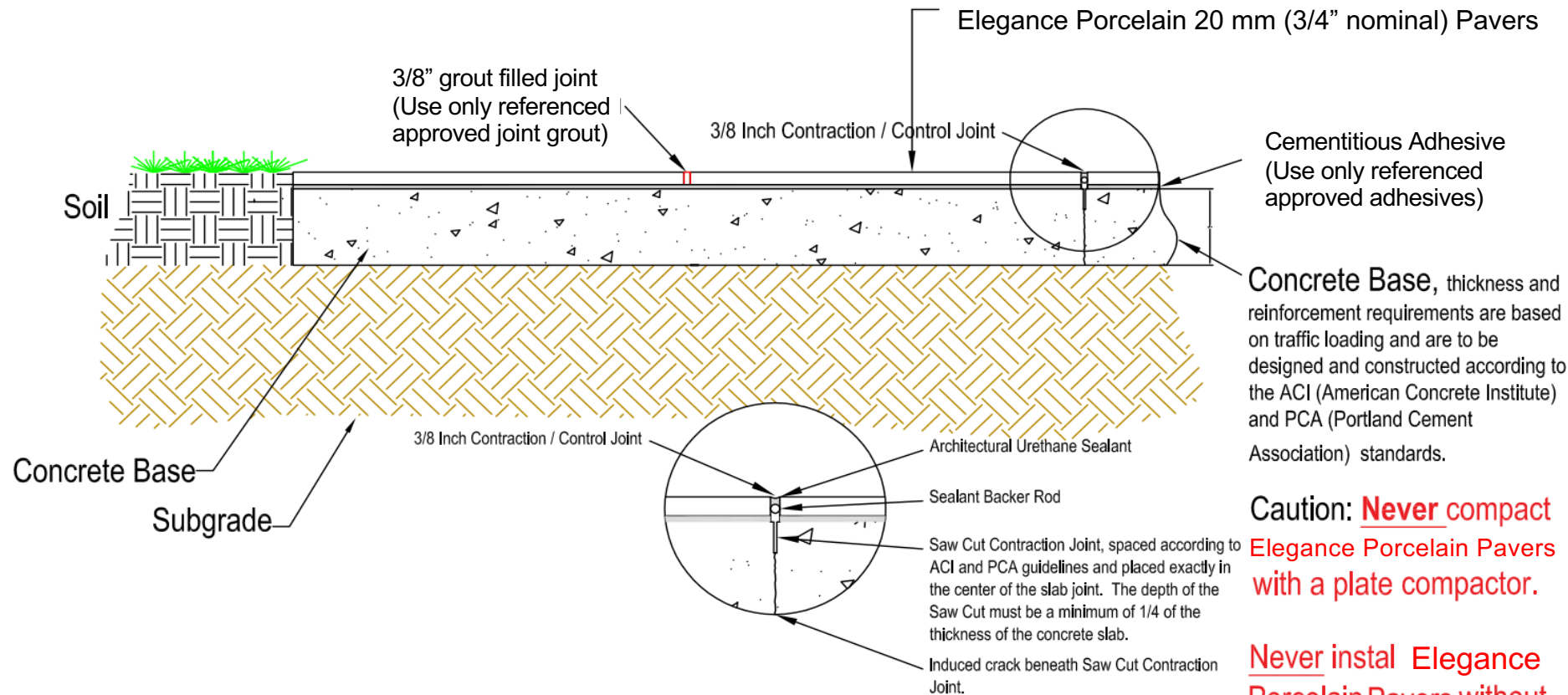
Never install Elegance Porcelain Pavers without the required 4mm spacers between all units.

Porcelain Pavers Installation Guide: Installation Options

3. Cementitious Adhesive Overlay, Concrete Base Installation (Light Vehicle Traffic)

- Follow the detail drawing below.
- Insure that pavement is constructed with a 2 degree pitch and that it is pitched away from any building.
- Referenced approved Cementitious Adhesives. www.mapei.com/public/US/products/Kerabond_T-Keralastic_EN_Ir.pdf
www.mapei.com/public/US/products/Ultraflex_LFT_EN_Ir.pdf
- Referenced approved joint grout products. www.mapei.com/public/US/products/ultracolorplus_tds_ea.pdf,
www.mapei.com/public/US/products/kerapoxytds_ea.pdf

For Cementitious adhesive and grout installation, refer to the manufacturer's technical instructions and specifically as they relate to outdoor installations.



