



M.P.D.



**MULTI PATTERN
DESIGN**

FRONTIER²⁰

 **LANDMARK**
CERAMICS

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.

PROJECT

FLOOR DESIGN

Frontier20 Blue Stone Blue Select - 12"x24"

Frontier20 Blue Stone Blue Select - 24"x24"

Frontier20 Blue Stone Blue Select - 24"x36"

Frontier20 Blue Stone Blue Select - 24"x48"

Frontier20 Blue Stone Blue Select Stair Tread - 24"x13"

M.P.D. BIG ONE*

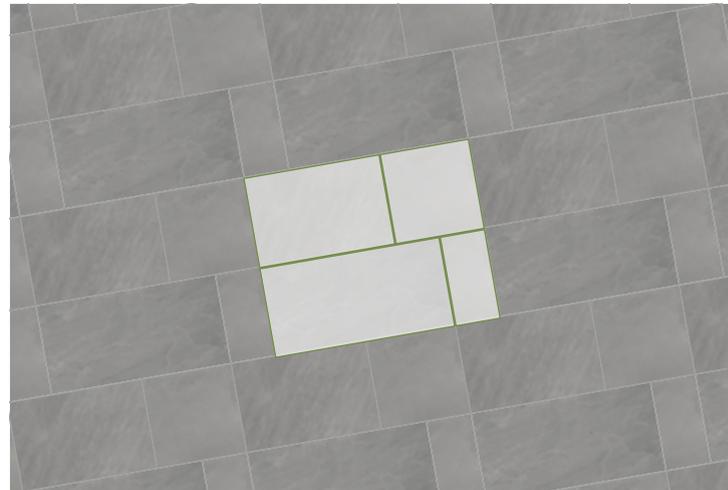


Module percentage

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



Available colors



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

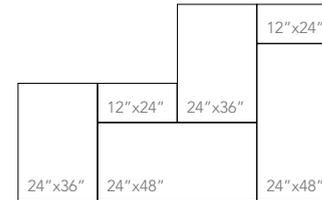
** NOTE
 The 24"x36" and 12"x24" sizes (MIX) are palletized together on the same single pallet containing the correct percentages of each size.

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").

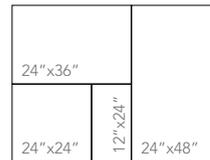
** NOTE
 The 24"x36" and 12"x24" sizes (MIX) are palletized together on the same single pallet containing the correct percentages of each size.

M.P.D. BIG THREE*

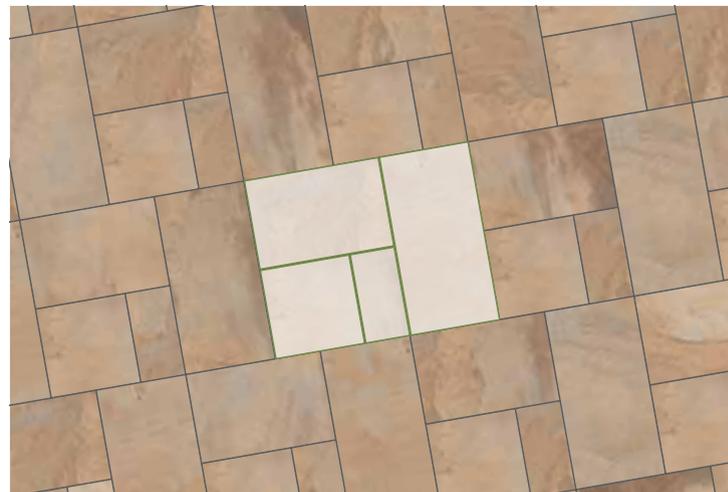


Module percentage

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



Available colors



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

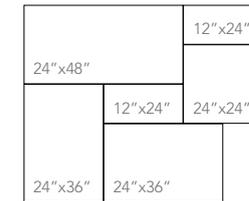
** NOTE
 The 24"x36" and 12"x24" sizes (MIX) are palletized together on the same single pallet containing the correct percentages of each size.

