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.

LEARN MORE ABOUT

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 U.S. Made top quality porcelain tiles.
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”

(*) When installed over reinforced concrete (4” minimum) using a thinset mortar suitable for porcelain tile.
Frontier20 offers you a variety of design options that allow you to blend your inside living space with the freedom of outside.

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”

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”
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.

CONTINUITY IN & OUT.

PROJECT FLOOR DESIGN
Frontier20 - Globe Barge Gold - 24 x 24
01 DRY LAYING.
A way of laying tiles that allows you to support plates directly onto grass, gravel or sand.

02 INSTALLATION OVER REINFORCED CONCRETE*.
A way of laying tiles that allows you to create perfectly stable surfaces of incredible resistance.

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

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

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.

ON GRASS
ON GRAVEL
ON SAND
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.

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

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

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.

DRY LAYING ON GRASS

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

1/4" PORCELAIN PAVER
3/4" MAXIMUM OF LIMESTONE FLAKE
EXISTING NATIVE SOIL

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.
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.

**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 tile 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.

**Dry Laying on Sand.**

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 tile 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.

**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 tile 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.
The Frontier20 may also be installed with traditional methods using thinset/thickset mortar appropriate for use with porcelain tile. 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 tile.

**ADVANTAGES.**
- Long term durability
- Readily accessible surfaces
- Able to withstand pedestrian and light vehicular traffic

**LOCATIONS.**
- Yards
- Porches
- Terraces
- Ramps
- Garages
- Parking areas
- Cycle tracks
- Pavements
- Squares

---

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.
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.

_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._

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.
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.
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.

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

Destination of Use.

- Stairs
- Pools
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

* Both Stair Tread and Grip Stair Tread are available in the standard version, with undecorated borders, and in the Monolithic version with decorated borders.
THICKNESS PORCELAIN TILE

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

* Coping, Coping Corner Left and Coping Corner Right have bullnose border and are available in the standard version, with undecorated borders, or in the Monolithic version with decorated borders.
WALL COVERS:
PROTECTION FROM WATER AND VISUAL CONTINUITY.

SYSTEM.
- COVER
- END-COVER

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

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

**STAIR TREAD MONOLITHIC**

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<thead>
<tr>
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* Available in standard version (with undecorated borders).

** GRIP STAIR TREAD MONOLITHIC**

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Grip on rectified side Grip on bullnose side

**TRIM DIMENSIONS**

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**STAIR TREAD**

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**RISER**

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**WALL COVERS**

**COVER**

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<td>24''</td>
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**TRIM DIMENSIONS**

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**END COVER**

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**MONOLITHIC**

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** TRIM TILES RANGE.**

**POOLS**

**POOL GRID**

**TRIM DIMENSIONS**

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**CORNER**

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**COPING CORNER**

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</table>
A SELECTION OF CONTEMPORARY SURFACE LOOKS.

Wood, quartz, slate, limestone and concrete effect. Modern materials rich and expressive design become the instruments to create avant-garde architectural landscapes, which, together with excellent technical characteristics, guarantee a high performance of use.
The colour of tiles printed in this catalogue may differ from actual tiles. Tile color reproductions in this catalogue are representative only. Slight tone and shade variations are inherent in porcelain tiles. Before selecting a colour, we recommend that you contact your local representative, who will provide you with a sample piece of the requested tile.

This porcelain tile 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 tile to tile. Inspect the product immediately upon delivery and select tiles from many boxes during installation to minimize and blend any possible colour difference.
COLORED BODY PORCELAIN TILE - Rectified Monocaliber

**QUARTZ LOOK**

GLOBE BARGE GOLD

- Available size: 24”x24”
- Color shading: V3

GLOBE SILVER QUARTZ

- Available size: 24”x24”
- Color shading: V3

**SLATE LOOK**

FREEDOM MULTICOLOR GOLD

- Available size: 24”x24”
- Color shading: V3

VINTAGE SLAB

- Available size: 24”x24”
- Color shading: V2

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This porcelain tile 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 tile to tile. Inspect the product immediately upon delivery and select tiles from many boxes during installation to minimize and blend any possible colour difference.

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Color Shading:

- Slight variation
- Moderate variation
- Substantial variation
RAISED FLOORS INSTALLATION SYSTEM.

LOW HEIGHT SUPPORTS.
System made up of disks of variable thickness. Utilize for low height installation (up to ¾”).