Caution: Never compact Elegance Porcelain Pavers with a plate compactor.

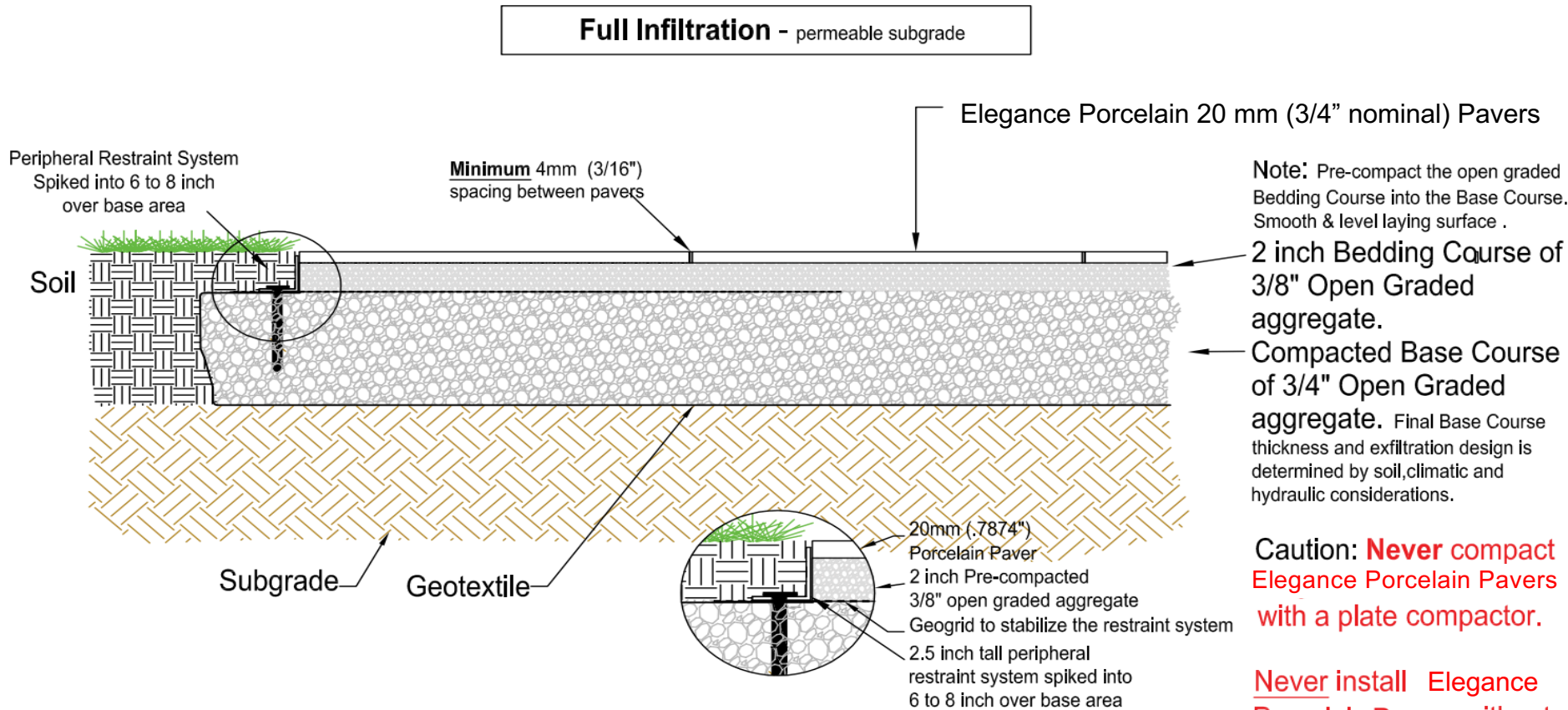
Never instal Elegance Porcelain Pavers without the required 4mm spacers between all units

Important: For a professional and chip free cut, Elegance Porcelain Pavers should only be cut with a tile saw equipped with a wet cut porcelain blade

Porcelain Pavers Installation Guide: Installation Options

4. Permeable Over Open Graded Aggregate Installation (Pedestrian Foot Traffic)

- Follow the detail drawing below.
- The required edge restraint system for this installation has a vertical height of 2 ½ inches as shown in the drawing. Follow the edge restraint manufacturer's recommendations for the use of their product in permeable applications regarding geogrid usage and placement to maintain the performance of there edging.
- Insure that pavement is constructed with a 2 degree pitch and that it is pitched away from any building.
- Insure the recommended 4mm spacing for all corners of the installed pavers.

