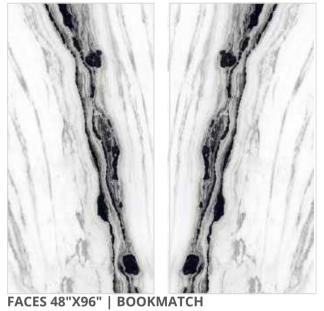
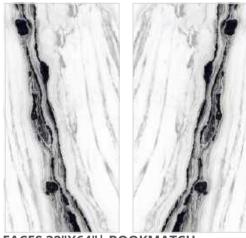
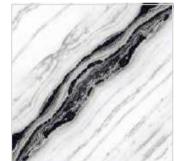


RP1001 PANDA

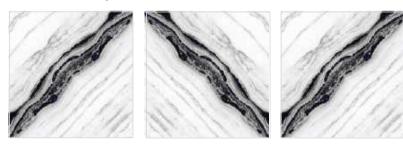




FACES 32"X64" | BOOKMATCH



FACES 48"X48" | BOOKMATCH



FACES 32"X32" | BOOKMATCH







WALL & FLOOR | PANDA (48X96)

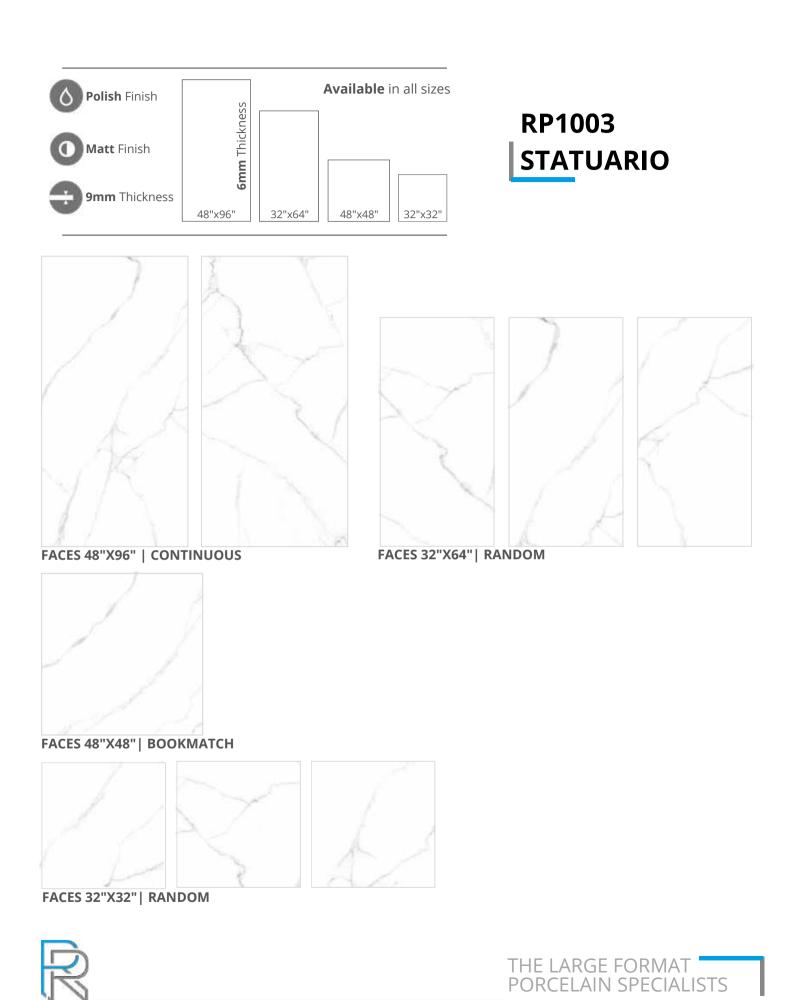
WALL & FLOOR | PANDA (48X48)





WALL & FLOOR | PANDA (32X64)

WALL & FLOOR | PANDA (32x32)







WALL & FLOOR | STATUARIO (48X96)

WALL & FLOOR | **STATUARIO** (48X48)





WALL & FLOOR | **STATUARIO** (32X64)

WALL & FLOOR | **STATUARIO** (32X32)









WALL| **SAHARA BLACK** (48X96)

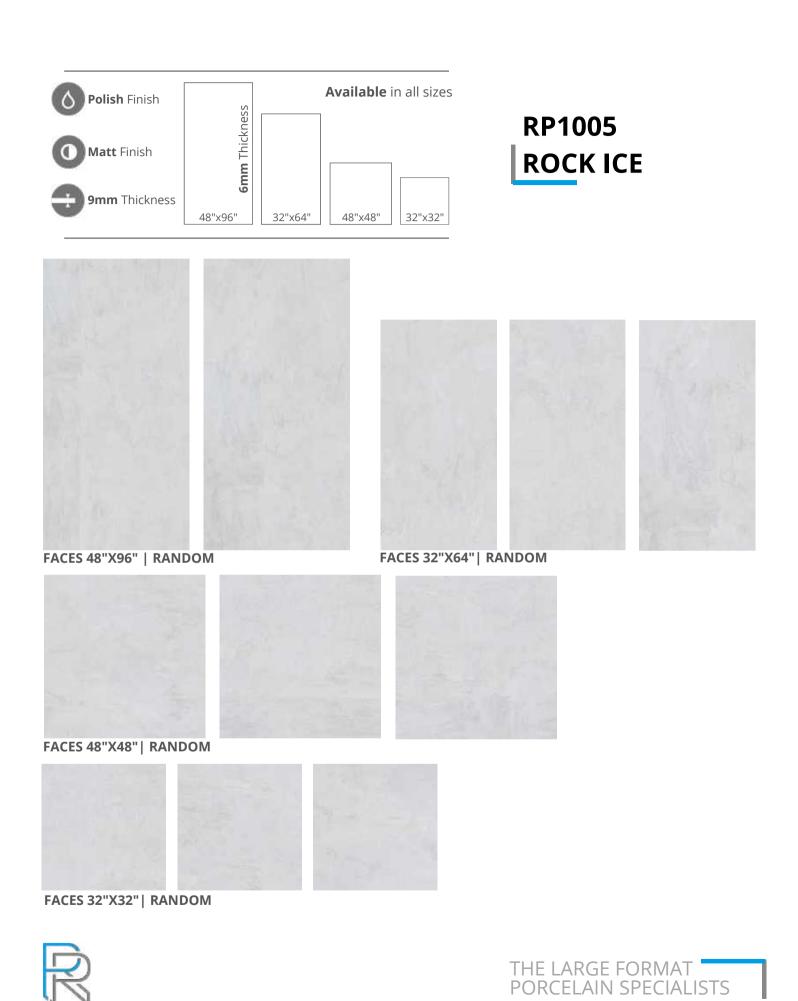
FLOOR | **SAHARA BLACK** (48X48)







WALL| **SAHARA BLACK** (32X32)







WALL | ROCK ICE (48X96)

WALL | ROCK ICE (48X48)





FLOOR | **ROCK ICE** (32X64)

WALL & FLOOR | **ROCK ICE** (32X32)



RP1007 ARMANI GREY





FACES 48"X48" | RANDOM



FACES 32"X32" | RANDOM







WALL| **ARMANI GREY** (48X96)

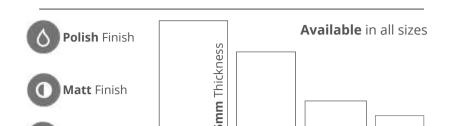
FLOOR | **ARMANI GREY** (48X48)





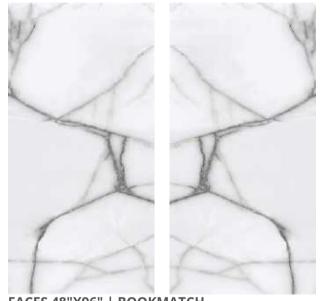
WALL | **ARMANI GREY** (32X64)

FLOOR | **ARMANI GREY** (32X32)



48"x48"

RP1009 CALACATTA SPIDER







9mm Thickness

FACE 48"X48" | BOOKMATCH



FACE 32"X32" | BOOKMATCH



THE LARGE FORMAT PORCELAIN SPECIALISTS





WALL| CALACATTA SPIDER (48X96)

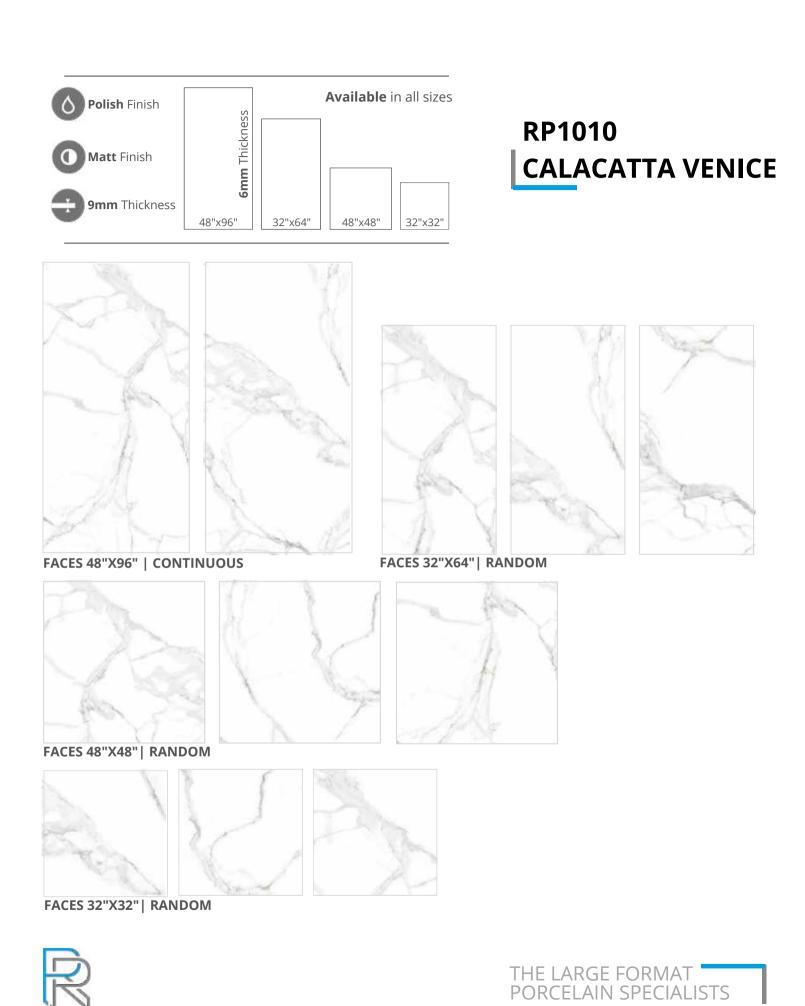
WALL & FLOOR | CALACATTA SPIDER (48X48)







WALL & FLOOR | CALACATTA SPIDER (32X32)







WALL & FLOOR | CALACATTA VENICE (48X96)

WALL & FLOOR | CALACATTA VENICE (48X48)







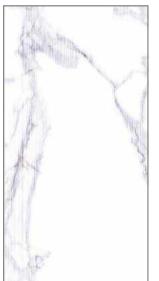
FLOOR | **CALACATTA VENICE** (32X32)

32"x64"











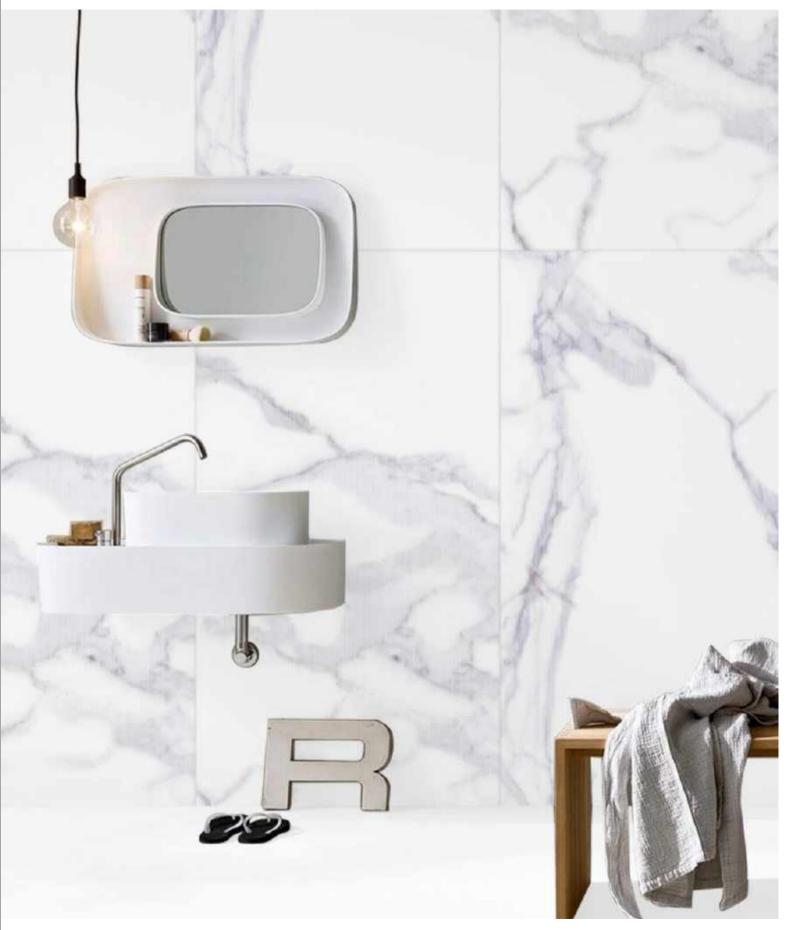




FACES 32"x64"| RANDOM







WALL | CALACATTA VENICE DECO (32x64)

Polish Finish

Matt Finish

6mm Thickness

Available size

48"x96"

