



**GENERAL  
CATALOG  
2023**

PISHGAMAN MEMARI ARYA has been established in 2008, started its activities by producing porcelain ceramics in OEM (Original Equipment Manufacturer) under its own brand of PMA. Believing in the value of investing in HR, all sales forces of the company, are selected among graduated CIVIL ENGINEERS with side operational experiences and have been trained in several different fields. PMA has Enriched its customers need cognition by large and wide connection with the country's be and reliable consultant companies and Architectural offices.

After the recognition of customer needs, most trended designs are selected from well-known Italian design ateliers finalized by high-quality raw materials, machinery, and technology.

All products are real porcelain, producing as full-body porcelain. Different range of porcelain ceramics producing in sizes 20x120 ,60x120, 80x160, 100x100, 120x240, 120x280 and 160x320 cm, carefully monitored by PMA's QC team. These products are appropriated for different application areas.

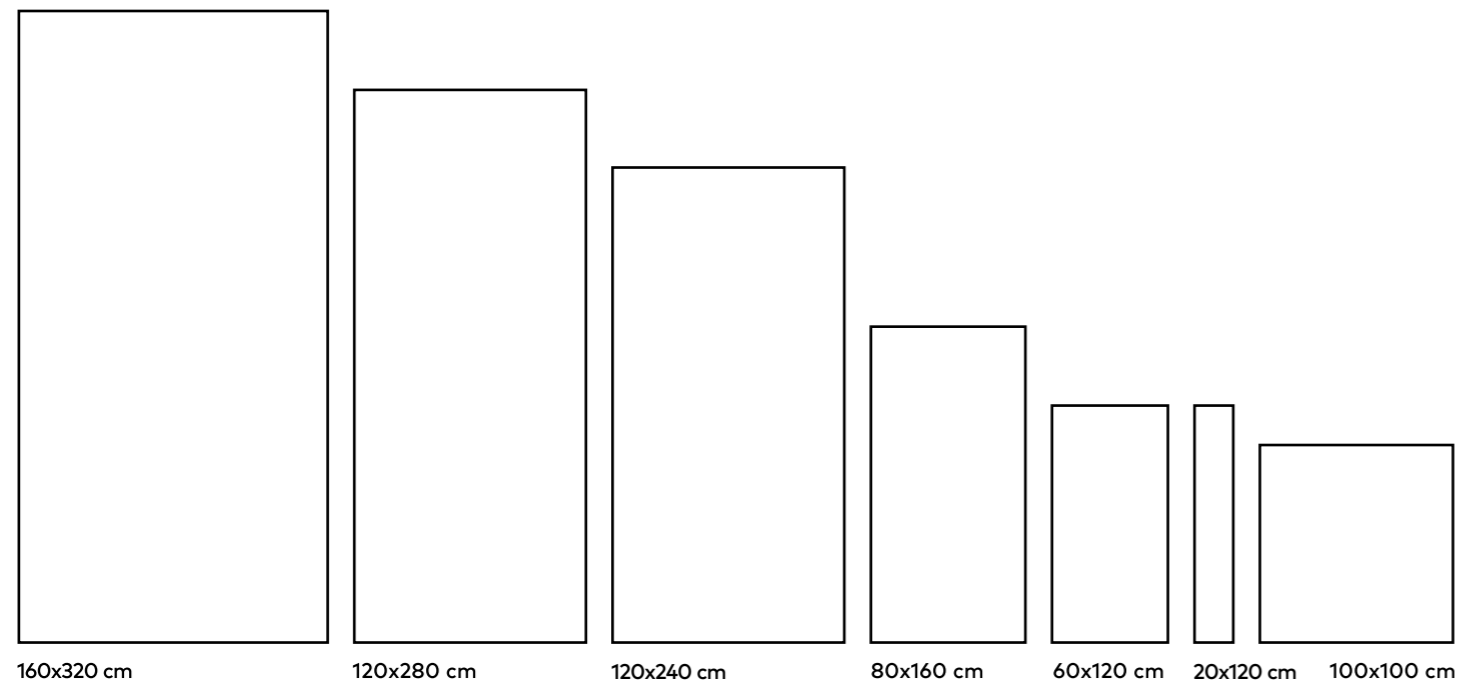
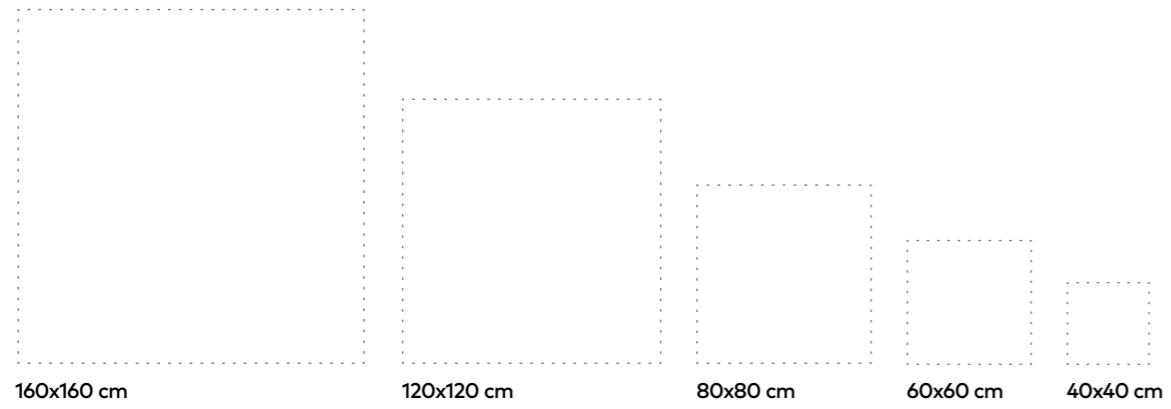
All products in PMA obtained ISIRI CERAMICS together with Europe CE. In addition, PMA is sampling randomly among its production and sending them to different qualified LAB such as Road, Housing & Urban Development Research Center, SAM institute Turkey, all reports are recorded. Product Selection Consulting Services are provided by our Sales Forces, considering Customer's need, situation, Project Fields of Application & Products technical characteristics.

To enhance the quality of our services after delivering the goods, all sales forces with the support of the technical support department provide different services such as technical visits during project execution, case assistance according to customers need.

All projects subject to heavy traffic with specific usage are supported by our technical assistance in order to improve their maintenance while periodic visits.

