



 **20** MM THICKNESS

# Cutting Guide



**TOPPAVER**  
SINTERED STONE

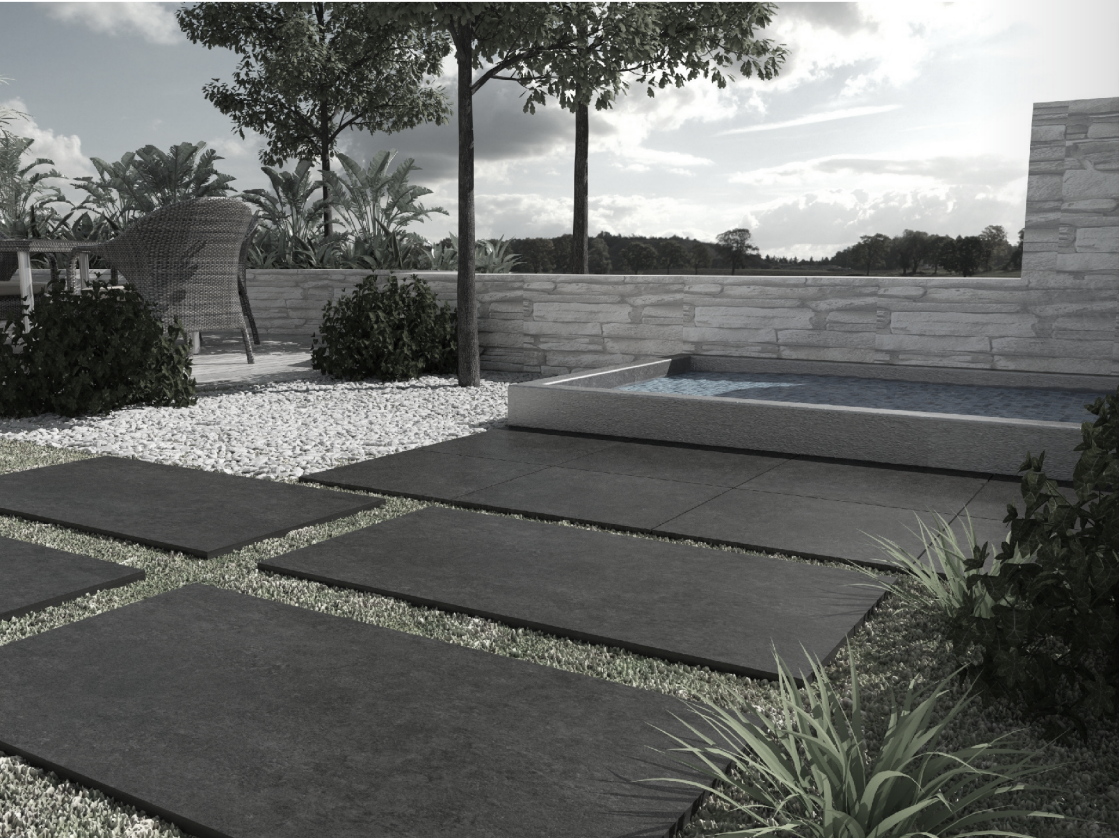
Dear Valued Customer,  
Thank you for trusting and choosing Top Paver.  
This guidebook will guide you through the best cutting techniques  
for our 20mm sintered stones. There will be 2 main categories:

**1. Linear cut;**

**2. Using core bits to drill holes.**

We hope this can help you prepare for a smooth cutting process.  
Our sincerest regards,

**Royal House**



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# TOP PAVER

## SINTERED STONE

## 1. LINEAR CUT

Due to their **20mm thickness** and **extremely hard surfaces**, cutting Top Paver products is very different from cutting regular tiles and **requires specific tools as well as techniques**. Basic blades can often make one or two solid cuts before losing their cutting strength. Their diamond blades will be destroyed to the point that they can no longer be restored with ordinary abrasive stones.

One approach is to **utilize segmented blades** for an easier cut, but this will result in a very poor cutting finish. Each edge cut must then be polished, especially if the installation will expose the edge.

The cut must be made using a **professional wet saw cutting machine**, pushing (or pulling, depending on how the cutting saw is built) parallel to the plane from the start of the cut, applying a horizontal force to the trolley while avoiding excessive force (see images 1 and 2).

