



FRONTIER²⁰

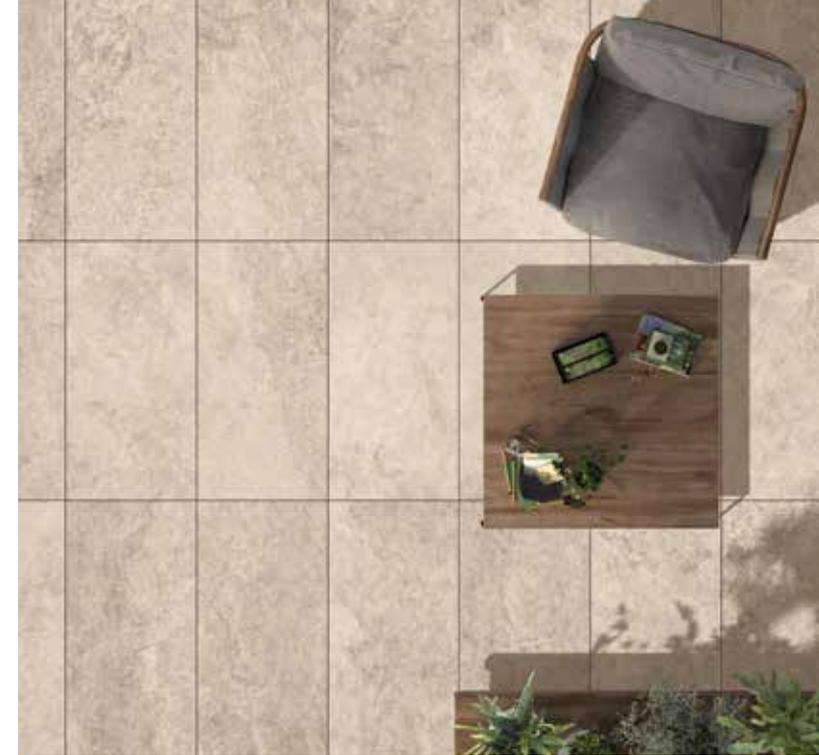
 **LANDMARK**
CERAMICS

A new landmark in the ceramic industry

Landmark Ceramics is an American company, based in Tennessee that has set out to research, manufacture and sell top quality porcelain ceramics in North America, taking advantage of the proven experience of the Gruppo Concorde, an international leader in the sector. Technological innovation, market presence, attention to detail, the welfare of people and the environment, efficient service and a thorough product range make Landmark a new benchmark in the North American market for those who are looking for a reliable partner for any building and architecture project using US Made top quality porcelain pavers.

FRONTIER²⁰

Frontier20 is a line of porcelain pavers that is perfectly suited for the outdoors. The market's demand for a stain proof, slip resistant, chemical resistant, no maintenance product lead to the development of a revolutionary aesthetically superior product that is versatile enough for exteriors as well as interiors. combining the highest level of quality control and technology with state of the art equipment, age old practices have been revitalized to offer a superior Industry leading product. Frontier20 offers a never before seen dimension to your outdoor living area! Please continue to be amazed at extremely realistic natural stone and wood look products.



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LEARN MORE ABOUT





PERFORMANCE, FUNCTIONALITY AND AESTHETICS: ALL IN 20 MM.



_Frontier20 porcelain pavers are inherently slip resistant and impervious to chemicals, salt, fading, or scratching. Free your self from having to commit to yearly sealing practices. **Your Frontier20 will never fade or need sealing!**

Simply pressure wash your way to a newly installed look any time you want. Moss and mold also won't be an issue, they too can easily be cleaned off without fear of streaking. The ultra realistic surface of Frontier20 is physically bound and can not fade or be removed.

Frontier20 is Freedom!

PROJECT

FLOOR DESIGN
Frontier20 - Vintage Slab - 24"x24"



PROJECT

FLOOR DESIGN
Frontier20 - Pietra di Barge - 18"x36"



PROJECT

FLOOR DESIGN
Frontier20 - Soul Walnut - 12"x48"



ANTISLIP

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



FADE RESISTANT

Landmarks Frontier20 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

Landmark's Frontier20 porcelain pavers are virtually non porous. Due to the baked on glazing process nothing can be absorbed including stains.



RESISTANT TO MOSS AND MOLDING

Landmark Frontier20 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

Landmark Frontier20 is made with inert ingredients that do not react or accept acids and or chemicals allowing you to make environmentally friendly cleaning decisions!



NO SEALING NEEDED

No sealers are needed because Landmark Frontier20 is so dense virtually nothing can stick to it!



RESISTANT TO SALTS

Landmark Frontier20 porcelain pavers are completely unaffected by use of salts.



EASY TO REPLACE AND REMOVE

When not mortared down or installed with adhesive Landmark's Frontier20 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 striping.



SCRATCH RESISTANT

Landmark Frontier20 porcelain pavers are extremely hard with an equally hard surface making them virtually scratch proof.



EASY TO INSTALL



SAVING OVER TIME

Low maintenance cost.



RESISTANT TO THERMAL SHOCK

Landmark'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 become very inert allowing for extreme and sudden temperature changes in the range of - 60 F +140 F.



ECO-FRIENDLY

Landmark Frontier20 porcelain pavers are produced in our environmentally friend complex following the strictest state and federal regulations. Because of Landmarks environment friendly commitment, we can incorporate up to 20% recycled content in our usa made porcelain pavers.



DRIVE OVER *

When properly installed over concrete, Landmark Frontier20 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

Landmark Frontier20 porcelain pavers are so dense that frost and or freezing temperatures do not affect it.

FOR RESIDENTIAL.



_Frontier20 offers you a **variety of design options** that allow you to realize beautiful residential space.



MAIN RESIDENTIAL APPLICATIONS

- Walkways
- Driveways
- Courtyards
- Paths on grass or gravel
- Garages
- Patios and porches
- Terraces and balconies
- Access ramps
- Verandas
- Outdoor pools

PROJECT

FLOOR DESIGN
Frontier20 - Attitude Warm Sand - 24"x24"

FOR PUBLIC SPACES.



_In public spaces Frontier20 lends itself perfectly to different types of applications where **durability, ease of cleaning and sanitation** are demanded. Frontier20 is your answer.

MAIN PUBLIC APPLICATIONS

- Public outdoor areas
- Swimming pools
- Outdoor restaurants
- Outdoor bars
- Wellness centres
- Urban design
- Safety passages
- Outdoor pavements and squares

PROJECT

FLOOR DESIGN
Frontier20 - Globe Silver Quartz - 24"x24"



 **20MM THICKNESS**
PORCELAIN PAVERS



CONTINUITY IN & OUT.

_Combining the Frontier20 line of products with the standard thickness product lines offers **high-level design flexibility and customization.**

Allowing designers and architects to easily transition inside design into outdoor beauty, functionality and performance.

PROJECT

FLOOR DESIGN

Frontier20 - Globe Barge Gold - 24"x24"



COMPLETE LAYING VERSATILITY.



The Frontier20 product line is so simply perfect, elegant and functional, that the challenge of installation is not “How can I install Frontier20?” but rather, “Where else do I want to install Frontier20?”. Frontier20 may be installed using the traditional mortared bed, the more modern over sand and limestone, to the eco friendly permeable method, or even the budget conscious elevated deck or pedestal application.

01 DRY LAYING.

A way of laying pavers that allows you to **support plates** directly onto grass, gravel or sand.

01.1 ON GRASS



01.2 ON GRAVEL



01.3 ON SAND



02

INSTALLATION OVER REINFORCED CONCRETE*.

A way of laying pavers that allows you to create **perfectly stable surfaces** of incredible resistance.

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



03

INSTALLATION OVER DECKING.

Traditional deck made with wood and porcelain pavers.



04

RAISED FLOORS.

Slabs matched with a support structure for raised high-performing floors that also leaves sufficient room for **under-floor inspection**.



01 DRY LAYING.

ADVANTAGES.

- RAPID
- MODIFIABLE
- REUSABLE
- EASY TO CARRY THROUGH
- REDUCES ADHESIVES COSTS
- QUICK TO INSTALL
- READY TO USE

The surface in 20mm thickness can be laid onto the substrate **without adhesives**, lending itself to applications onto **grass, gravel and sand**. Sought-after ambiance in the home come to life quickly with **incredible ease and simplicity**.

LOCATIONS.

- PRIVATE GARDENS
- PATIOS
- WALKWAYS
- PUBLIC PARKS AND GARDENS
- OUTDOOR COMMERCIAL AREAS
- BEACH RESORTS



PROJECT
FLOOR DESIGN
Frontier20 - Attitude Simply Grey - 24'x24'

01.1 DRY LAYING ON GRASS.

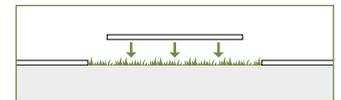
The slabs are laid **dry onto a grass surface** without the need for adhesives. The external paving can easily be altered at any time and each slab can be **removed and reused**.



DRY LAYING ON GRASS RECOMMENDATIONS FOR INSTALLATION

Frontier20 can be easily installed onto **grass substrates** simply by following the recommendations set out here: simply cut your grass in the desired application area as short as possible. Bare earth is always better. Rake out loose soil or a bed of fine gravel to level out the grade as needed. Compact loose soil or gravel and install. Take into consideration “rocking” of the paver. If “rocking” occurs adjust the soil or gravel and make it flat and level.

DRY LAY OVER GRASS (PEDESTRIAN FOOT TRAFFIC)



- A** FRONTIER20 PORCELAIN 3/4" NOMINAL (20MM) PAVERS
- B** BARE SOIL IS BEST. SCRATCH AND LAYEL WITH A RAKE

The stratigraphic images are just an example of the type of application and technical features of Frontier20. Landmark Ceramics recommends to refer to the specific norms valid in the various countries to carry out a state-of-the-art installation.

**DRY LAYING ON GRAVEL
RECOMMENDATIONS
FOR INSTALLATION**

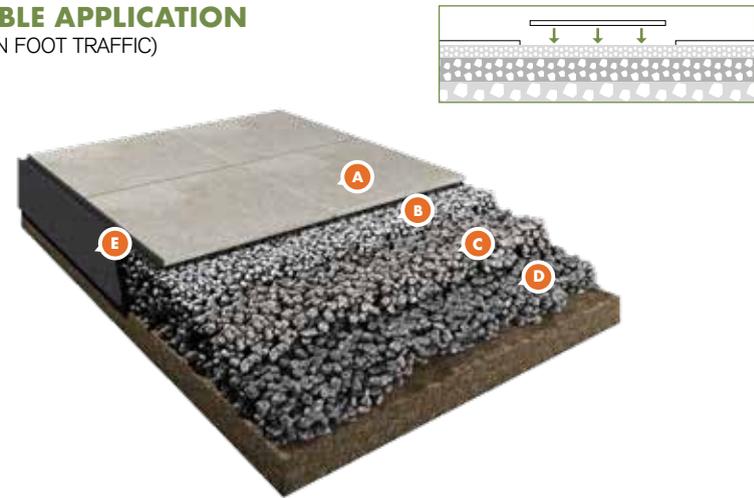
Frontier20 can be installed onto gravel substrates simply by placing the slabs next to one another with a minimum 1/4" gap in between. Having coarser limestone below and successively finer layers of limestone below the paver allows for a permeable eco friendly free draining Installation. This installation solution is functional, quick and promotes a strong visual impact that is aesthetically pleasing.



**01.2 DRY LAYING
ON GRAVEL.**

Installing porcelain pavers over gravel can allow a cost effective means to allow for water drainage on a flat patio. Costly swales and drains are no longer necessary. Simply put down a base of 4-6" of compacted limestone (57 limestone), screed the stone level, compact the stone and with the use of paver spacers leave a minimum 1/4" joint that will allow water to freely flow directly underneath your patio or walkway. The joint can then be filled using 1/2" stone chips or flakes. The application can also be utilized as an overlay for an array of existing substrates.

**PERMEABLE APPLICATION
(PEDESTRIAN FOOT TRAFFIC)**



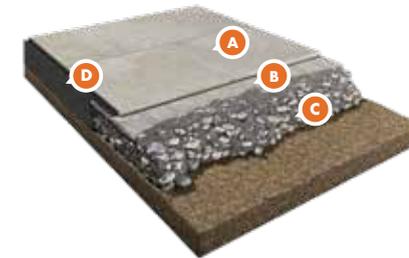
- A** FRONTIER20 PORCELAIN 3/4" NOMINAL (20 MM) PAVERS
- B** COARSENESS OF GRAVEL 2" - 8 S' AND 9 S' (1/2" + LESS)
- C** COARSENESS OF GRAVEL 4" - #57 (3/4")
- D** COARSENESS OF GRAVEL 6" - 3 S' - 4 S' IF DESIRED
- E** FILTER FABRIC

Insure the plastic 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.

The stratigraphic images are just an example of the type of application and technical features of Frontier20. Landmark Ceramics recommends to refer to the specific norms valid in the various countries to carry out a state-of-the-art installation.

