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.

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.
PERFORMANCE, FUNCTIONALITY 
AND AESTHETICS:
ALL IN 20 MM.

Frontier20 porcelain pavers are inherently slip resistant and impervious to chemicals, salt, fading, or scratching. Free yourself 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!
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 becomes very inert allowing for extreme and sudden temperature changes in the range of -60 F to +140 F.

**Antislip**

The structure and texture of the porcelain paver reduces the risk of slipperness.

**Fade Resistant**

Landmark’s 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.

**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.

**Stain Resistant**

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

**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.

**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 becomes very inert allowing for extreme and sudden temperature changes in the range of -60 F to +140 F.

**Eco-Friendly**

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

**Resistant to Moist 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.

**No Sealing Needed**

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

**Scratch Resistant**

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

**Easy to Install**

Low maintenance cost.

**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 threet part mortar suitable for porcelain pavers.

**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”

THICKNESS
PORCELAIN Pavers
20 MM

76
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.
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.
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

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)

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.
**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), screw 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)**

**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 uncompact 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.

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

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

**THICKNESS PORCELAIN PAVERS**

- **COARSENESS OF GRAVEL 4" - #57 (3/4")**
- **FRONTIER20 PORCELAIN 3/4" NOMINAL (20 mm) PAVERS**
- **COARSENESS OF GRAVEL 2" - 8 S' AND 9 S' (1/2" + LESS)**
- **FRONTIER20 PORCELAIN 3/4" NOMINAL (20 mm) PAVERS**
- **3/4" UNCOMPACTED BEDDING SAND**
- **APPROX. 4" OF SLEEPER SAND**
- **APPROX. 4" OF BEDDING SAND**
- **FILTER FABRIC**

Ensure 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 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.

**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

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

Installation over reinforced concrete is just an example of the type of application and technical features of Frontier20. Landmark Ceramics recommends referring to the specific norms valid in the various countries to carry out a state-of-the-art installation.
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

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

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

In combination with a suitable structure, the Frontier20 porcelain paver in 20mm thickness lends itself 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, allowing 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 waterproofing 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 referring to the specific norms valid in the various countries to carry out a state-of-the-art installation.

LOW HEIGHT SUPPORTS (UP TO ¾” - 20 MM) PEDESTAL INSTALLATION OVER EXISTING SUBSTRATE (PEDESTRIAN FOOT TRAFFIC)

20 21
RAISED FLOORS INSTALLATION SYSTEM.

LOW HEIGHT SUPPORTS.
System made up of disks of variable thickness. Utilize for low height installation (up to 3/4”).

<table>
<thead>
<tr>
<th>AVAILABLE HEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/8”</td>
</tr>
</tbody>
</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>
</tr>
</thead>
<tbody>
<tr>
<td>1 1/4” - 2”</td>
</tr>
</tbody>
</table>

Shim
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 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.

AVAILABLE HEIGHT
1/8” 1/4” 1/2” 3/4”

Shim 1/8”

1 1/4” - 2” 2” - 3” 3” - 4 3/4” 4 3/4” - 7 3/4”

Coupler
add up 4” each

Slope corrector
0” - 1” per foot slope

Wall corner
24”x24” - 12”x24” - 12”x12”

Wall border
12”x48”

Floor center
18”x36”

Pedestal + 1 coupler
Pedestal + 1 coupler + slope corrector
Pedestal + 1 coupler + slope corrector
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.

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.

SUPPORTS REQUIREMENTS

<table>
<thead>
<tr>
<th>SIZE</th>
<th>UP TO *1/4” (20 MM)</th>
<th>ABOVE *1/4” (20 MM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>12”x12” (300x300 mm)</td>
<td>4 supports 0.32 pcs/sq ft</td>
<td>Please contact Landmark Ceramics</td>
</tr>
<tr>
<td>24”x12” (600x300 mm)</td>
<td>4 supports 0.32 pcs/sq ft</td>
<td>Please contact Landmark Ceramics</td>
</tr>
<tr>
<td>24”x24” (600x600 mm)</td>
<td>4 supports 0.32 pcs/sq ft</td>
<td>Please contact Landmark Ceramics</td>
</tr>
<tr>
<td>18”x36” (450x900 mm)</td>
<td>6 supports 0.56 pcs/sq ft</td>
<td>Please contact Landmark Ceramics</td>
</tr>
<tr>
<td>12”x48” (300x1200 mm)</td>
<td>6 supports 0.65 pcs/sq ft</td>
<td>Please contact Landmark Ceramics</td>
</tr>
<tr>
<td>18”x48” (400x1200 mm)</td>
<td>6 supports 0.65 pcs/sq ft</td>
<td>Please contact Landmark Ceramics</td>
</tr>
</tbody>
</table>

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

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, load-bearing, 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.