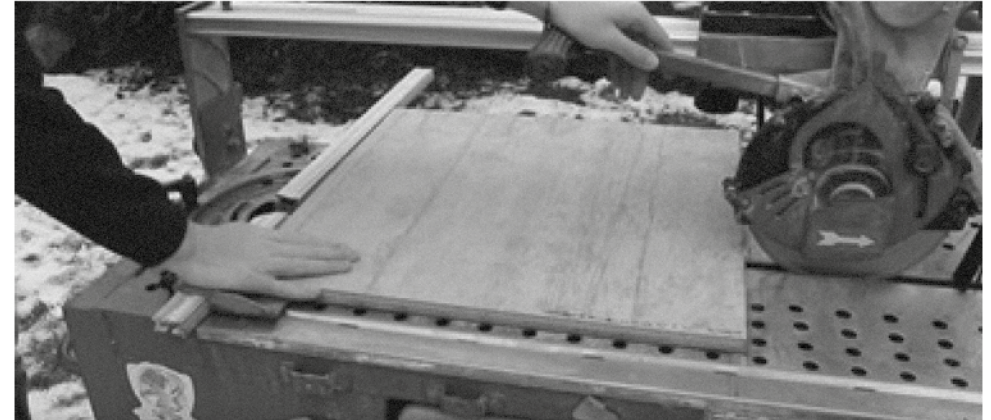


FIGURE 1

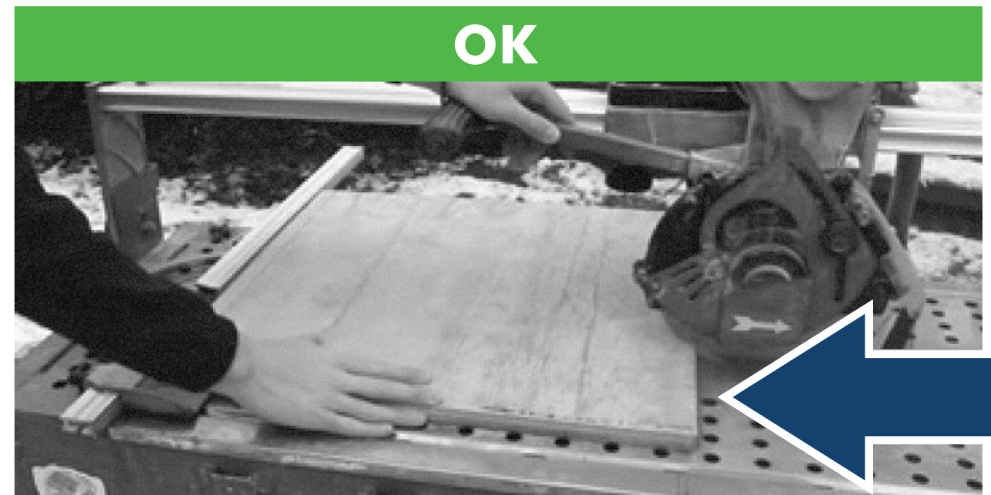


FIGURE 2

Please keep in mind that **the cut must be done all at once with one passage**. It is critical to draw the blade down without hitting the tile, then pull/push the disc to cut the entire paver at once. **It is not recommended** to make the cut with a force perpendicular to the cutting plane's side (see image 3). In fact, making a vertical cut may impact the internal tensions of the product, resulting in tile breaking.

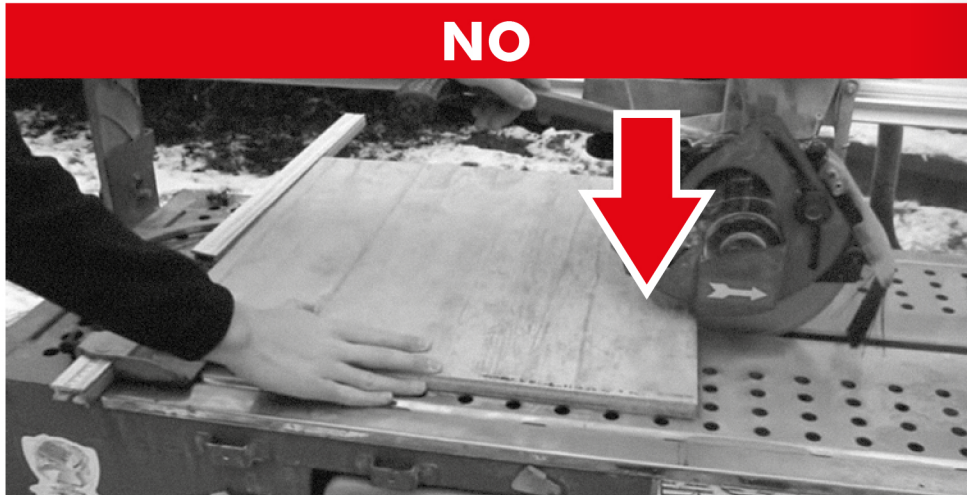


FIGURE 3

Another method is to make **a 2-3mm deep groove** (see image 4) by applying a very light force perpendicular to the paver surface, then making the final cut all at once with one passage.



FIGURE 4

In both cases, it is advisable to **use high-quality disc blades** and to **revive them whenever necessary** in order to get a proper cut. When using low-quality or non-paver-specific blades, it may be necessary to resuscitate them two or three times during a single cut. This could result in higher costs due to the use of numerous diamond abrasive stones, or, worse, increase the likelihood of the paver breaking during the cutting process significantly.

To decrease the presence or dispersion of ceramic powder and to cool down the blade, Royal recommends **using plenty of water before, during, and after the cutting phases**. Clean the newly cut surface with water once the cut is finished to remove all dust from the paver caused by the cutting procedure.

## 2. USING CORE BITS TO DRILL HOLES

Creating holes in standard 9-10mm thick porcelain tiles is a common practice, but it is a highly delicate process that demands experience as well as technique. This is even more true for pavers 20mm thick. It is advised that **drills or grinders be used in conjunction with high-quality core bits** for porcelain tiles and pavers while doing this specific cut. Due to the resistance of the 20mm stoneware, the use of low-quality core bits may result in numerous breakages as well as accelerated tool wear.

To begin, lay the tile on a sturdy support that absorbs the vibrations produced by the work (for example, a wood panel or regenerated rubber on a wooden panel). After putting the drill with the core bit in the correct position (make sure the drill is not in hammer mode), mark the exact spot with a pencil, then proceed to place the core bit by tilting it slightly on the paver (see image 5).

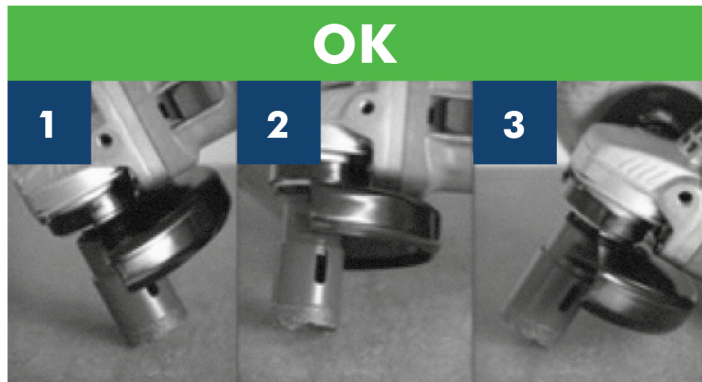


FIGURE 5



FIGURE 6

**Do not place the core bit perpendicular to the paver surface** (see image 6) as it could lead to paver breaking. Once the core bit is in place and moving, make a gentle oscillatory movement until the hole from top to bottom through the paver is complete.