RP1011
DIAMANTE COMBO



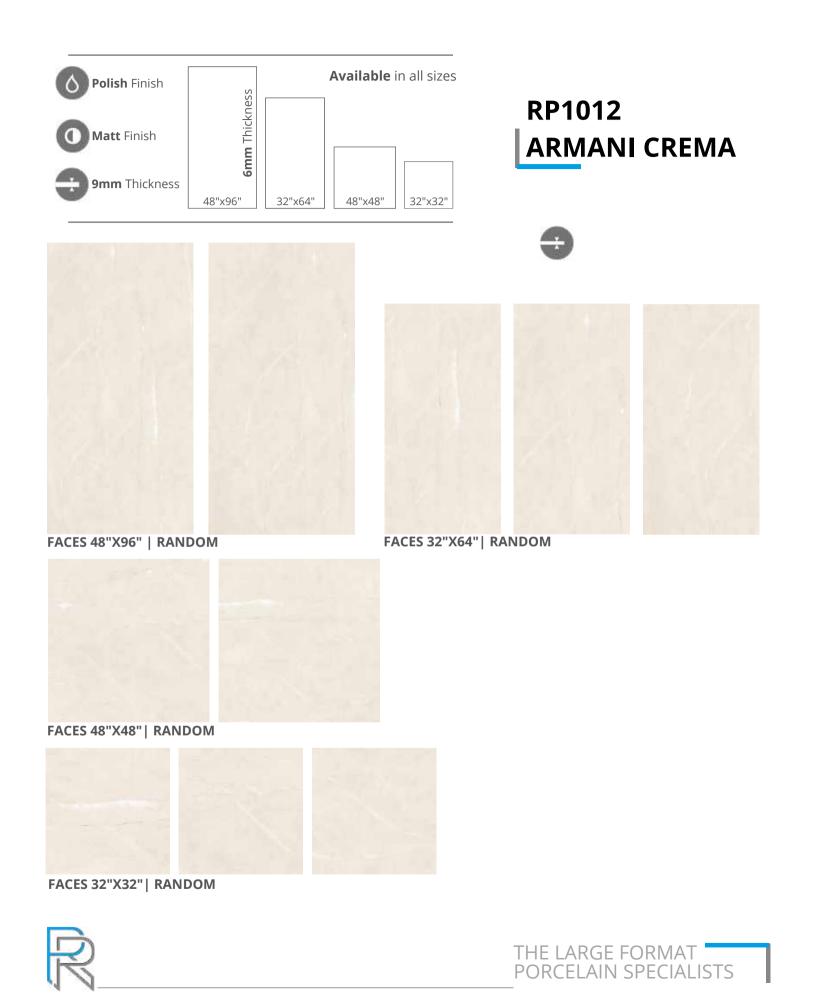
FACES 48"X96" | BOOKMATCH







WALL| **DIAMANTE COMBO** (48X96)







WALL & FLOOR | **ARMANI CREMA** (48X96)

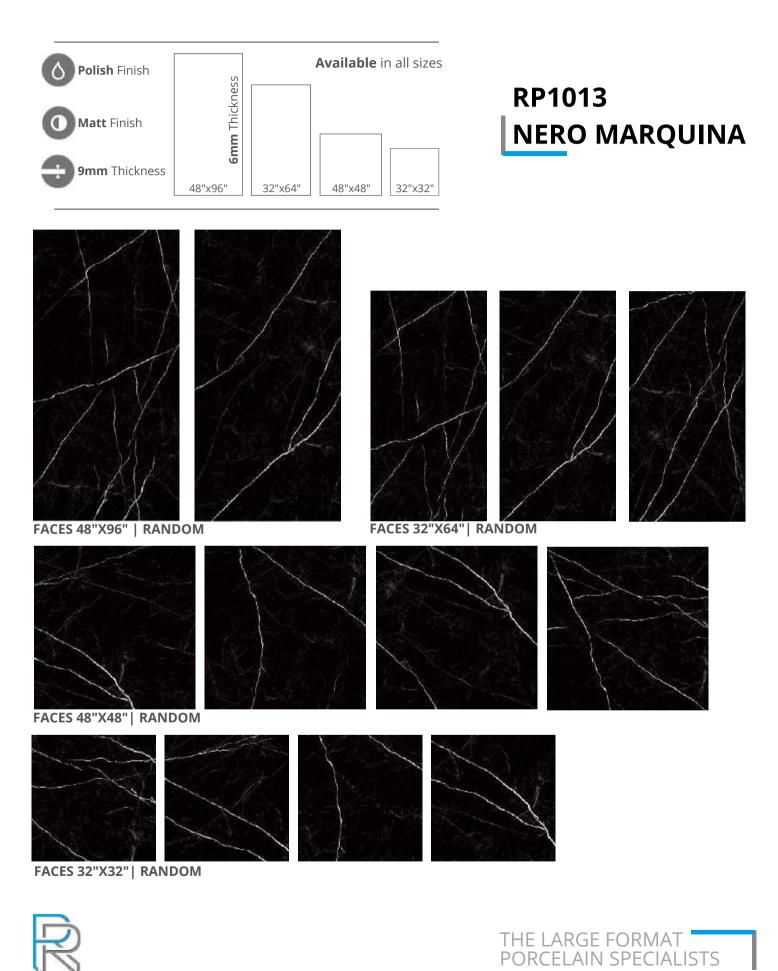
FLOOR | ARMANI CREMA (48X48)







WALL & FLOOR | **ARMANI CREMA** (32X32)







WALL| **NERO MARQUINA** (48X96)

FLOOR | **NERO MARQUINA** (48X48)







WALL & FLOOR | **NERO MARQUINA** (32X32)

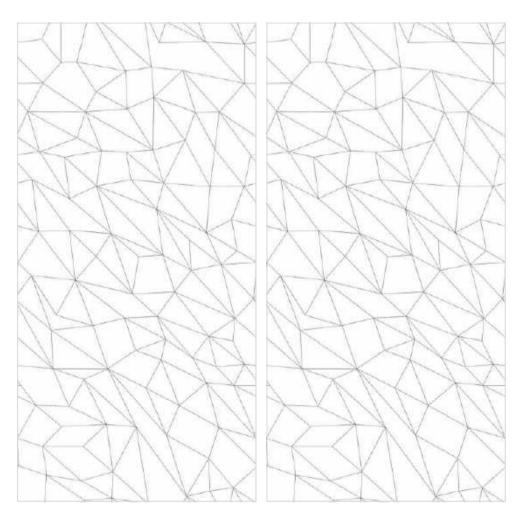


Matt Finish

6mm Thickness

Available size

RP1015 COSMOS BIANCO



48"x96"

FACE 48"X96" | BOOKMATCH





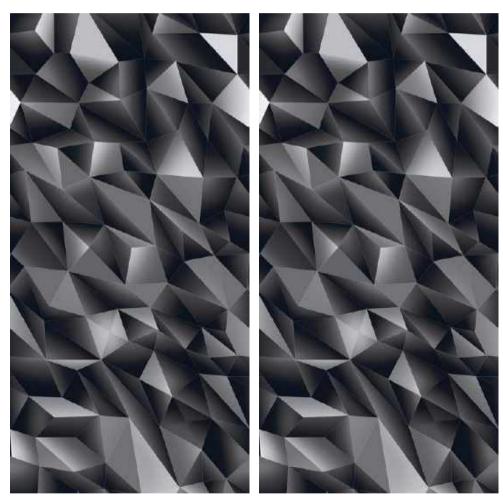
Polish Finish

Matt Finish

6mm Thickness

Available size

RP1016 COSMOS NEGRO



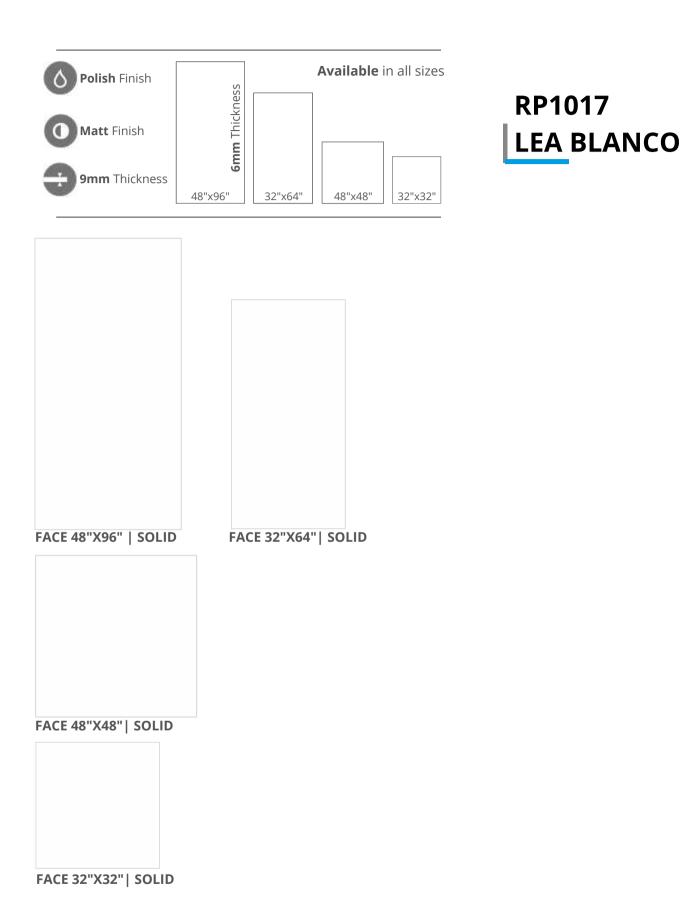
48"x96"

FACES 48"X96" | BOOKMATCH







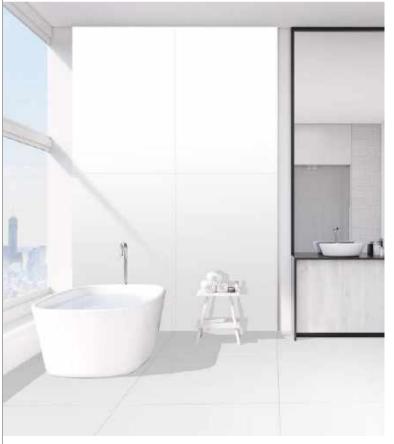






FLOOR | **LEA BLANCO** (48X96)

FLOOR | **LEA BLANCO** (48X48)







FLOOR | **LEA BLANCO** (32X32)







WALL| PIETRA BLANCO (48X96)

WALL & FLOOR | PIETRA BLANCO (48X48)





WALL & FLOOR | PIETRA BLANCO (32X64)

FLOOR | **PIETRA BLANCO** (32X32)

32"x64"











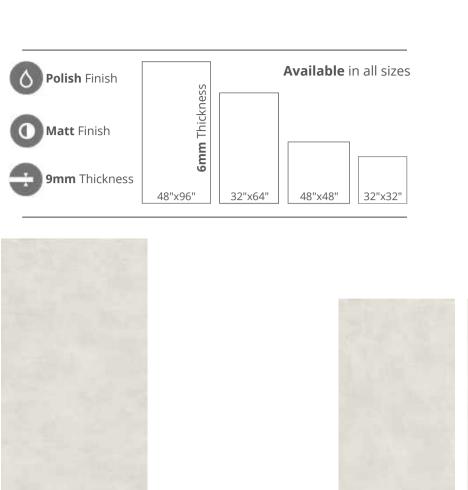








WALL | **PIETRA BIANCO DECO** (32x64)





RP1022

VINTAGE ALMENDRA





FACES 48"X48" | RANDOM



FACES 32"X32" | RANDOM







WALL| VINTAGE ALMENDRA (48X96)

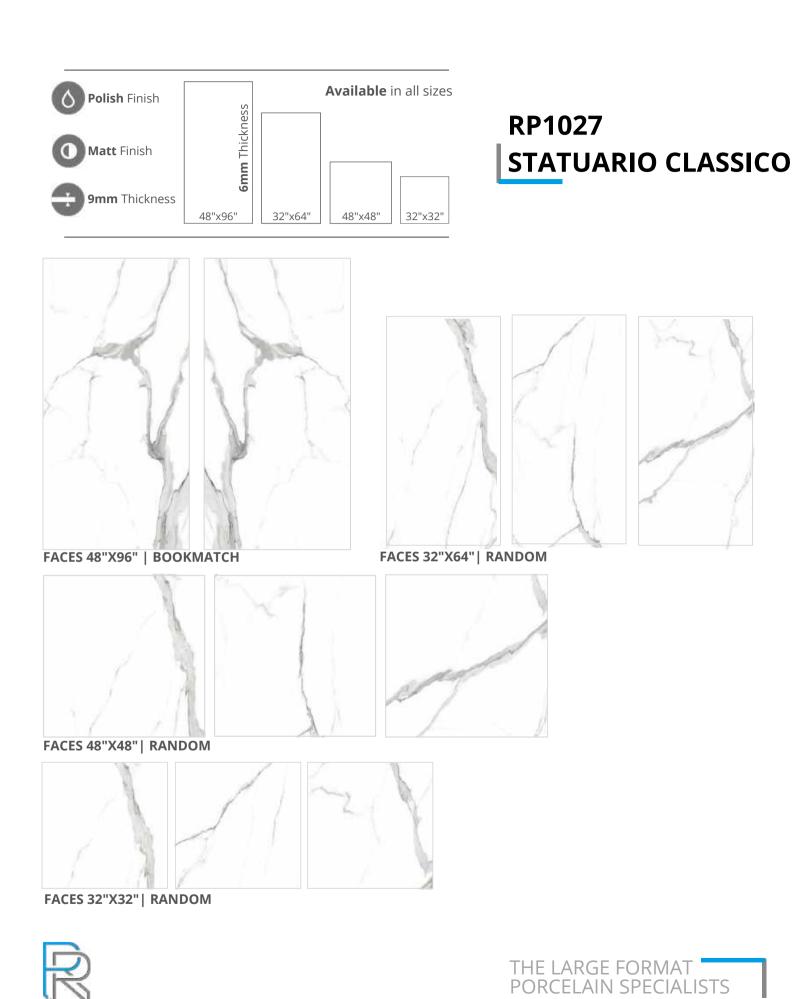
WALL & FLOOR | VINTAGE ALMENDRA (48X48)





WALL | **VINTAGE ALMENDRA** (32X64)

FLOOR | **VINTAGE ALMENDRA** (32X32)





WALL & FLOOR | STATUARIO CLASSICO (48X96)



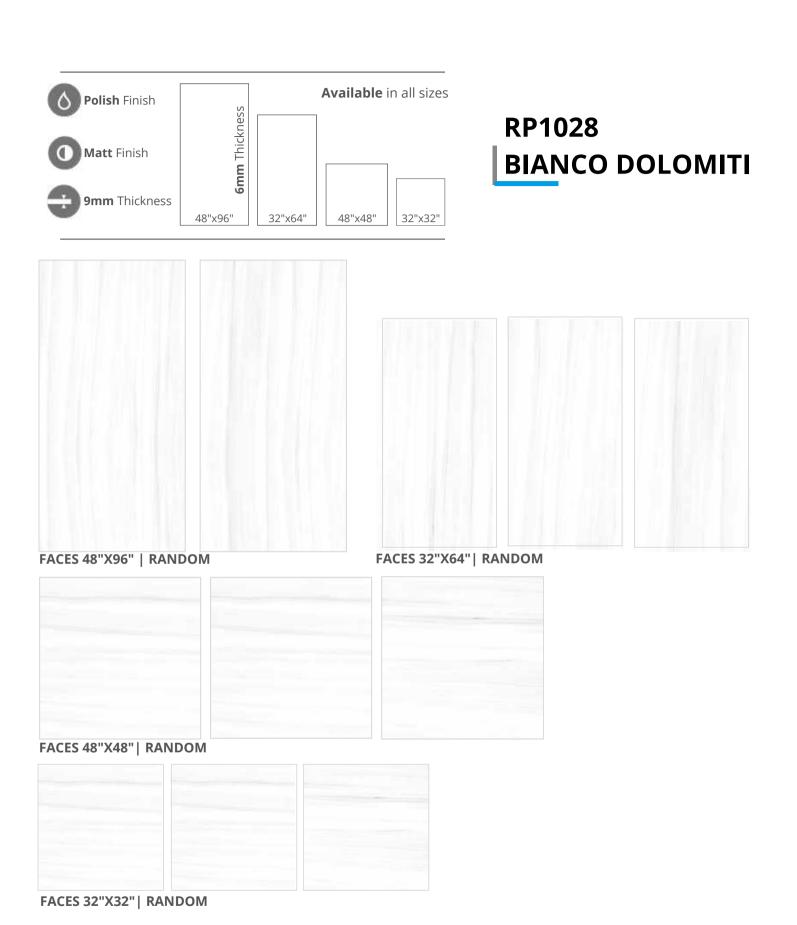
WALL & FLOOR | STATUARIO CLASSICO (48X48)