BACKING WITH DOUBLE FIBERGLASS MESH.

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.
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 pavers, for projects that demand total visual continuity.

TRIM TILES TO LANDSCAPE THE OUTDOORS.

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.

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.

DESTINATION OF USE.

- STAIRS
- POOLS

* 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

20 mm THICKNESS PORCELAIN Pavers
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

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

*STAIR TREAD*  
**MONOLITHIC**

- **Grip Stair Tread**
- **Trims**
  - **A:** 24"  
  - **B:** 13"  
  - **Thickness:** 20 mm

*TRIM DIMENSIONS*

**RISER**

- **Rectified**
- **Bullnose**

**WALL COVERS**

*COVER*

- **A:** 24"  
- **B:** 12"  
- **Thickness:** 20 mm

**END COVER**

* Available in standard version (with undecorated borders).

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

**POOLS**

*POOL GRID*

- **COPING**
- **CORNER**

**TRIM DIMENSIONS**

- **A:** 24"  
- **B:** 6"  
- **Thickness:** 20 mm

**COPING CORNER**

- **Rectified**
- **Bullnose**

* Available in standard version (with undecorated borders).

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

* Rectified Bullnose

* Grip on rectified side

* Grip on bullnose side

**COPING**

Only bullnose border

**COPING CORNER**

Only bullnose border

**TRIM TILES RANGE 24”x24”**

**PORCELAIN PAVERS**

**THICKNESS**

- **Rectified**
- **Bullnose**
### STAIRS

<table>
<thead>
<tr>
<th>Component</th>
<th>Trim Dimensions</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stair Tread</strong></td>
<td>A: 36” B: 13”</td>
<td>Rectified Bullnose</td>
</tr>
<tr>
<td><strong>Grip Stair Tread</strong></td>
<td>A: 48” B: 12”</td>
<td>Rectified Bullnose</td>
</tr>
<tr>
<td><strong>Riser</strong></td>
<td>A: 36” B: 6”</td>
<td>Rectified</td>
</tr>
<tr>
<td><strong>Cover</strong></td>
<td>A: 36” B: 12”</td>
<td>Rectified</td>
</tr>
<tr>
<td><strong>End Cover</strong></td>
<td></td>
<td>Undecorated border and dripstone</td>
</tr>
</tbody>
</table>

### POOLS

<table>
<thead>
<tr>
<th>Component</th>
<th>Trim Dimensions</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pool Grid</strong></td>
<td>A: 18” B: 6”</td>
<td>Rectified</td>
</tr>
<tr>
<td><strong>Pool Grid Corner</strong></td>
<td>A: 18” B: 6”</td>
<td>Rectified</td>
</tr>
<tr>
<td><strong>Coping</strong></td>
<td>A: 12” B: 13”</td>
<td>Rectified Bullnose</td>
</tr>
<tr>
<td><strong>Coping Corner</strong></td>
<td>A: 12” B: 13”</td>
<td>Rectified Bullnose</td>
</tr>
</tbody>
</table>

* Available just in standard version (with undecorated borders)
## TRIM TILES RANGE 16”x48”

### STAIRS

**STAIR TREAD**

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>Rectified</th>
<th>Bullnose</th>
</tr>
</thead>
<tbody>
<tr>
<td>48”</td>
<td>16”</td>
<td>20 mm</td>
<td></td>
</tr>
</tbody>
</table>

**GRIP STAIR TREAD**

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>Rectified</th>
<th>Bullnose</th>
</tr>
</thead>
<tbody>
<tr>
<td>48”</td>
<td>16”</td>
<td>20 mm</td>
<td></td>
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</tbody>
</table>