PMA has set its mission, based on Training & Learning. In this regard, has organized related seminars and workshops.

**WE WILL ALWAYS BE THERE, FOR YOU**



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PRODUCTS

## Calacatta Gold

Calacatta Gold marble tile is a treat to the eyes. Its creamy white background is gently infused with deep grey veining and the occasional ribbons of gold demonstrate a striking piece. The marble's natural and unlimited variation creates a luxurious artwork in every piece.

Wall: Calacatta Gold Polished — 120x280 cm  
Floor: Calacatta Gold Polished — 120x280 cm



Wall: Calacatta Gold Polished — 120x280 cm  
Floor: Calacatta Gold Polished — 120x280 cm





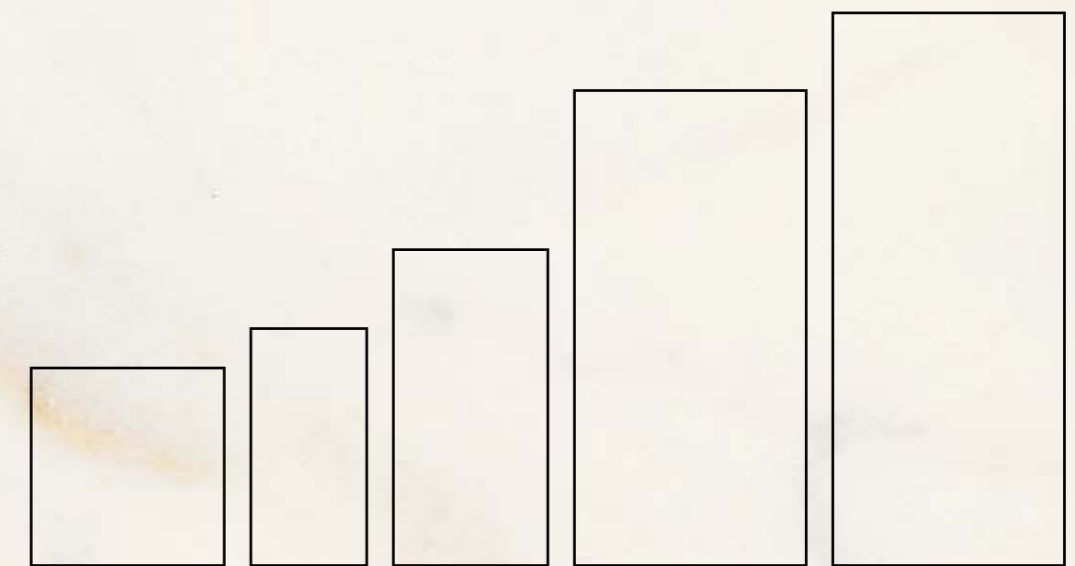
Wall: Calacatta Gold Polished — 120x280 cm  
Floor: Calacatta Gold Polished — 120x280 cm

Wall: Calacatta Gold Polished — 120x280 cm  
Floor: Calacatta Gold Polished — 120x280 cm



## Calacatta Gold

Available other sizes upon demand. For more detail please contact sales department.