To minimize the presence or dispersion of ceramic powder and to cool down the cutter, Royal recommends **using plenty of water before, during, and after the drilling phase**. Clean the newly drilled hole with water to remove all the dust from the surface of the paver created by the drilling.

When necessary, certain equipment that soften the cut made by milling the sharp/irregular edges of the hole might be used to alter the shape of the hole created. These tools must be made with artificial diamonds and designed specifically for porcelain tiles and pavers.

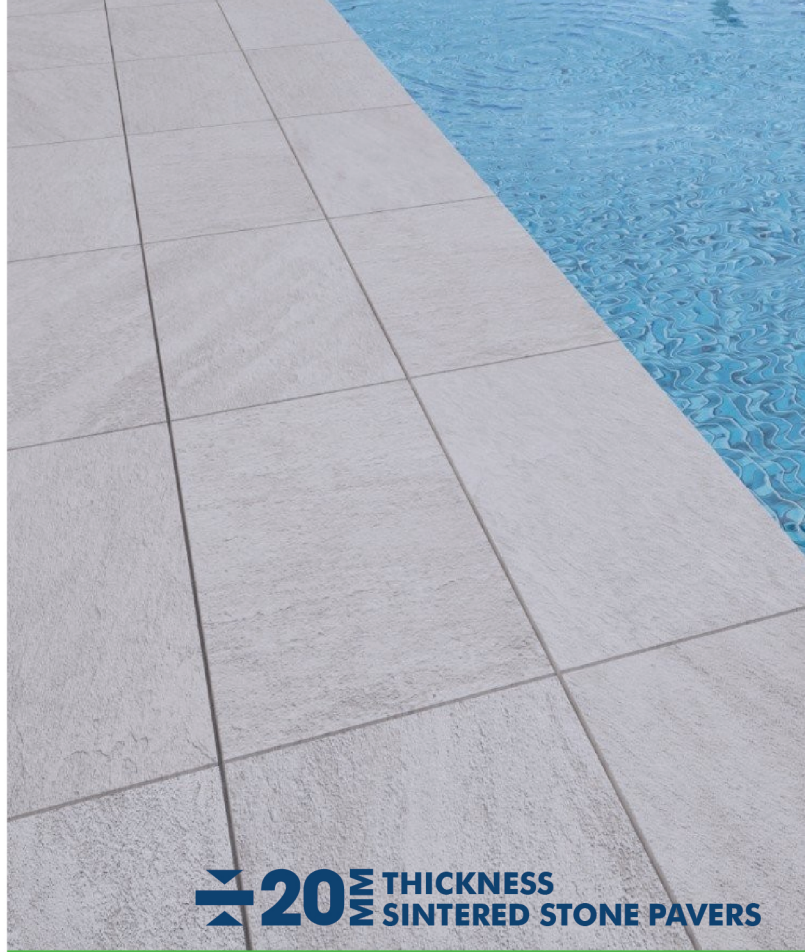
### 3. GENERAL RECOMMENDATIONS

Royal suggests using high-quality tools and blades specifically designed for pavers. This is because, unlike regular porcelain tiles, Top Paver products are extremely durable, compact, and resistant to cutting and drilling operations.

To limit the presence or dispersion of ceramic powder and to cool down the blades/core bits, Royal recommends using plenty of water before, during, and after the cutting/drilling phase, as well as approved wet or suction tools. Once the relevant operations have been completed, clean the surface to prevent dust from becoming caught by the joint filler.

Royal always advises the use of safety glasses, masks, gloves, and steel toe shoes.





 **20<sup>MM</sup>** THICKNESS  
SINTERED STONE PAVERS

# INSTALLATION

## Guide



**TOPPAVER**  
SINTERED STONE

Dear **Valued Customer,**

Thank you for trusting and choosing **Top Paver.**

This guidebook will teach you about the benefits and versatility of Top Paver products, as well as how to properly install, maintain and care for them. The guide's installation procedures are based on standard masonry and hardscape installation practices. We strongly advise you to check with your local codes department for their requirements, as installation methods may differ from area to region due to differences in native soils, frost line depth, and freeze thaw cycles.

Please contact us if you have any questions. We will gladly assist you.

Our sincerest regards,  
**Royal House.**



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# TOP PAVER

## SINTERED STONE



# 1 Benefits of Top Paver



### Anti-slip

The structure and texture of Top Paver products reduce the risk of slipperiness.



### Saving time and money

Low maintenance costs.



### Mold resistant

Completely prevents mold and mildew formation, making removal a breeze.



### Chemical resistant

Do not react with or take acids and chemicals, allowing for eco-friendly cleaning selections.



### Fade resistant

Top Paver products are completely unaffected by sunlight, ensuring long-term usage and enjoyment.



### Stain resistant

Top Paver products are nonporous thanks to the baked-on glazing process.



### Scratch resistant

Thanks to Pyramid technology, the surface is extremely hard and virtually scratch-proof.



### Salt resistant

Completely unaffected by salt use.



### Easy to install, replace and remove

No sealing needed, can be easily removed and repositioned to a new area when not mortared down or installed with adhesive.



### Easy to clean

Mild environmentally friendly detergents and pressure washers up to 1500 PSI can be used without worry of etching or striping.



### Drive over

When properly laid over concrete, Top Paver products are suitable for mild residential vehicular traffic.



### Frost resistant

Can withstand frost and freezing conditions.



### Thermal shock resistant

Top Paver products are baked at high temperatures up to 2300 degrees Fahrenheit, resulting in a very dense material with strong molecular bonds. The density allows for extreme and abrupt temperature changes from -60°F to 140°F.



### Eco-friendly

Top Paver products utilize recycled components and adhere to the most stringent environmental regulations.