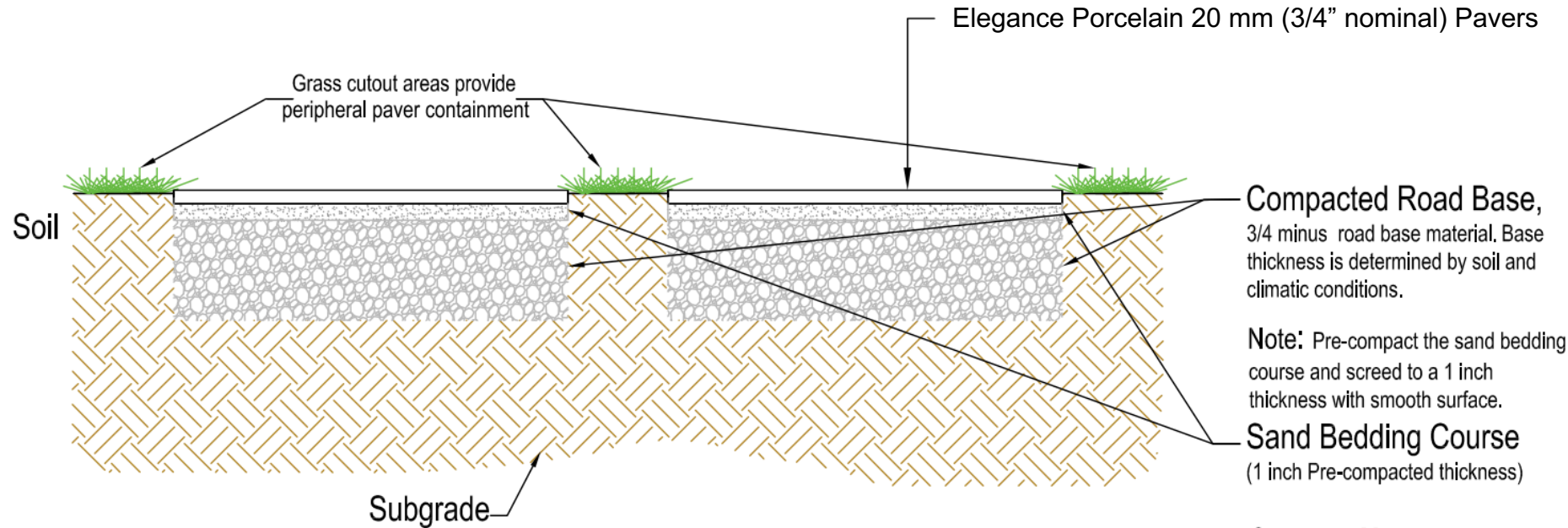


Important: For a professional and chip free cut Elegance Porcelain Pavers should only be cut with a tile saw equipped with a wet cut porcelain blade.

Porcelain Pavers Installation Guide: Installation Options

5. Stepping Stone Sand Set on Compacted Road Base Installation (Pedestrian Foot Traffic)

- Follow the detail drawing below.



Caution: Never compact Elegance Porcelain Pavers with a plate compactor.