M.P.D. BIG FOUR*



Module percentage

24"x48" = 28,6%
 24"x24" = 14,3%
 24"x36" + 12"x24" (MIX) = 57.1% **



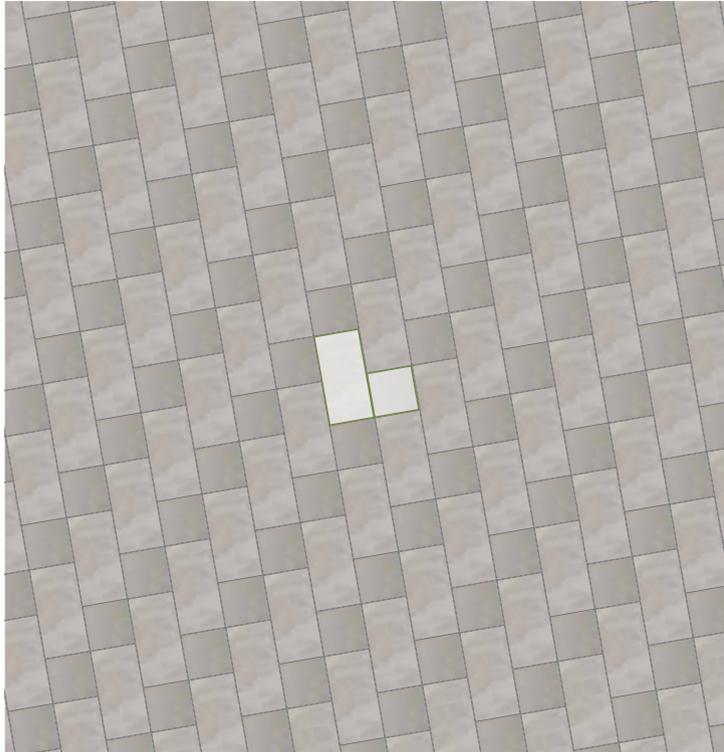
Available colors



* 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

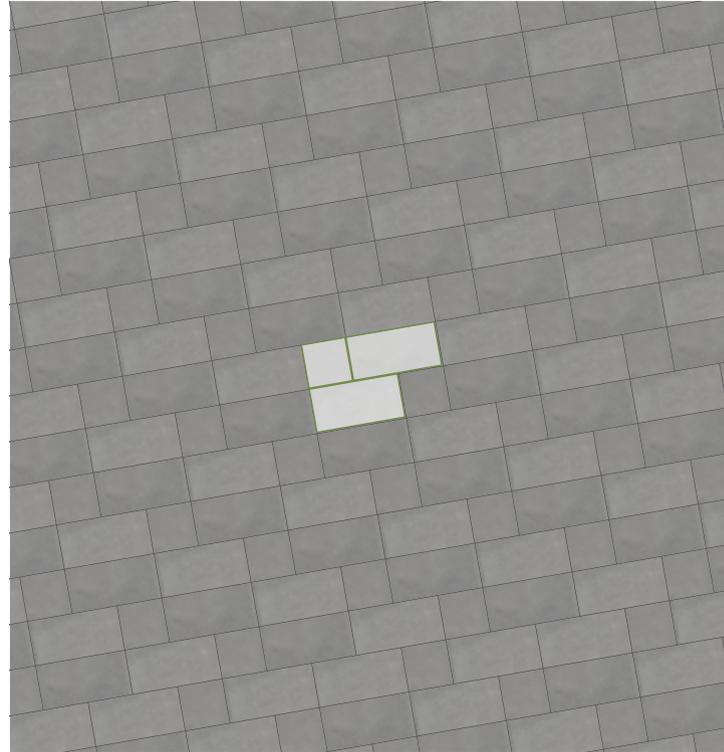
12"x24" = 67%
12"x12" = 33%



Available colors

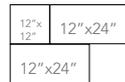


M.P.D. SMALL TWO*



Module percentage

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



Available colors

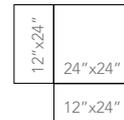


M.P.D. SMALL THREE*



Module percentage

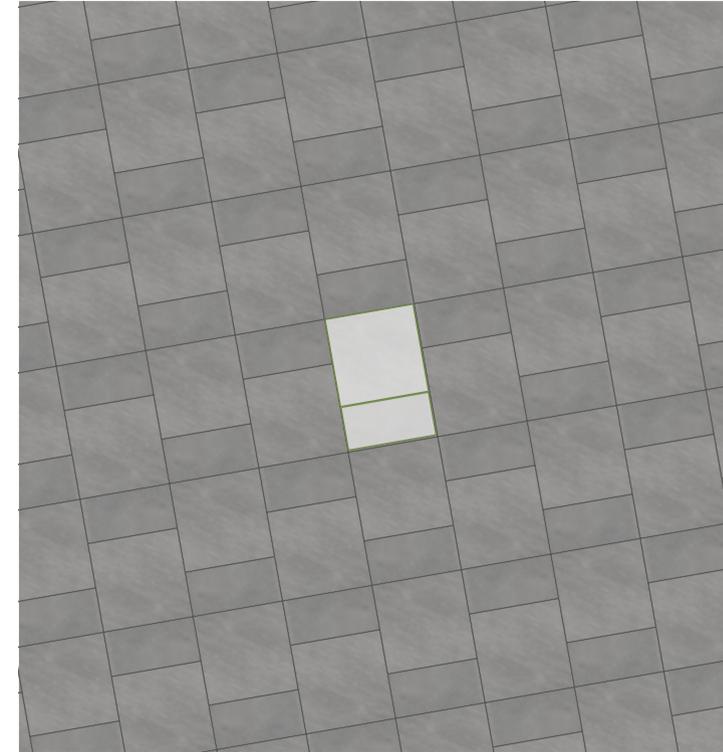
24"x24" = 50%
12"x24" = 50%



Available colors

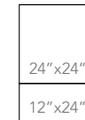


M.P.D. SMALL FOUR*



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*