### POOLS

**POOL GRID**

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>Rectified</th>
<th>Bullnose</th>
</tr>
</thead>
<tbody>
<tr>
<td>24”</td>
<td>6”</td>
<td>20 mm</td>
<td></td>
</tr>
</tbody>
</table>

**POOL GRID CORNER**

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>Rectified</th>
<th>Bullnose</th>
</tr>
</thead>
<tbody>
<tr>
<td>24”</td>
<td>6”</td>
<td>20 mm</td>
<td></td>
</tr>
</tbody>
</table>

### COPING

**COPING**

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>Rectified</th>
<th>Bullnose</th>
</tr>
</thead>
<tbody>
<tr>
<td>16”</td>
<td></td>
<td>20 mm</td>
<td></td>
</tr>
</tbody>
</table>

**COPING CORNER**

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>Rectified</th>
<th>Bullnose</th>
</tr>
</thead>
<tbody>
<tr>
<td>16”</td>
<td></td>
<td>20 mm</td>
<td></td>
</tr>
</tbody>
</table>

*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

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.
01 WIDE LOOKS RANGE.

**FLAGSTONE LOOK**
- Flagstone Pink-Tan
- Flagstone Brown

**CONCRETE LOOK**
- Warm Sand
- Simply Grey

**STONE LOOK**
- Sight Anthracite
- Sight Grey
- Pietra di Bagnolo
- Source Beige

**LIMESTONE LOOK**
- Limestone

**QUARTZ LOOK**
- Silver Quartz
- Barge Gold
- Pietra di Barge
- Point Silver

**SLATE LOOK**
- Multicolor Gold
- Multicolor Dark
- Vintage Slab

**TRAVERTINE LOOK**
- Desert
- Absolute
- Cosmos
WIDE LOOKS RANGE.

WOOD LOOK

- WALNUT
  - V3
- PEPPER
  - V3
- SOUL WALNUT
  - V2
- SOUL GREY
  - V2
- LOGOS BROWN
  - V2
- MITO BROWN
  - V2

NEW 2018

THICKNESS
PORCELAIN PAVERS
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 bled your home’s interior charm with your outdoor living area.

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.
THICKNESS
PORCELAIN PAVERS

12"x48" Frontier20 is characterized by a wide range of sizes from the small 12"x12" and 12"x24" up to the bigger 18"x36" and 24"x48", from the classic 24"x24" to the refined 12"x48" and 16"x48" plank size. Frontier20 ensures freedom in every design project.
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” x 12”x24” (MIX) = 40% **

**Available colors**
- Blue Select
- Pink-Tan
- Full color

* 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” x 12”x24” (MIX) = 50% **

**Available colors**
- Blue Select
- Pink-Tan
- Full color

* 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
- Blue Select
- Full color
- Pink-Tan

M.P.D. BIG FOUR*

Module percentage
- 24”x48” = 28.6%
- 24”x24” = 14.3%
- 24”x36” = 12”x24” (MIX) = 57.1% **

Available colors
- Blue Select
- Full color
- Pink-Tan

* Modular products with 4 mm joint (approx. 5/32”).
** NOTE
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** NOTE
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**M.P.D. SMALL ONE**

- **Module percentage**
  - 12”x24” = 67%
  - 12”x12” = 33%

- **Available colors**
  - Blue Select
  - Full color
  - Pink/Tan

---

**M.P.D. SMALL TWO**

- **Module percentage**
  - 12”x24” = 80%
  - 12”x12” = 20%

- **Available colors**
  - Blue Select
  - Full color
  - Pink/Tan

---

**M.P.D. SMALL THREE**

- **Module percentage**
  - 24”x24” = 50%
  - 12”x24” = 50%

- **Available colors**
  - Blue Select
  - Full color
  - Pink/Tan

---

**M.P.D. SMALL FOUR**

- **Module percentage**
  - 24”x24” = 67%
  - 12”x24” = 33%

- **Available colors**
  - Blue Select
  - Full color
  - Pink/Tan

---

* Modular products with 4 mm joint (approx 5/32”).
M.P.D. MULTI PATTERN DESIGN SMALL

**M.P.D. SMALL FIVE**

- Available colors: Blue Select, Pink-Tan, Full color
- Module percentage:
  - 24"x24" = 57%
  - 12"x24" = 29%
  - 12"x12" = 14%