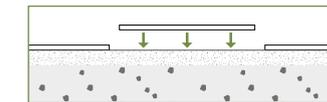
**01.3 DRY LAYING
ON SAND.**

Traditional concrete paver installation can also be utilized and is the ideal installation practice, especially where ground frost is common throughout the winter. 4-6" of compacted road base grade limestone should be used with a sand as a top dressing. With concrete pavers typically 3/4" - 1 1/2" of sand is common. We recommend only 3/4" of uncompacted sand. This allows for the easiest installation and allows for reconfiguration at anytime. Again a minimum of 1/4" joint should be maintained and filled in with your choice of paver sand.



- A** FRONTIER20 PORCELAIN 3/4" NOMINAL (20 MM) PAVERS
- B** 3/4" UNCOMPACTED BEDDING SAND

**TYPICAL FLEXIBLE
BASE INSTALLATION
(PEDESTRIAN FOOT TRAFFIC)**

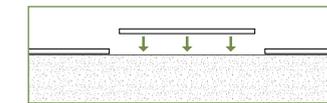


- C** 4-6" CRUSHER RUN/ROAD BASE
- D** FILTER FABRIC



- A** FRONTIER20 PORCELAIN 3/4" NOMINAL (20 MM) PAVERS
- B** APPROX. 4" OF BEDDING SAND

**OVER SAND BASE
INSTALLATION
(PEDESTRIAN FOOT TRAFFIC)**



- C** FILTER FABRIC

Insure the plastic 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.



DRY LAYING ON SAND

02 INSTALLATION OVER REINFORCED CONCRETE*

The Frontier20 may also be installed with traditional methods using thinset/thickset mortar appropriate for use with porcelain paver. In a short 24 hours your floor will be ready for foot traffic. This method offers the most stable and most durable floor covering that is able to withstand foot traffic up to light vehicular traffic.

* It is recommended installation over 4" minimum thick reinforced concrete, using a thinset/thickset mortar suitable for porcelain paver.

ADVANTAGES.

- LONG TERM DURABILITY
- READILY ACCESSIBLE SURFACES
- ABLE TO WITHSTAND PEDESTRIAN AND LIGHT VEHICLE TRAFFIC

LOCATIONS.

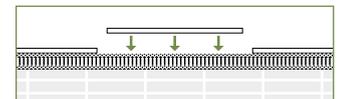
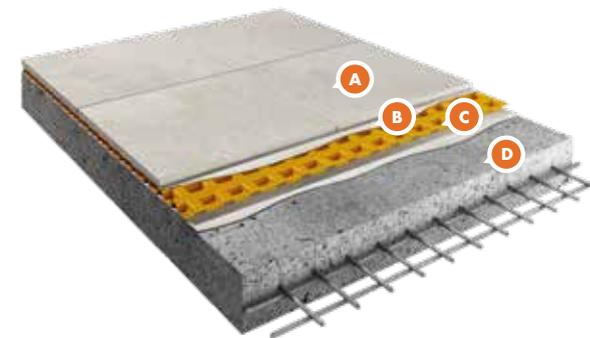
- YARDS
- PORCHES
- TERRACES
- RAMPS
- GARAGES
- PARKING AREAS
- CYCLE TRACKS
- PAVEMENTS
- SQUARES



INSTALLATION OVER REINFORCED CONCRETE



THIN SET MORTAR APPLICATION OVER REINFORCED CONCRETE



- A** FRONTIER20 PORCELAIN 3/4" NOMINAL (20MM) PAVERS
- B** THINSET
- C** UNCOUPLING MEMBRANE
- D** EXISTING OR NEW CONCRETE (REINFORCED) 4" MINIMUM

The stratigraphic images are just an example of the type of application and technical features of Frontier20. Landmark Ceramics recommends to refer to the specific norms valid in the various countries to carry out a state-of-the-art installation.



03 INSTALLATION OVER DECKING.

Landmark Ceramic's Frontier20 combined with a **grate system** allows porcelain paving to be utilized in conjunction with an existing or new construction **wood deck structure**. As long as the wooden deck structure is constructed soundly and according to local codes, the honeycomb plastic grate is installed as the substrate for the porcelain paver. This system is **highly innovative and functional** for the design of contemporary outdoor spaces.



ADVANTAGES.

- ANTISLIP FROST RESISTANT
- RESISTANT TO THERMAL SHOCK
- SAFETY
- EASY TO MAINTAIN
- DURABLE OVER TIME
- HIGH END LOOK
- NEVER HAVING TO STAIN DECK BOARDS AGAIN
- NO SCREW OR NAILS STICKING UP
- NO WOOD SPLINTERS

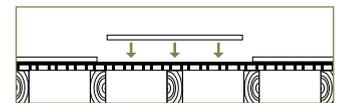
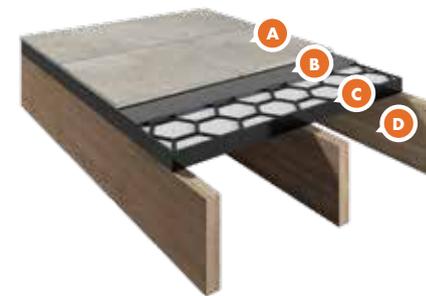
LOCATIONS.

- PRIVATE GARDENS
- OUTDOOR ELEVATED WALKWAYS
- DECK PATIOS
- DECK GAZEBOS



INSTALLATION OVER DECKING

INSTALLATION OVER DECKING (PEDESTRIAN FOOT TRAFFIC)



- A** FRONTIER20 PORCELAIN 3/4" NOMINAL (20MM) PAVERS
- B** OUTDOOR FABRIC OR SOUND DAMPERING MATTRESS
- C** HONEYCOMB PLASTIC GRATE
- D** DECK JOISTS

Insure the plastic 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.

The stratigraphic images are just an example of the type of application and technical features of Frontier20. Landmark Ceramics recommends to refer to the specific norms valid in the various countries to carry out a state-of-the-art installation.



04 RAISED FLOORS.

In combination with a suitable structure the **Frontier20 porcelain paver** in 20mm thickness lend themselves perfectly to floors with a **suspended installation**. The adjustable stand means being able to create an air space under the floor in which to lay electrical conduit or plumbing. The raised flooring system is easy to manage, allows you to configure the underlying wiring or plumbing systems based on specific needs and also to change its configuration any time a new look is needed.

ADVANTAGES.

- LEVEL OFF UNEVEN SURFACES
- ALLOWS YOU TO HIDE UNSIGHTLY PIPES AND PLANTS WIRES AND ELECTRICAL CONDUIT
- EASY MAINTENANCE
- ALLOWS FOR WATER DRAINAGE
- RESISTANT TO THERMAL EXPANSION
- PROVIDES THERMAL AND ACOUSTIC INSULATION
- NO NEED FOR ADHESIVES
- REDUCES LABOUR COSTS

LOCATIONS.

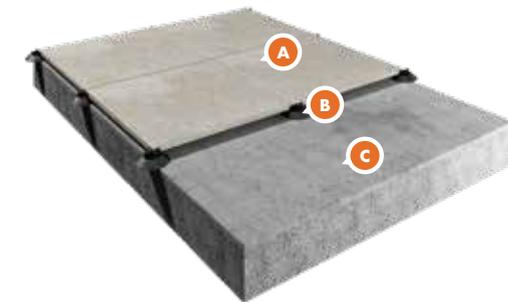
- PATIOS
- GAZEBOS
- FACILITY AREAS OF COMMERCIAL VENUES
- ROOF TOPS



RAISED FLOORS RECOMMENDATIONS FOR INSTALLATION

For raised installation, Frontier20 slabs are installed onto pedestal supports with a **distance of a 1/4" between adjacent slabs** once the underlying footing has been duly layered with water-proofing materials. In this way, there is a technical gap below the foot-plan that **can be easily inspected** by lifting the slabs.

LOW HEIGHT SUPPORTS (UP TO 3/4" - 20 MM) PEDESTAL INSTALLATION OVER EXISTING SUBSTRATE (PEDESTRIAN FOOT TRAFFIC)



- A** FRONTIER20 PORCELAIN 3/4" NOMINAL (20 MM) PAVERS
- B** PEDESTAL
- C** EXISTING SLAB OR SUBSTRAIGHT

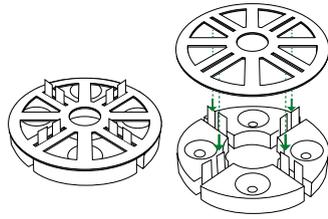
The stratigraphic images are just an example of the type of application and technical features of Frontier20. Landmark Ceramics recommends to refer to the specific norms valid in the various countries to carry out a state-of-the-art installation.

RAISED FLOORS INSTALLATION SYSTEM.

LOW HEIGHT SUPPORTS.

System made up of disks of variable thickness. Utilize for low height installation (up to 3/4").

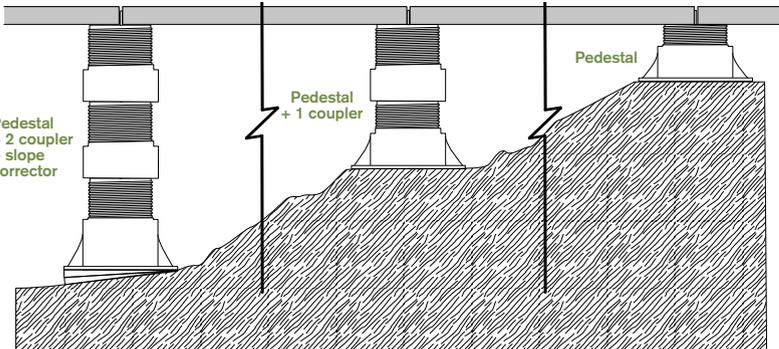
| | AVAILABLE HEIGHT | | | |
|---|------------------|------|------|------|
|  | 1/8" | 1/4" | 1/2" | 3/4" |
|  | 1/8" | | | |



ADJUSTABLE HEIGHT SUPPORTS.

System made up of adjustable height pedestal (from 1 1/4" to 16").

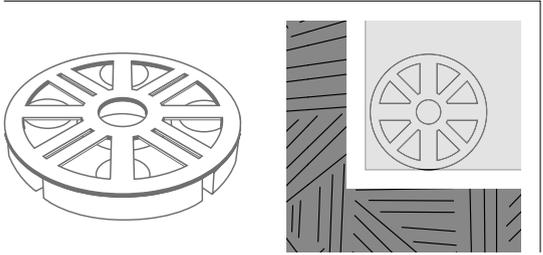
| | AVAILABLE HEIGHT | | | |
|---|------------------------|---------|-------------|-----------------|
|  | 1 1/4" - 2" | 2" - 3" | 3" - 4 3/4" | 4 3/4" - 7 3/4" |
|  | add up 4" each | | | |
|  | 0" - 1" per foot slope | | | |



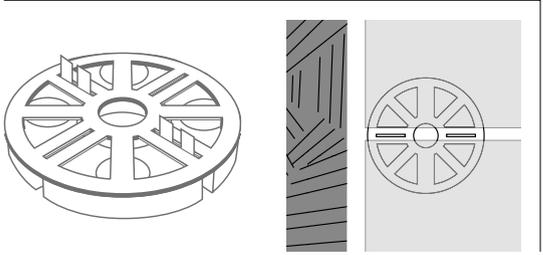
RAISED FLOORS INSTALLATION SYSTEM.

It is recommended to carry out raised installation onto a solid, resistant substrate with the correct inclination to guarantee water drainage. Support come equipped with four spacers that allow for the creation of grout lines between pavers. For a correct installation against walls or corners, it is necessary to keep the supports distant from the wall and remove 2 or 4 spacers as showed in the picture. **Landmark Ceramics** recommends to strictly follow the instructions for the raised installation of Frontier20.

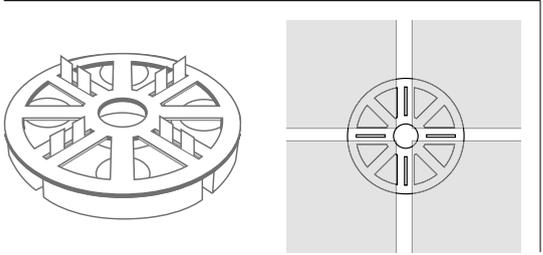
Wall corner



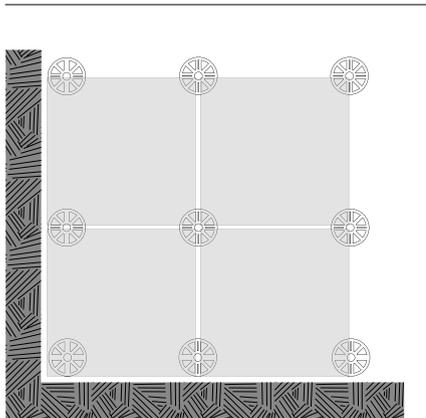
Wall border



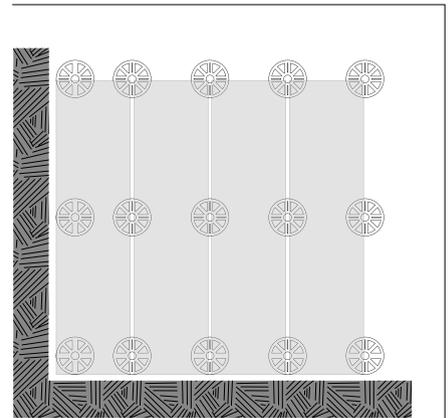
Floor center



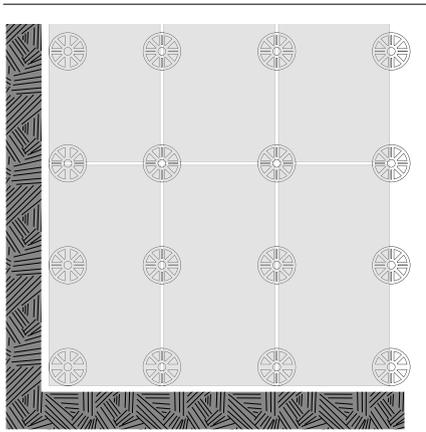
24"x24" - 12"x24" - 12"x12"



12"x48"



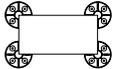
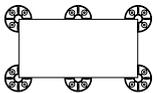
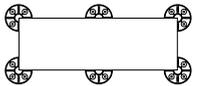
18"x36"



RAISED FLOORS INSTALLATION SYSTEM.