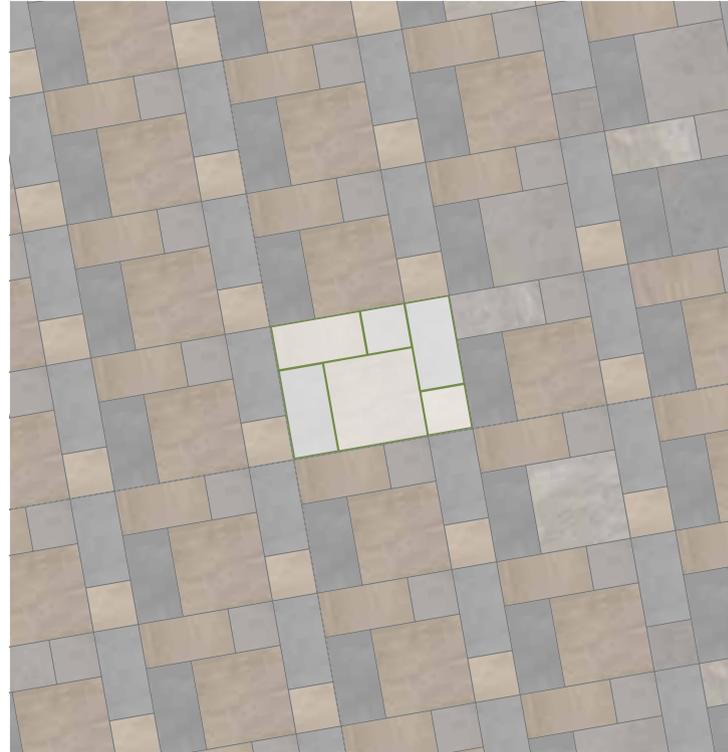
Module percentage

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

Available colors



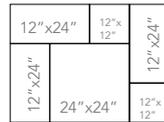
M.P.D. SMALL SIX*



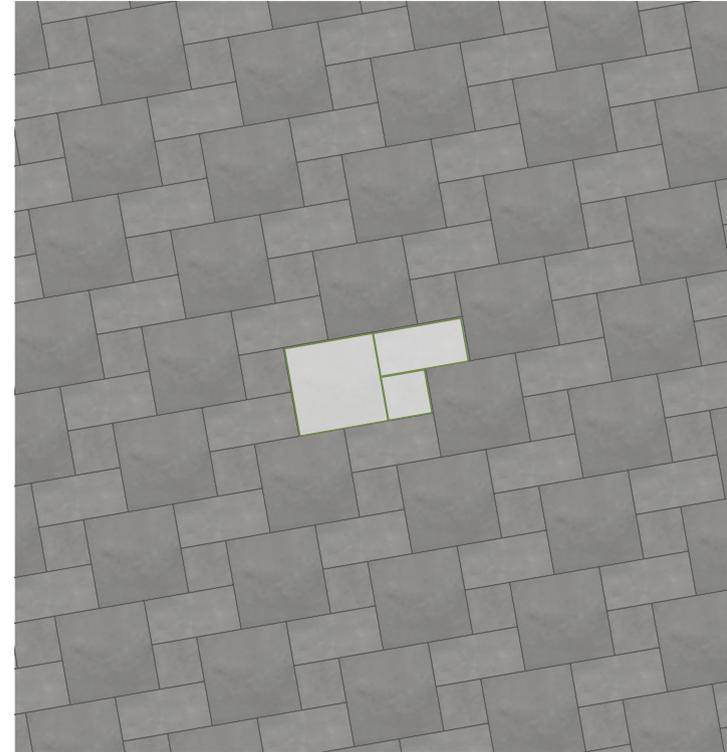
Module percentage

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

Available colors



M.P.D. SMALL SEVEN*



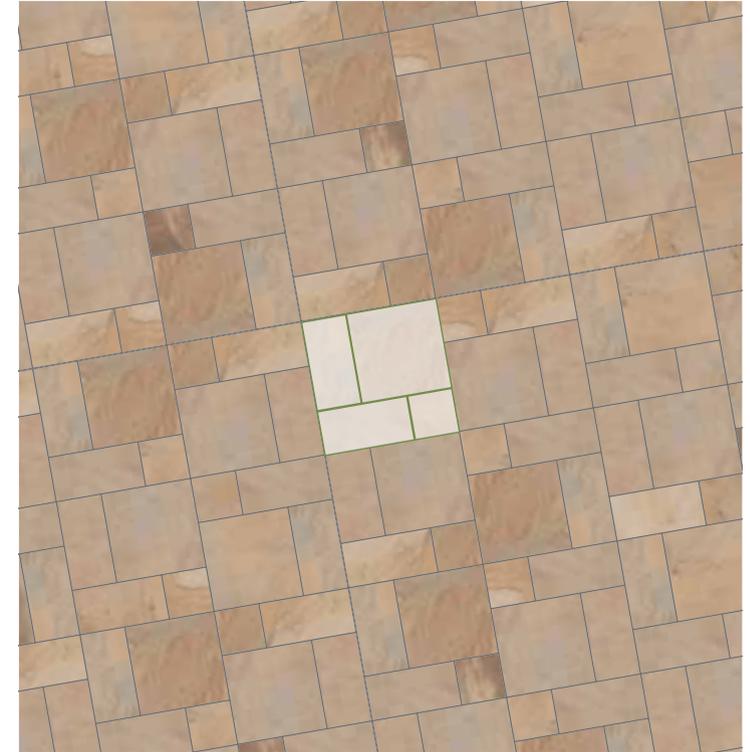
Module percentage

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

Available colors



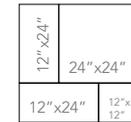
M.P.D. SMALL EIGHT*



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

24" x 48" ± 0.8"

24" x 36" ± 0.8"

24" x 24" ± 0.8"

12" x 24" ± 0.8"

12" x 12" ± 0.8"

V4

10% MIN. ON PRODUCTION RECYCLED MATERIAL

Available sizes

Color shading

24" x 48" ± 0.8"

24" x 36" ± 0.8"

24" x 24" ± 0.8"

12" x 24" ± 0.8"

12" x 12" ± 0.8"

V2

10% MIN. ON PRODUCTION RECYCLED MATERIAL

FLAGSTONE LOOK

FLAGSTONE PINK-TAN

AMERICANSTONE ★



Available sizes

Color shading

24" x 48" ± 0.8"

24" x 36" ± 0.8"

24" x 24" ± 0.8"

12" x 24" ± 0.8"

12" x 12" ± 0.8"

V4

10% MIN. ON PRODUCTION RECYCLED MATERIAL

The color of pavers printed in this catalog may differ from actual pavers. Paver color reproductions in this catalog are representative only. Slight tone and shade variations are inherent in porcelain pavers. Before selecting a color, 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 color 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 color difference.