**100x100 cm**  
FGPB-W1280  
Polished | 12 Faces

**60x120 cm**  
FGPB-R1280  
Polished | 11 Faces

**80x160 cm**  
FGPB-C1280  
Polished | 8 Faces

**120x240 cm**  
FGPB-A5180  
Polished | 6 Faces

**120x280 cm**  
FGPB-L5180  
Polished | 5 Faces

FGPB-L5155  
Polished | Book Match





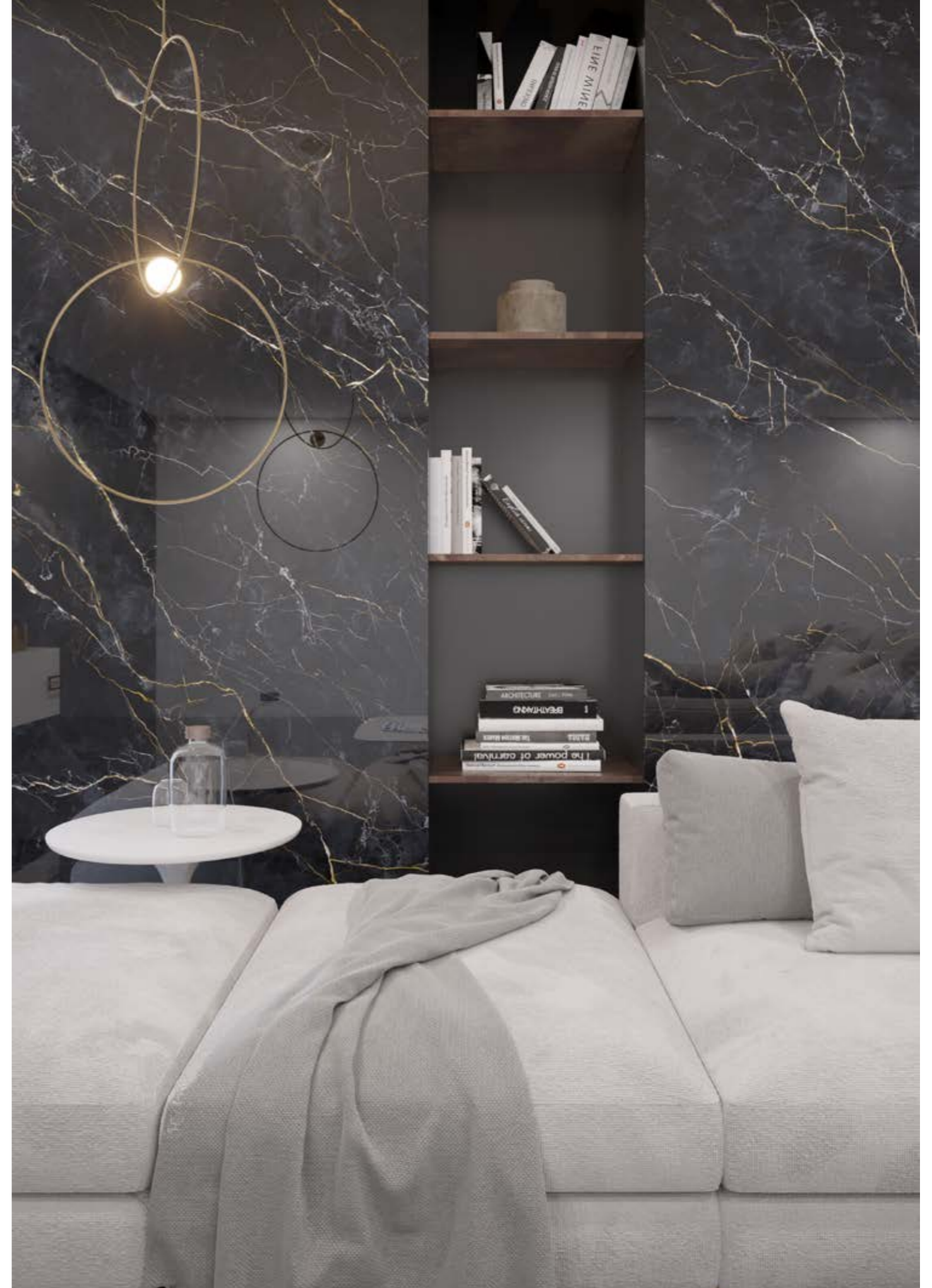
## Saint Laurent

Saint Laurent Marble with black background covered by white and golden veins is one of the most beautiful marble effect tiles. The combination of black, white, and gold creates a unique look for unique designs. Infuse depth and luxury into your home with PMA's daring Golden Black Marble effect floor and wall tiles.

Floor: Saint Laurent Polished — 120x280 cm



Wall: Saint Laurent Polished — 120x280 cm  
Floor: Saint Laurent Polished — 120x280 cm



Wall: Saint Laurent Polished — 120x280 cm



Saint  
Laurent



Available other sizes upon demand. For more detail  
please contact sales department.



100x100 cm  
FGPB-W5160  
Polished | 10 Faces



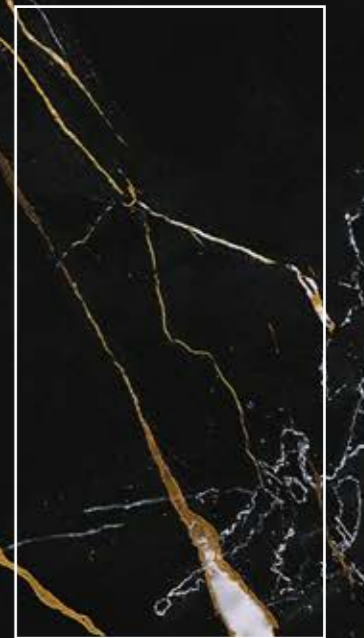
80x160 cm  
FGPB-C5160  
Polished | 8 Faces



120x240 cm  
FGPB-A5160  
Polished | 5 Faces



120x280 cm  
FGPB-L5160  
Polished | 5 Faces



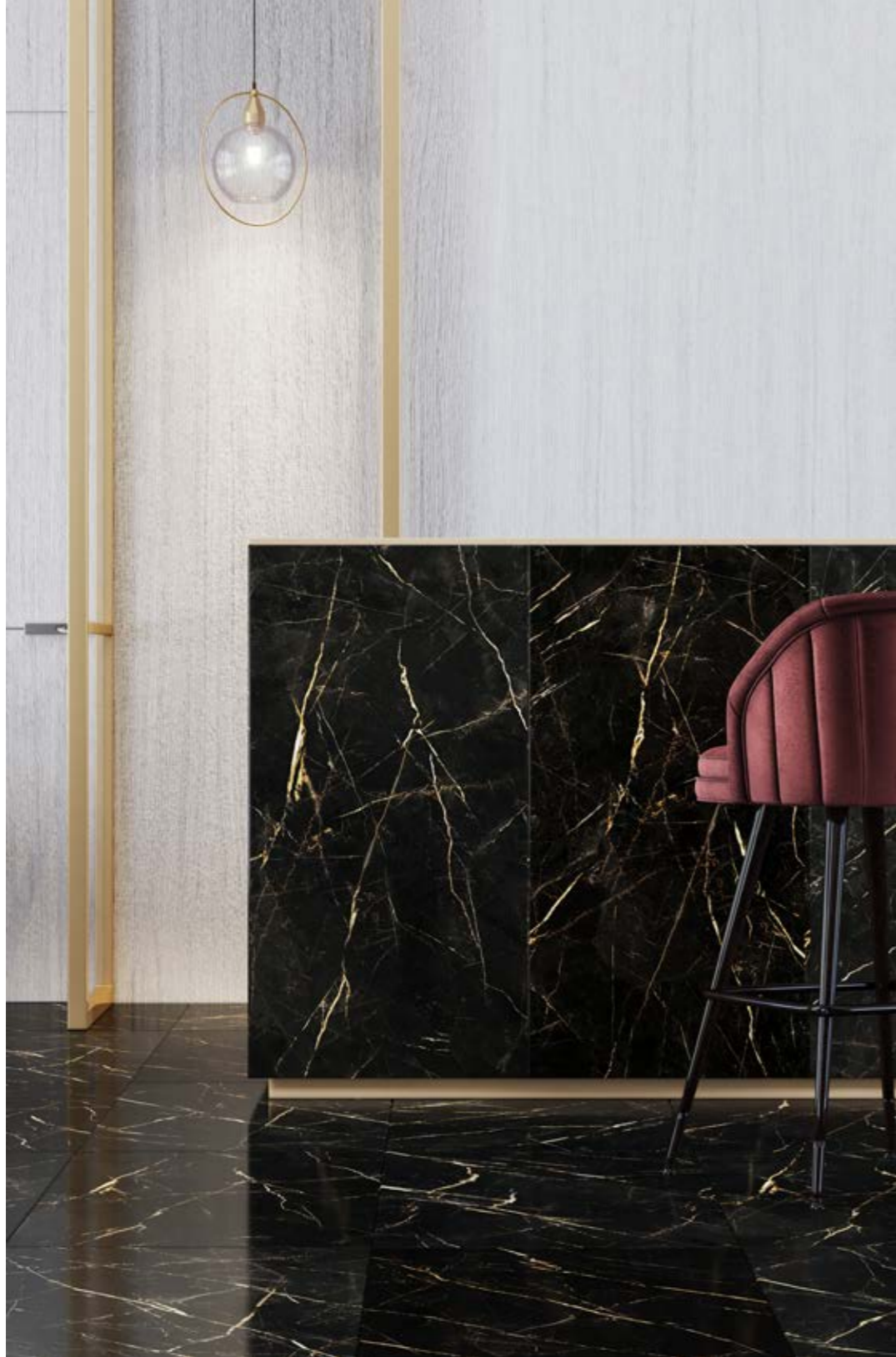
160x320 cm  
FGPB-X5160  
Polished | 4 Faces