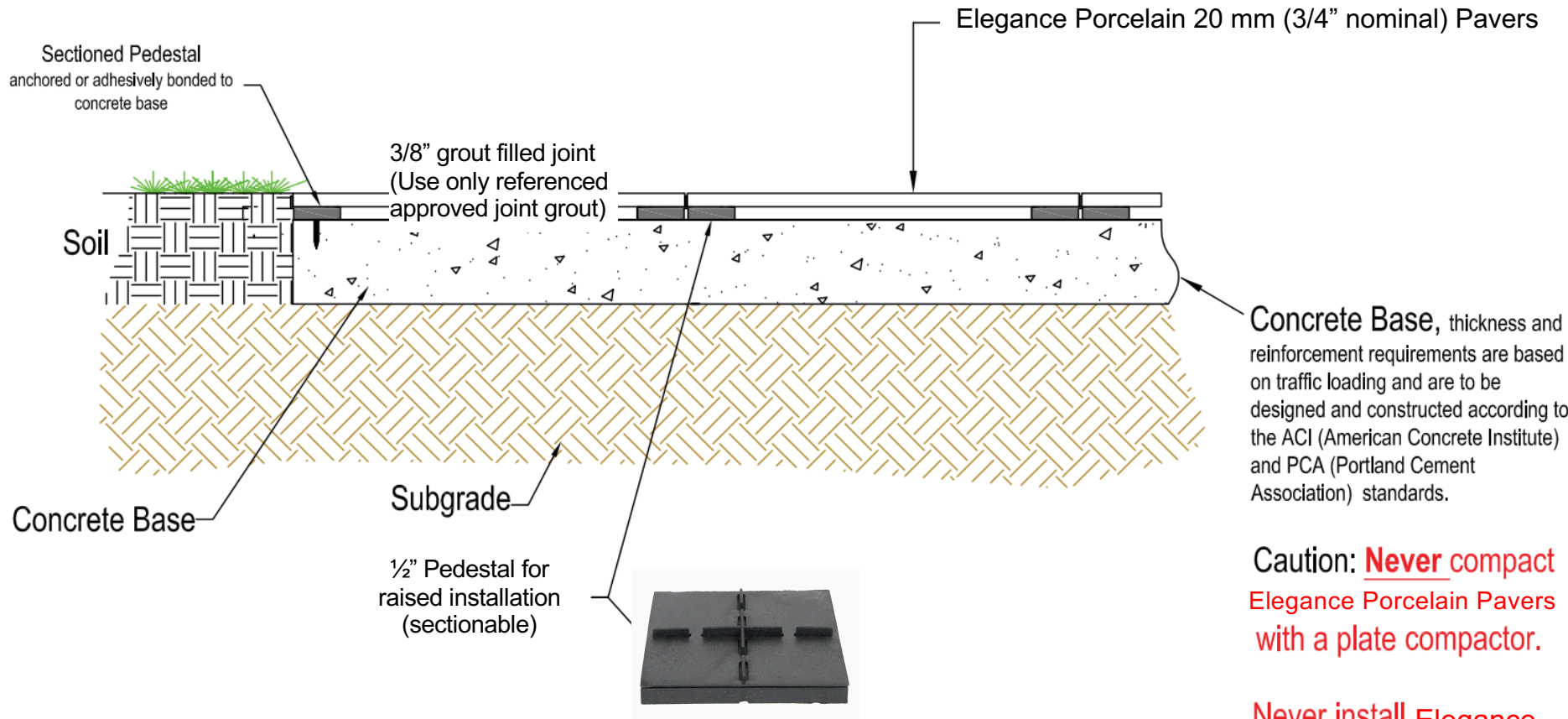
Never install Elegance Porcelain Pavers without the required 4mm spacers between all units.

Important: For a professional and chip free cut, Elegance Porcelain Pavers should only be cut with a tile saw equipped with a wet cut porcelain blade.

Porcelain Pavers Installation Guide: Installation Options

6.Fixed Pedestal (1/8" or 1/2") Installation on Concrete Floor (Pedestrian Foot Traffic)

- Follow the detail drawing below.
- Insure that concrete slab is smooth, even across the surface and is constructed with a 2 degree pitch and that it is pitched away from any building.
- Insure the plastic 1/8" or 1/2" pedestal supports are installed at all corners of the installed pavers. Please refer to recommended number of supports for different sizes of porcelain pavers.



Important: For a professional and chip free cut, Elegance Porcelain Pavers should only be cut with a tile saw equipped with a wet cut porcelain blade.