**M.P.D. SMALL SIX**

- Available colors: Blue Select, Pink-Tan, Full color
- Module percentage:
  - 24"x24" = 33%
  - 12"x24" = 50%
  - 12"x12" = 17%

**M.P.D. SMALL SEVEN**

- Available colors: Blue Select, Pink-Tan, Full color
- Module percentage:
  - 24"x24" = 57%
  - 12"x24" = 29%
  - 12"x12" = 14%

**M.P.D. SMALL EIGHT**

- Available colors: Blue Select, Pink-Tan, Full color
- Module percentage:
  - 24"x24" = 44%
  - 12"x24" = 45%
  - 12"x12" = 11%

* Modular products with 4 mm joint (approx 5/32”).
COLORED BODY PORCELAIN PAVERS - Rectified Monocaliber

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.

**Available sizes**

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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.

Available size: 24" x 24" (0.8"

Color shading:
- Uniform appearance
- Slight variation
- Moderate variation
- Substantial variation

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- Uniform appearance
- Slight variation
- Moderate variation
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Available size

18" x 36"

0.8"
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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 ensure 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 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 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 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 clearing 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.
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 chemicals 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 highly 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.

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.

ORDINARY MAINTENANCE
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”.

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PAVER PERFORMANCE DATA

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 | Yes | 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 Varied | 5% | 5% | 5-10% | >= 5%
Easy To Repair | Yes | No | Can Not | No | 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
Environmental Friendly | Facility 98% Green | Many Exotic Rainforest Species | No | Large Carbon Fiber Print | Possible Fly Ash Content | Mixed Or Imported
Recycled Content | 20% In Each Paver | No | Not Possible | Not Possible | If Possible Less Than 5% | Not Possible

PHYSICAL PROPERTIES

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<th>TEST ASTM</th>
<th>NORTH AMERICAN STANDARD A137.1*</th>
<th>RESULTS</th>
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<tr>
<td>Average dynamic coefficient of friction **</td>
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<td>Skid Resistance</td>
<td>DIN 51097</td>
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<td>Thickness</td>
<td>C499</td>
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* 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 adopted, in accordance with the local laws and regulations and the conditions of use. Failure to do so could lead to severe injury or property damage.
- Pavings are not recommended for use in structural installations. The manufacturer recommends that the project engineer and/or customer must carefully assess the project requirements with regard to the technical specifications of the slab, 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 from any significant height, therefore the manufacturer recommends to check the specific instructions about ceramic slabs, and to follow the table for raised installation provided below. In certain conditions, reinforcing must be applied on the back of the slab (double fiberglass mesh) supplied and applied by the manufacturer, with reference to any dry installation system. Failing to follow the recommendations could result in severe injury or property damage. The manufacturer recommends to comply with local legislation and conditions of use with regard to the installation of the product and could avoid 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.

FEATURES

- Stainable
- Freeze Thaw Proof
- Salt Resistant
- Acid Resistant
- Scratch Resistant
- Moisture Absorption
- Easy To Repair
- Uv Resistant
- Needs Sealed
- Pressure Washer Safe
- Environmental Friendly
- Recycled Content

- Water absorption
- Average dynamic coefficient of friction
- Skid Resistance
- Resistance to freeze/thaw cycling
- Warpage
- Wedging
- Chemical resistance
- Breaking strength
- Thickness

TEST ASTM

- C373
- BOT 3000 test
- DIN 51097
- C1026
- C485
- C485
- C502
- C580
- C48
- C499

NORTH AMERICAN STANDARD A137.1*

- ≤ 0.5%
- ≥ 0.42
- A=B+C
- As reported
- Warpage ± 0.4% or ± 0.05m
- Warpage ± 0.4% or ± 0.07m
- ± 0.25% or ± 0.03m
- As reported
- 250 lbf or greater
- Range: 0.04 in

RESULTS

- COMPLY WITH ANSI A137.1
- RESISTANT
- COMPLY WITH ANSI A137.1
- COMPLY WITH ANSI A137.1
- COMPLY WITH ANSI A137.1
- UNAFFECTED
- UNAFFECTED
- COMPLY WITH ANSI A137.1

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