WARNINGS.

If the application of the 20 mm slabs requires 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 (double fiberglass mesh) 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. For further information and recommendations concerning the installation systems please refer to <https://hardscape.landmarkceramics.com> website.

| SUPPORTS REQUIREMENTS | | | |
|---|-----------------------|---------------------------|----------------------------------|
| | SIZE | UP TO 3/4" (20 MM) | ABOVE 3/4" (20 MM) |
|  | 12"x12" (300x300 mm) | 4 supports 0,32 pcs/sq ft | Please contact Landmark Ceramics |
|  | 24"x12" (600x300 mm) | 4 supports 0,32 pcs/sq ft | Please contact Landmark Ceramics |
|  | 24"x24" (600x600 mm) | 4 supports 0,32 pcs/sq ft | Please contact Landmark Ceramics |
|  | 18"x36" (450x900 mm) | 6 supports 0,56 pcs/sq ft | Please contact Landmark Ceramics |
|  | 12"x48" (300x1200 mm) | 6 supports 0,65 pcs/sq ft | Please contact Landmark Ceramics |
|  | 16"x48" (400x1200 mm) | 6 supports 0,65 pcs/sq ft | Please contact Landmark Ceramics |

NOTE.

For any detail and technical specification concerning the double fiberglass mesh, please contact Landmark Ceramics. Landmark is responsible only if it supplies the whole system (paver + double fiber mesh). Landmark cannot be held responsible for reinforcing systems that has not supplied. **In case of breakage, paver must be replaced immediately.**

RECOMMENDATIONS FOR THE INSTALLATION, ORDINARY CLEANING AND MAINTENANCE OF FRONTIER20.

Landmark Ceramics recommends carrying out the procedures for the ordinary cleaning of Frontier20 floor surfaces using water and commercially available neutral detergents: the inclination of the surface and the space between adjacent slabs for dry-system installation favour the natural flow of water. However, it is important to take into consideration that any type of floor surface is subject to the surface tension effect of liquids: it is the same property of water that gives the tendency to transform into spherical droplets and which cause the curved top surface of a glass full of water. The surface tension can obstacle the complete drainage of water and cause a temporary stagnation of liquid on the slab edges. In order to avoid this problem, Landmark Ceramics recommends ensuring adequate inclination of the surface during installation so as to encourage the flow of water between adjacent slabs. Please remember in any case that, in view of the distinctive advantages of porcelain stoneware, Frontier20 absorbs practically no water, which makes it highly frost-proof. This may lead to localised water pooling, mainly on the edges of the pavers, independently of the manner and quality of the laying. Laying is also recommended with a minimum gap of 4 mm (5/32"). Should liquid deposit on the surface, it is recommended to push it towards grout lines using a brush or remove it with a wet and dry vacuum cleaner.



Backing with double fiberglass mesh.



PROJECT
FLOOR DESIGN
Frontier20 - Sight Anthracite - 18"x36"



TRIM TILES TO LANDSCAPE THE OUTDOORS.

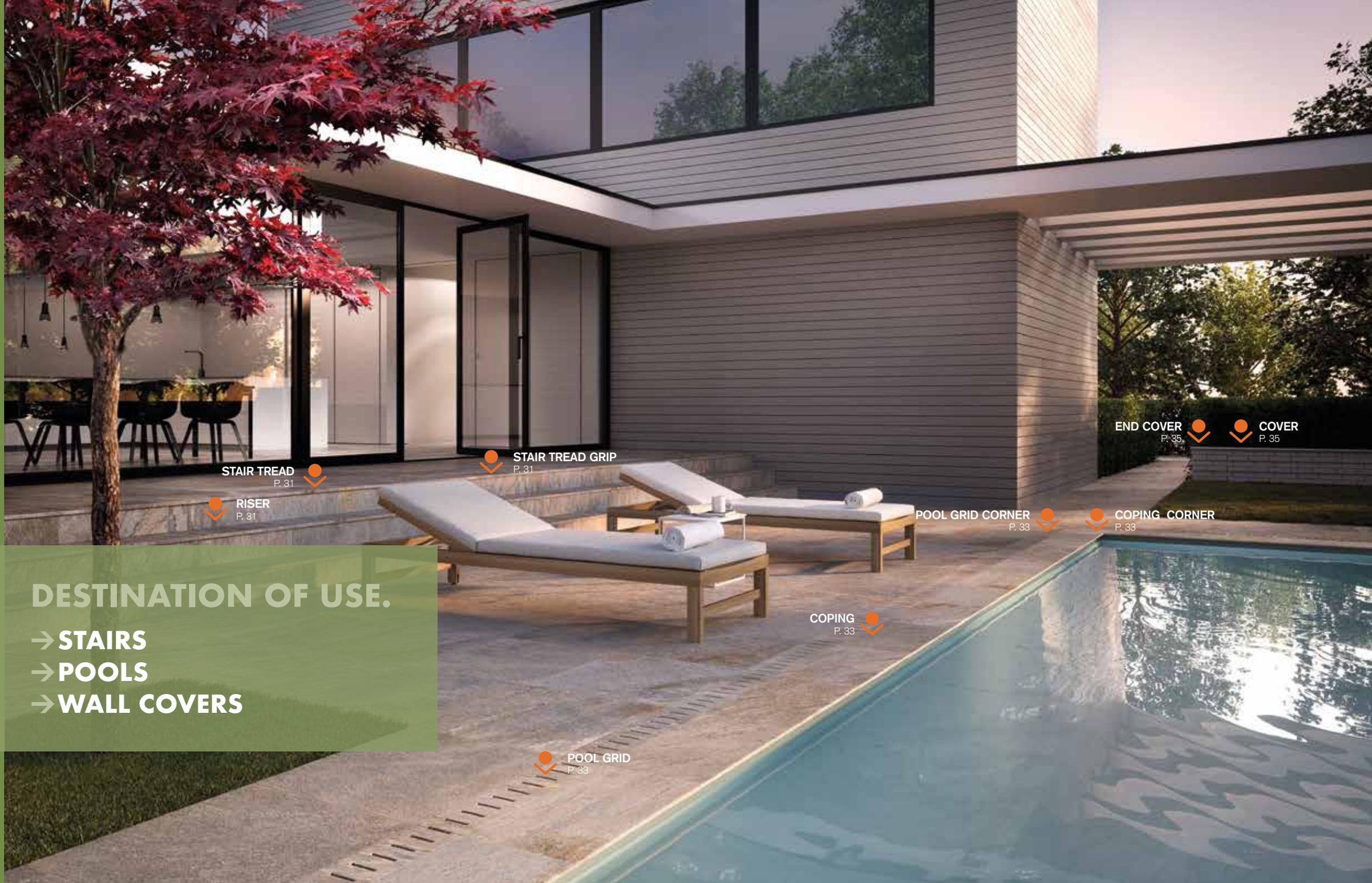
Frontier20 includes a complete range of **special trim pieces** to seamlessly complete and accentuate the landscaping of outdoor spaces. The trim tiles represent the ideal solution for the planning of outdoor spaces, **commercially or residentially**. The special trims feature coordinated aesthetics to match those of the **Landmark porcelain paver**, for projects that demand **total visual continuity**.

PROJECT

FLOOR DESIGN
Frontier20 - Silver Quartz - 24"x24"

DESTINATION OF USE.

- STAIRS
- POOLS
- WALL COVERS



COPING & STAIR TREAD MONOLITHIC. A UNIQUE PIECE, A THOUSAND SOLUTIONS.

__Coping & Stair Tread Monolithic* is processed in order to cater to multiple needs in outdoor design. **Two different border shapes**, bullnose (rounded) border and rectified border, in one single piece: freedom for projects with the excellent technical performance of porcelain stoneware.

BULLNOSE BORDER



RECTIFIED BORDER



STAIR TREAD MONOLITHIC
(RECTIFIED BORDER)



STAIR TREAD MONOLITHIC
(BULLNOSE BORDER)



GRIP STAIR TREAD MONOLITHIC
(RECTIFIED BORDER)



GRIP STAIR TREAD MONOLITHIC
(BULLNOSE BORDER)

DESTINATION OF USE.

- STAIRS
- POOLS

__A trim piece offering outstanding versatility, both in terms of look and efficiency. Thanks to its two different border shapes, Coping & Stair Tread Monolithic is suitable both for **swimming pool copings** and for **stairs**, in two different versions: with or without grip strips.



COPING MONOLITHIC
(ONLY BULLNOSE BORDER)

* Coping & Stair Tread Monolithic is available in the following colors: Barge Gold, Limestone, Multicolor Gold, Silver Quartz, Vintage Slab.

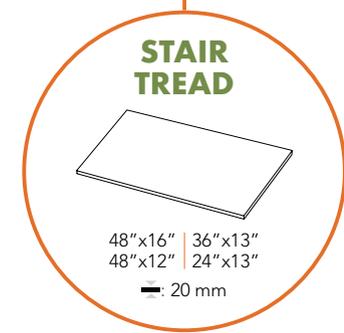
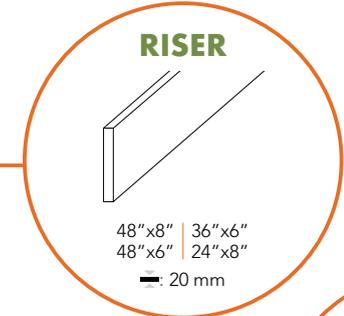
STAIRS WITH AN IN-DEMAND AESTHETIC THAT IS ALSO HIGH PERFORMING.

SYSTEM.

- STAIR TREAD
- GRIP STAIR TREAD
- RISER

ADVANTAGES.

- RESISTANCE TO SALTS
- RESISTANCE TO CHEMICALS
- TECHNICAL PERFORMANCE
- ANTI-SLIP
- VISUAL CONTINUITY TO THE OUTDOOR FLOOR



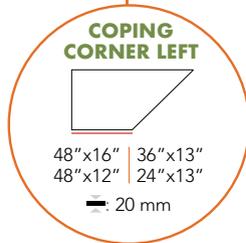
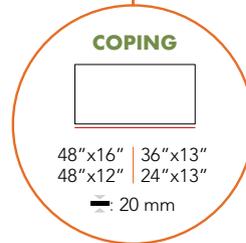
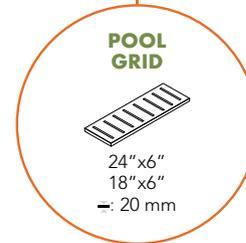
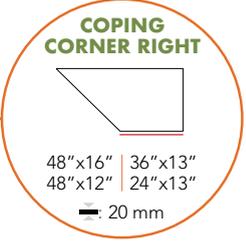
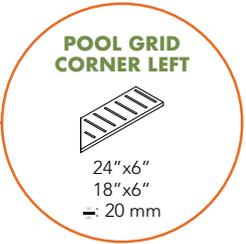
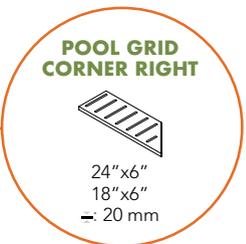
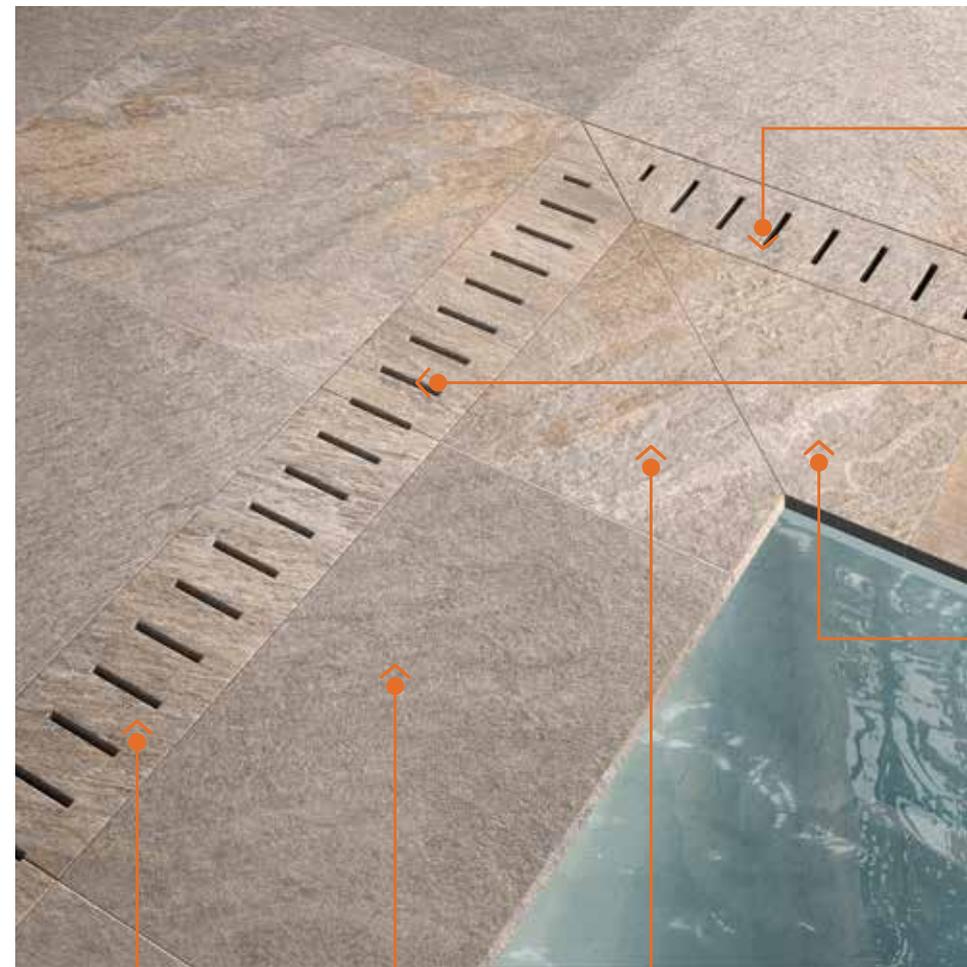
COMFORT AND STYLE FOR SWIMMING POOL AREAS.