WALL & FLOOR | STATUARIO CLASSICO (32X64)



FLOOR | **STATUARIO CLASSICO** (32X32)







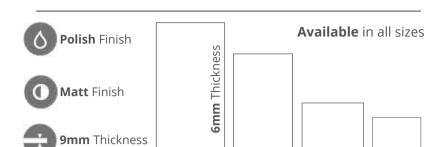
FLOOR | BIANCO DOLOMITI (48X48)

WALL & FLOOR | BIANCO DOLOMITI (48X96)

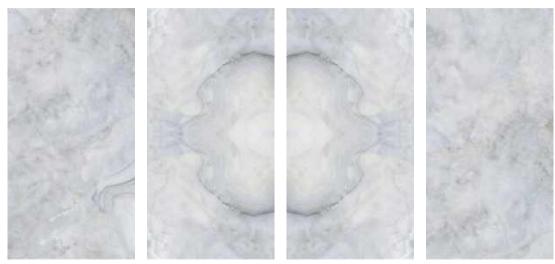


WALL & FLOOR | **BIANCO DOLOMITI** (32X64)

FLOOR | **BIANCO DOLOMITI** (32X32)



RP1029 BLUE AGATE ONYX

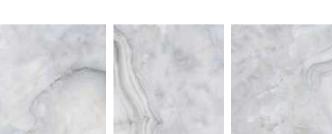


48"x48"

FACES 48"X96" | BOOKMATCH



FACES 48"X48" | RANDOM



FACES 32"X32" | RANDOM



FACES 32"X64" | RANDOM



THE LARGE FORMAT PORCELAIN SPECIALISTS



WALL & FLOOR | BLUE AGATE ONYX (48X96)



WALL & FLOOR | **BLUE AGATE ONYX** (32X64)



WALL & FLOOR | **BLUE AGATE ONYX** (48X48)



FLOOR | **BLUE AGATE ONYX** (32X32)

32"x64"





RP1029 BLUE AGATE ONYX DECO







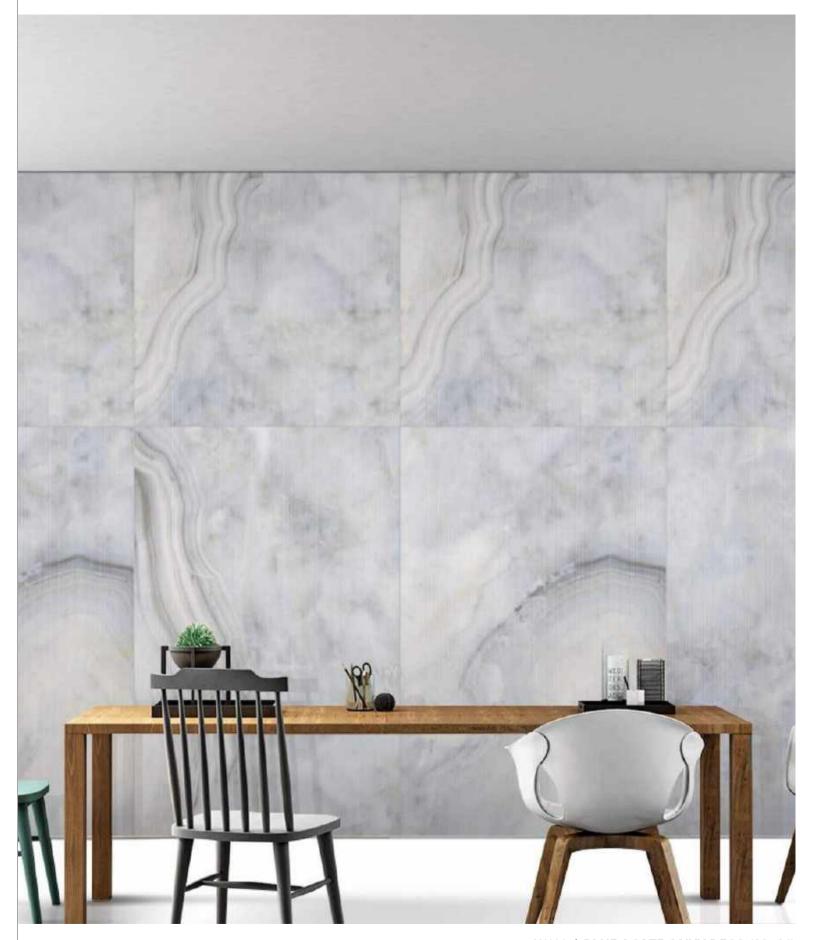




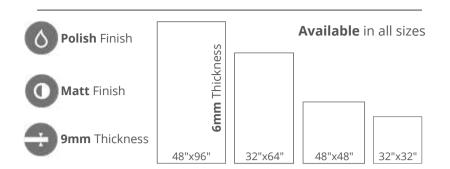


FACES 32"x64" | RANDOM





WALL | **BLUE AGATE ONYX DECO** (32x64)



RP1030 GOLD AGATE ONYX



FACES 48"X96" | BOOKMATCH



FACES 48"X48" | RANDOM



THE LARGE FORMAT PORCELAIN SPECIALISTS









WALL & FLOOR | GOLD AGATE ONYX (48X96)

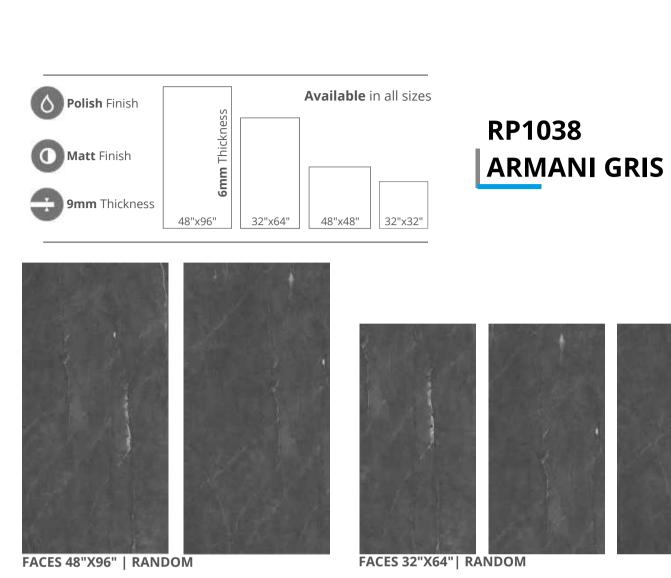


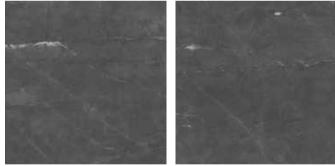




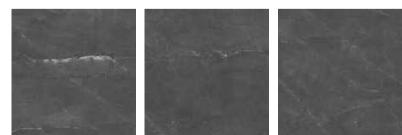


WALL & FLOOR | **GOLD AGATE ONYX** (32X32)





FACES 48"X48" | RANDOM



FACES 32"X32" | RANDOM





WALL & FLOOR | **ARMANI GRIS** (48X96)









FLOOR | **ARMANI GRIS** (32X32)



32"x32"



9mm Thickness









WALL & FLOOR | TERRAZO LIGHT GREY (32X32)







FACES 32"X32" | RANDOM



THE LARGE FORMAT PORCELAIN SPECIALISTS





WALL| **OPERA AZUL** (48X96)

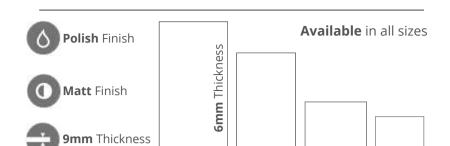






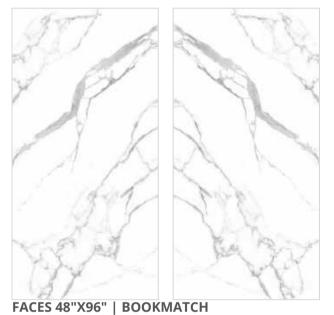
WALL & FLOOR | OPERA AZUL (32X32)

FLOOR | OPERA AZUL (48X48)



48"x48"

RP1047 CALACATTA ITALIA





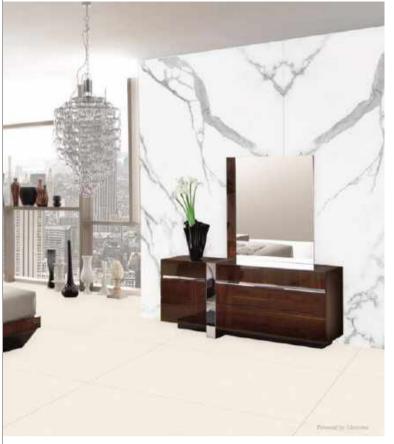
FACES 48"X48" | BOOKMATCH



FACES 32"X32" | BOOKMATCH



THE LARGE FORMAT PORCELAIN SPECIALISTS





WALL| CALACATTA ITALIA (48X96)



WALL | CALACATTA ITALIA (32X64)



WALL & FLOOR | CALACATTA ITALIA (48X48)

WALL & FLOOR | CALACATTA ITALIA (32X32)





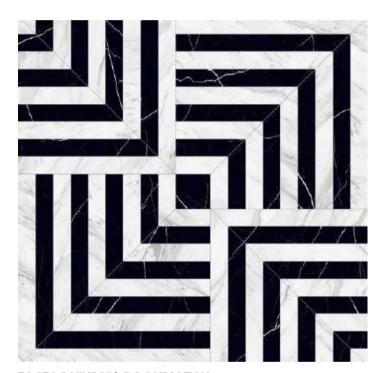




9mm Thickness

32"x32"

RP1048 FIRE BLACK



FACES 32"X32" | BOOKMATCH







32"x32"

RP1053 TERRAZO DARK GREY

9mm Thickness







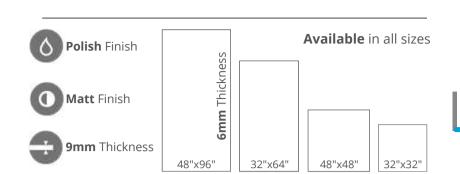


FACES 32"X32" | RANDOM









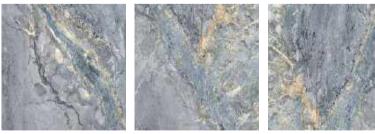
RP1054 BARDIGLIO



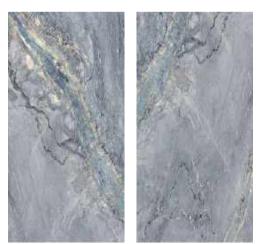
FACES 48"X96" | BOOKMATCH



FACES 48"X48" | RANDOM



FACES 32"X32" | RANDOM



FACES 32"X64" | RANDOM







WALL| **BARDIGLIO** (48X96)



WALL | **BARDIGLIO** (32X64)



WALL & FLOOR | BARDIGLIO (32X32)



9mm Thickness

Available size



RP1063
CERCHIO INNOTTONE



FACE 32"X32" | BOOKMATCH





Polish Finish

Available size

Matt Finish

32"x32" 9mm Thickness

RP1064 NASTRO INNOTTONE



FACE 32"X32" | BOOKMATCH









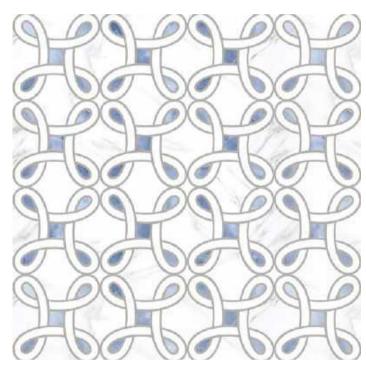
Matt Finish



9mm Thickness

32"x32"

RP1065 AZUL BAHIA TWIST



FACE 32"X32" | BOOKMATCH







32"x32"





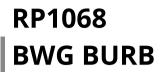


FACE 32"X32" | BOOKMATCH



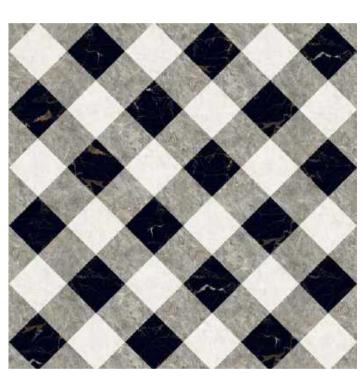






9mm Thickness

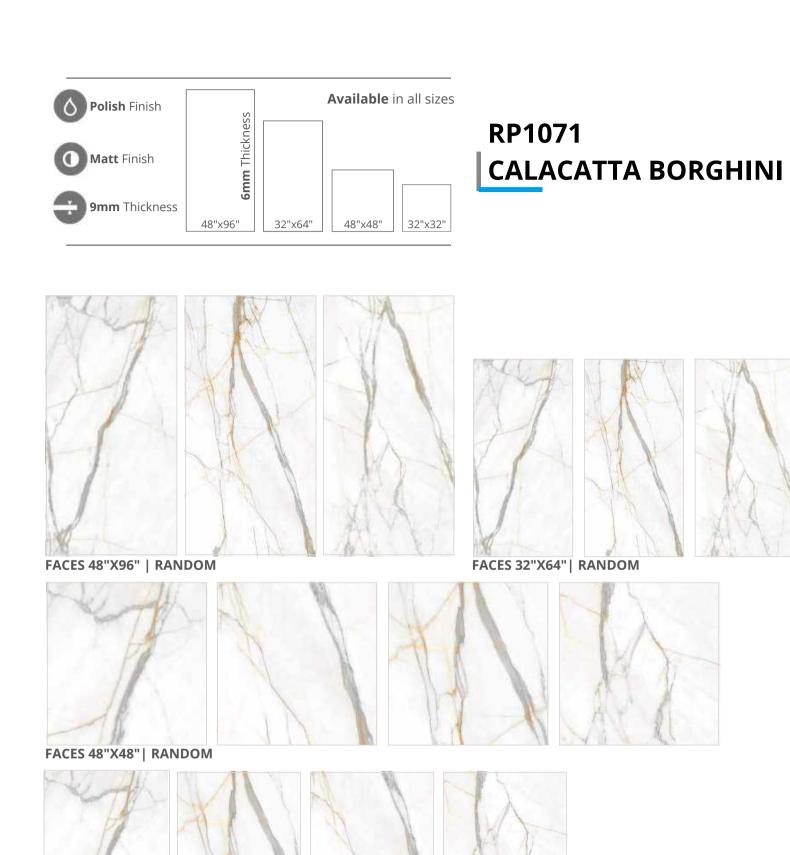
32"x32"