Color Shading

V1 UNIFORM APPEARANCE

V2 SLIGHT VARIATION

V3 MODERATE VARIATION

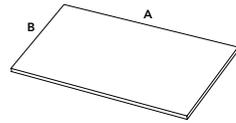
V4 SUBSTANTIAL VARIATION

TRIM TILES RANGE 24" x 24"

STAIRS

STAIR TREAD*

TRIM DIMENSIONS

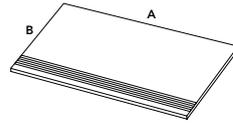


A: 24"
B: 13"

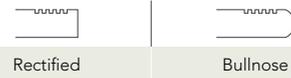


GRIP STAIR TREAD*

TRIM DIMENSIONS

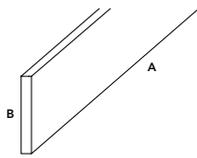


A: 24"
B: 13"



RISER*

TRIM DIMENSIONS



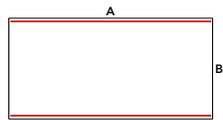
A: 24"
B: 8"



WALL COVERS

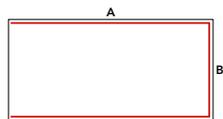
COVER*

TRIM DIMENSIONS



A: 24"
B: 12"

END COVER*



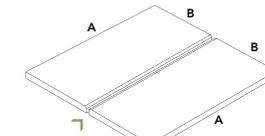
* Available in standard version (with undecorated borders).

TRIM TILES RANGE 24" x 24"

POOLS

LINEAR COVER DRAIN SET*

TRIM DIMENSIONS



OPEN JOINT
WIDTH 0,28" (1/32")

A: 24"
B: 11,63"

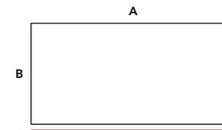


Open joint width 0,28" (1/32")



COPING*

TRIM DIMENSIONS



A: 24"
B: 13"

A: 24"
B: 12"

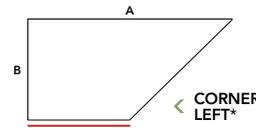


Rectified Bullnose

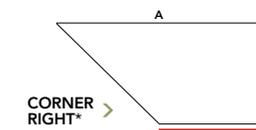


COPING CORNER*

TRIM DIMENSIONS



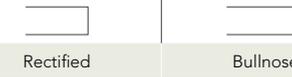
CORNER
LEFT*



CORNER
RIGHT*

A: 24"
B: 13"

A: 24"
B: 12"



Rectified Bullnose

* Available in standard version (with undecorated borders).

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

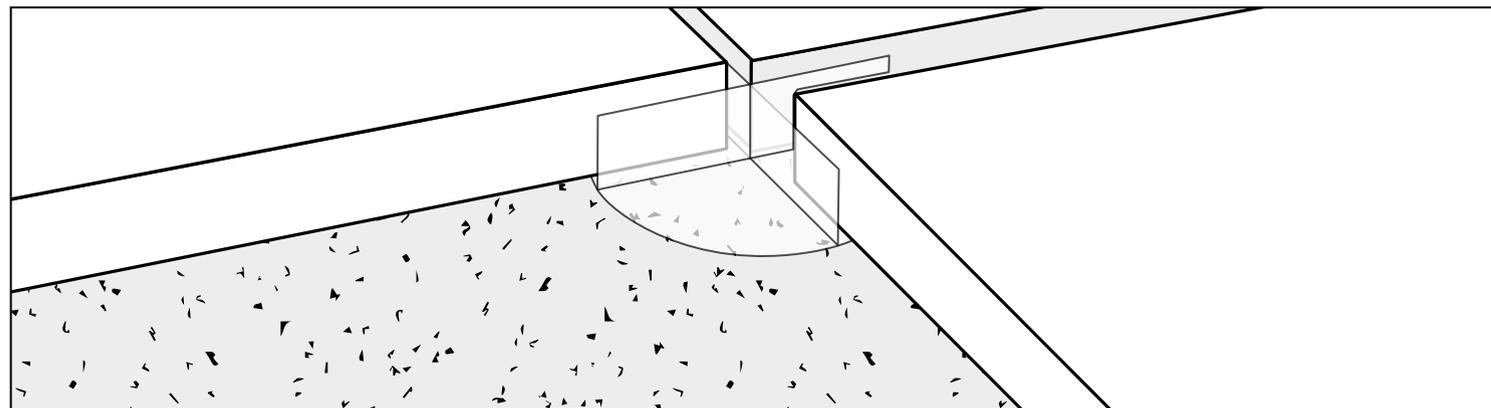
When installing porcelain paver on sand set base, fill the 4 mm (approx $\frac{3}{16}$ ") paver joints with these options:

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.