SYSTEM.

- POOL GRID
- POOL GRID CORNER
- COPING
- COPING CORNER

ADVANTAGES.

- RESISTANCE TO SALTS
- RESISTANCE TO CHEMICALS
- ANTI-SLIPPERINESS
- DURABILITY
- EASY TO CLEAN
- VISUAL CONTINUITY TO THE OUTDOOR FLOOR



WALL COVERS: PROTECTION FROM WATER AND VISUAL CONTINUITY.

SYSTEM.

- COVER
- END-COVER

ADVANTAGES.

- ANTI-DETERIORATION
- EASY TO CLEAN
- PROTECTS THE WALL FROM WATER INFILTRATION



COVER *



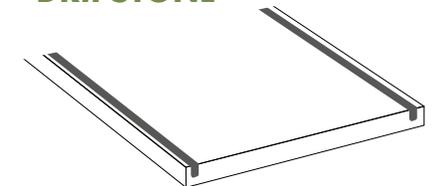
36"X12"
24"x12"
— 20 mm

END COVER *



36"X12"
24"x12"
— 20 mm

DRIPSTONE



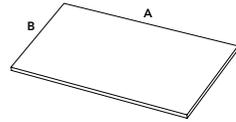
* Both Cover and End-Cover have dripstone and undecorated borders.

TRIM TILES RANGE 24"x24"

STAIRS

STAIR TREAD
MONOLITHIC**

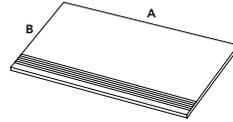
TRIM DIMENSIONS



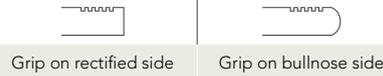
A: 24"
B: 13"
—: 20 mm

GRIP STAIR TREAD
MONOLITHIC**

TRIM DIMENSIONS

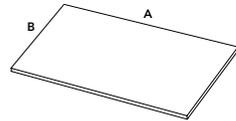


A: 24"
B: 13"
—: 20 mm



STAIR TREAD*

TRIM DIMENSIONS

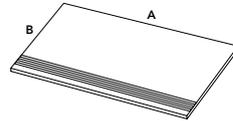


A: 24"
B: 13"
—: 20 mm



GRIP STAIR TREAD*

TRIM DIMENSIONS

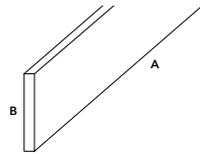


A: 24"
B: 13"
—: 20 mm



RISER*

TRIM DIMENSIONS



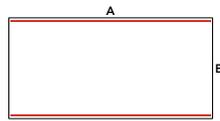
A: 24"
B: 8"
—: 20 mm



WALL COVERS

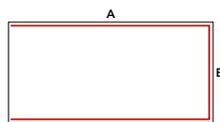
COVER*

TRIM DIMENSIONS



A: 24"
B: 12"
—: 20 mm

END COVER*



* Available in standard version (with undecorated borders).

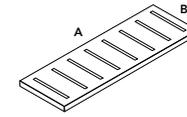
** Monolithic trim pieces (with decorated borders), available in the following colors: Barge Gold, Limestone, Multicolor Gold, Silver Quartz, Vintage Slab.

TRIM TILES RANGE 24"x24"

POOLS

POOL GRID

TRIM DIMENSIONS

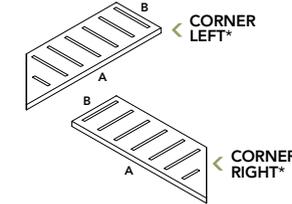


A: 24"
B: 6"
—: 20 mm



POOL GRID
CORNER

TRIM DIMENSIONS

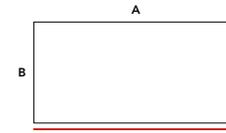


A: 24"
B: 6"
—: 20 mm



COPING
MONOLITHIC**

TRIM DIMENSIONS

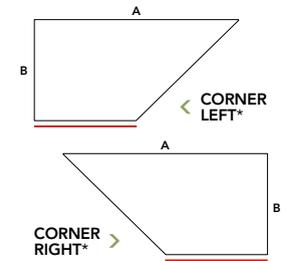


A: 24"
B: 13"
—: 20 mm

Only bullnose border

COPING CORNER
MONOLITHIC**

TRIM DIMENSIONS

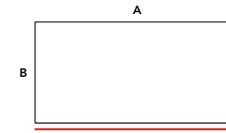


A: 24"
B: 13"
—: 20 mm

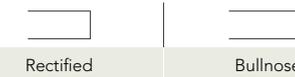
Only bullnose border

COPING*

TRIM DIMENSIONS

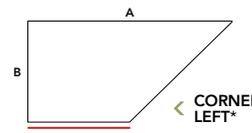


A: 24"
B: 13"
—: 20 mm

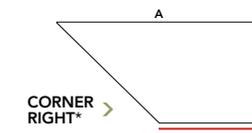


COPING CORNER*

TRIM DIMENSIONS



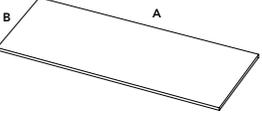
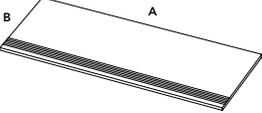
A: 24"
B: 13"
—: 20 mm

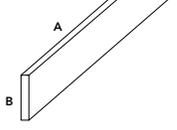
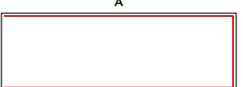


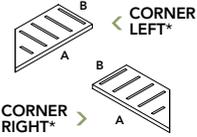
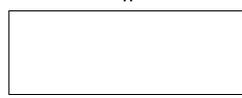
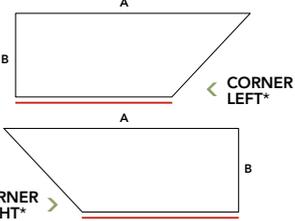
* Available in standard version (with undecorated borders).

** Monolithic trim pieces (with decorated borders), available in the following colors: Barge Gold, Limestone, Multicolor Gold, Silver Quartz, Vintage Slab.

TRIM TILES RANGE 18" x 36"

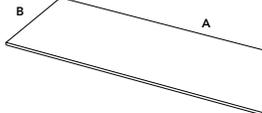
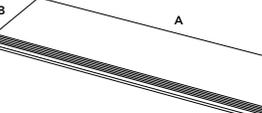
| STAIRS | | | |
|---|---|--|--|
| STAIR TREAD* | TRIM DIMENSIONS | GRIP STAIR TREAD* | TRIM DIMENSIONS |
|  | A: 36" B: 13" —: 20 mm |  | A: 36" B: 13" —: 20 mm |
| |  Rectified | |  Bullnose |

| STAIRS | | WALL COVERS | |
|---|---|--|--|
| RISER* | TRIM DIMENSIONS | COVER* | TRIM DIMENSIONS |
|  | A: 36" B: 6" —: 20 mm |  | A: 36" B: 12" —: 20 mm |
| |  Rectified | |  Undecorated border and dripstone |
| | | END COVER* | |
| | |  | |

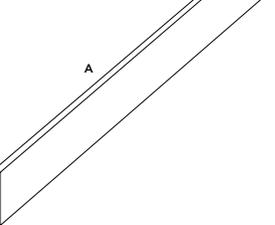
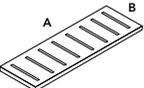
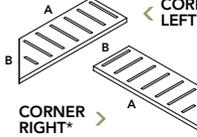
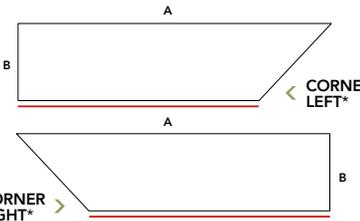
| POOLS | | | |
|---|---|--|---|
| POOL GRID* | TRIM DIMENSIONS | POOL GRID CORNER* | TRIM DIMENSIONS |
|  | A: 18" B: 6" —: 20 mm |  | A: 18" B: 6" —: 20 mm |
| |  Rectified | |  Rectified |
| COPING* | TRIM DIMENSIONS | COPING CORNER* | TRIM DIMENSIONS |
|  | A: 36" B: 13" —: 20 mm |  | A: 36" B: 13" —: 20 mm |
| |  Rectified | |  Bullnose |

* Available just in standard version (with undecorated borders)

TRIM TILES RANGE 12" x 48"

| STAIRS | | | |
|---|---|---|--|
| STAIR TREAD* | TRIM DIMENSIONS | GRIP STAIR TREAD* | TRIM DIMENSIONS |
|  | A: 48" B: 12" —: 20 mm |  | A: 48" B: 12" —: 20 mm |
| |  Rectified | |  Bullnose |



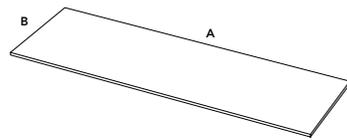
| STAIRS | | POOLS | |
|---|---|---|---|
| RISER* | TRIM DIMENSIONS | POOL GRID* | TRIM DIMENSIONS |
|  | A: 48" B: 6" —: 20 mm |  | A: 24" B: 6" —: 20 mm |
| |  Rectified | |  Rectified |
| | | POOL GRID CORNER* | TRIM DIMENSIONS |
| | |  | A: 24" B: 6" —: 20 mm |
| | | |  Rectified |
| | | COPING CORNER* | TRIM DIMENSIONS |
| | |  | A: 48" B: 12" —: 20 mm |
| | | |  Rectified |
| | | |  Bullnose |

* Available just in standard version (with undecorated borders)

TRIM TILES RANGE 16" x 48"

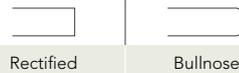
STAIRS

STAIR TREAD*

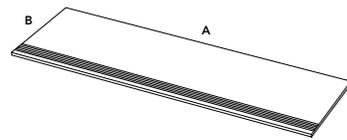


TRIM DIMENSIONS

A: 48"
B: 16"
20 mm

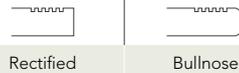


GRIP STAIR TREAD*

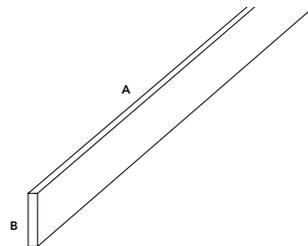


TRIM DIMENSIONS

A: 48"
B: 16"
20 mm



RISER*



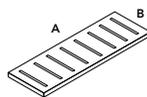
TRIM DIMENSIONS

A: 48"
B: 8"
20 mm



POOLS

POOL GRID*

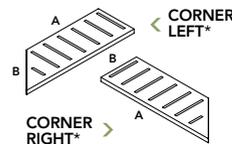


TRIM DIMENSIONS

A: 24"
B: 6"
20 mm



POOL GRID CORNER*

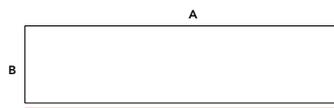


TRIM DIMENSIONS

A: 24"
B: 6"
20 mm



COPING*

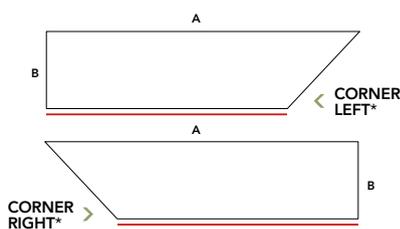


TRIM DIMENSIONS

A: 48"
B: 16"
20 mm



COPING CORNER*



TRIM DIMENSIONS

A: 48"
B: 16"
20 mm



* Available just in standard version (with undecorated borders)



A COMPLETE PROJECT FOR EVERY NEED.