FACE 32"X32"| BOOKMATCH







FACES 32"X32" | RANDOM





WALL & FLOOR | CALACATTA BORGHINI (48X96)



FLOOR| CALACATTA BORGHINI (48X48)



WALL & FLOOR | CALACATTA BORGHINI (32X64)



WALL & FLOOR | CALACATTA BORGHINI (32X32)







WALL & FLOOR | CALACATTA UDI (48X96)

WALL & FLOOR | CALACATTA UDI (48X48)







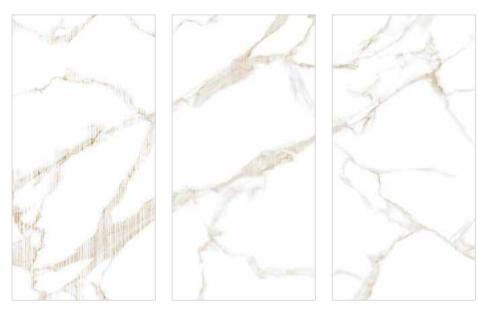
WALL & FLOOR | CALACATTA UDI (32X32)

24"x48"









FACES 24"X48" | RANDOM







WALL | CALACATTA UDI DECO (24X48)



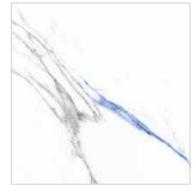






32"x32"

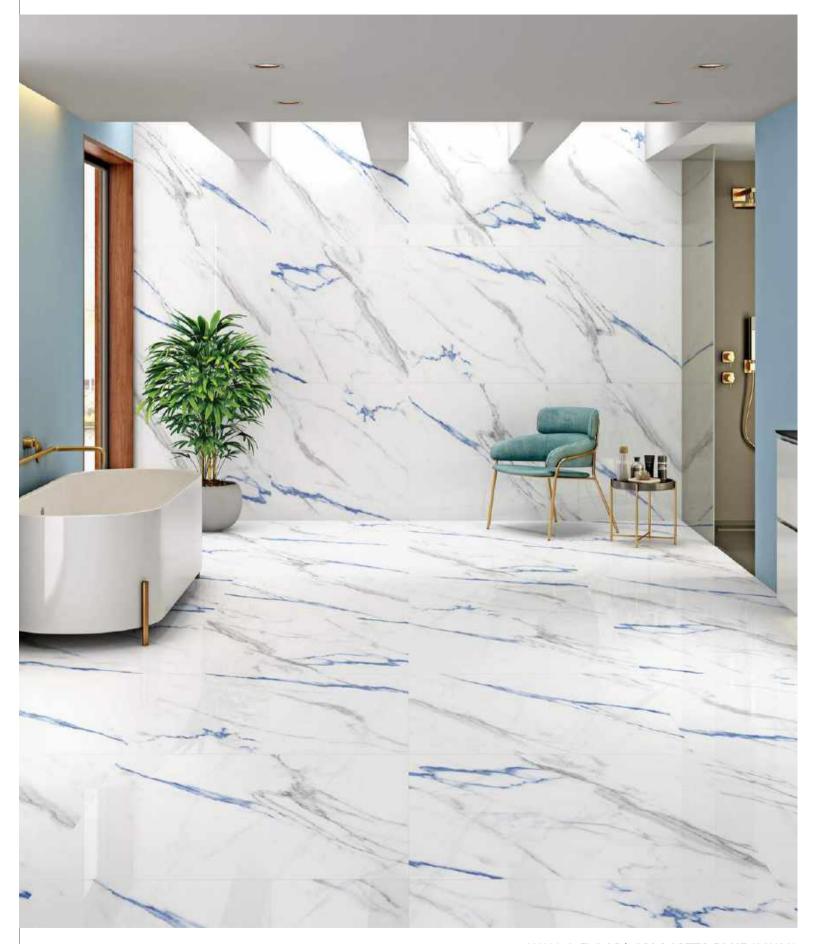




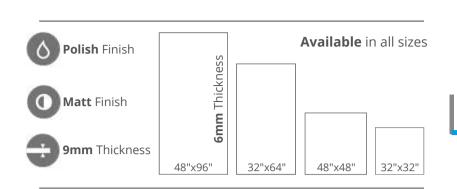


FACES 32"X32" | RANDOM

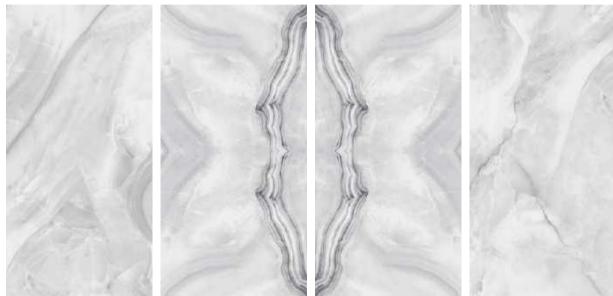




WALL & FLOOR | CALACATTA BLUE (32X32)



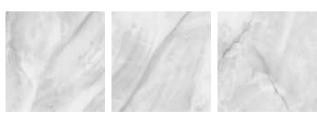
RP1079 **AGATE GREY**



FACES 48"X96" | BOOKMATCH



FACES 48"X48" | RANDOM



FACES 32"X32" | RANDOM



FACES 32"X64" | RANDOM



THE LARGE FORMAT PORCELAIN SPECIALISTS



WALL | AGATE GREY (48X96)









WALL | **AGATE GREY** (32X32)





FACES 48"X48" | RANDOM



FACES 32"X32" | RANDOM



FACES 32"X64" | RANDOM







WALL| **AGATE WHITE** (48X96)

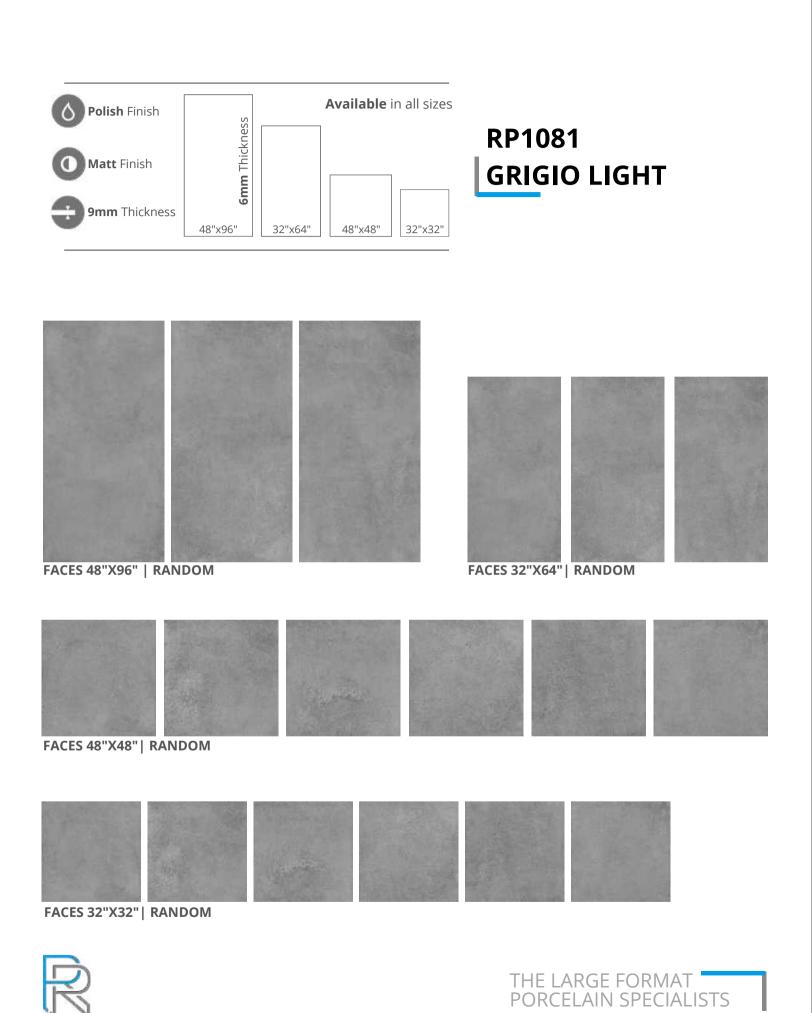








FLOOR | **AGATE WHITE** (32X32)







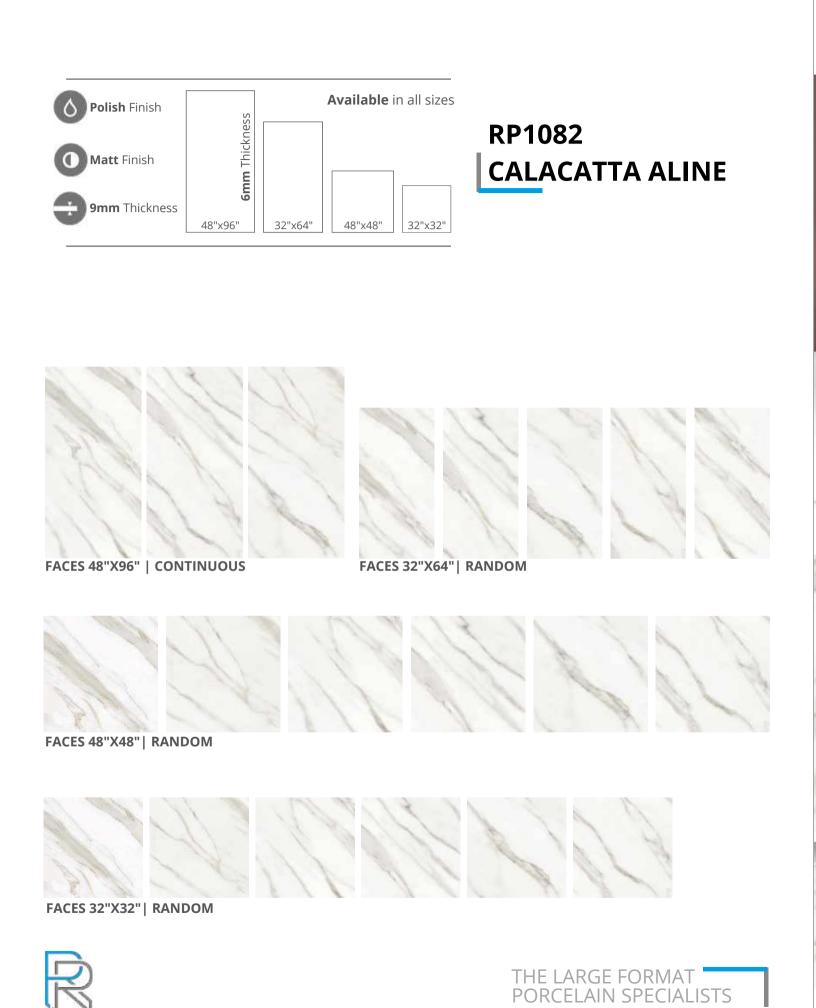
WALL & FLOOR | GRIGIO LIGHT (48X96)





WALL & FLOOR | **GRIGIO LIGHT** (32X64)

FLOOR | **GRIGIO LIGHT** (32X32)







WALL| CALACATTA ALINE (48X96)

WALL & FLOOR | CALACATTA ALINE (48X48)







FLOOR | CALACATTA ALINE (32X32)







WALL| CRISTALLO GREY (48X96)

FLOOR| CRISTALLO GREY (48X48)





WALL & FLOOR | CRISTALLO GREY (32X64)

FLOOR | CRISTALLO GREY (32X32)

Available sizes Peco Finish Pero Finish Pero Finish RP1083 CRISTALO GREY DECO 24"x48"













WALL| **BLUE STORM ONYX** (48X96)

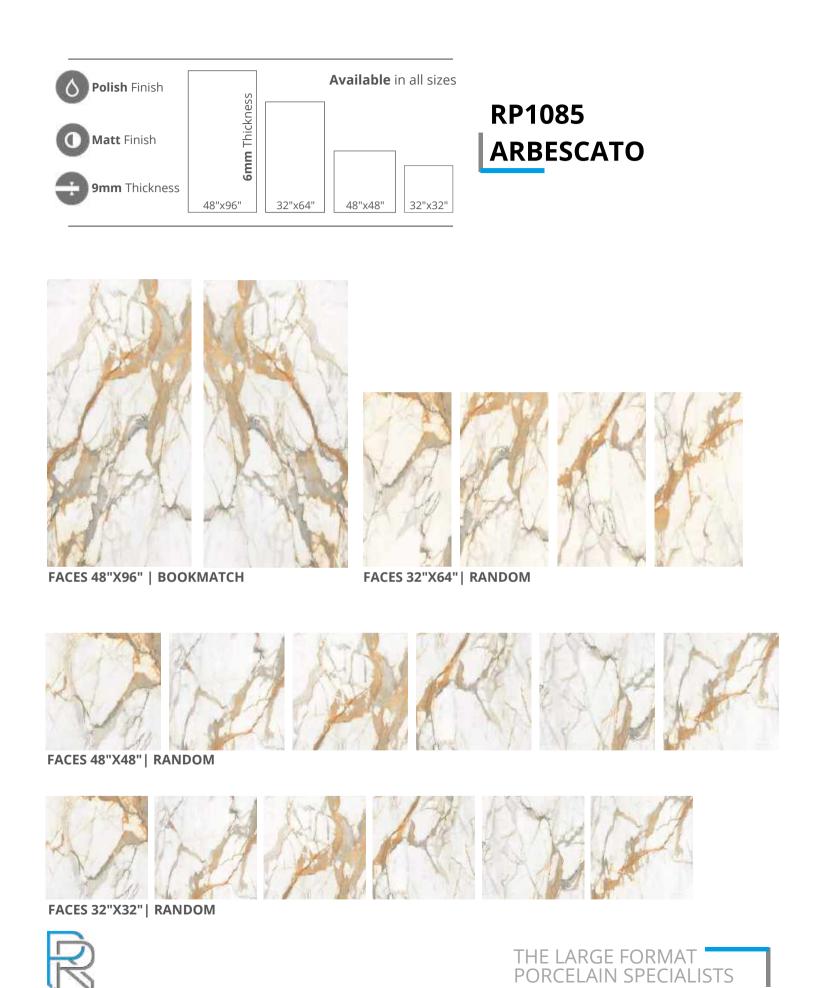
FLOOR | **BLUE STORM ONYX** (48X48)







WALL & FLOOR | BLUE STORM ONYX (32X32)







WALL | **ARBESCATO** (48X96)

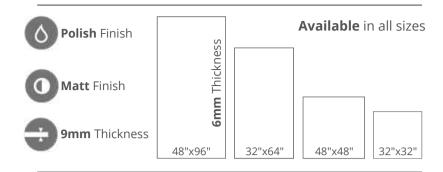
FLOOR| **ARBESCATO** (48X48)