**(\*) Installed atop reinforced concrete (4" minimum) with paver-specific thinset mortar.**

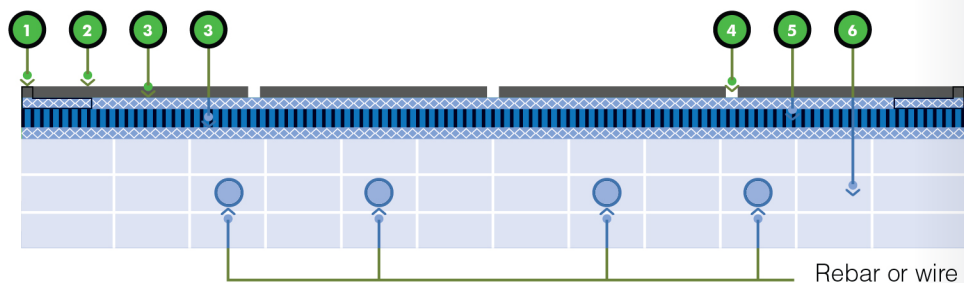
## 2.1 THINSET MORTAR OVER REINFORCED CONCRETE

### PRACTICAL INSTALLATION

Follow the drawing below.

- >> Ensure the pavement is built with a 2 degree slope away from any buildings.
- >> Consult your distributor about thinset mortar that is ideal for Top Paver and outdoor use.
- >> For cementitious adhesive and grout application, follow the manufacturer's recommendations.
- >> A minimum of 3/16" (4 mm) grout joint is permitted for concrete foundation slabs that are not large enough to require contraction/control joints. Control joint width should be at least 3/8" (1 cm) for bigger slabs that require contraction/control joints. All contraction/control joints must be set in the joint line of the pavers, not beneath them.

**CAUTION:** If Top Paver products installed over a control joint will reflectively crack along the contraction/control joint beneath it.  
The use of an uncoupling membrane can help to mitigate the potential issue.



1. Trim piece with edge restriction.
2. Top Paver 3/4" (20 mm) sintered stones.
3. Thinset mortar.
4. 3/16" minimum grout joint.
5. Uncoupling membrane.
6. Existing or new concrete (reinforced). 4" minimum.

#### IMPORTANT:

Top Paver products should only be cut with paver saws equipped with wet cut porcelain blades for a professional and chip-free finish.

#### NOTES:

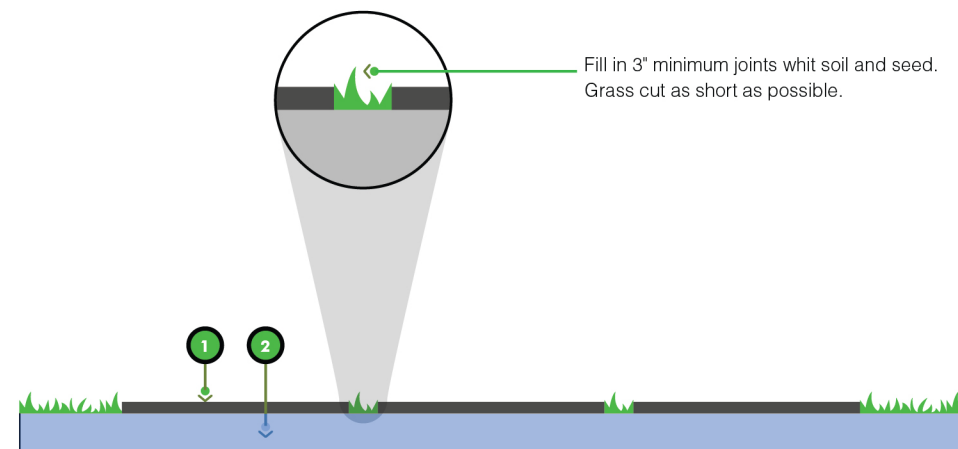
Never use a plate compactor to compact Top Paver products.  
Never install Top Paver products without spacers (minimum 4 mm - 5/32").  
The drawing shown above is just for illustration purposes.  
Project/site evaluation and structural design must be performed by a qualified professional engineer.

## 2.2 DRY LAY OVER GRASS

### PRACTICAL INSTALLATION

Follow the drawing below.

- >> Trim grass as short as possible in the desired area. Remove any debris.
- >> Scratch up and level the top 1" of soil using a landscape rake.
- >> Ensure the subgrade is graded to a 1" in 10' slope pitched away from any building.



1. Top Paver 3/4" (20 mm) sintered stones.
2. Scratch and layel with a rake on bare soil.

#### IMPORTANT:

Top Paver products should only be cut with paver saws equipped with wet cut porcelain blades for a professional and chip-free finish.

#### NOTES:

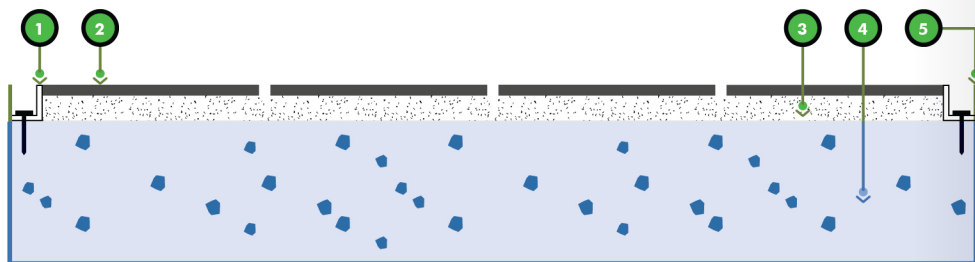
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The drawing shown above is just for illustration purposes.  
Project/site evaluation and structural design must be performed by a qualified professional engineer.

### 2.3 TYPICAL FLEXIBLE BASE

#### PRACTICAL INSTALLATION

Follow the drawing below.

- >> The base material should be dug 6" to 8" beyond the pavement's edge.
- >> 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.
- >> Ensure the pavement is built with a 1" in 10' slope pitched away from any building.
- >> Install plastic 3/16" (4 mm) spacers at the corners of the installed pavers to prevent pavers from touching each other (and potentially chipping) and to allow improved water drainage.



1. Paver edging.
2. Top Paver 3/4" (20 mm) sintered stones.
3. 3/4" uncompacted bedding sand.
4. 4-6" crusher run/road base.
5. Fabric filter.