FRONTIER20: EXTERIOR DESIGN WITH A DIFFERENT STYLE.



_Frontier20 is a complete project for any design need, specially developed by Landmark for contemporary outdoor spaces. The extent of the range makes it possible to design outdoor environments with looks that are always new, and to play with surfaces inspired by different materials.

ADVANTAGES.

- WIDE LOOKS RANGE
- PRODUCTS INSPIRED BY MUST POPULAR AMERICAN STONES
- A WIDE RANGE OF SIZES
- M.P.D. - MULTI PATTERN DESIGN PROJECT
- WIDE CHOICE OF TRIM PIECES

PROJECT

FLOOR DESIGN
Frontier20 - Silver Quartz - 24"x24"



PROJECT

FLOOR DESIGN
Frontier20 - Soul Walnut - 12"x48"

_Frontier20 includes American Stone, a selection of porcelain stoneware surfaces inspired by typical American stones. To this is added the Multi Pattern Design project, which completes the range with new formats for the creation of innovative installation solutions that arise from the combination of multiple sizes.



PROJECT

FLOOR DESIGN
Frontier20 - Sight Grey - 18"x36"

01
WIDE LOOKS
RANGE.

BLUESTONE LOOK



BLUESTONE FULL COLOR
V4 AMERICANSTONE



BLUESTONE BLUE SELECT
V2 AMERICANSTONE

QUARTZ LOOK



SILVER QUARTZ
V3



BARGE GOLD
V3



PIETRA DI BARGE
V2



POINT SILVER
V2

FLAGSTONE LOOK



FLAGSTONE PINK-TAN
V4 AMERICANSTONE



FLAGSTONE BROWN
V3 AMERICANSTONE

CONCRETE LOOK



WARM SAND
V1



SIMPLY GREY
V1

STONE LOOK



SIGHT ANTHRACITE
V2



SIGHT GREY
V2



PIETRA DI BAGNOLO
V2



SOURCE BEIGE
V2

TRAVERTINE LOOK

SLATE LOOK



MULTICOLOR GOLD
V3 AMERICANSTONE

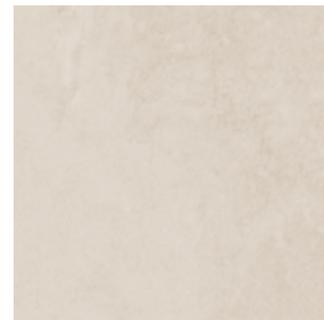


MULTICOLOR DARK
V3 AMERICANSTONE



VINTAGE SLAB
V2 AMERICANSTONE

LIMESTONE LOOK



LIMESTONE
V2 AMERICANSTONE

STONE LOOK



SKY
V2



DESERT
V2



ABSOLUTE
V2



COSMOS
V2

01 WIDE LOOKS RANGE.

WOOD LOOK



WALNUT



PEPPER



SOUL WALNUT



SOUL GREY



NEW2018

LOGOS BROWN



NEW2018

MITO BROWN



02
THE AMERICAN SOUL OF THE REAL AMERICAN STONES.



Frontier20 American Stone is a collection of some of the most regionally popular natural stones from across the nation. Elegant rangy Bluestone from the North East, earth tone tans browns from the desert south west to the classic heartland Cherokee pinks, tans and coffee brown, even the pacific northwest's deep charcoals and grey. Naturally inspired color that are rich, sophisticated and bold enough to make a statement yet versatile enough to seamlessly blend your home's interior charm with your outdoor living area.

PROJECT
FLOOR DESIGN
Frontier20 - Bluestone Blue Select - 24"x24"

AMERICANSTONE ★

Unlike natural stone, American Stone is uniform in thickness and consistent in size, affording the most in design flexibility and cost saving installation. American Stone is extremely durable, will never fade, impervious to chemicals or salts, can be easily cleaned without harsh chemicals and never needs sealed. **Landmark's American Stone is freedom.**

PROJECT
FLOOR DESIGN
Frontier20 - Freedom Multicolor Dark - 24"x24"

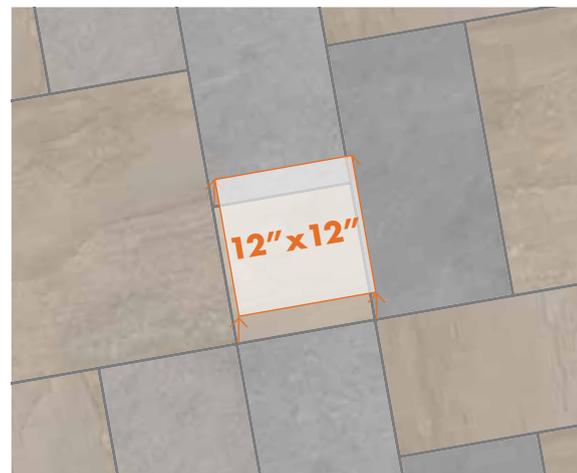


PROJECT
FLOOR DESIGN
Frontier20 - Flagstone Pink-Tan- 24"x24"

03

A WIDE RANGE OF DIFFERENT SIZES.

DIFFERENT SIZES, GREATER FREEDOM.



Frontier20 is characterized by a wide range of sizes from the small **12" x 12"** and **12" x 24"** up to the bigger **18" x 36"** and **24" x 48"**, from the classic **24" x 24"** to the refined **12" x 48"** and **16" x 48"** plank size. Frontier20 ensures freedom in every design project.

M.P.D.

MULTI PATTERN DESIGN

The Multi Pattern Design (M.P.D.) is a project designed to allow combination of multiple size patterns and therefore develop creative and original outdoor design solutions.

M.P.D. project is available in two different versions:

- **M.P.D. Big:** allows multiple big size patterns made by using 4 formats (24"x48", 24"x36", 24"x24", 12"x24")
- **M.P.D. Small:** combines 12"x12", 12"x24" and 24"x24" formats to create smaller size patterns.



M.P.D. BIG ONE*

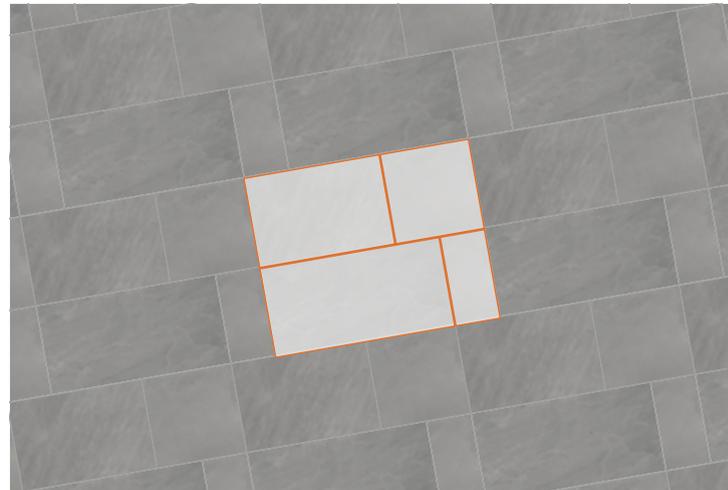


Module percentage

24"x48" = 40%
 24"x24" = 20%
 24"x36" + 12"x24" (MIX) = 40% **



Available colors



* Modular products with 4 mm joint (approx 5/32").

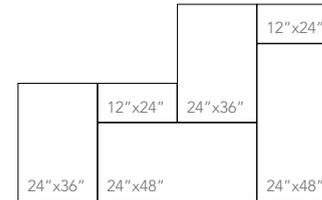
** NOTE
 The 24"x36" and 12"x24" sizes (MIX) are palletized together on the same single pallet containing the correct percentages of each size.

M.P.D. BIG TWO*



Module percentage

24"x48" = 50%
 24"x24" = 0%
 24"x36" + 12"x24" (MIX) = 50% **



Available colors



* Modular products with 4 mm joint (approx 5/32").

** NOTE
 The 24"x36" and 12"x24" sizes (MIX) are palletized together on the same single pallet containing the correct percentages of each size.

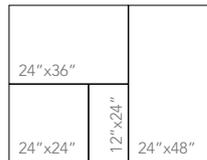
M.P.D. BIG THREE*



Module percentage

24"x48" = 40%
24"x24" = 20%
24"x36" + 12"x24" (MIX) = 40% **

Available colors



* Modular products with 4 mm joint (approx 5/32").

** NOTE
The 24"x36" and 12"x24" sizes (MIX) are palletized together on the same single pallet containing the correct percentages of each size.



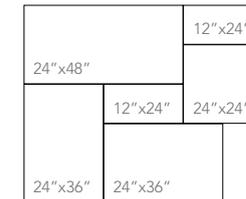
M.P.D. BIG FOUR*



Module percentage

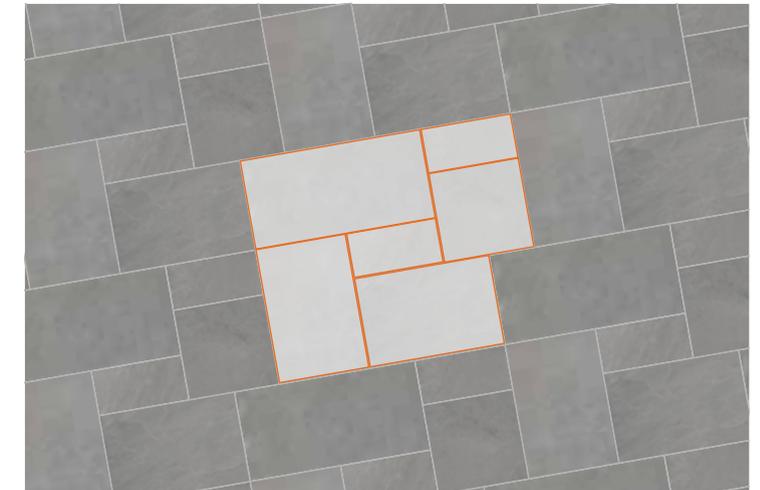
24"x48" = 28,6%
24"x24" = 14,3%
24"x36" + 12"x24" (MIX) = 57,1% **

Available colors

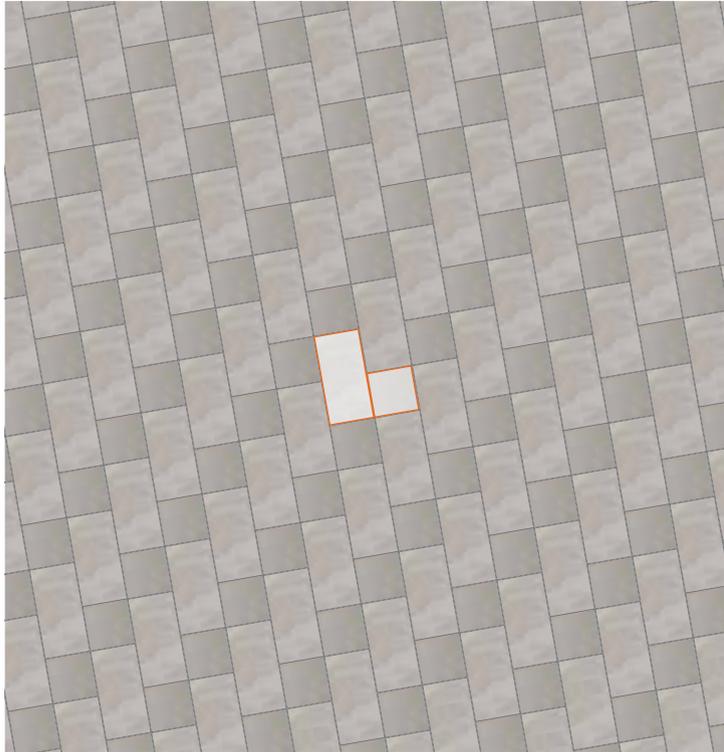


* Modular products with 4 mm joint (approx 5/32").

** NOTE
The 24"x36" and 12"x24" sizes (MIX) are palletized together on the same single pallet containing the correct percentages of each size.