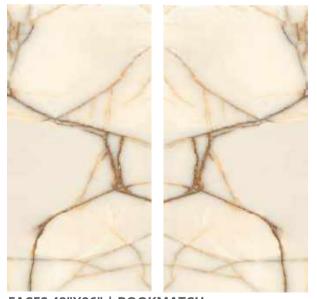


WALL | **ARBESCATO** (32X64)

FLOOR | ARBESCATO (32X32)



RP1086 CALACATTA SPIDER GOLD







FACES 48"X96" | BOOKMATCH

FACES 32"X64" | RANDOM



FACES 48"X48" | BOOKMATCH



FACES 32"X32" | BOOKMATCH





WALL & FLOOR | CALACATTA SPIDER GOLD (48X96)



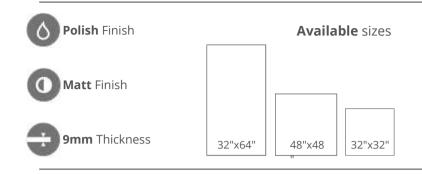
WALL & FLOOR | CALACATTA SPIDER GOLD (48X48)







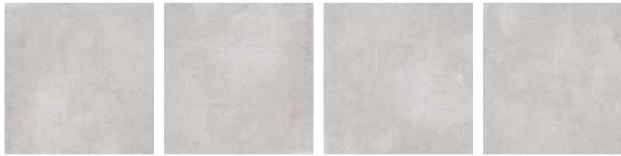
WALL & FLOOR | CALACATTA SPIDER GOLD (32X32)



RP1087 GRAFITO



FACES 32"X64" | RANDOM



FACES 48"X48" | RANDOM



FACES 32"X32" | RANDOM





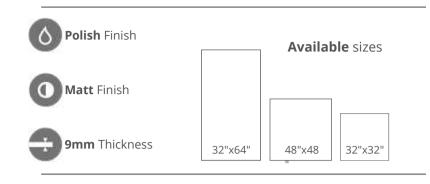
FLOOR | **GRAFITO** (48X48)



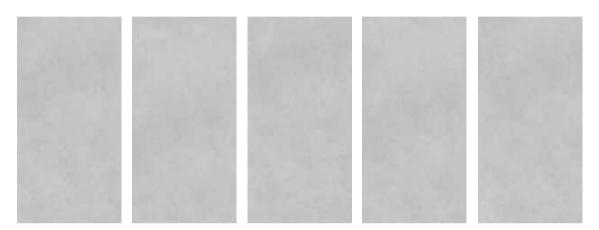


WALL & FLOOR | **GRAFITO** (32X64)

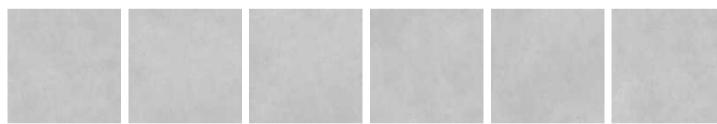
WALL | **GRAFITO** (32X32)



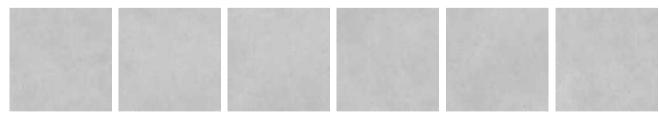
RP1088 CONCRETO



FACES 32"X64" | RANDOM



FACES 48"X48" | RANDOM



FACES 32"X32" | RANDOM







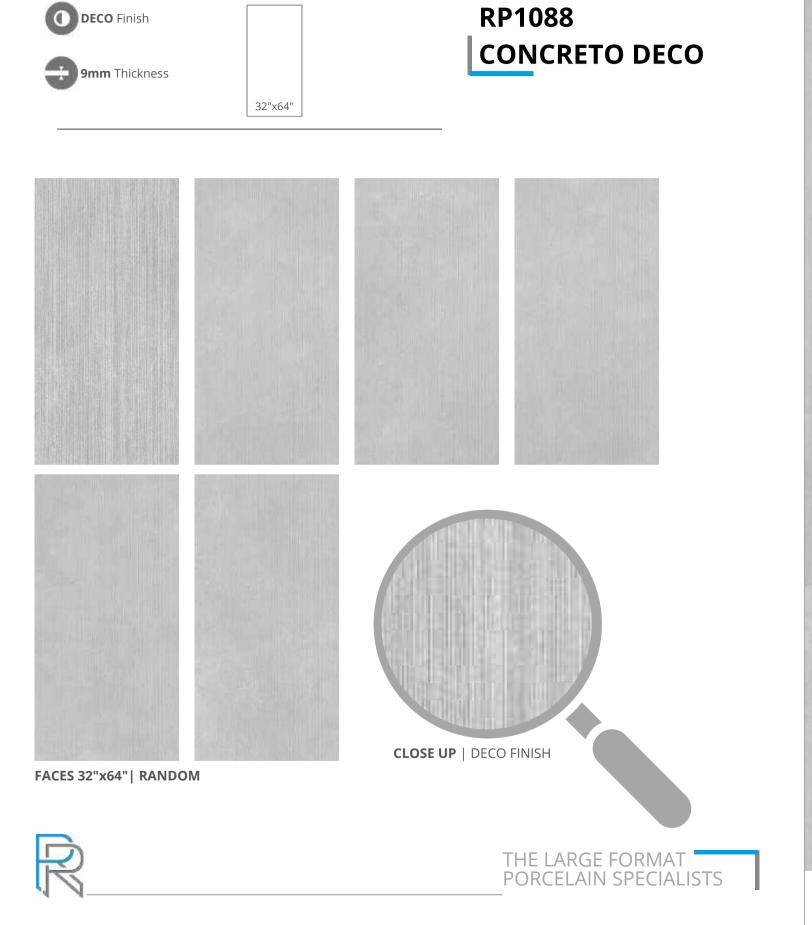
FLOOR | CONCRETO (48X48)





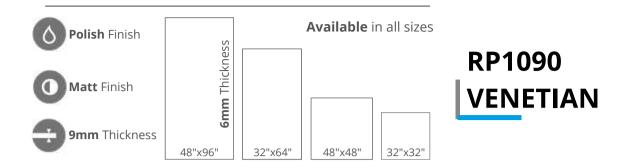


WALL & FLOOR | CONCRETO (32X32)





WALL | CONCRETO DECO (32x64)











FACES 48"X96" | RANDOM

FACES 32"X64" | RANDOM



FACES 48"X48" | RANDOM



FACES 32"X32" | RANDOM









WALL| **VENETIAN** (48X96)

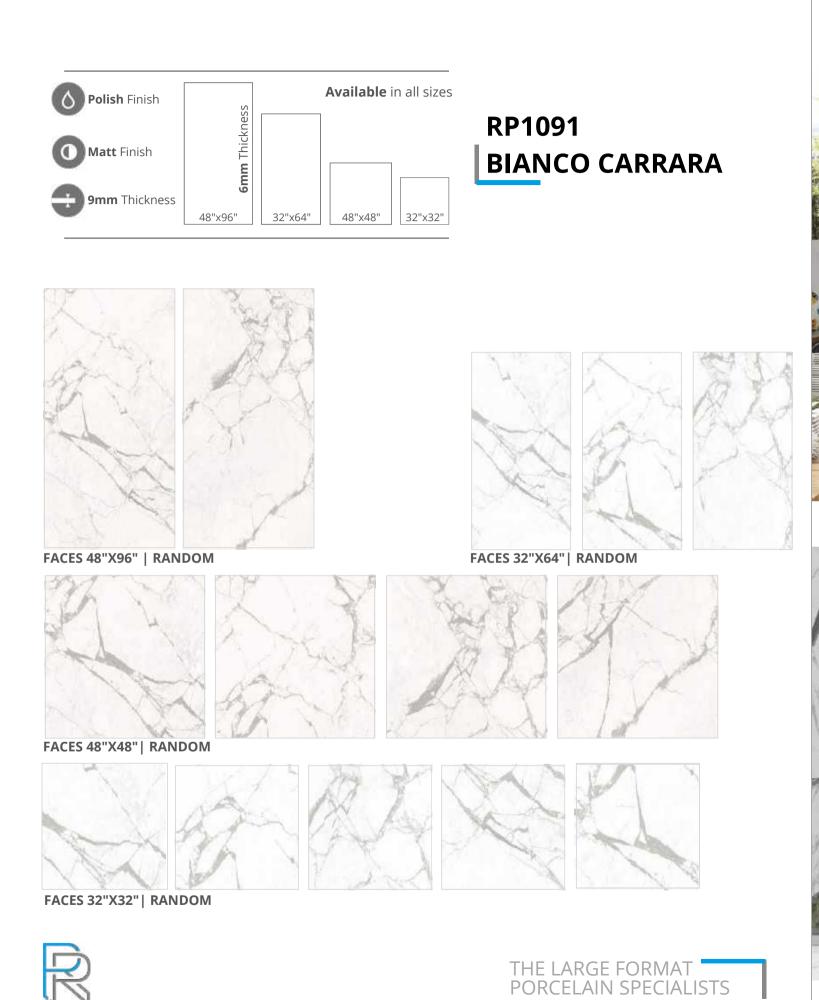
WALL & FLOOR | **VENETIAN** (48X48)





WALL | **VENETIAN** (32X64)

FLOOR | **VENETIAN** (32X32)









FLOOR| **BIANCO CARRARA** (48X48)







FLOOR | BIANCO CARRARA (32X32)



Matt Finish

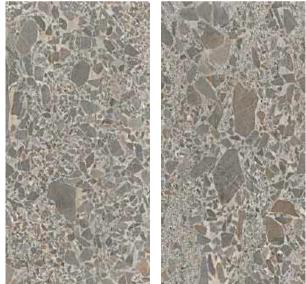
6mm Thickness

Available size

RP1093 CEPPO DI GRE



48"x96"



FACES 48"X96" | RANDOM









10"x63"

RP1094 RIVER WHITE



FACE 10"X63" | RANDOM











10"x63"

RP1095 RIVER BROWN



FACE 10"X63" | RANDOM











10"x63"

RP1096 RIVER SMOKE



FACE 10"X63" | RANDOM









32"x32"



9mm Thickness





FACES 32"X32" | RANDOM





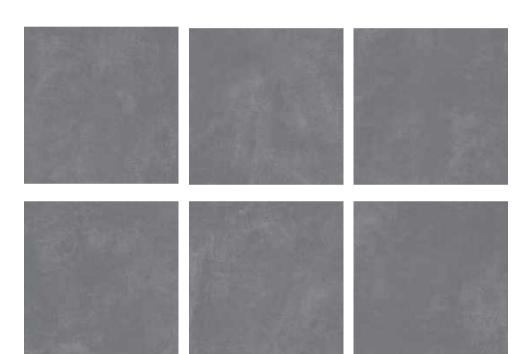






9mm Thickness

32"x32"



FACES 32"X32" | RANDOM







RP1104 STATUARIO GOLD

9mm Thickness

32"x32"





FACES 32"X32" | RANDOM

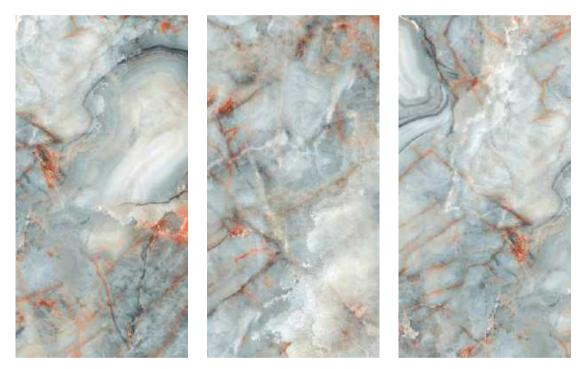






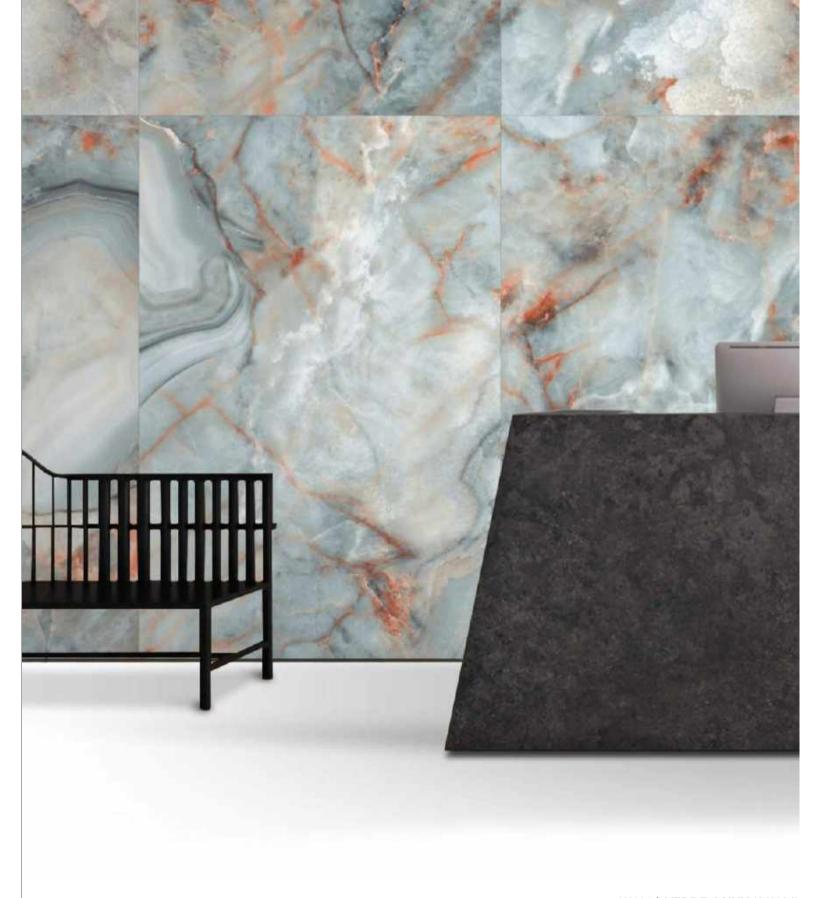
Polish Finish	Available sizes
Matt Finish	
9mm Thickness	32"x64"

RP1105 VERDE ONYX



FACES 32"X64" | RANDOM





Polish Finish	Available sizes	
Matt Finish		
9mm Thickness	32"x64"	

RP1106 NORDIC GREY



FACES 32"X64" | RANDOM







WALL & FLOOR | **NORDIC GREY** (32X64)



RP1107 NERO BASALTINA

9mm Thickness

32"x32"



FACES 32"X32" | RANDOM









9mm Thickness

32"x32"