<table>
<thead>
<tr>
<th>AVAILABLE HEIGHT</th>
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<tbody>
<tr>
<td>1/8”</td>
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</table>

Shim 1/8”

ADJUSTABLE HEIGHT SUPPORTS.
System made up of adjustable height pedestal (from 1 1/4” to 16”).

<table>
<thead>
<tr>
<th>AVAILABLE HEIGHT</th>
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<tbody>
<tr>
<td>1 1/4” - 2”</td>
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</table>

Coupler add up 4” each
Slope corrector 0” - 1” per foot slope

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 tiles. 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
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 any raised floor installation a ceramic slab may fracture on impact if a heavy object falls on it from any 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 www.lcusa.com website.

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**TILE PERFORMANCE DATA**

**PHYSICAL PROPERTIES**

<table>
<thead>
<tr>
<th>TEST ASTM</th>
<th>NORTH AMERICAN STANDARD A137.1-</th>
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<tbody>
<tr>
<td>Water absorption *</td>
<td>C373 ± 0.5%</td>
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<tr>
<td>DCOF Average dynamic coefficient of friction --</td>
<td>BOT 3000 test a 0.42</td>
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<tr>
<td>Resistance to freeze/thaw cycling --</td>
<td>C1106 As reported</td>
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<tr>
<td>Warpage (edge)</td>
<td>C485 Warpage ± 0.4% or ± 0.05 in</td>
</tr>
<tr>
<td>Warpage (diagonal)</td>
<td>C485 Warpage ± 0.4% or ± 0.07 in</td>
</tr>
<tr>
<td>Wedging</td>
<td>C502 ± 0.25% or ± 0.03 in</td>
</tr>
<tr>
<td>Chemical resistance</td>
<td>C558 As reported</td>
</tr>
<tr>
<td>Breaking strength</td>
<td>C448 250 lbf or greater</td>
</tr>
<tr>
<td>Thickness</td>
<td>C499 Range: 0.04 in</td>
</tr>
</tbody>
</table>

**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 (tile + double fiber mesh). Landmark cannot be held responsible for reinforcing systems that is not supplied.

In case of breakage, the tile must be replaced immediately.

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

Landmark Ceramics recommends carrying out the procedures for the ordinary cleaning of Frontier00 floor surfaces using water and commercially available neutral detergents: the inclination of the surface and the space between adjacent slabs for dry-system installation favours 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 obstruct 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: with regard to a raised floor installation a ceramic slab may fracture on impact if a heavy object is dropped onto it from a height, with a risk of injury to anyone standing or walking on such slab.

The manufacturer recommends to require the assistance of a qualified professional in order to check the suitability of the installation system above the ground adjusted, in accordance with the local laws and regulations and the conditions of use. Failure to do so is subject to change. Please refer to lcusa.com for the latest, most accurate and up-to-date information.

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**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 adjusted, in accordance with the local laws and regulations and the conditions of use. Failure to do so is subject to change. Please refer to lcusa.com for the latest, most accurate and up-to-date information.
- A ceramic slab installed on a raised pedestal system may fracture on impact if a heavy object is dropped onto it from a height, with a risk of injury to anyone standing or walking on such slab.
- The information provided can be subject to change. Please refer to lcusa.com for the latest, most accurate and up-to-date information.

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**SUPPORTS REQUIREMENTS**

<table>
<thead>
<tr>
<th>SIZE</th>
<th>UP TO 1/2&quot; (20 MM)</th>
<th>ABOVE 1/4&quot; (20 MM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>24”x24” (600x600 mm)</td>
<td>4 supports 0.92 pcs/sq ft</td>
<td>Please contact Landmark Ceramics</td>
</tr>
</tbody>
</table>

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**NOTE.**

- Be sure to use tiles belonging to the same caliber.
- Test results are available on request.
- The information provided can be subject to change.
- 0.42 ≥ 0.5% COMPLY WITH ANSI A137.1
- VINTAGE SLAB

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**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 a 0.42 |
- Resistance to freeze/thaw cycling -- C1106 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 C558 As reported UNAFFECTED
- Breaking strength C448 250 lbf or greater COMPLY WITH ANSI A137.1
- Thickness C499 Range: 0.04 in COMPLY WITH ANSI A137.1

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**VINTAGE SLAB**

- Made in USA
- PROUDLY MADE IN USA
- 2016 PERFORMANCE DATA

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**BACKING**

- Backing with double fiberglass mesh