#### IMPORTANT:

Top Paver products should only be cut with paver saws equipped with wet cut porcelain blades for a professional and chip-free finish.

#### NOTES:

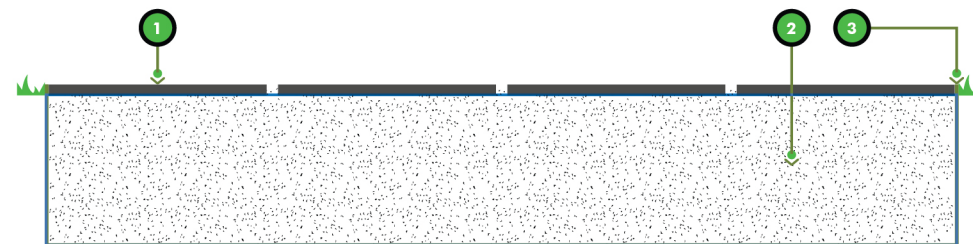
Never use a plate compactor to compact Top Paver products.  
 Never install Top Paver products without spacers (minimum 4 mm - 5/32").  
 The drawing shown above is just for illustration purposes.  
 Project/site evaluation and structural design must be performed by a qualified professional engineer.

### 2.4 OVER SAND BASE

#### PRACTICAL INSTALLATION

Follow the drawing below.

- >> Fabric filter is preferred since it enables water to flow through but not sand particles.
- >> 2-4" compactable sand is recommended. You can go with more, but it will not provide a distinct edge. Going less than 2" may result in a less ideal effect because it will hold more water and become "mushy" when super saturated.
- >> The use of an edge restraint is preferable but not required. It is especially important if your planned paving area is higher than the surrounding native soil, as it will aid in the reduction of sand migration or erosion.
- >> Ensure the 3/16" (4 mm) plastic spacers are fitted at all corners of the installed pavers to prevent pavers from touching (and potentially damaging) each other and to allow for better water drainage.



1. Top Paver 3/4" (20 mm) sintered stones.
2. Approx. 4" of bedding sand.
3. Fabric filter.

#### IMPORTANT:

Top Paver products should only be cut with paver saws equipped with wet cut porcelain blades for a professional and chip-free finish.

#### NOTES:

Never use a plate compactor to compact Top Paver products.  
 Never install Top Paver products without spacers (minimum 4 mm - 5/32").  
 The drawing shown above is just for illustration purposes.  
 Project/site evaluation and structural design must be performed by a qualified professional engineer.

## 2.5 PERMEABLE INSTALLATION

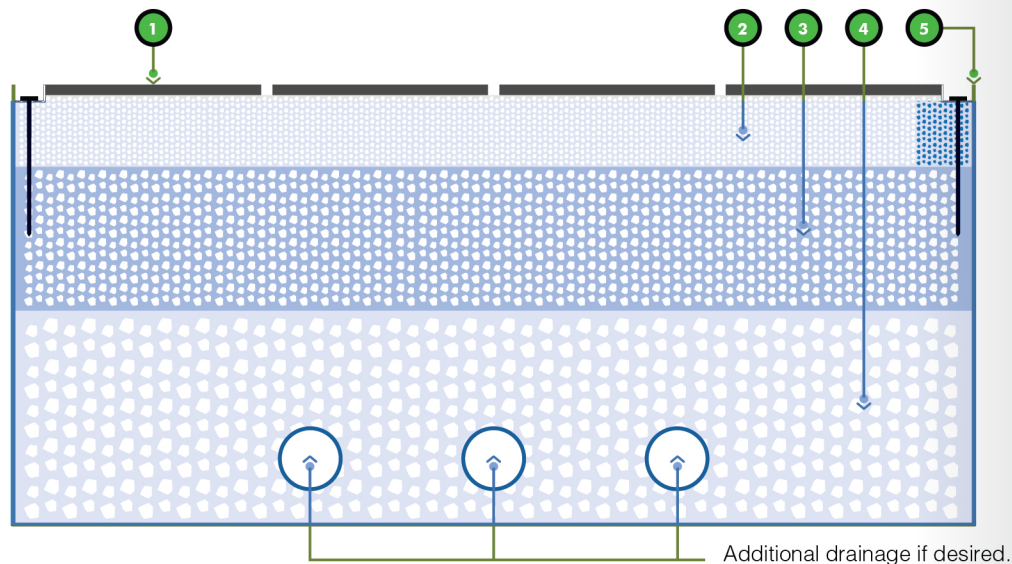
### PRACTICAL INSTALLATION

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.

>> Ensure the pavement is built with a 1" in 10' slope pitched away from any building.

>> Ensure the 3/16" (4 mm) plastic spacers are fitted at all corners of the installed pavers to prevent pavers from touching (and potentially damaging) each other and to allow for better water drainage.



1. Top Paver 3/4" (20 mm) sintered stones.
2. Gravel coarseness 2" - 8 s' and 9 s' (1/2" + less).
3. Gravel coarseness 4" - #57 (3/4").
4. Gravel coarseness 6" - 3 s' - 4 s' if desired.
5. Fabric filter.

#### IMPORTANT:

Top Paver products should only be cut with paver saws equipped with wet cut porcelain blades for a professional and chip-free finish.

#### NOTES:

Never use a plate compactor to compact Top Paver products.  
Never install Top Paver products without spacers (minimum 4 mm - 5/32").  
The drawing shown above is just for illustration purposes.  
Project/site evaluation and structural design must be performed by a qualified professional engineer.

## 2.6 OVER DECKING

### PRACTICAL INSTALLATION

Follow the drawing below.

>> Deck joists must be "sound", in good shape, and constructed in accordance with local codes.

>> Deck joists must be spaced 16" on center. Deck joists must be spaced 16" apart.

>> The tops of the joists must be flat to one another.

>> Grates must span 2 joists and be fastened with weatherproof screws.

>> Grates can be staggered by 1/3rd, 1/4th or 1/2 as illustrated.