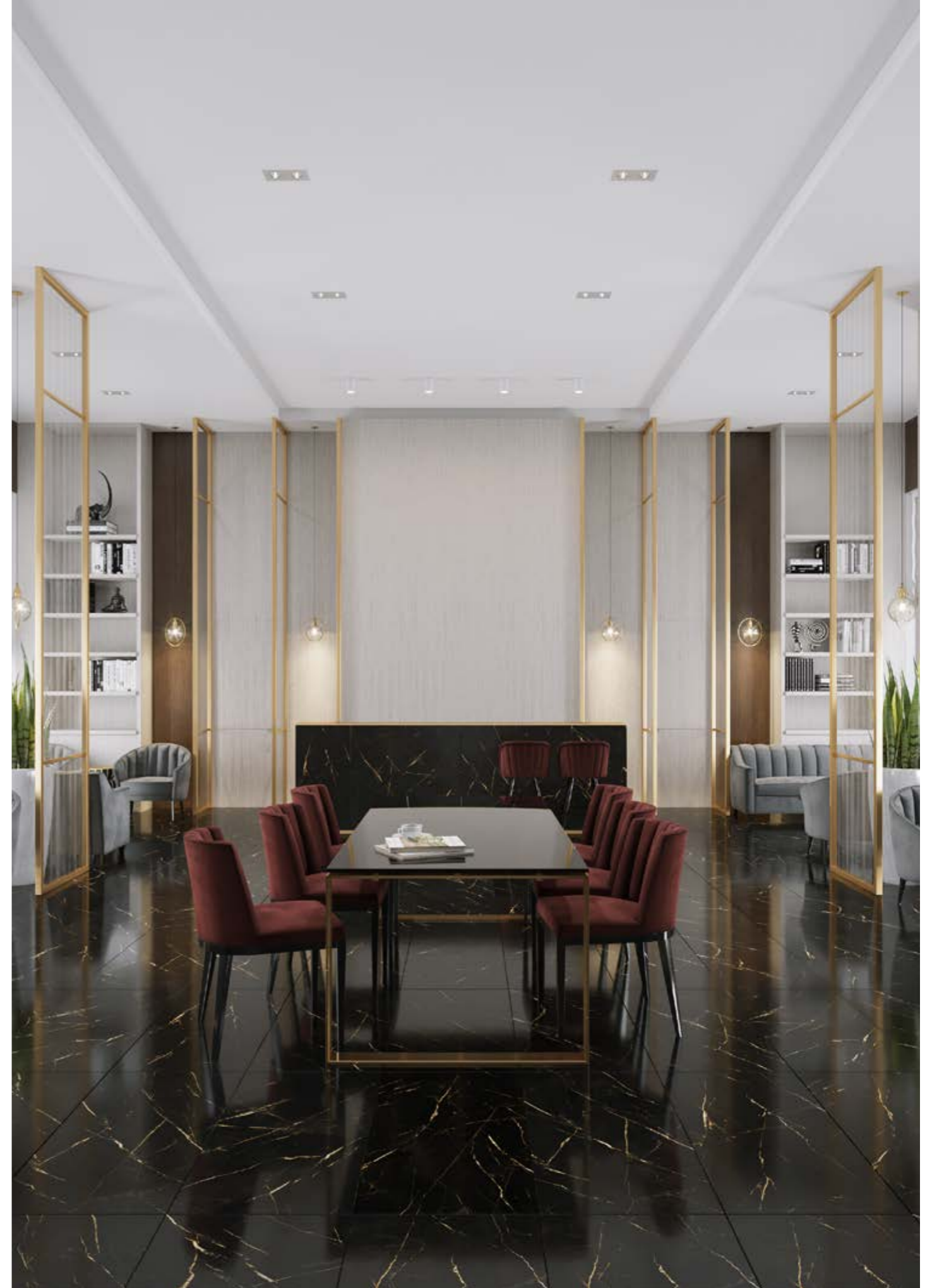
### Golden Black

Golden Black marble is one of the best designs of Royal collection, a combination of golden and black color with a few white streaks. Its marble-effect brings sort of glamor which only a dramatic worthwhile material is able to produce. Golden Black provides a sense of wealth and luxury. Its fine details such as random veining patterns and shiny surface, represents exclusive marble choice.

Floor: Golden Black Polished — 60x120 cm  
Wall: Calacatta Gold Polished — 60x120 cm



Floor: Golden Black Polished — 60x120 cm





Wall: Golden Black Polished — 60x120 cm  
Floor: Golden Black Polished — 60x120 cm