FACES 32"X32" | RANDOM



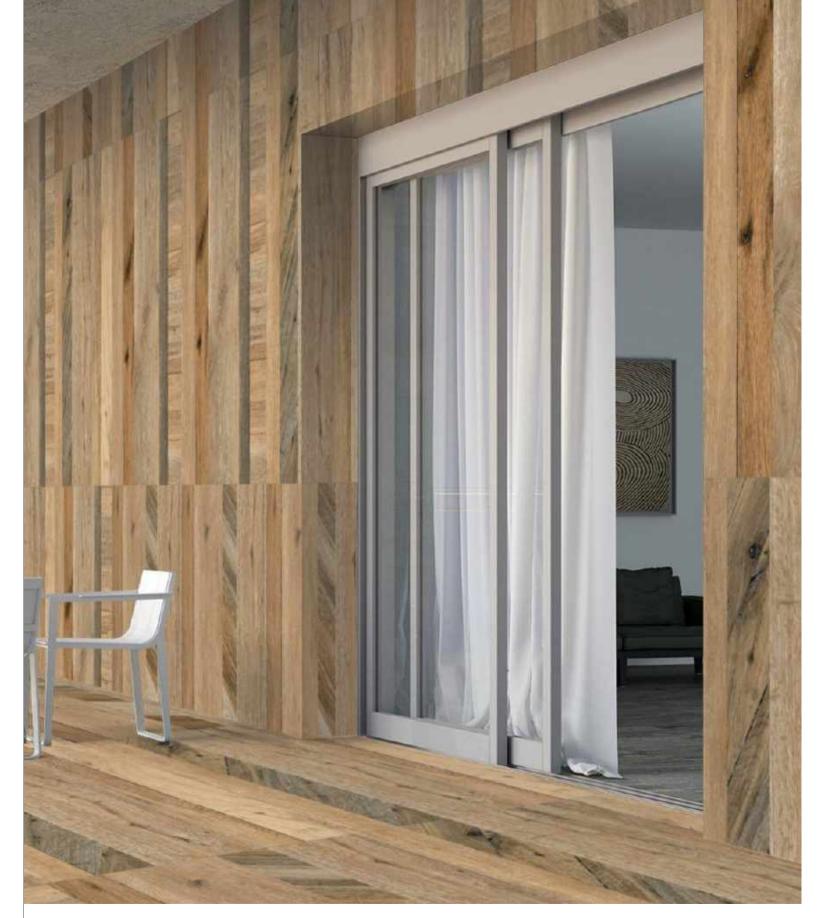


Polish Finish	Available sizes	
Matt Finish		
9mm Thickness	32"x64"	

RP1109 GRUNCHY WOOD

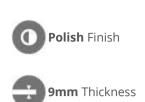


FACES 32"X64"| RANDOM













RP1110 GRAPHITE



FACES 32"X32" | RANDOM



FACES 32"X64" | RANDOM





WALL & FLOOR | **GRAPHITE** (32X64)



WALL & FLOOR | **GRAPHITE** (32X32)

RP1110 DECO Finish **GRAPHITE DECO** 9mm Thickness 32"x64" CLOSE UP | DECO FINISH FACES 32"x64" | RANDOM

THE LARGE FORMAT PORCELAIN SPECIALISTS

Available sizes





Polish Finish		Available sizes
Matt Finish		
9mm Thickness	32"x64"	32"x32"

RP1111 RUSTICO



FACES 32"X64" | RANDOM



FACES 32"X32" | RANDOM





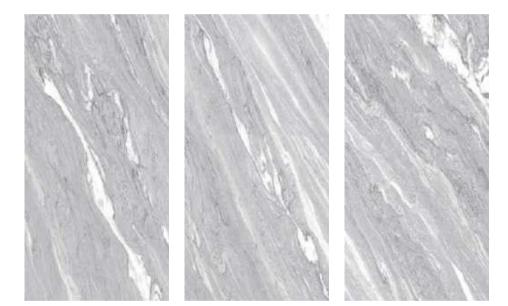
WALL & FLOOR | **RUSTICO** (32X64)



FLOOR | **RUSTICO** (32X32)

Polish Finish	Available sizes
Matt Finish	
9mm Thickness	32"x64"

RP1112 NUVALATO



FACES 32"X64" | RANDOM









32"x64"









FACES 32"x64" | RANDOM







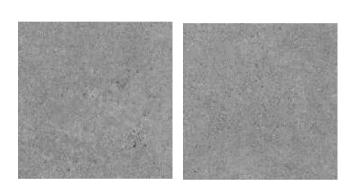
WALL | **NUVALATO DECO**(32x64)



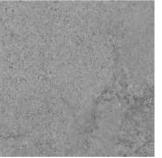


9mm Thickness

32"x32"









FACES 32"X32" | RANDOM





Polish Finish	Available sizes
Matt Finish	
9mm Thickness	32"x64"

RP1118 DILENGO LIGHT





FACES 32"X64"| RANDOM





WALL & FLOOR | **DILENGO LIGHT** (32X64)

32"x32"







RP1118 DILENGO LIGHT DECO











WALL | **DILENGO LIGHT DECO** (32x64)



WALL & FLOOR | **DILENGO LIGHT DECO** (32X32)

Polish Finish	Available sizes
Matt Finish	
9mm Thickness	32"x64"

RP1119 DILENGO DARK



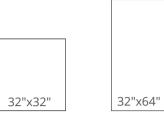












RP1119 DILENGO DARK DECO



FACE 32"x64" | RANDOM



FACE 32"X32" | RANDOM







WALL | **DILENGO DARK DECO** (32x64)



WALL & FLOOR | **DILENGO DARK DECO** (32X32)



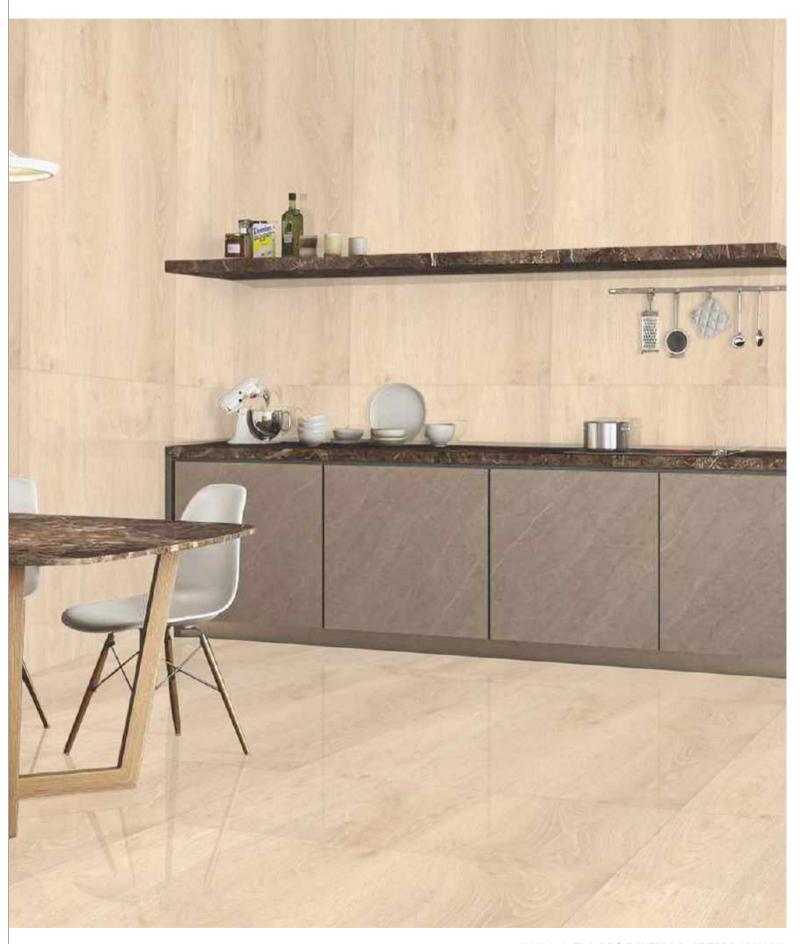
Polish Finish	Available sizes	5
Matt Finish		
Matt Fillish		
9mm Thickness	32"x64"	

RP1120 DILENGO CREMA



FACES 32"X64" | RANDOM

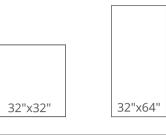




WALL & FLOOR | **DILENGO CREMA** (32X64)







RP1120 DILENGO CREMA DECO



FACE 32"x64" | RANDOM



FACE 32"X32" | RANDOM





CLOSE UP | DECO FINISH



WALL | **DILENGO CREMA DECO** (32x64)



WALL| **DILENGO CREMA DECO** (32X32)

Polish Finish	Available sizes
Matt Finish	
9mm Thickness	32"x64"

RP1121 DILENGO BIANCO



FACES 32"X64" | RANDOM





32"x32"







RP1120 DILENGO BIANCO DECO



FACE 32"x64" | RANDOM



FACE 32"X32" | RANDOM







WALL | **DILENGO BIANCO DECO** (32x64)



WALL| **DILENGO BIANCO DECO** (32X32)



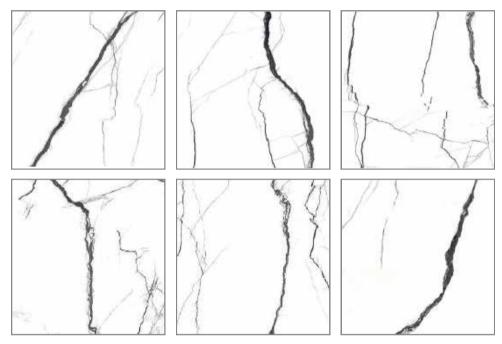




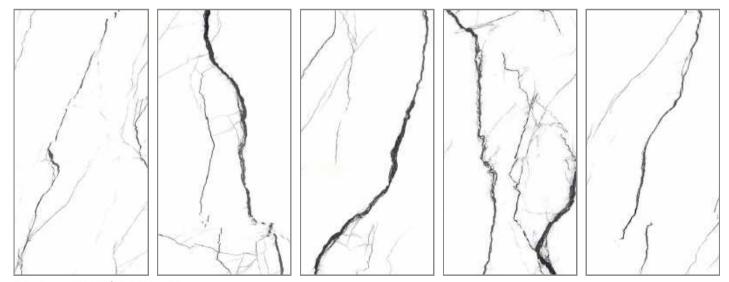
32"x32"



RP1122 CALCATTA SV



FACES 32"X32" | RANDOM



FACES 32"X64" | RANDOM





WALL| CALCATTA SV (32X64)



WALL & FLOOR | CALCATTA SV (32X32)







32"x32"









FACES 32"X32" | RANDOM





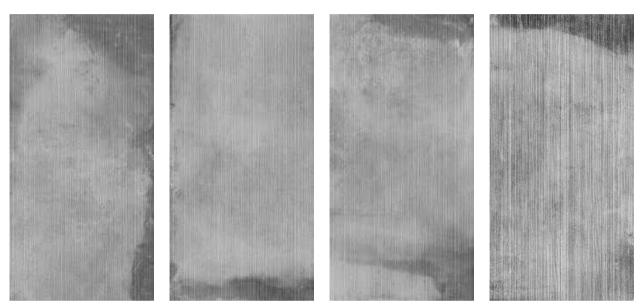


32"x64"









FACES 32"x64"| RANDOM







WALL | **GREY MOON DECO**(32x64)



32"x32"



9mm Thickness





FACES 32"X32" | RANDOM





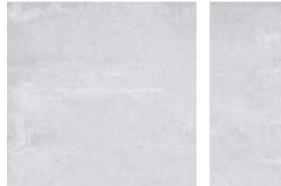




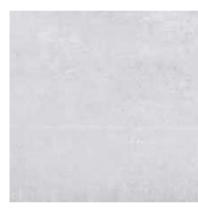
32"x32"



9mm Thickness

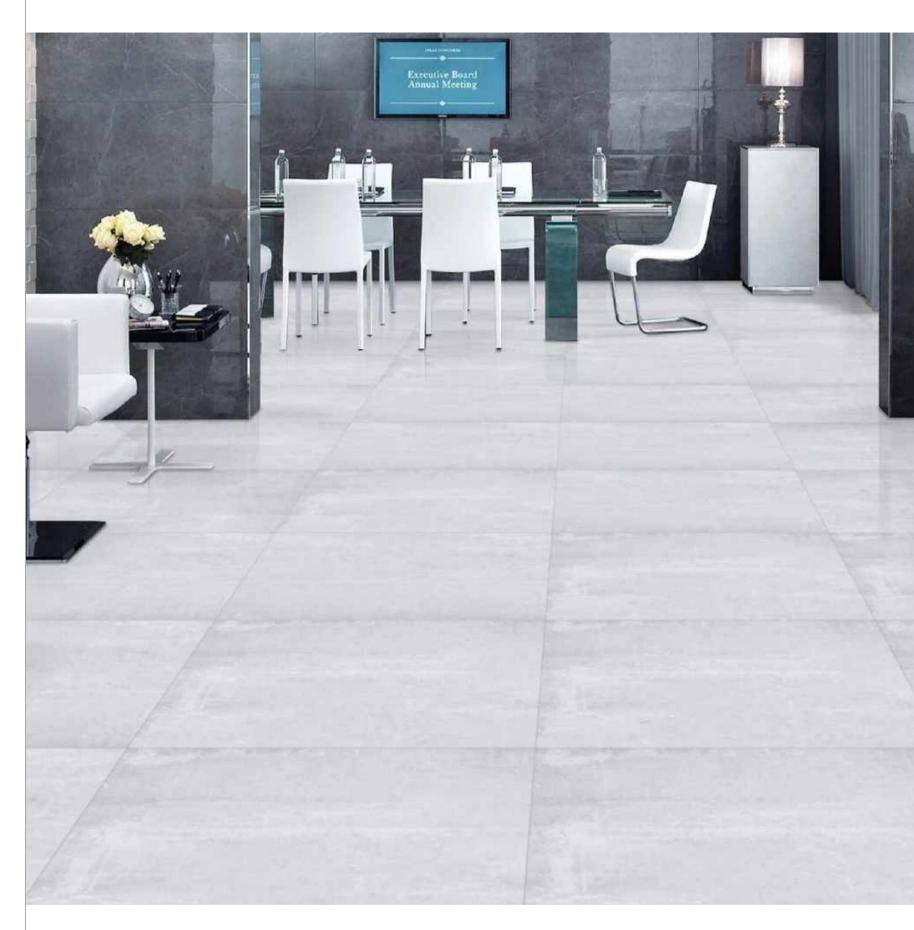






FACES 32"X32" | RANDOM









9mm Thickness

32"x32"







FACES 32"X32" | RANDOM









9mm Thickness

32"x32"







FACES 32"X32" | RANDOM





FLOOR | NIRGATO (32X32)