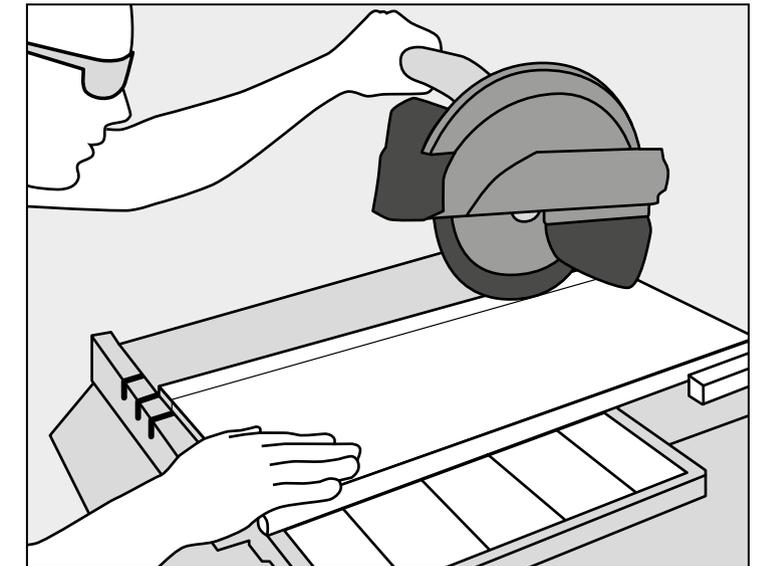
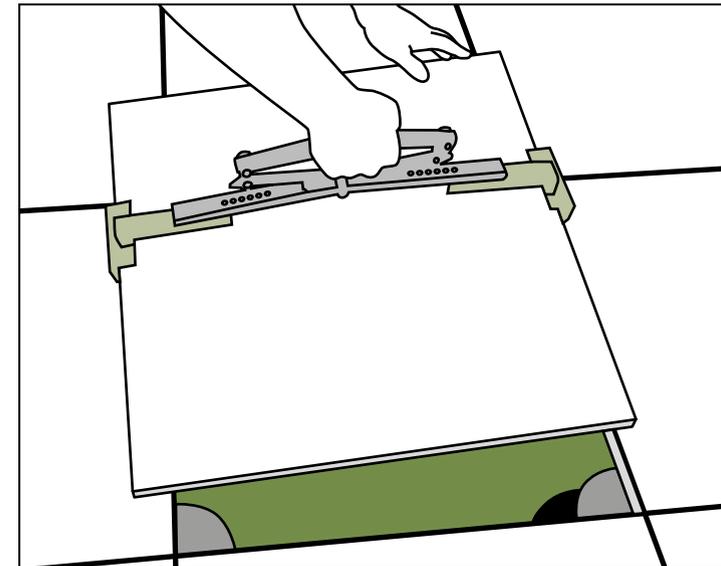
Porcelain paver pallets are shipped with a very strong plastic covering and the individual units are packaged in protective cardboard boxes. The protective cardboard boxes guard them from the possibility of chipping.

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.



IMPORTANT NOTE: LEGAL DISCLAIMER

The nominal measurements include 4 mm (approx $\frac{3}{16}$ ") for product spacers which are sold separately. Although extreme care has been taken to ensure the accuracy of all measurements set forth herein, manufacturer assumes no liability relating thereto.

IMPORTANT NOTES:

1. Use the manufacturer's instructions when choosing polymeric sand for your project.
2. The use of cement blended sand and polymeric sand can reduce plant growth and insect infiltration within the joint infill material.
3. Whether using traditional sand or a cemented blended sand, ensure the gradation of the sand is fine enough to pass through and fill the $\frac{3}{16}$ " (4 mm) joints.

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.



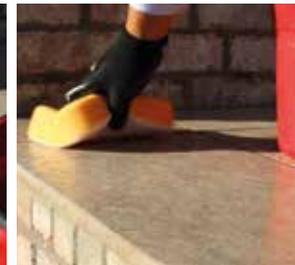
PIC 2. Remove excess grout with clean water.



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	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 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
Resistance to thermal shock	C484	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
Resistance to stain	C1378	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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