M.P.D. SMALL ONE*



Module percentage

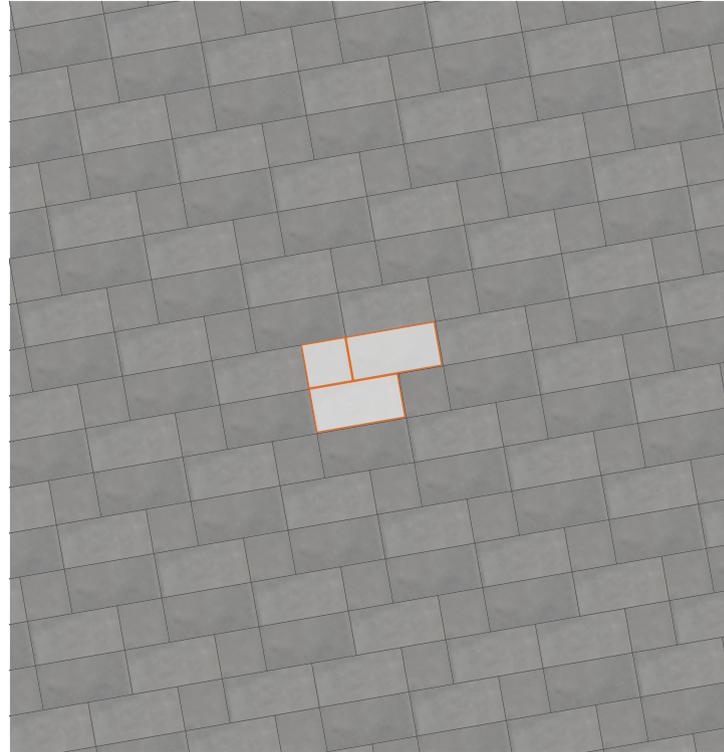
12"x24" = 67%
12"x12" = 33%



Available colors

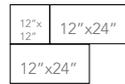


M.P.D. SMALL TWO*



Module percentage

12"x24" = 80%
12"x12" = 20%



Available colors

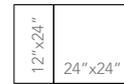


M.P.D. SMALL THREE*



Module percentage

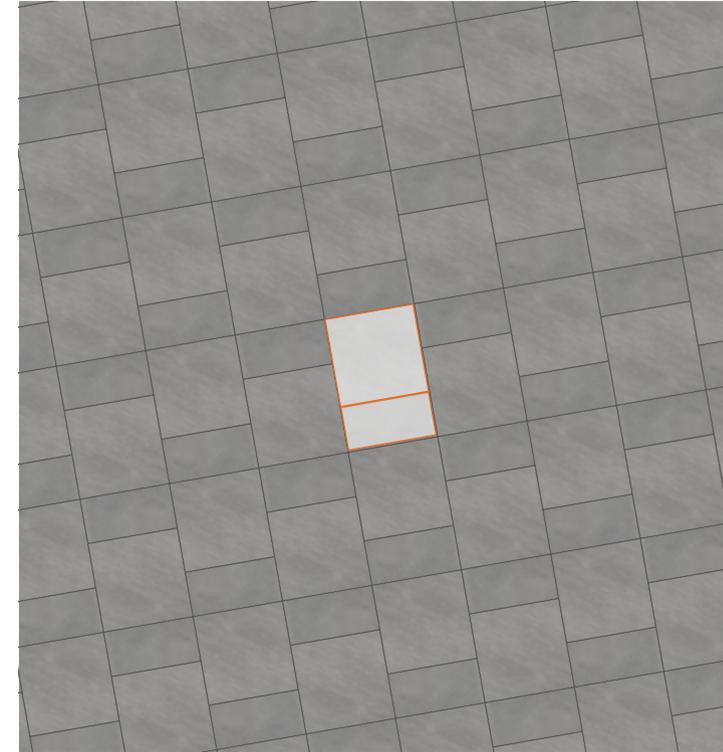
24"x24" = 50%
12"x24" = 50%



Available colors



M.P.D. SMALL FOUR*



Module percentage

24"x24" = 67%
12"x24" = 33%



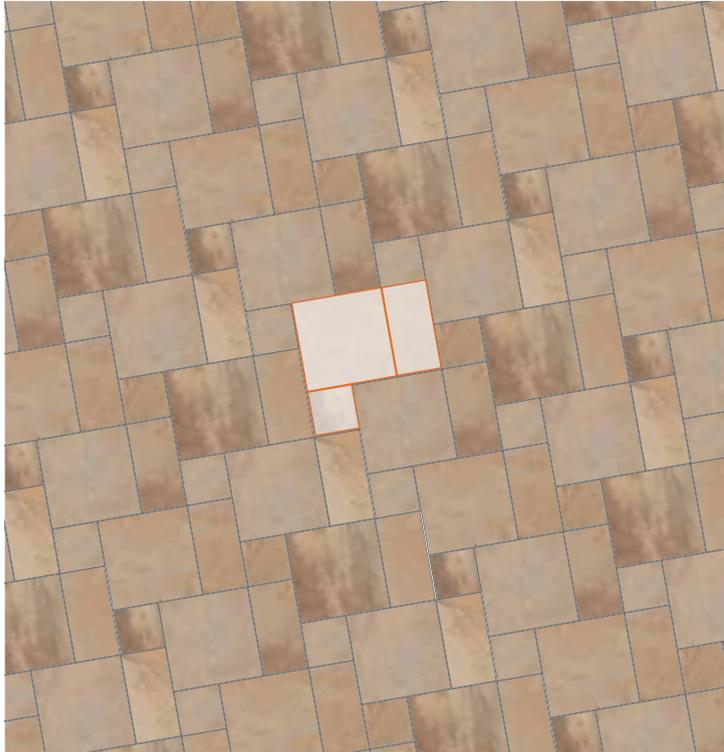
Available colors



* Modular products with 4 mm joint (approx 5/32").

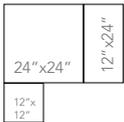
* Modular products with 4 mm joint (approx 5/32").

M.P.D. SMALL FIVE*



Module percentage

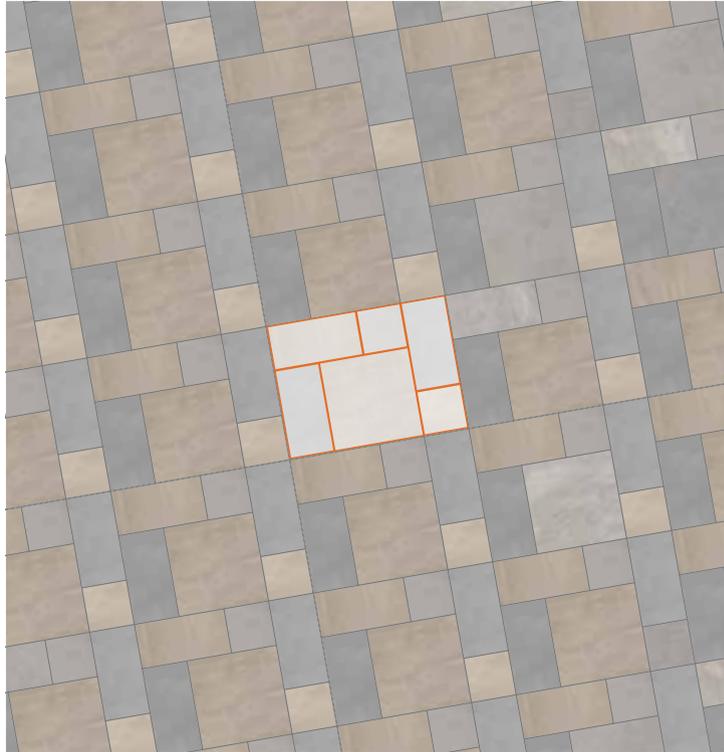
24"x24" = 57%
12"x24" = 29%
12"x12" = 14%



Available colors

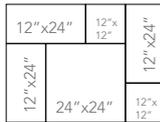


M.P.D. SMALL SIX*



Module percentage

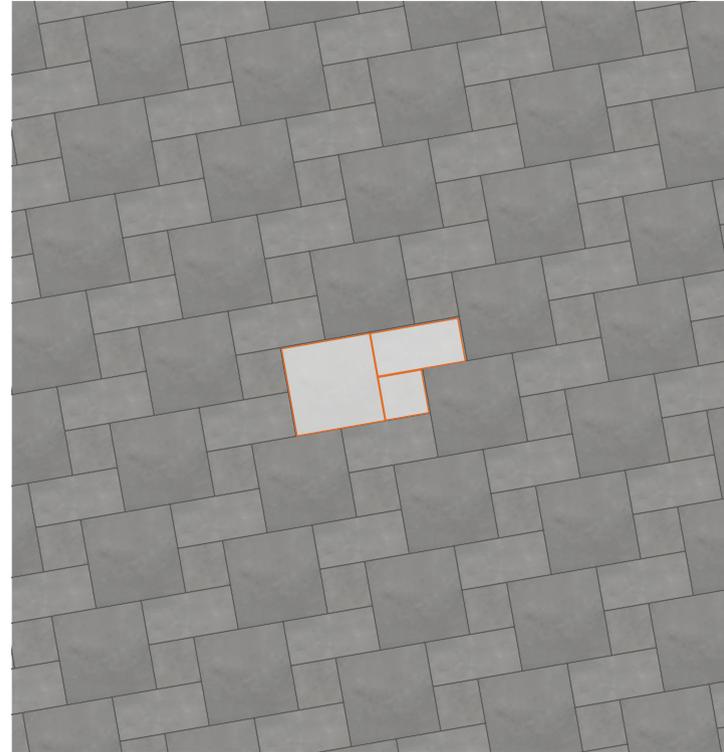
24"x24" = 33%
12"x24" = 50%
12"x12" = 17%



Available colors



M.P.D. SMALL SEVEN*



Module percentage

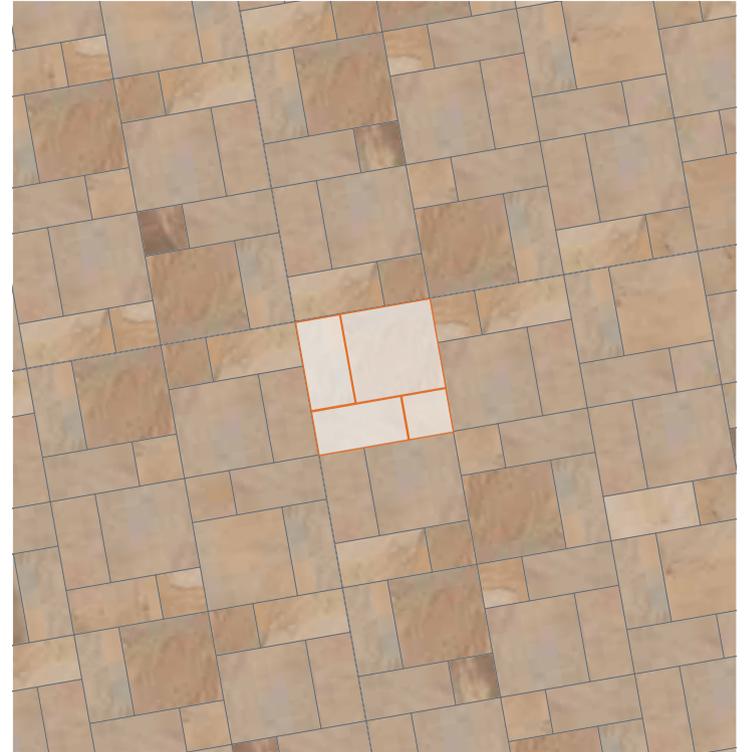
24"x24" = 57%
12"x24" = 29%
12"x12" = 14%



Available colors

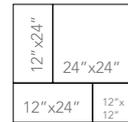


M.P.D. SMALL EIGHT*



Module percentage

24"x24" = 44%
12"x24" = 45%
12"x12" = 11%



Available colors



* Modular products with 4 mm joint (approx 5/32").

* Modular products with 4 mm joint (approx 5/32").

BLUESTONE LOOK

BLUESTONE FULL COLOR

AMERICANSTONE ★



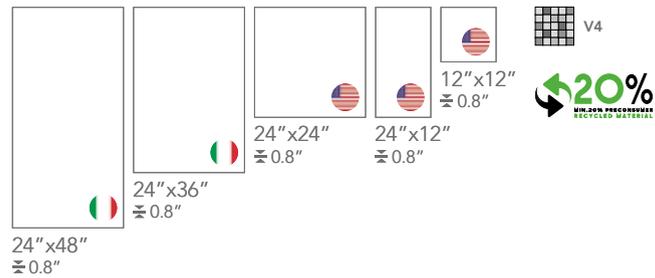
BLUESTONE BLUE SELECT

AMERICANSTONE ★



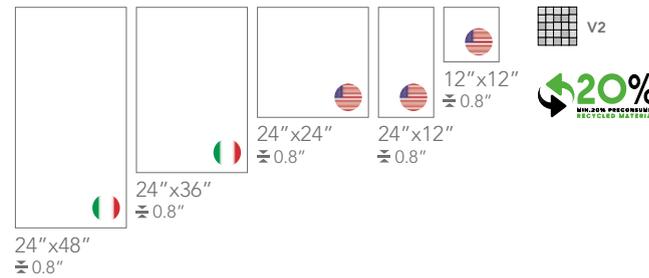
Available sizes

Color shading



Available sizes

Color shading



The colour of pavers printed in this catalogue may differ from actual pavers. Paver color reproductions in this catalogue are representative only. Slight tone and shade variations are inherent in porcelain pavers. Before selecting a colour, we recommend that you contact your local representative, who will provide you with a sample piece of the requested paver.

This porcelain paver product is manufactured with a V2/V3/V4 shade variation. Remember that the amount of colour as well as the texture of each piece may vary from paver to paver. Inspect the product immediately upon delivery and select pavers from many boxes during installation to minimize and blend any possible colour difference.