RP1200 INVISIBLE PEARL



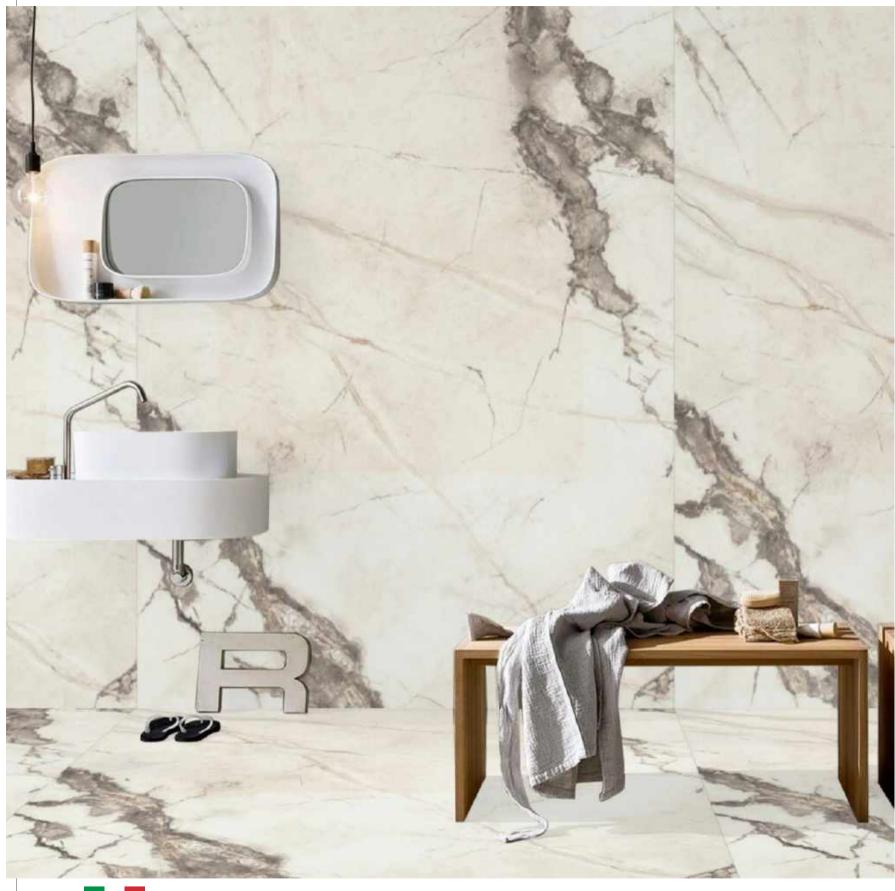
48"x111"



FACES 48"X111" | RANDOM



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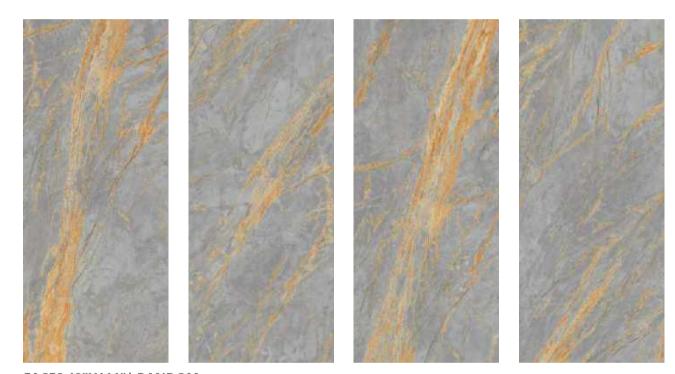


WALL & FLOOR | INVISIBLE PEARL (48X111)





RP1201 SIGNORIA GRIGIO SIENA



FACES 48"X111" | RANDOM









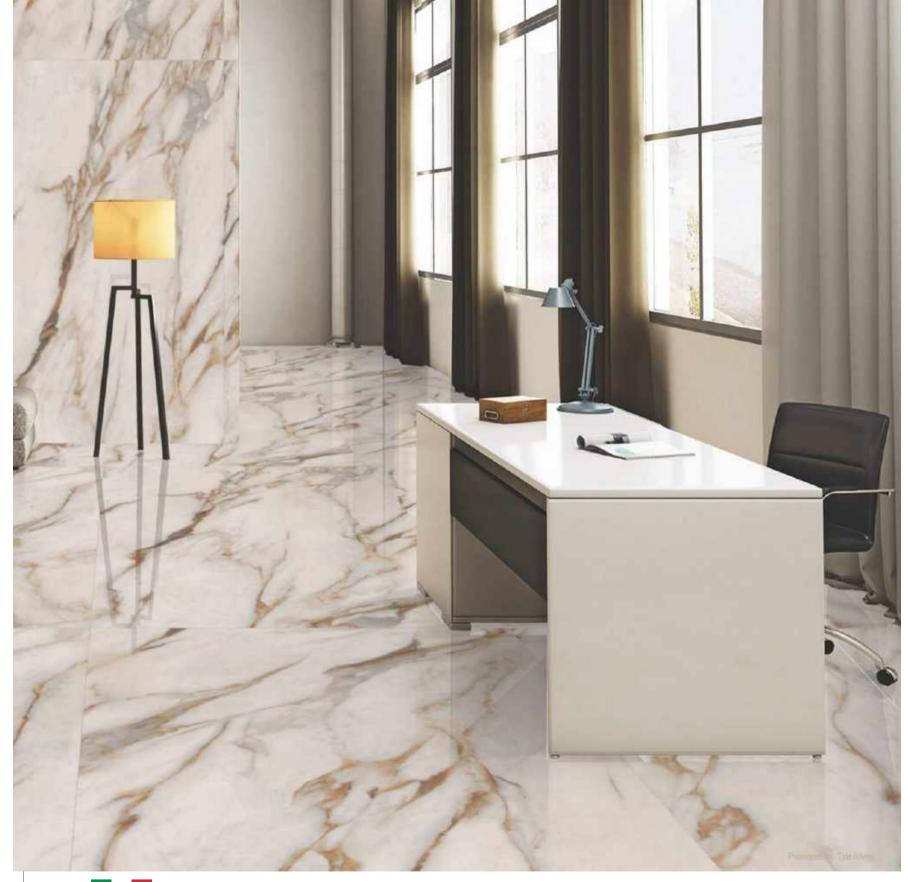


48"x111"

RP1202 CALACATTA VENA ORO













9mm Thickness

Available size

RP1203 CRYSTAL

48"x111"





FACES 48"X111"| RANDOM



THE LARGE FORMAT PORCELAIN SPECIALISTS





WALL & FLOOR | CRYSTAL (48X111)





48"x111"

RP1204 STATUARIO VERSILIA







FACES 48"X111" | RANDOM











48"x111"

RP1205 TITANIUM BLACK



FACES 48"X111" | RANDOM









RP2001 LIMESTONE ASH

20mm Thickness

24"x24"

















FACES 24"X24" | RANDOM







RP2002 LIMESTONE BEIGE

20mm Thickness

24"x24"













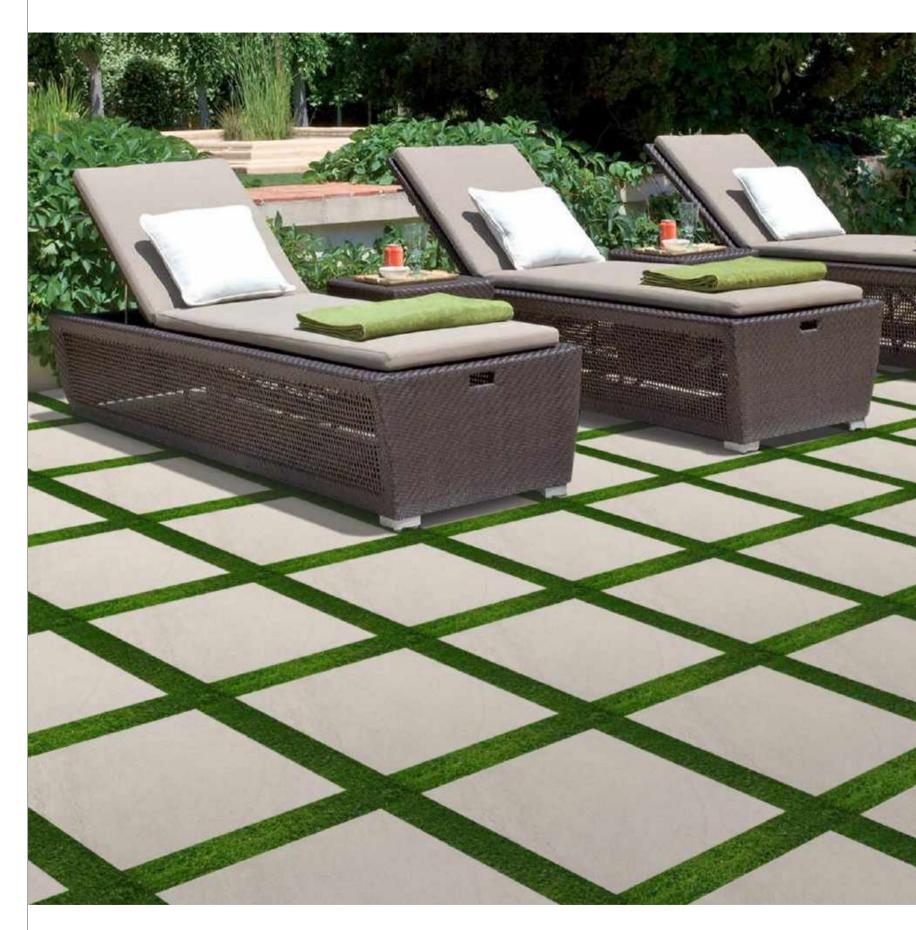




FACES 24"X24" | RANDOM









20mm Thickness

Available size



RP2003 LIMESTONE ICE

















FACES 24"X24" | RANDOM





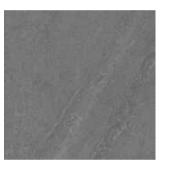


20mm Thickness

Available size



RP2004 LIMESTONE COAL







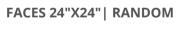








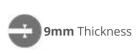






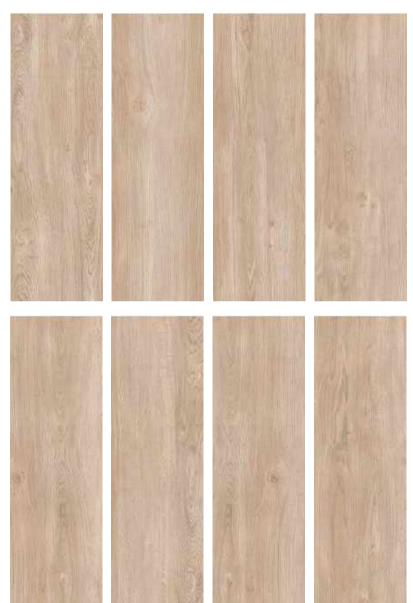






RP2005 FJORD HONNING













PAVER | **FJORD HONNING** (16X48)





RP2006 FJORD GRA



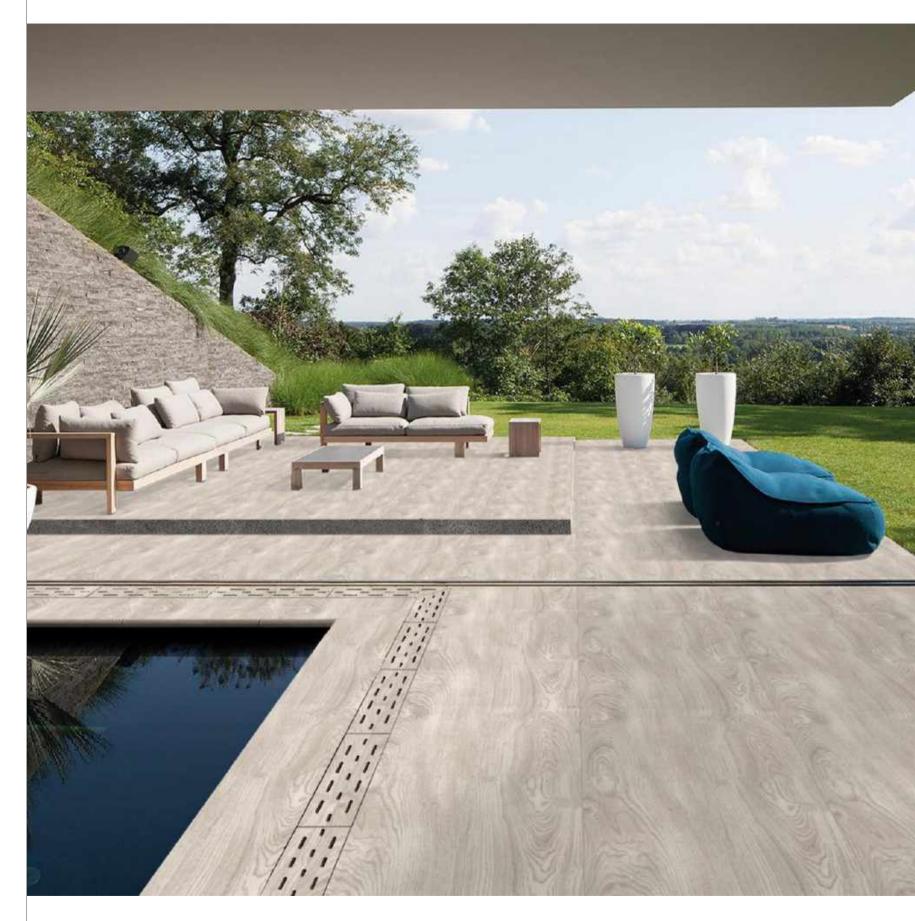




FACE 16"X48" | RANDOM









RP2007 DURANGO MEDIUM

20mm Thickness

24"x24"



FACES 24"X24" | RANDOM



THE LARGE FORMAT PORCELAIN SPECIALISTS



PAVER | LDURANGO MEDIUM (24X24)





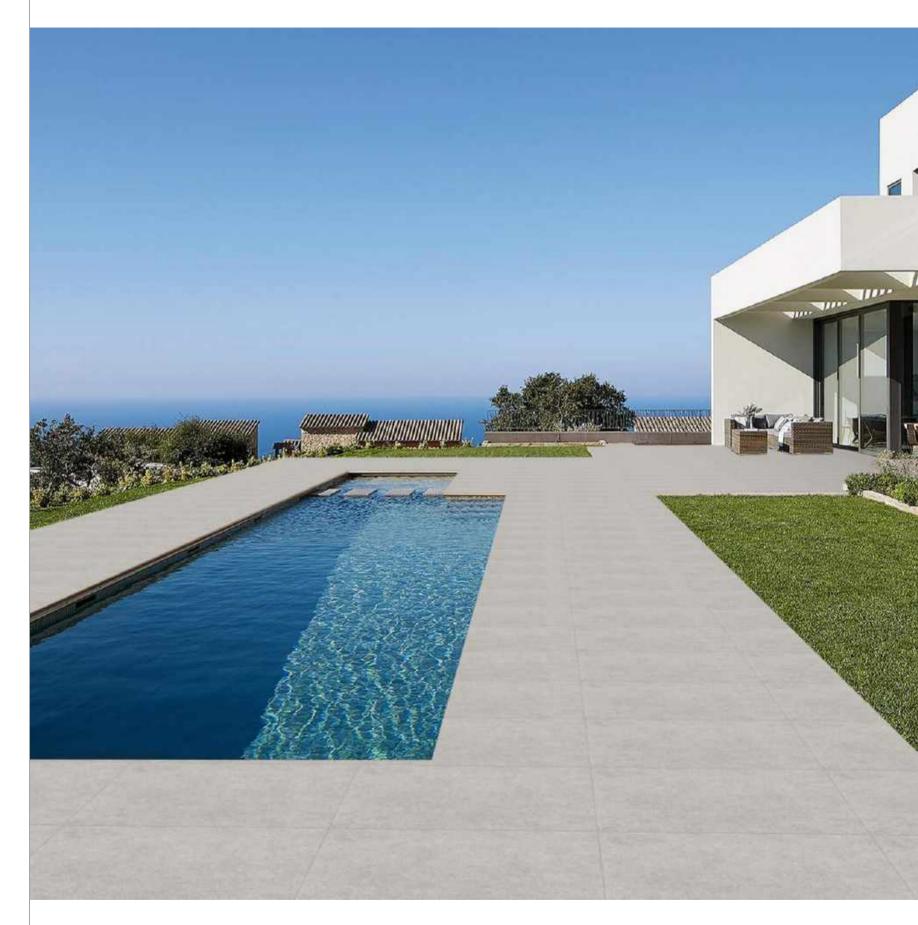
24"x24"