Porcelain Pavers Installation Guide: Legal Disclaimer

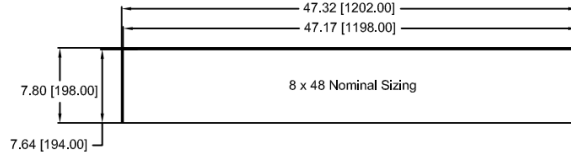
Legal Disclaimer

The nominal measurements include 4mm 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.

STANDARD CALIBER - (M)

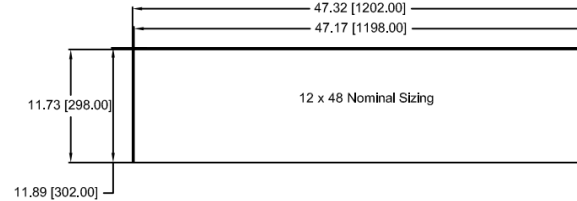
8"x 48" Nominal sizing

Calibrated unit cut sizing without spacing = 194x1198mm or 7.64" x 47.17"
With 4mm spacing added to two planes = 198mm x 1202mm or 7.80" x 47.32"



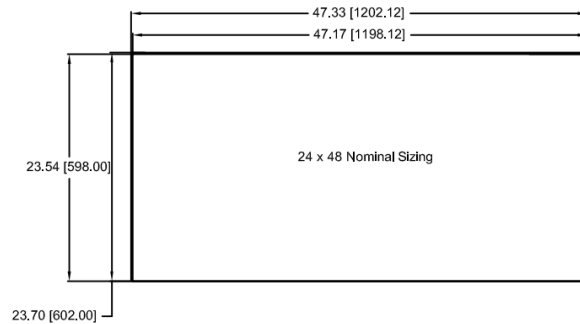
12"x 48" Nominal sizing

Calibrated unit cut sizing without spacing = 298x1198mm or 11.73" x 47.17"
With 4mm spacing added to two planes = 302mm x 1202mm or 11.89" x 47.32"



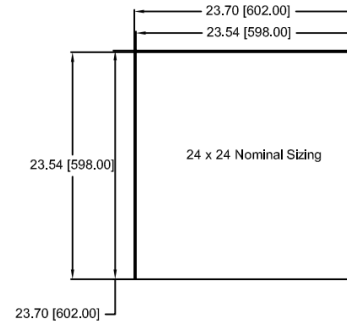
24"x 48" Nominal sizing

Calibrated unit cut sizing without spacing = 598x1198mm or 23.54" x 47.17"
With 4mm spacing added to two planes = 602mm x 1202mm or 23.70" x 47.32"



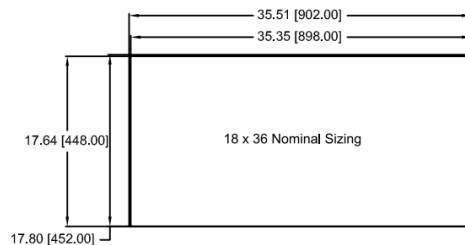
24"x 24" Nominal sizing

Calibrated unit cut sizing without spacing = 598x598mm or 23.54" x 23.54"
With 4mm spacing added to two planes = 602mm x 602mm or 23.70" x 23.70"



18"x 36" Nominal sizing

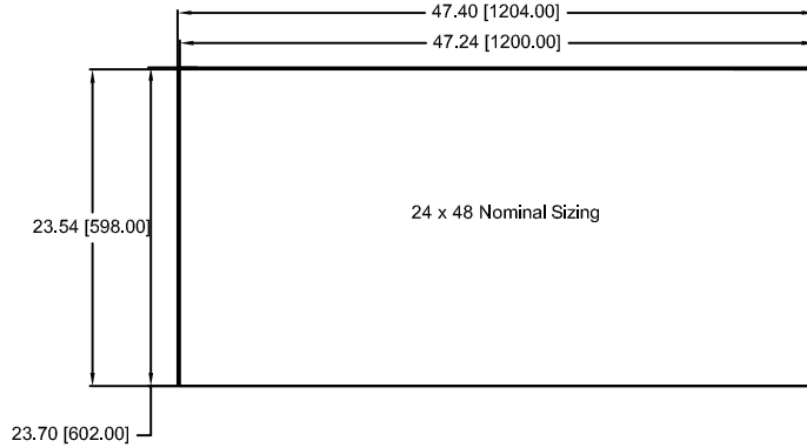
Calibrated unit cut sizing without spacing = 448x898mm or 17.64" x 35.35"
With 4mm spacing added to two planes = 452mm x 902mm or 17.80" x 35.51"