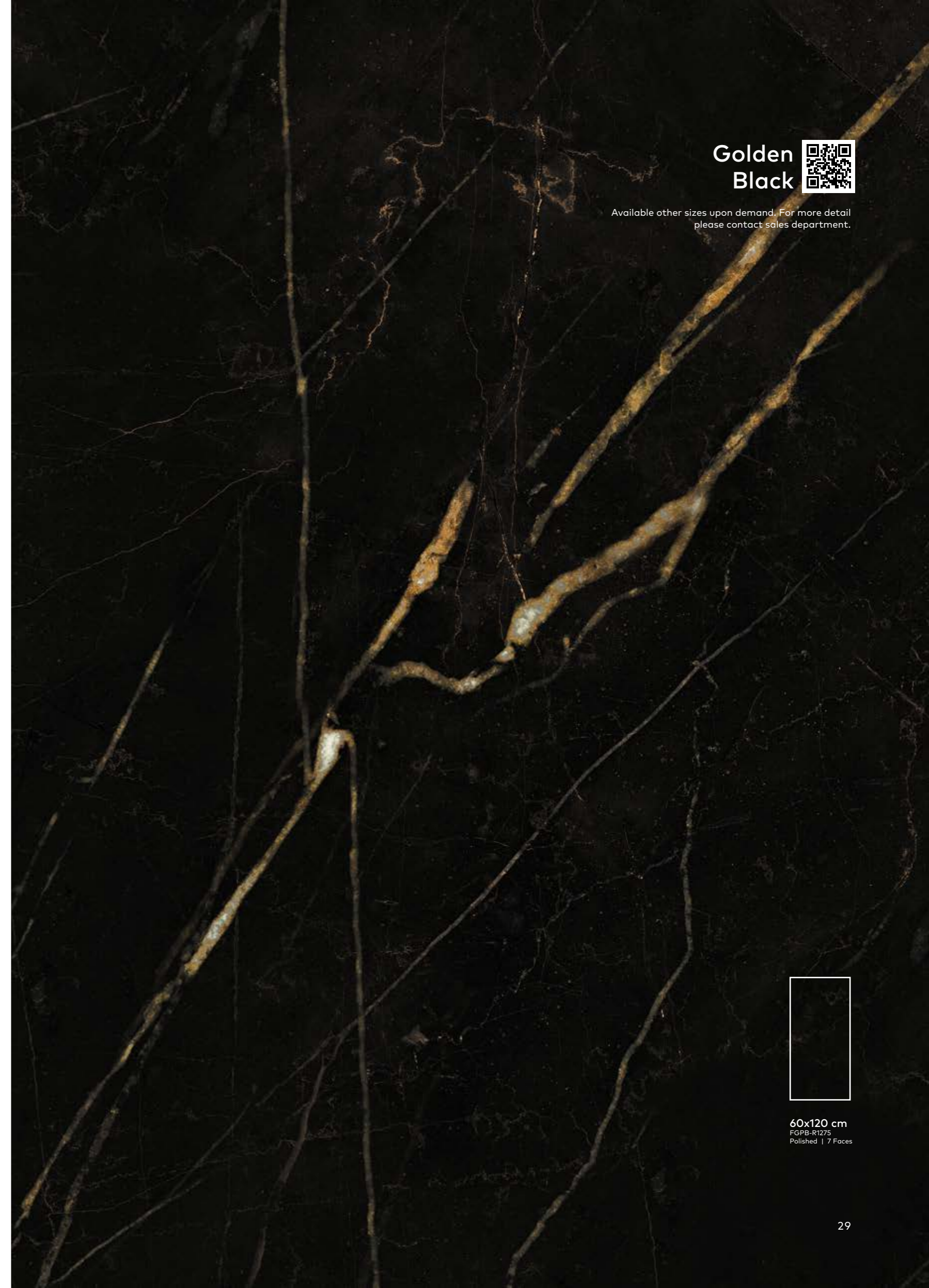
Wall: Golden Black Polished — 60x120 cm  
Floor: Golden Black Polished — 60x120 cm



Golden  
Black



Available other sizes upon demand. For more detail  
please contact sales department.



60x120 cm  
FGPB-RT275  
Polished | 7 Faces



## Calacatta Silva

Calacatta Silva has the beauty of natural marble. Thanks to its porcelain character this product is suitable for private spaces to commercial world and helps architects to create a combination of modernity and practicality.

Wall: Calacatta Silva polished — 120x280 cm  
Floor: Calacatta Silva polished — 120x280 cm





Floor: Calacatta Silva Semipolished — 60x120 cm





Floor: Calacatta Silva Semipolished — 60x120 cm  
Wall: Calacatta Silva Semipolished — 60x120 cm

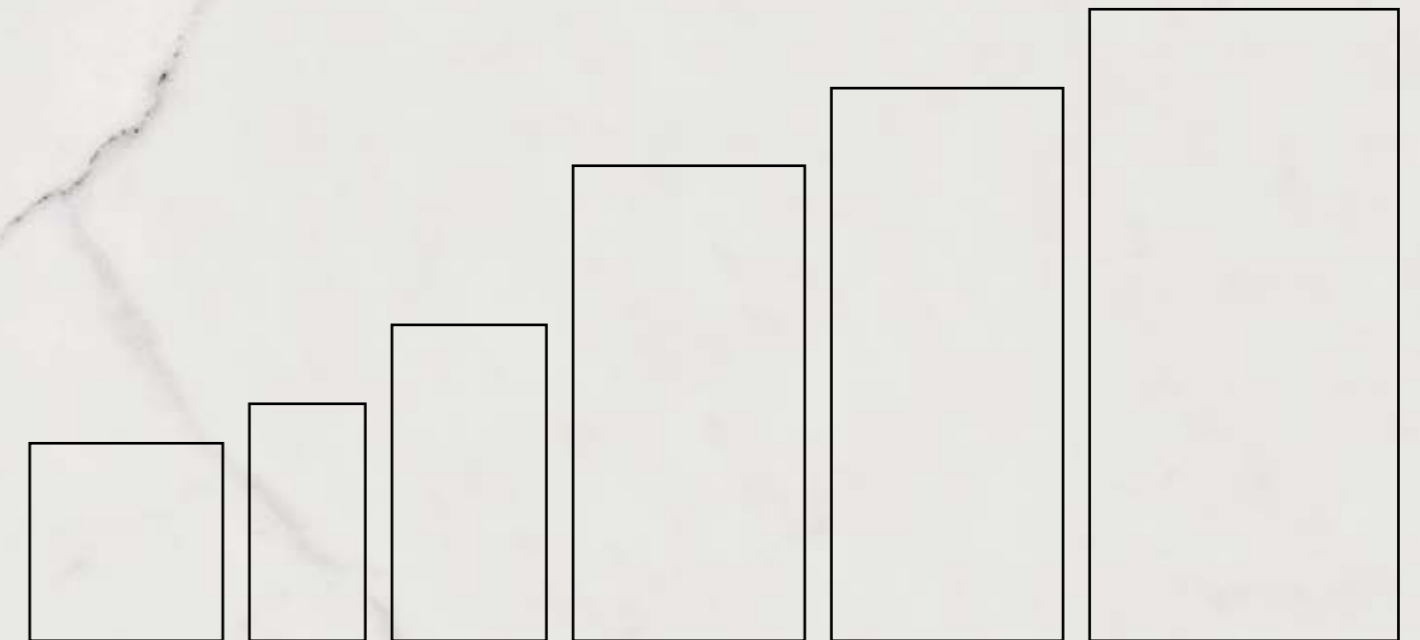
Wall: Calacatta Silva Polished — 120x280 cm



Calacatta  
Silva



Available other sizes upon demand. For more detail  
please contact sales department.