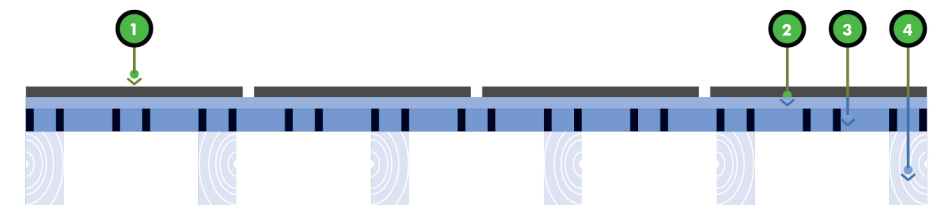
>> The thickness of outdoor fabrics varies. To minimize acoustics, multiple layers may be required.

>> It is recommended to utilize paver spacers. The minimum recommended joint size is 1/8 inch.

>> Spacers can be coated with silicone or a neutral-colored adhesive to help decrease paver movement.

>> Depending on the desired drainage, paver joints can be filled or left open.

>> Ensure the 3/16" (4 mm) plastic spacers are fitted at all corners of the installed pavers to prevent pavers from touching (and potentially damaging) each other and to allow for better water drainage.



1. Top Paver 3/4" (20 mm) sintered stones.
2. Outdoor fabrics or sound insulating mattress.
3. Honeycomb plastic grate.
4. Deck joists.

#### IMPORTANT:

Top Paver products should only be cut with paver saws equipped with wet cut porcelain blades for a professional and chip-free finish.

#### NOTES:

Never use a plate compactor to compact Top Paver products.  
Never install Top Paver products without spacers (minimum 4 mm - 5/32").  
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Project/site evaluation and structural design must be performed by a qualified professional engineer.

## 2.7 LOW HEIGHT SUPPORTS PEDESTAL OVER EXISTING SUBSTRATE

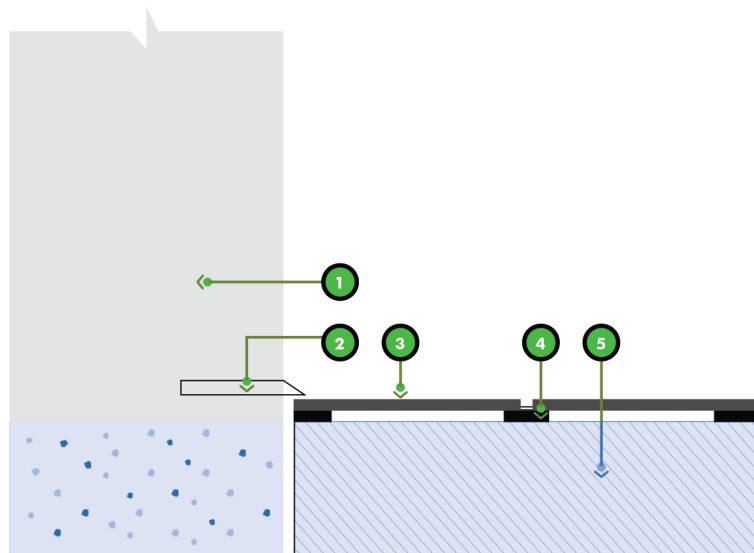
### PRACTICAL INSTALLATION

Follow the drawing below.

>> The edge restraint system has a height profile of 1 ½" - 2".

>> Ensure the concrete slab is in stable condition and has a 1" in 10' slope to redirect water away from the structure.

>> Ensure that spacer tabs are intact in the corners where the pavers might come to contact.



1. House or structure.

2. Threshold for door.

3. Top Paver ¾" (20 mm) sintered stones.

4. Pedestal.

5. Existing slab or substrate.

\* For installation on adjustable height pedestals (from 1 ¼" to 16"), email [orders@apollofloor.com](mailto:orders@apollofloor.com).

#### IMPORTANT:

Top Paver products should only be cut with paver saws equipped with wet cut porcelain blades for a professional and chip-free finish.

#### NOTES:

Never use a plate compactor to compact Top Paver products.

Never install Top Paver products without spacers (minimum 4 mm - 5/32").

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## 2.8 SAND SET OVER CONCRETE

### PRACTICAL INSTALLATION

Follow the drawing below.

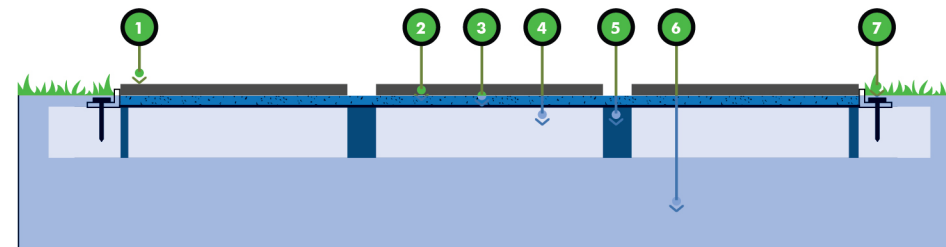
>> The edge restraint system has a height profile of 1 ½" - 2".

>> Make sure to incorporate edge restraint into the concrete base.

>> To contain sand, lay fabric right on top of the concrete and fold it up the front of the border.

>> Ensure the pavement is built with a 1" in 10' slope pitched away from any building.

>> Ensure the 3/16" (4 mm) plastic spacers are fitted at all corners of the installed pavers to prevent pavers from touching (and potentially damaging) each other and to allow for better water drainage.



1. Top Paver ¾" (20 mm) sintered stones.

2. Sand bedding course 1".

3. Fabric.

4. Existing or new concrete (4" minimum).

5. ½" 1" inch drainage holes drilled 24 inch on center.

6. Subgrade.

7. Peripheral restraint system.

#### IMPORTANT:

Top Paver products should only be cut with paver saws equipped with wet cut porcelain blades for a professional and chip-free finish.

#### NOTES:

Never use a plate compactor to compact Top Paver products.

Never install Top Paver products without spacers (minimum 4 mm - 5/32").

The drawing shown above is just for illustration purposes.