Porcelain Pavers Installation Guide: Legal Disclaimer

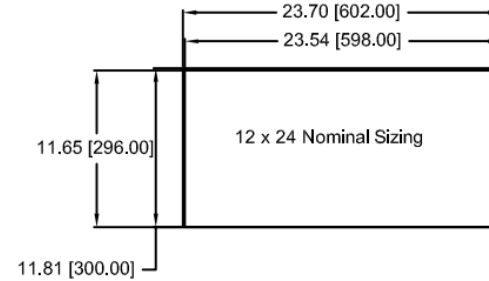
24"x 48" Nominal sizing

Calibrated unit cut sizing without spacing = 598x1200mm or 23.54" x 47.24"
With 4mm spacing added to two planes = 602mm x 1204mm or 23.70" x 47.40"



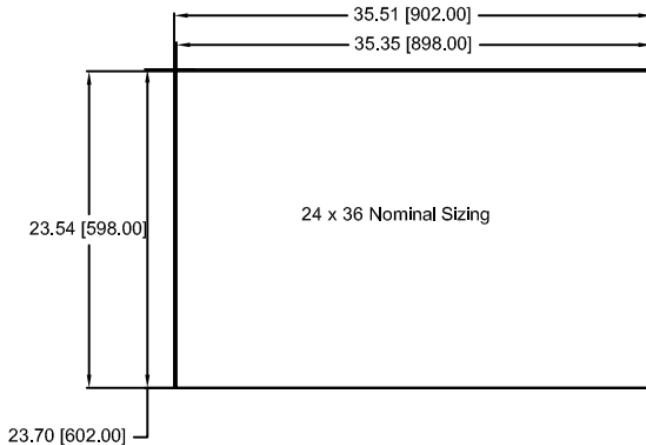
12"x 24" Nominal sizing

Calibrated unit cut sizing without spacing = 296x598mm or 11.65" x 23.54"
With 4mm spacing added to two planes = 300mm x 602mm or 11.81" x 23.70"



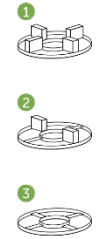
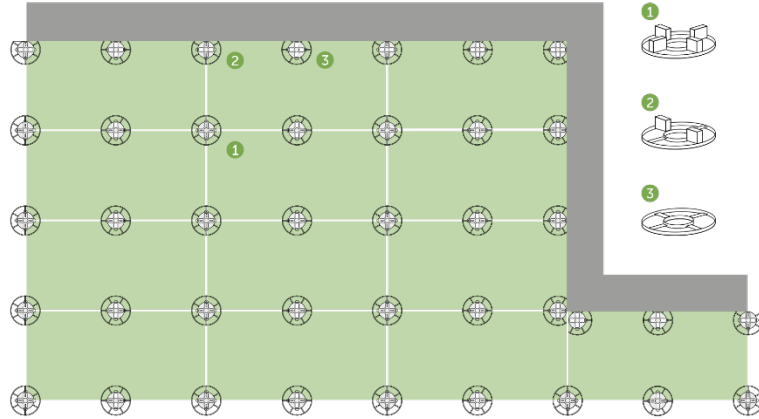
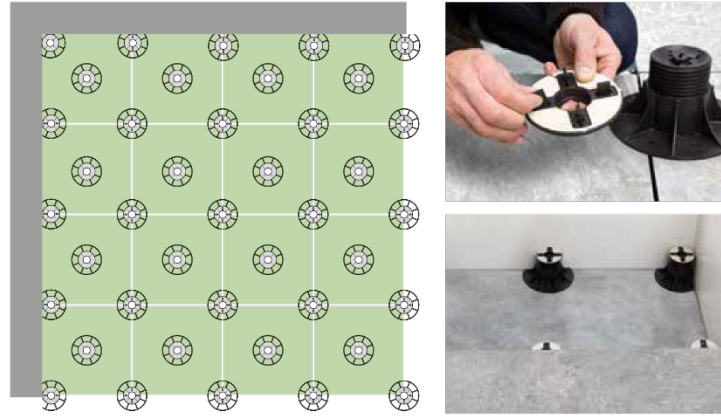
24"x 36" Nominal sizing