**100x100 cm**  
FGPB-W600  
Polished | 11 Faces

FGM-W600  
Matte | 11 Faces

**60x120 cm**  
FGPB-R600  
Polished | 9 Faces

FGM-R600  
Matte | 9 Faces

**80x160 cm**  
FGPB-C600  
Polished | 7 Faces

FGM-C600  
Matte | 7 Faces

**120x240 cm**  
FGPB-A5015  
Polished | 4 Faces

FGM-A5015  
Natural | 4 Faces

**120x280 cm**  
FGPB-LS015  
Polished | 4 Faces

FGM-LS015  
Natural | 4 Faces

**160x320 cm**  
FGPB-X5015  
Polished | 4 Faces

FGM-X5015  
Natural | 4 Faces



## Elegant Blue

Elegant Blue with its unique design embodies extraordinary charm of precious gems. Appropriate for both classic and contemporary area. Its unique color, sophisticated plays of golden veins and iridescent reflections brings dynamic to any space. Elegant Blue represents a cobalt sea split by golden waves.

Wall: Elegant Blue Polished — 120x280 cm  
Floor: Natural Concrete Light Grey Soft Matte — 120x280 cm



Wall: Elegant Blue Polished — 120x280 cm  
Floor: Natural Concrete Light Grey Soft Matte — 120x280 cm





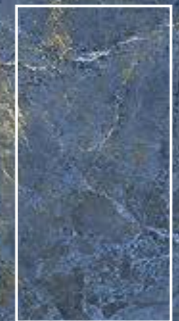
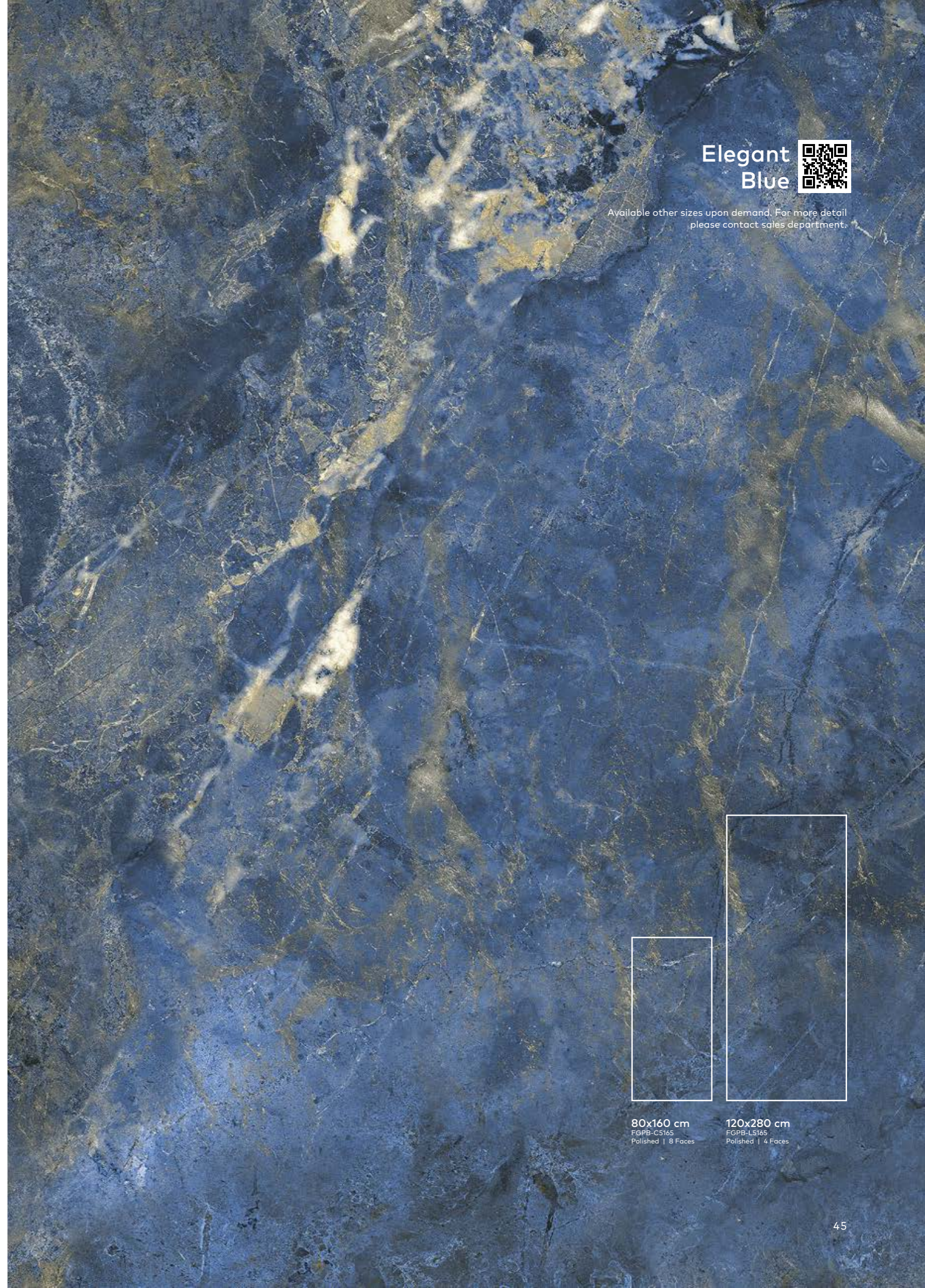
Wall: Elegant Blue Polished — 120x280 cm  
Floor: Natural Concrete Light Grey Soft Matte — 120x280 cm

Wall: Elegant Blue Polished — 120x280 cm  
Floor: Calacatta Silva Natural — 120x280 cm

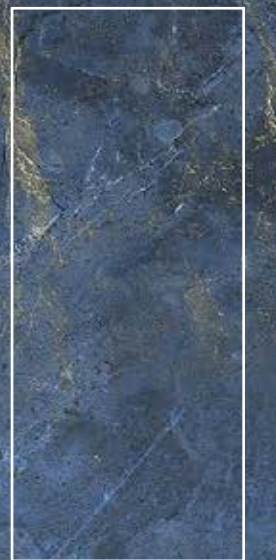


Elegant Blue 

Available other sizes upon demand. For more detail please contact sales department.