Project/site evaluation and structural design must be performed by a qualified professional engineer.

## 2.9 OVER 3/4" PEDESTAL ON CONCRETE

### PRACTICAL INSTALLATION

Follow the drawing below.

>> Ensure the concrete slab is properly built, smooth, and has 1 ½ - 2 degree pitch away from any building.

>> Plastic supports for ¾" pedestal must be placed and installed in all corners of the pavers.



1. Top Paver ¾" (20 mm) sintered stones.
2. ¾" pedestal.

3. Concrete base.
4. Subgrade.

#### IMPORTANT:

Top Paver products should only be cut with paver saws equipped with wet cut porcelain blades for a professional and chip-free finish.

#### NOTES:

Never use a plate compactor to compact Top Paver products.  
Never install Top Paver products without spacers (minimum 4 mm - 5/32").  
The drawing shown above is just for illustration purposes.  
Project/site evaluation and structural design must be performed by a qualified professional engineer.

## 2.10 HIGH DENSITY PANELS

### PRACTICAL INSTALLATION

Follow the drawing below.

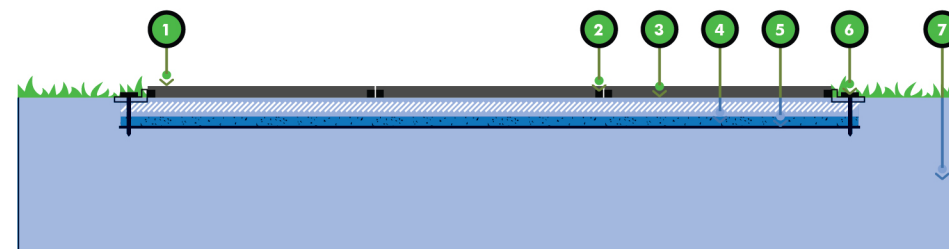
>> The edge restraint system has a height profile of 0.75" - 1".

>> Attach the edge restraint into the panel.

>> Lay fabric directly on top of the subgrade to contain sand.

>> Place panel on 1" sand bed course.

>> Ensure the 3/16" (4 mm) plastic spacers are fitted at all corners of the installed pavers to prevent pavers from touching (and potentially damaging) each other and to allow for better water drainage.



1. Top Paver ¾" (20 mm) sintered stones.
2. Spacers.
3. High density panels.
4. Sand ½" - 1"

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

#### IMPORTANT:

Top Paver products should only be cut with paver saws equipped with wet cut porcelain blades for a professional and chip-free finish.

#### NOTES:

Never use a plate compactor to compact Top Paver products.  
Never install Top Paver products without spacers (minimum 4 mm - 5/32").  
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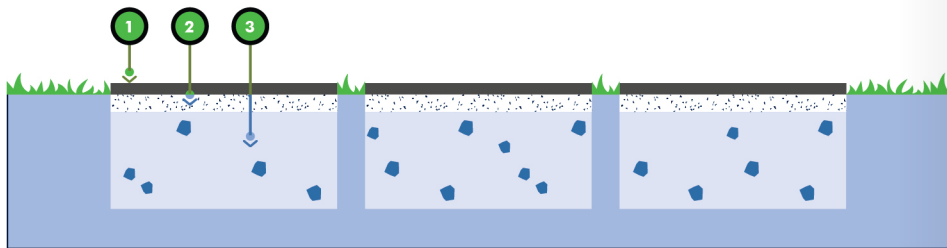
### 2.11 DRY LAY OVER GRASS ON COMPACTED ROAD BASE

#### PRACTICAL INSTALLATION

Follow the drawing below.

>> The compacted base road is made up of  $\frac{3}{4}$  compacted gravel.

>> Pour sand bed course onto compacted gravel and leveled to provide a smooth surface.



1. Top Paver  $\frac{3}{4}$ " (20 mm) sintered stones.
2. 1" leveled sand bed course.

3. Compacted road.

#### IMPORTANT:

Top Paver products should only be cut with paver saws equipped with wet cut porcelain blades for a professional and chip-free finish.

#### NOTES:

Never use a plate compactor to compact Top Paver products.

Never install Top Paver products without spacers (minimum 4 mm - 5/32").

The drawing shown above is just for illustration purposes.

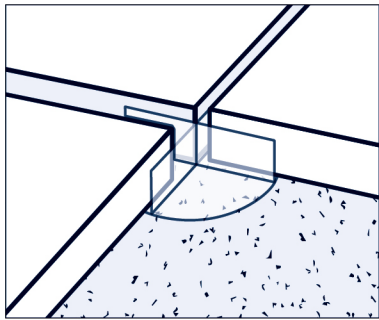
Project/site evaluation and structural design must be performed by a qualified professional engineer.



### INSTALLATION INFORMATION AND RECOMMENDATIONS

Each of the following installation choices has its own set of details and instructions. The thickness of the base will vary depending on the climate and geographical region. The sand bed course must be pre-compacted before being struck off with a screed to the required thickness as illustrated in the drawings. Before laying the pavers, the sand layer underneath must be pre-compacted. To ensure a clean strike off finish, the sand layer must have a moisture content of 5 to 6%. Compacting dry sand will not give the desired results.

Compacting dry sand will not give the desired results.



- > Only use a paver saw with a wet cut porcelain blade to cut Top Paver products.
- > Pre-compact and strike off sand leveling course before placing pavers in sand set installations.
- > When installing pavers on sand set and permeable installations, 3/16" (4 mm) plastic spacers must always be used. The photo on the right shows how 3/16" spacers are used to support and space paver corners.
- > The use of plate compactors on Top Paver products is not recommended.

### JOINT FILLING

When installing Top Paver products on sand set base, fill the 3/16" (4mm) paver joints with one of these options:

#### 1. Traditional sand

Fill the open joints completely with traditional dry sand. Sweep away any extra sand from the pavers. Refilling may be needed in the future due to wind and rain erosion.