Calibrated unit cut sizing without spacing = 598x898mm or 23.54" x 35.35"
With 4mm spacing added to two planes = 602mm x 902mm or 23.70" x 35.51"



Porcelain Pavers – Raised Installation on Supports

Pedestal Patterns

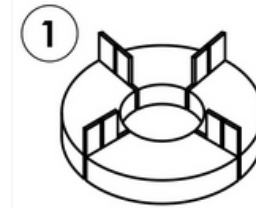
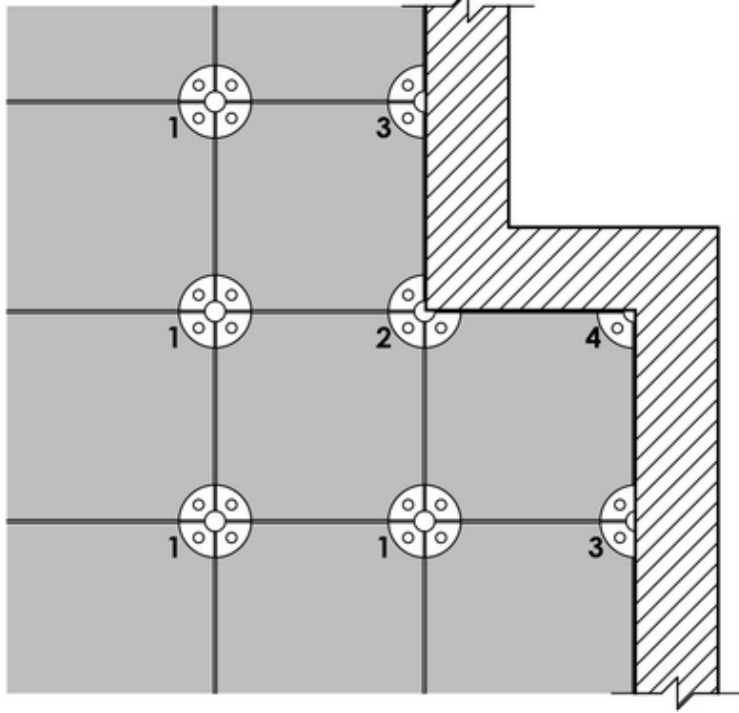


SIZES & RECOMMEND PATTERNS:	 24"x24"	 20"x40"	 16"x48"	 32"x32"
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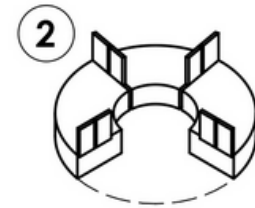
THE NUMBER OF SUPPORTS TO THE PIECE



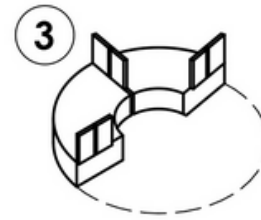
Porcelain Pavers – Raised Installation on Supports



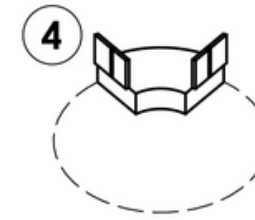
In the middle



Outside corner



Along the wall

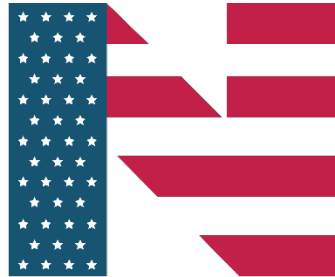


Inside corner

- Draw the layout of the pedestals on the concrete patio using chalk and optimize the placement of the pavers over the concrete surface to avoid cuts which would leave sections less than 8" wide.
- Place pedestals which have been cut in semicircles along the perimeter at the paver intersections, ensuring the only remaining spacer tabs are aligned with the gap between pavers. At right angle corners, cut pedestals into quadrants with all spacer tabs removed and place in corners.

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This concludes The American Institute of Architects
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