80x160 cm  
FGPB-G5165  
Polished | 8 Faces



120x280 cm  
FGPB-L5165  
Polished | 4 Faces

## Nero Marquina

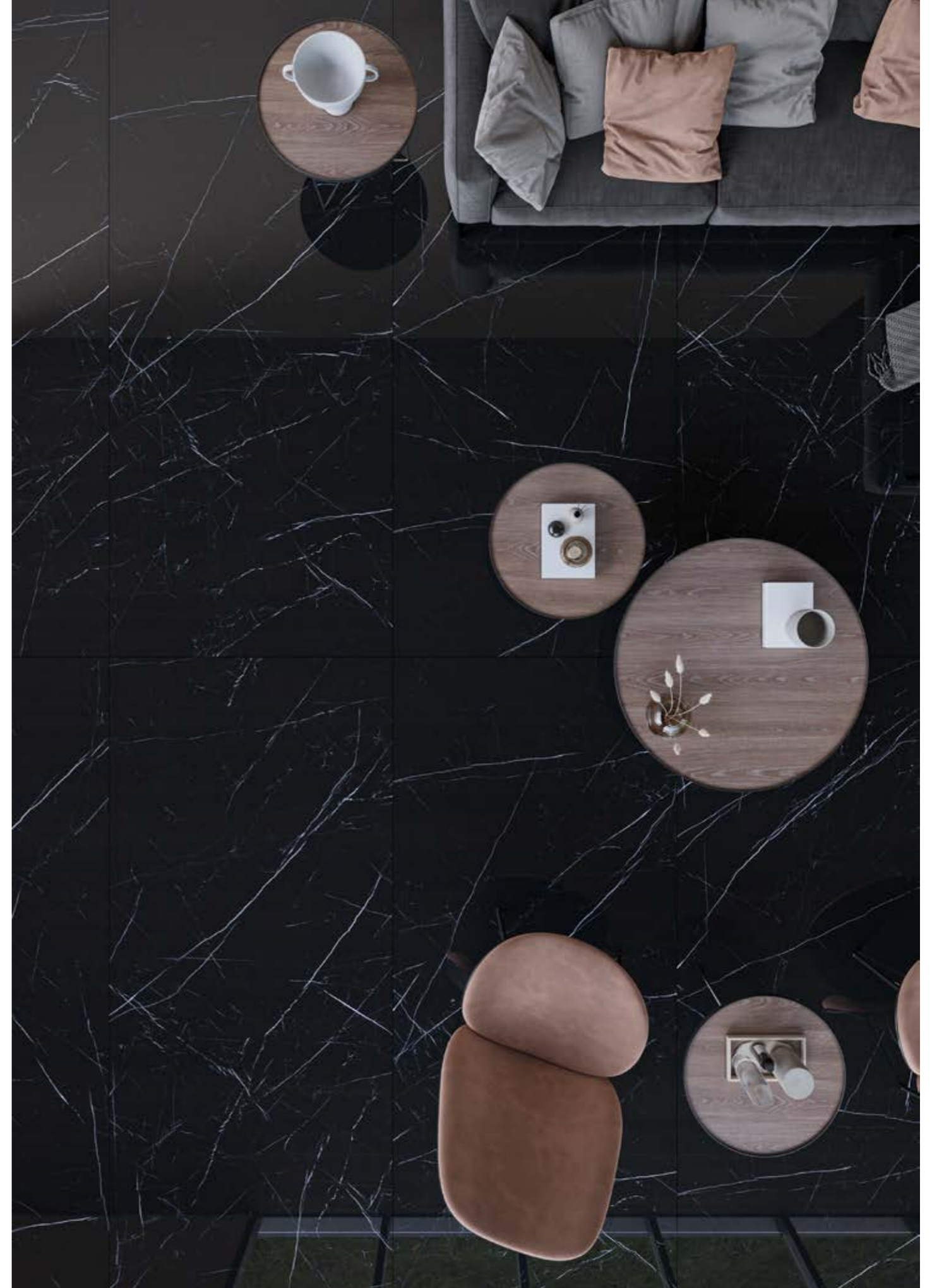
Nero Marquina, has the intense elegance of black marble. With its ultra-thin white veins running along an extreme black surface, Nero Marquina by PMA is a full body porcelain slab suitable for ultra-sophisticated settings. Its visual perfection provides a unique visual impact.

Floor: Nero Marquina Natural — 120x280 cm





Floor: Nero Marquina Polished — 60x120 cm





Floor: Nero Marquina Natural — 60x120 cm



# Nero Marquina



Available other sizes upon demand. For more detail please contact sales department.



**60x120 cm**  
FGPB-R5030  
Polished | 9 Faces

**80x160 cm**  
FGPB-C5030  
Polished | 7 Faces

**120x240 cm**  
FGM-A5030  
Natural | 5 Faces

**120x280 cm**  
FGM-L5030  
Natural | 5 Faces

**160x320 cm**  
FGM-X5030  
Natural | 4 Faces

FGM-R5030  
Matte | 9 Faces

FGM-C5030  
Matte | 7 Faces

FGPB-L5030  
Polished | 5 Faces



## Statuario Extra

Statuario Extra marble is one of the most renowned and charming marbles, enriched with dark and grey veins and thinner patterns. Its clean white background contrasted with grey veining doubles its beauty. Statuario Extra with dramatic, artistic, and large-scale singular vein patterns brings a refined Italian design touch to your architectural projects.

Wall: Statuario Extra Polished — 120x280 cm  
Floor: Statuario Extra Polished — 120x280 cm



Wall: Statuario Extra Polished — 120x280 cm  
Floor: Statuario Extra Polished Book Match — 120x280 cm





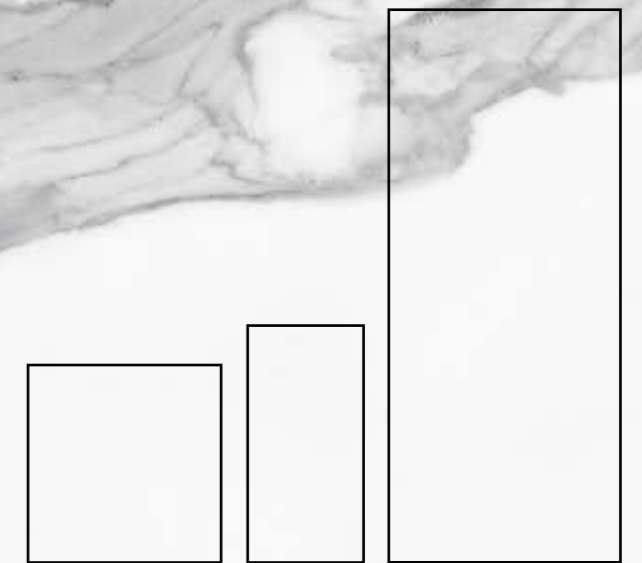
Wall: Statuario Extra Polished — 120x280 cm  
Floor: Statuario Extra Polished — 120x280 cm

Floor: Statuario Extra Polished — 60x120 cm



## Statuario Extra

Available other sizes upon demand. For more detail please contact sales department.