#### 2. Polymeric sand

Polymeric sand is a polymer blend that hardens when exposed to moisture. Sweep sand into open joints until they are completely filled. Wipe away extra sand and dust from the surface. To ensure that all excess sand is gone, use a blower for the final dust clearance. Surface staining might occur if there is any remaining sand or dust. Once the joints have been filled and the surface has been cleaned, spritz the pavement with water to activate the polymer and cure the mixture.

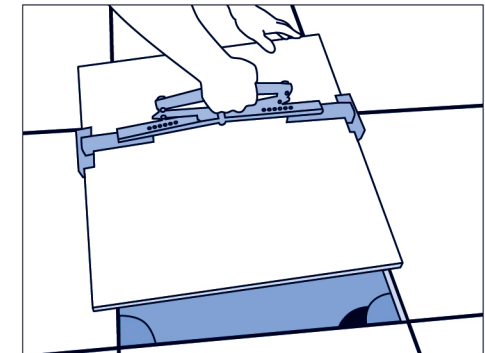
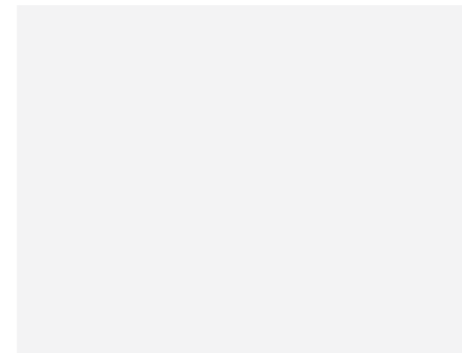
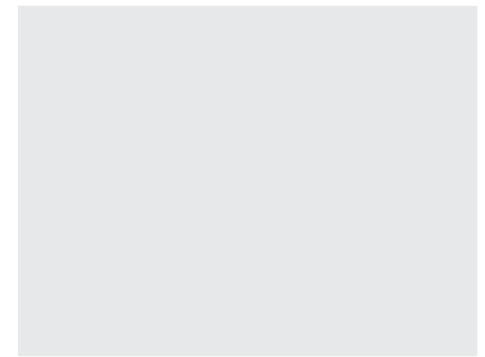
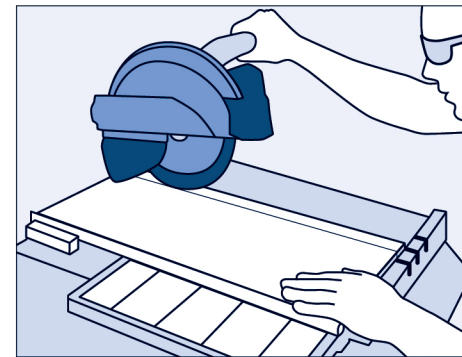
## Installation tools

### HANDLING AND SPECIALTY TOOLS

Top Paver pallets are packaged individually in protected cardboard boxes and shipped with a very robust plastic covering to prevent from chipping. Once the plastic shipping cover has been removed, protect any un-used boxed pavers from the outdoors. This ensures that the protective cardboard boxes remain intact.

A wet cut paver saw is used to properly and neatly cut Top Paver products to fit around edges and corners. The saw must be equipped with a diamond blade intended for wet cutting porcelain and designed to safely cut a 24" (60 cm) length paver.

A paver clamp makes it simple to place and remove pavers. Gloves are strongly advised when handling and installing slabs to protect the hands from harm. Notched trowels and grout float tools are used to install cementitious adhesive and grout. To select the proper tools for application, consult the adhesive and grout manufacturers' instructions.



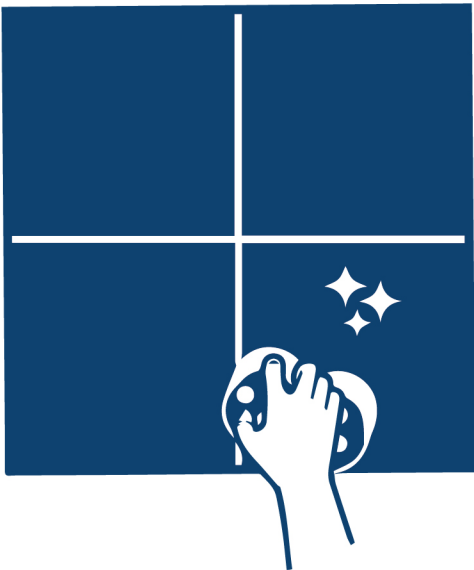


# 4 Care & maintenance

## FIRST DEEP CLEANING AFTER INSTALLATION OVER CONCRETE

After grouting the joints, use a sponge and clean water to remove any excess grout. The grout in the joints will harden significantly after 12-48 hours and leave a noticeable "haze". A diluted acid cleanser designed specifically for removing "grout haze", along with a gentle scrubbing pad, will typically remove it. For maximum results, change your acid/water solution on a regular basis. Use clean water to eliminate the acid/water combination and clean dry towels to dry the floor. Additional cleaning may be required for places with excess grout or grout that has been glued to the face of the tile.

Excess grout residue must be removed before it dries and sticks to the surface. Cleaning water should be changed often and thoroughly rinsed. The use of a floor scrubber along with a diluted acid detergent aids in reaching and cleaning the areas between neighboring tiles. If proper cleaning procedures are not carried out or carried out too late, the grout residue will form an absorbent coating that traps dirt, making the surface difficult to clean. In this instance, Royal House will not be accountable for any surface damage.



### DO



- Keep tiles clean with basic cleaning of warm water and mild soap
- Use multi-purpose spray cleaner to remove soap scum, hard water stains and mildew.
- Wipe tiles dry thoroughly after cleaning.
- Cover furnitures and table legs with protectors to prevent scratches.
- Choose products in compatible with grout to avoid damage.

### DO NOT



- Expose tiles to permanent inks or dyes.
- Use cleaning products containing acids, ammonia or other strong chemicals.
- Clean glazed tiles with oil-based cleaners.
- Put too much pressure on tiles.



# TOPPAVER

## SINTERED STONE



# INSTALLATION

## Guide



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