FLAGSTONE LOOK

FLAGSTONE PINK-TAN

AMERICANSTONE ★



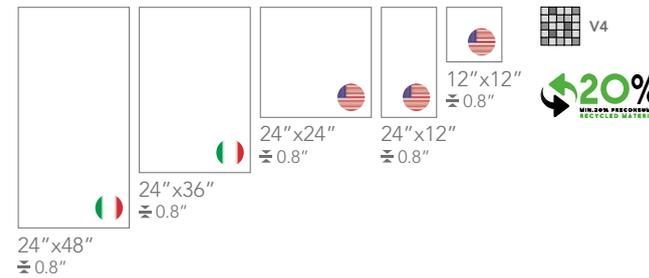
FLAGSTONE BROWN

AMERICANSTONE ★



Available sizes

Color shading



Available size

Color shading



Color Shading



STONE LOOK

SKY



Available size



24" x 24"
± 0.8"

Color shading



DESERT



Available size



24" x 24"
± 0.8"

Color shading



ABSOLUTE



Available size



24" x 24"
± 0.8"

Color shading



COSMOS



Available size



24" x 24"
± 0.8"

Color shading



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This porcelain paver product is manufactured with a V2 shade variation. Remember that the amount of colour as well as the texture of each piece may vary from paver to paver. Inspect the product immediately upon delivery and select pavers from many boxes during installation to minimize and blend any possible colour difference.

Color Shading

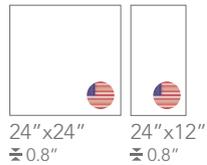


QUARTZ LOOK

GLOBE BARGE GOLD



Available sizes



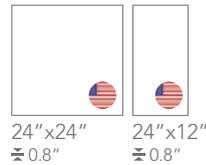
Color shading



GLOBE SILVER QUARTZ



Available sizes



Color shading



CONCRETE LOOK

ATTITUDE WARM SAND



Available size



Color shading



ATTITUDE SIMPLY GREY



Available size



Color shading



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This porcelain paver product is manufactured with a V1/V3 shade variation. Remember that the amount of colour as well as the texture of each piece may vary from paver to paver. Inspect the product immediately upon delivery and select pavers from many boxes during installation to minimize and blend any possible colour difference.

Color Shading



SLATE LOOK

FREEDOM MULTICOLOR GOLD AMERICANSTONE ★



Available size



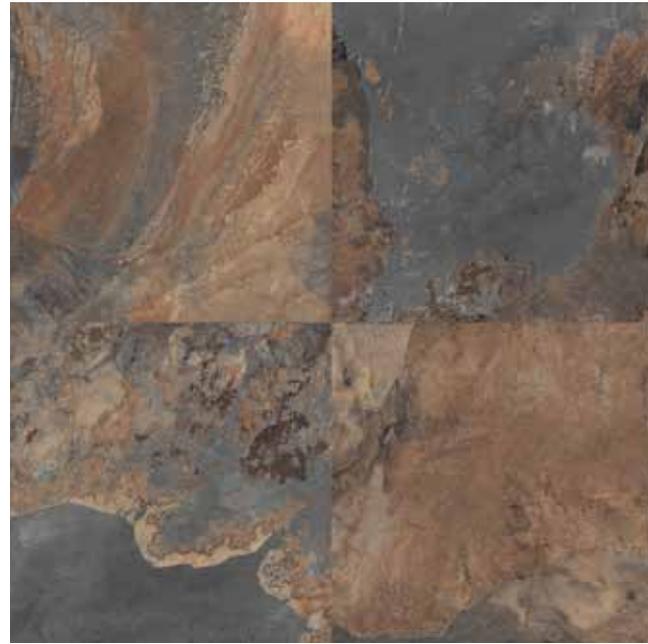
24" x 24"
± 0.8"

Color shading



V3

FREEDOM MULTICOLOR DARK AMERICANSTONE ★



Available size



24" x 24"
± 0.8"

Color shading



V3



SLATE LOOK

VINTAGE SLAB AMERICANSTONE ★



Available sizes



24" x 24"
± 0.8" 24" x 12"
± 0.8"

Color shading



V2

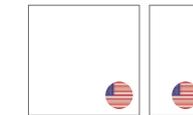


LIMESTONE LOOK

LIMESTONE AMERICANSTONE ★



Available sizes



24" x 24"
± 0.8" 24" x 12"
± 0.8"

Color shading



V2

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This porcelain paver product is manufactured with a V2/V3 shade variation. Remember that the amount of colour as well as the texture of each piece may vary from paver to paver. Inspect the product immediately upon delivery and select pavers from many boxes during installation to minimize and blend any possible colour difference.

Color Shading



WOOD LOOK

NATURAL DESIGN WALNUT



Available size



24" x 24"
± 0.8"

Color shading



V3

NATURAL DESIGN PEPPER



Available size



24" x 24"
± 0.8"

Color shading



V3

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This porcelain paver product is manufactured with a V3 shade variation. Remember that the amount of colour as well as the texture of each piece may vary from paver to paver. Inspect the product immediately upon delivery and select pavers from many boxes during installation to minimize and blend any possible colour difference.

Color Shading



V1

UNIFORM APPEARANCE



V2

SLIGHT VARIATION



V3

MODERATE VARIATION



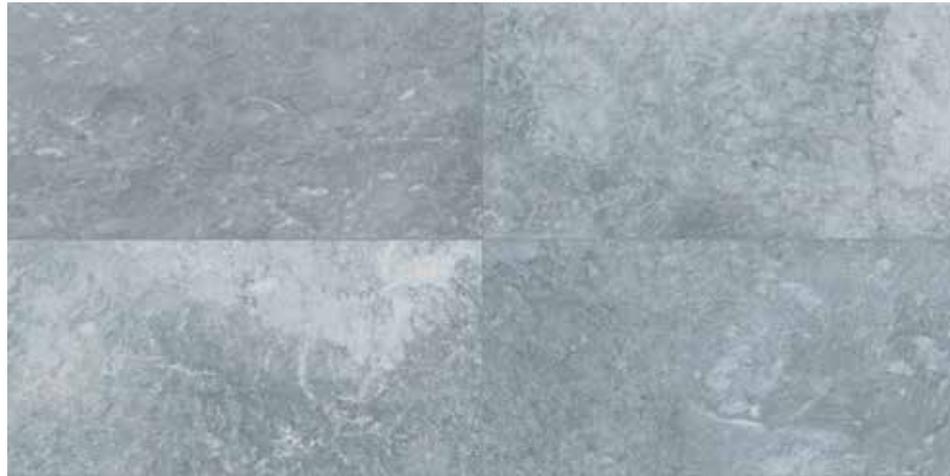
V4

SUBSTANTIAL VARIATION



STONE LOOK

SIGHT ANTHRACITE



Available size



18" x 36"
± 0.8"

Color shading



SIGHT GREY



Available size



18" x 36"
± 0.8"

Color shading



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This porcelain paver product is manufactured with a V2 shade variation. Remember that the amount of colour as well as the texture of each piece may vary from paver to paver. Inspect the product immediately upon delivery and select pavers from many boxes during installation to minimize and blend any possible colour difference.

STONE LOOK

PIETRA DI BAGNOLO



Available size



18" x 36"
± 0.8"

Color shading



TRAVERTINE LOOK

SOURCE BEIGE



Available size



18" x 36"
± 0.8"

Color shading



Color Shading



V1
UNIFORM APPEARANCE



V2
SLIGHT VARIATION



V3
MODERATE VARIATION



V4
SUBSTANTIAL VARIATION

COLORED BODY PORCELAIN PAVERS - Rectified Monocaliber

QUARTZ LOOK

PIETRA DI BARGE



Available size



18"x36"
±0.8"

Color shading



V2

POINT SILVER



Available size



18"x36"
±0.8"

Color shading



V2

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This porcelain paver product is manufactured with a V2 shade variation. Remember that the amount of colour as well as the texture of each piece may vary from paver to paver. Inspect the product immediately upon delivery and select pavers from many boxes during installation to minimize and blend any possible colour difference.

WOOD LOOK

SOUL WALNUT



Available size



12"x48"
±0.8"

Color shading



V2

SOUL GREY



Available size



12"x48"
±0.8"

Color shading



V2

Color Shading



V1

UNIFORM APPEARANCE



V2

SLIGHT VARIATION



V3

MODERATE VARIATION



V4

SUBSTANTIAL VARIATION

WOOD LOOK

LOGOS BROWN



Available size



16" x 48"
± 0.8"

Color shading



MITO BROWN



Available size



16" x 48"
± 0.8"

Color shading



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This porcelain paver product is manufactured with a V2 shade variation. Remember that the amount of colour as well as the texture of each piece may vary from paver to paver. Inspect the product immediately upon delivery and select pavers from many boxes during installation to minimize and blend any possible colour difference.

Color Shading



INSTALLATION INFORMATION AND RECOMMENDATIONS.

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 $\frac{3}{16}$ " (4mm) 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.

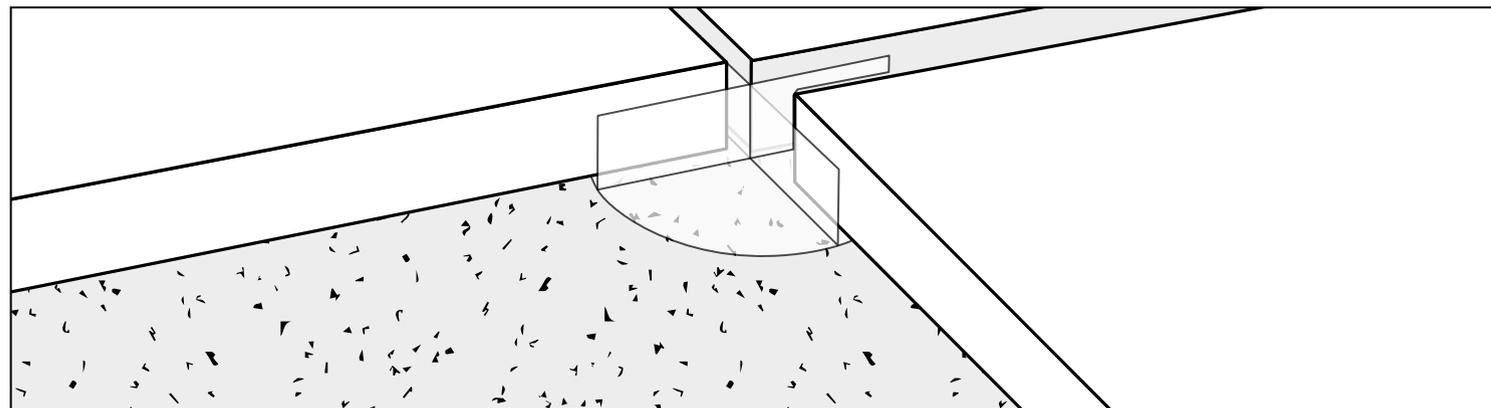
When installing porcelain paver on sand set base, fill the 4 mm (approx $\frac{3}{16}$ ") paver joints with these options:

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

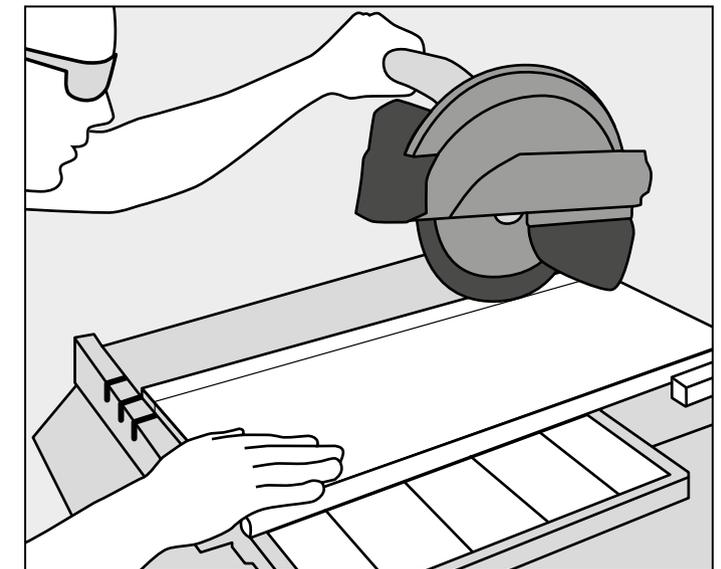
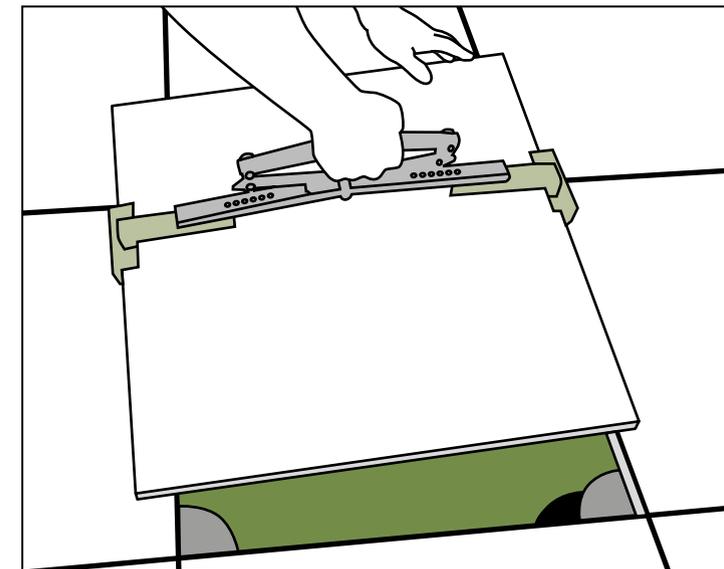
Polymeric sand is a blend of polymers which harden when subjected to moisture. Sweep the sand into the open joints until completely filled. All excess sand and dust must be swept from the surface. Use a blower for the final dust removal to make certain all excess sand is removed. Any residual sand or 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.