RP2009 TECHNIKA GRIGIO



FACE 24"X24" | RANDOM





Flamed Finish

Available size

24"x24"

RP2010 TECHNIKA ANTRACITE

20mm Thickness

FACE 24"X24" | RANDOM





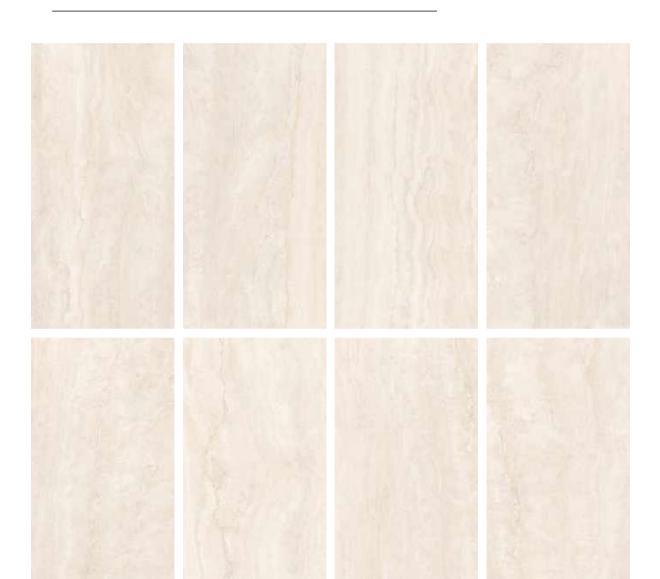






18"x36"

RP2011 ENDLESS BONE



FACES 18"X36" | RANDOM



THE LARGE FORMAT PORCELAIN SPECIALISTS



FLOOR | **ENDLESS BONE** (18X36)





18"x36"

RP2012 ENDLESS SILVER





FACES 18"X36" | RANDOM







FLOOR | ENDLESS SILVER (18X36)





RP2013 ENDLESS WHITE

18"x36"



FACES 18"X36" | RANDOM



THE LARGE FORMAT PORCELAIN SPECIALISTS



FLOOR | ENDLESS WHITE (18X36)

Flamed Finish

Available size

24"x24"

RP2014 MORRACAN ARABISCH

20mm Thickness













FACES 24"X24" | RANDOM







Flamed Finish

Available size

RP2015 MORRACAN LILLIE

20mm Thickness

24"x24"











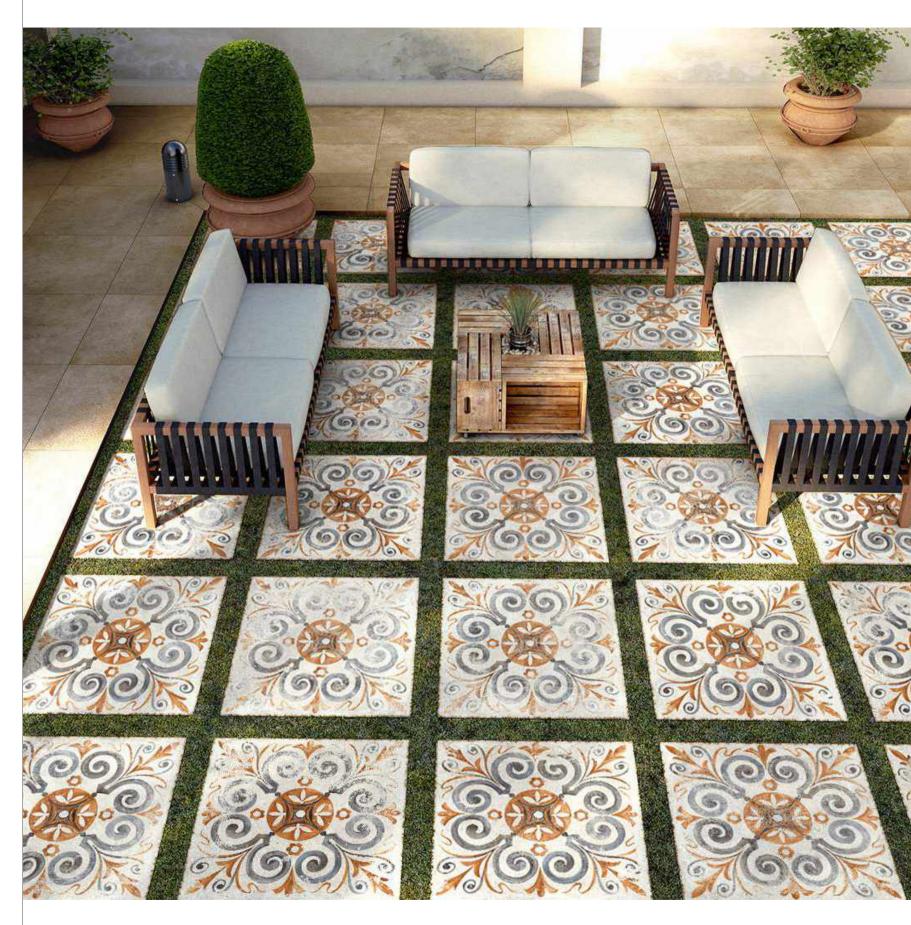






FACES 24"X24" | RANDOM





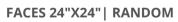


24"x24"

RP2016 MORRACAN GEOMETRISCH

20mm Thickness









Flamed Finish

Available size

24"x24"

RP2017 MORRACAN BLUMEN

20mm Thickness











FACES 24"X24" | RANDOM







PAVER | MORRACAN BLUMEN (24X24)

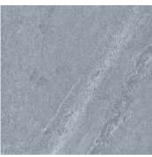


24"x24"

RP2018 LIMESTONE GUNMETAL

20mm Thickness

















FACES 24"X24" | RANDOM







PORCELAIN INSTALLATION GUIDE



Large Format Tile & Thin Porcelain Slab Panels

Raphael Porcelain large format tile has been around for some time but has exploded in popularity over the past few years. Traditionally, tiles came in a relatively standard size, such as $8" \times 8"$ floor tiles and $4" \times 4"$ wall tiles. Today, tiles are available from tiny glass mosaics that are $3/8" \times 3/8"$ to large format thin porcelain tile panels that can be as large as $5' \times 10'$. Compared with standard tile installations, large format tiles present new challenges for tile installers. When installing large format tiles, specific procedures and methods must be adhered to so that the tile doesn't crack and leave behind a failed installation. Handling, lippage, subfloor preparation, mortar coverage, and curing/protection require extra consideration during the large format tiles' installation process. Thin Porcelain Tile ("TPT"). Raphael Porcelain large format tile panels also called "thin tile" and "thin tile panels," are characterized by large panels up to $5' \times 10'$ with a thickness of 6mm.

Advantages

For consumers, a large format tile is aesthetically pleasing within a wide variety of colors and designs available. As a design element, large format tiles can be used to make a smaller room

appear bigger. Many people also enjoy the look of thin grout lines commonly used with large format tiles. Additionally, because each tile offers more coverage per tile than traditionally sized tile, there are fewer grout lines. With fewer grout lines, maintenance becomes easier because a tile face is typically easier to clean than a grout line. As many of us know, even sealed or epoxy-based grout can be challenging to keep clean and looking its best. Raphael Porcelain large format tile also offers some extended benefits. Raphael Porcelain tile products are easy to clean and offer scratch, fire-resistant, and waterproof surfaces.

Subfloor Preparation -

With Raphael Porcelain large format tile, the subfloor or substrate must be properly prepared before laying any tile, and the larger the tile size, the more essential this becomes. It must be level and flat. Any dips or humps can lead to lippage that large format tile installations are prone to. Lippage is when one edge of a tile is not level with the adjacent tile's edge. This leads to the finished surface having an uneven appearance, degrading the quality of the installation. Additionally, uneven surfaces will make it difficult to achieve the proper mortar coverage and bond, another important aspect of installing large format tile. Raphael Porcelain large format tiles, only LFT Thinset, are approved.

Variance in Substrate

With traditional tile that is less than 15" x 15", there can be up to a 1/4" variance in the substrate over a 10' span. For tile with at least one edge greater than 15", the American National Standards Institutes (ANSI) recommends a maximum variance of 1/8" over a 10' span and 1/16" over a 24" span. A 6-foot level or 10-foot straight edge can be used to measure variance in the substrate. Large format tiles will highlight any imperfections in the subfloor, so If the subfloor exceeds these specifications, the subfloor must be corrected with a self-leveling underlayment, patch, or grinding it down.

Self-leveling Underlayments

A self-leveling underlayment is a cement-based product that can be poured on the subfloor to fix small imperfections in the subfloor and even the surface. As it cures, the self-leveling underlayment produces a smooth and flat surface ready for tiling. For minor variances, a trowel applied self-leveling patch can be used to bring the substrate to tolerance. Patching compounds can also be used to fix small variances on walls as well. The industry recommends using substrate preparation products and installation products from the same manufacturer to ensure compatibility.

Mortar

Using the appropriate thin-set/mortar is very important for a successful installation. With traditionally sized tile installations, a thin-set is used to bond the tile to the substrate. With large format tiles that often have a 1/4" (6mm) thickness, a regular thin-set can be problematic. For many large format tile installations, it is usually recommended to use a Large format tile thin-set. Using an inadequate amount of mortar can lead to hollow spots. These hollow spots indicate that the tile is not fully supported, and the tile becomes susceptible to cracking and ore loosening at these points.

Mortars designed for Large format Tile (LFT) will support the tile without the tile slumping into the mortar. These mortars, however, can be difficult to trowel and work with in general. Newer types of high-performance medium-bed mortars are formulated to be lighter and much easier to trowel. When selecting a mortar, it is always advisable to consult the material manufacturer for mortar recommendations as not all mortars are suitable for every application.

Trowel Size —

Complete mortar coverage is an essential part of Raphael Porcelain large format tile installations. Without the proper coverage, the tile and gout become susceptible to cracking along with a loss of bond to the tiles. To achieve full coverage, start by using the appropriate trowel and troweling technique. For many large format tile installations, a larger trowel such as 1/2" x 1/2" square notch or a 3/4" x 3/4" rounded notch will help attain adequate coverage. For larger tiles, a U-notch trowel may be necessary for correct coverage.

With a correct trowel, a proper setting bed will be produced to eliminate voids and reduce time spent resetting tiles that don't have full coverage. There is no exact standard for trowel size selection, so that that trowel size may vary for different jobs and substrates. However, the larger the tile size, the larger the trowel that is generally needed. For instance, a 1/2" x 1/2" square or round notch trowel is commonly used for tiles sized from 13" to 20" while a 3/4" x 3/4" rounded notch trowel is typically used for tiles larger than 20". For thin porcelain tile panels, a specialty euro/zipper trowel is often used to achieve full coverage.

Troweling Thinset -

When applying the thinset to the substrate, the thinset should be combed in a linear, uniform direction. With the trowel held at a 45-degree angle, drag the trowel across the thinset in one direction leaving behind straight and full "ribbons" of thinset. Using straight trowel lines will also help prevent voids or air from becoming trapped between the tile and substrate for proper coverage and adhesion.

Back Buttering

While an LFT thinset will generally require proper coverage, back buttering also helps to achieve full coverage. Back buttering is the process of using the flat side of the trowel to apply a thin layer thinset or mortar to the back of the tile before setting it. This helps to fill any voids on the back of the tile. Back-buttering is especially important with natural stone products such as travertine, granite, marble, slate, etc. because of the naturally occurring spaces and imperfections on the back of the tile. By filling the spaces in with thinset before setting, weaker areas are strengthened, and better coverage is obtained.

For Raphael Porcelain thin panels, a different method is used for back buttering. Instead of using the trowel's flat side to produce an even flat coat on the back of the tile, the trowel's notched side is used to create the same ribbons of thinset as used on the substrate. These thinset ridges should be in a level line across the back of the panel and line up parallel with the substrate's ridges of thinset on the substrate. By troweling both the backside of the panel the same as the substrate, 100% coverage can be achieved, which is essential for Raphael Porcelain thin panel installations' success.

Crack Isolation -

Large format tiles are more susceptible to cracking than smaller sized tiles. Movement, along with tiny cracks in the subfloor, can transfer to the tile and result in cracks. Traditionally, reinforced mortar beds had been used to allow the substrate and tile covering to move independently of each other and prevent the transfer of cracks from the substrate to covering. However, reinforced mortar beds add significant additional height to the installation and aren't practical by today's new construction and remodeling standards.

Uncoupling membranes are designed to replace the traditional reinforced mortar beds without the addition of significant height. While each manufacturer will have its design, in general, uncoupling membranes are composed of a waffle-like grid structure with an anchoring fleece on one side, are lightweight, come in a roll, and are easy to install. Incorporating an uncoupling membrane or other crack isolation underlayment will help to prevent cracks from occurring.

Lippage

Even with a perfectly flat subfloor, lippage is still another concern for large format tile installations. Lippage occurs when the adjacent edges of the two tiles are not even. The bigger the tile, the more problematic lippage can become. Not only does lippage appear more prominent with larger size tiles, but it also presents a greater tripping hazard. Incorrect mortar bed, wrong setting techniques, and warpage can all lead to lippage.

With the correct setting, practices will help to prevent lippage. Another extremely valuable tool available today is tile leveling systems. Easy-to-use tile leveling systems will significantly help in creating lippage-free installations. These systems generally consist of a few components, including base/bottom plates, caps, straps, and installation gun and can be used for both floor and wall applications.

ON POLISHED TILE DO NOT USE THE SCREW DOWN SYSTEM

Tile Leveling System -

The Tile leveling system is a 3 component tile leveling system including shim, horseshoe, and installation tool, and can be used with grout joints down to 1/32". For wider grout joints, common tile spaces can still be used with the leveling system. The small, square foot/bottom plate attached to each strap's end is slid under the edge of the tile 2 -3 inches from each corner. The cap then slides down over the strap and will sit on the top part of the tile. With the strap and cap in place, the Installation Tool is used to tighten the assembly, locking all the tiles in place for a level and flat surface.

Raphael Porcelain does not guarantee and does not take responsibility for the installation due to many variables. This is a general guide on how to handle the installation of the material.