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.



CLEANING INFORMATION FOR PORCELAIN PAVERS INSTALLED OVER CONCRETE

FIRST FLOOR DEEP CLEANING AFTER INSTALLATION OVER CONCRETE

After Grouting the Joints (pic. 1) It is important to remove the excess grout with a sponge and clear water (pic. 2). After 12/48 hours, the grout in the joints will have "set up" /hardened significantly. There will be a noticeable residual "haze". Typically, a diluted acid cleaner specifically for removing "Grout Haze", combined with a soft scrubbing pad will remove the majority if not all the "Haze". Change your acid/water solution frequently for best results. It is also recommended to keep a bucket of clean water to remove the acid/water solution. It is recommended to keep and use clean dry towels to help remove as much residual water and keep the floor as dry as possible.

Please refer to the cleaning chemical company's suggested methods and dilution rates. (pic. 3). For areas with excess grout or grout that becomes adhered to the face of the tile, further cleaning with an Acid/ Water Solution may be necessary. Please refer to the Cleaning Chemical Company's instructions as not all acids or chemicals are the same.

The excess grout residue (pic. 4-5) must be removed so that it does not dry and stick on the surface. It is necessary to change the cleaning water frequently and rinse well. Care must be taken on inlaid, polished and especially Anti Slip products similar to Frontier20. The use of a floor-washing machine combined with the use of a diluted acid detergent helps reach the spaces between adjacent tiles and clean them properly. If such a cleaning procedure is not carried out, or if such cleaning is carried out too late, the grout residue creates an absorbent film, which holds dirt, making the surface difficult to clean: in this case, Landmark Ceramics will not be liable for any damage caused to the surface.

ORDINARY CLEANING

Ordinary maintenance must be carried out using specialized detergents to remove stains but these detergents must not leave a wax, film or membrane residue. Rinsing well with plenty of clean water is a fundamental part of the cleaning procedure, therefore we advise against the use of products which state that they "do not need rinsing".

OTHER RECOMMENDATIONS

Bright colored products, in particular white and extra-white tiles, are very delicate and, although for all intent and purpose are hygienically clean, However, they can get dirty more easily than darker tiles. It is therefore necessary to remember that these particular products require careful regular maintenance. Sealers are unnecessary, especially in the case of our **Frontier20** Product line. Sealing will change the D.C.O.F. (Dynamic Co-efficient of Friction) resulting in a surface that will become more slippery. Also because Porcelain has such a low absorption the sealer will unlikely stick and most likely the sealer will flake off over time.



PIC 1. Fill joint with grout.



PIC 2. Remove excess grout with clean water.



PIC 3. Add specific acid cleaning agent for porcelain tile to clean water.



PIC 4. First floor deep cleaning after 12/48 h from installation.



PIC 5. Removal of excess grout residues with hard brush.

CLEANING AGENTS

| TYPE OF STAIN | SOLUTION | DETERGENTS | MANUFACTURER |
|---|----------------------|---|---|
| INORGANIC STAINS | | | |
| Cement Carbon Calcium Efflorescence Chalk Metallic residues Rust Cement-based grout Colored grout Wall paint | Acid | DETERGENT WITH AN ACID BASIS * | |
| | | DETERDEK or similar | UNITED STATES > Fila Chemicals USA, Corp.10800 N.W. 21st Street #170 Miami, FL 33172 USA Tel. +1-305-513-0708 email filausa@filasolutions.com |
| | | KERANET (liquid) or similar | MAPEI Americas Headquarters 1144 E. Newport Center Drive Deerfield Beach, Florida 33442 |
| ORGANIC STAINS | | | |
| Coca Cola Ice Cream Coffee Wine Beer Animal fats Vegetable fats Mustard Mayonnaise Ketchup Jam Linseed oil Lipstick Wax | Alkaline and neutral | LIMITED FOAM TYPE PRODUCT ** | |
| | | PS87 or similar | UNITED STATES > Fila Chemicals USA, Corp.10800 N.W. 21st Street #170 Miami, FL 33172 USA Tel. +1-305-513-0708 email filausa@filasolutions.com |
| | | FILACLEANER or similar | UNITED STATES > Fila Chemicals USA, Corp.10800 N.W. 21st Street #170 Miami, FL 33172 USA Tel. +1-305-513-0708 email filausa@filasolutions.com |
| | | Ammonium | Universal |
| RESIDUAL RINGS of organic nature | Saline solution | Sodium hypochloride (bleach for white laundry) | Universal |
| Silicone oils Machine Oil Resins and glazes Coal and natural rubber Encres et feutres | | FILASOLV or similar | UNITED STATES > Fila Chemicals USA, Corp.10800 N.W. 21st Street #170 Miami, FL 33172 USA Tel. +1-305-513-0708 email filausa@filasolutions.com |
| | | Aceton | Universal |
| | | NITRO - THINNER | Universal |
| | | TURPENTINE | Universal |
| | | TRICHLORETHYLENE | Universal |
| | | CIF AMMONIACAL | Universal |
| Tire | | HAND CLEANSER | Universal |
| Silicone and chewin-gum | | Ice+scraper | |

N.B. When using the above products, the instructions on the package should be followed.

- * **Detergent with an acid base:** a detergent with an acid basis, specifically recommended after bath floor or wall installation, for the decalcificant cleaning and the regular maintenance.
- ** **Limited foam type product:** a limited foam type product degreasing and general cleaning, suitable for all types of stains but especially for remove of vegetable and animals fats.

PERFORMANCE COMPARISON PORCELAIN PAVERS VS. COMPETITOR OUTDOOR PAVING MATERIALS

| FEATURES | LANDMARK FRONTIER20 PORCELAIN PAVERS | WOOD PAVERS | CLAY BRICK | CIP (CAST IN PLACE) CONCRETE | CONCRETE PAVERS | NATURAL STONE |
|--------------------------|--------------------------------------|--------------------------------|-------------------|------------------------------|--------------------------|-------------------|
| Stainable | No | Yes | Yes (Highly) | Yes | Yes | Yes (Highly) |
| Freeze Thaw Proof | Breaks Down Over Time | No | No | No | No | No |
| Salt Resistant | Yes | No | Salt Will Degrade | No | No | No |
| Acid Resistant | Yes | No | Acid Will Burn | No | No | No |
| Scratch Resistant | Highly | No | Somewhat | No | No | No |
| Moisture Absorption | < 0,5% | Highly Varried | 5% | 5% | 5-10% | >= 5% |
| Easy To Repair | Yes | Yes | No | Can Not | No | No |
| Uv Resistant | Unaffected | No | Yes | If Sealed | Yes/No | Unaffected |
| Needs Sealed | Never | Yes | Recommended | Recommended | Recommended | Recommended |
| Pressure Washer Safe | > 1500 PSI | No | Not Recommended | > 1500 PSI | No | No |
| Environmentally Friendly | Facility 98% Green | Many Exotic Rainforest Species | No | Large Carbon Foot Print | Possible Fly Ash Content | Mined Or Imported |
| Recycled Content | 20% In Each Paver | No | Not Possible | Not Possible | If Possible Less Than 5% | Not Possible |

| PHYSICAL PROPERTIES | TEST ASTM | NORTH AMERICAN STANDARD A137.1+ | RESULTS |
|---|---------------|---------------------------------|-------------------------|
| Water absorption * | C373 | ≤ 0.5% | COMPLY WITH ANSI A137.1 |
| DCOF Average dynamic coefficient of friction ** | BOT 3000 test | ≥ 0.42 | ≥ 0.42 |
| Skid Resistance | DIN 51097 | - | A+B+C |
| | DIN 51130 | | R11 |
| Resistance to freeze/thaw cycling * | C1026 | As reported | RESISTANT |
| Warpage (edge) | C485 | Warpage ± 0.4% or ± 0.05 in | COMPLY WITH ANSI A137.1 |
| Warpage (diagonal) | C485 | Warpage ± 0.4% or ± 0.07 in | COMPLY WITH ANSI A137.1 |
| Wedging | C502 | ± 0.25% or ± 0.03 in | COMPLY WITH ANSI A137.1 |
| Chemical resistance | C650 | As reported | UNAFFECTED |
| Breaking strength | C648 | 250 lbf or greater | 2200 lbf |
| Thickness | C499 | Range: 0.04 in | COMPLY WITH ANSI A137.1 |

* Average values referred to our production and related to the matt finish of the product.

** As far as values relating to the matt finish of the product and to tests carried out by certified external laboratories whose results are available upon request at Headoffice, we are willing to check the lot you are interested in purchasing.

- Be sure to use pavers belonging to the same caliber.

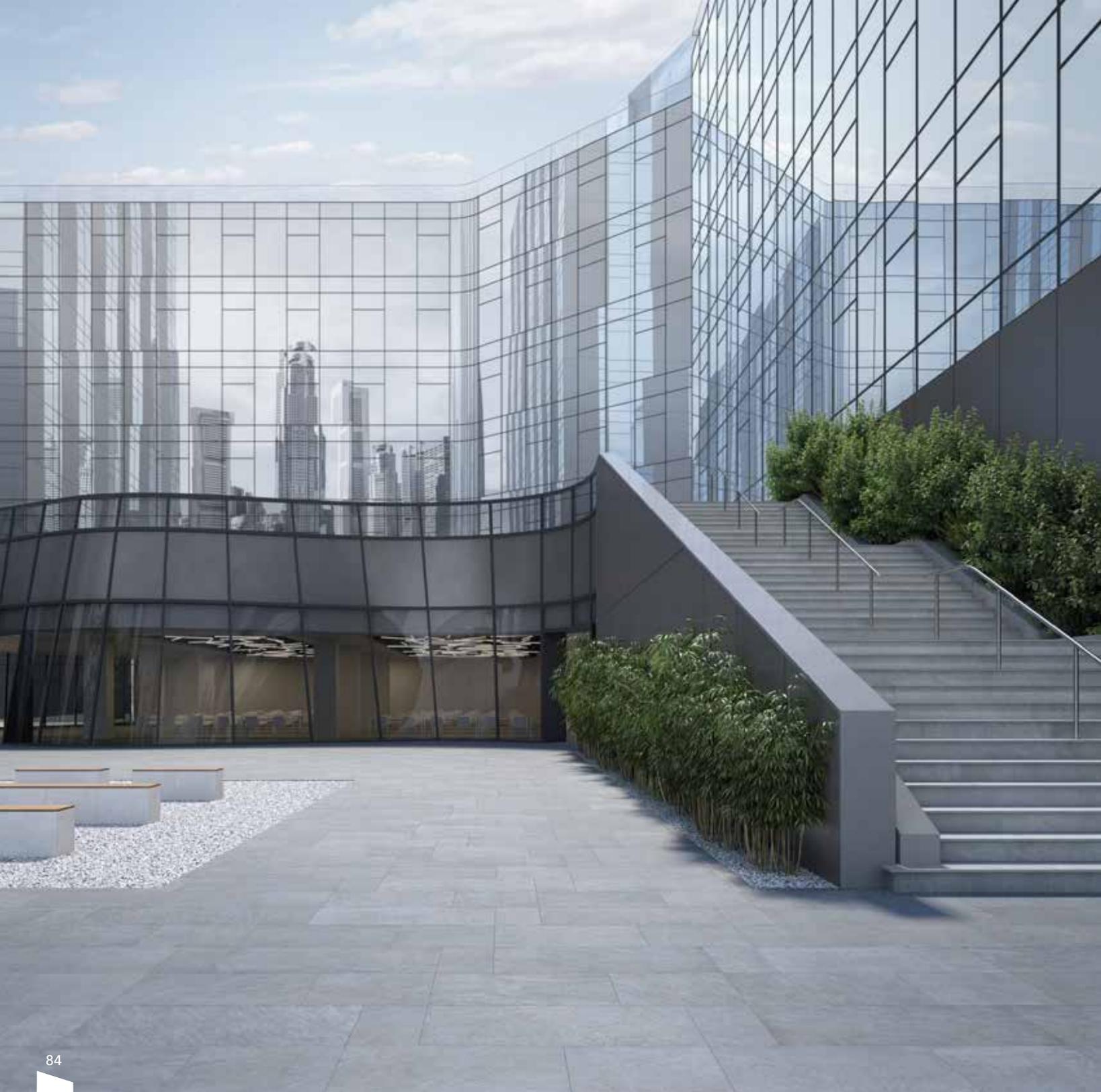
- Test results are available on request.

- The information provided can be subject to change. Please refer to <https://hardscape.landmarkceramics.com> for the latest, most accurate and up-to-date information.

WARNINGS.

- Outdoor pavings installed unglued above the ground level are subject to the action of the wind, with the risk, in some cases, of becoming airborne. The manufacturer recommends to require the assistance of a qualified professional in order to check the suitability of the installation system above the ground adopted, in accordance with the local laws and regulations and the conditions of use. Failure to do so could result in serious injury or property damage.
- If the application of the 20 mm slabs requires 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 (double fiberglass mesh) 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. Failure to adhere to the manufacturer's instructions for installation of slabs on raised pedestal systems may result in serious injury.
- For further information and recommendations concerning the installation systems please refer to <https://hardscape.landmarkceramics.com> website.





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