**100x100 cm**  
FGPB-W1285  
Polished | 9 Faces

**60x120 cm**  
FGPB-R1285  
Polished | 10 Faces

**120x280 cm**  
FGPB-L5185  
Polished | 4 Faces

FGPB-L5210  
Polished | Book Match



## Elegant Grey

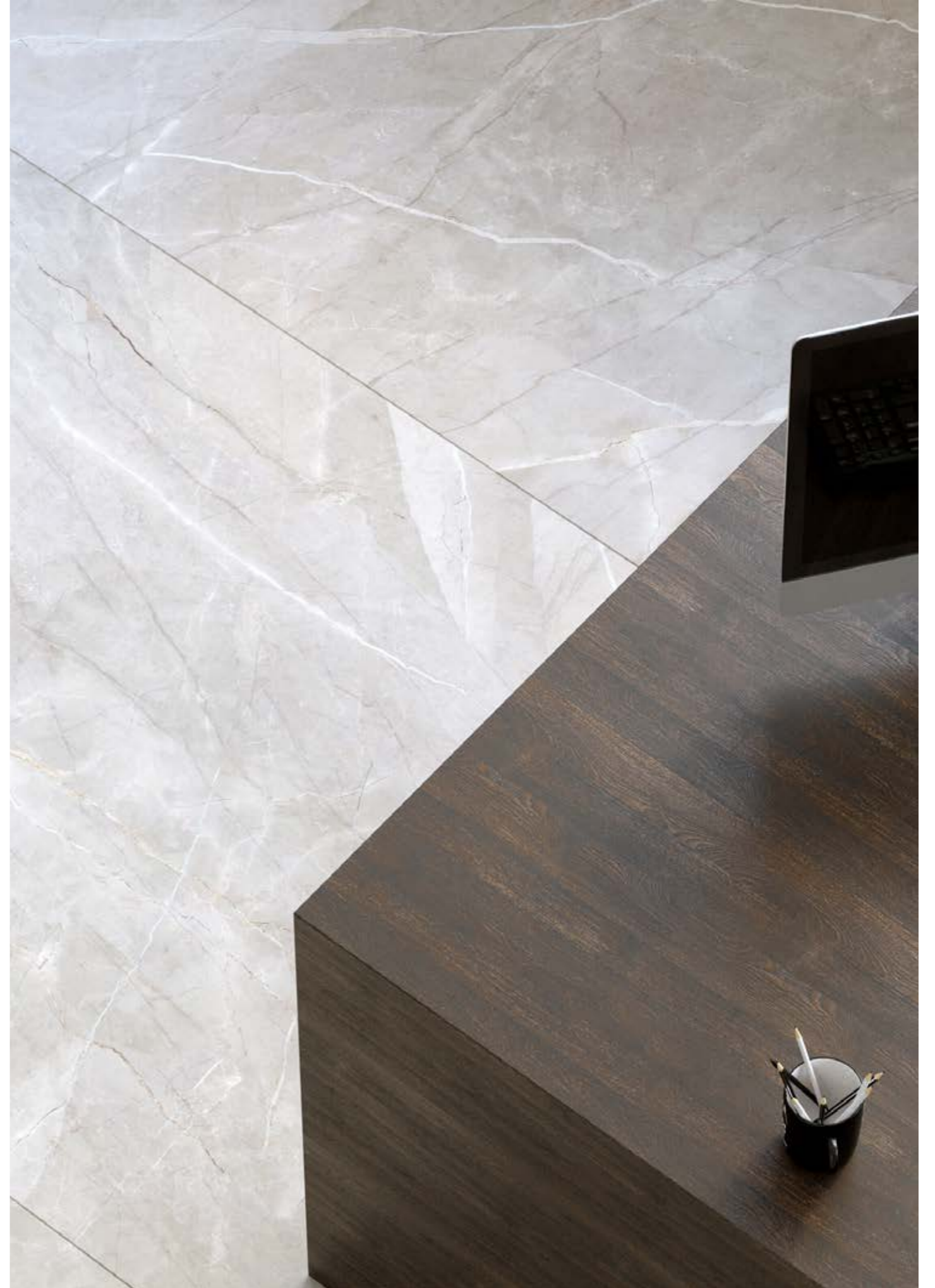
Elegant Grey Marble is a striking deep grey marble with distinctive white veining. The most beautiful sought after marble inspired porcelain tile boasts prominent veins, blooms, and subtle variations that you find in any natural design product. Elegant Grey marble tiles are perfectly combined with a wide range of colors based on it's nude theme of color.

Wall: Elegant Grey Natural — 120x280 cm  
Floor: Elegant Grey Natural — 120x280 cm





Floor: Elegant Grey Natural — 120x280 cm





Wall: Elegant Grey Natural — 120x280 cm  
Floor: Elegant Grey Natural — 120x280 cm

Wall: Elegant Grey Natural — 120x280 cm  
Floor: Elegant Grey Natural — 120x280 cm



Elegant Grey 

Available other sizes upon demand. For more detail please contact sales department.



120x280 cm  
FGM-L5195  
Natural | 5 Faces

## Pantheon Marble

Pantheon has an outstanding styling. Its grey surface embraces pure white veining in detailed smooth base texture with disperse splashes and slight movements of taupe veins that increases the beauty and enhances the grace of Pantheon's design. Pantheon's minimal and modern style gives you the chance of experiencing elegance and luminosity.



Facade: Pantheon Light Grey Matte — 60x120 cm



Facade: Pantheon Light Grey Matte — 60x120 cm



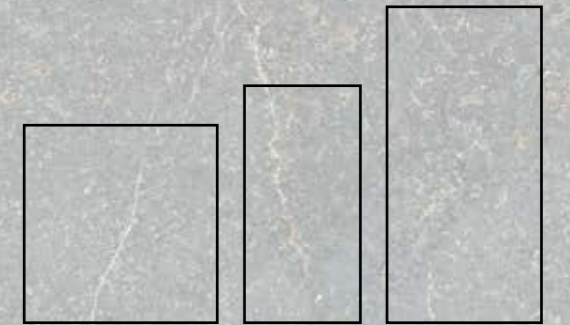
Floor: Pantheon Light Grey Semipolished — 80x160 cm



## Pantheon Light Grey



Available other sizes upon demand. For more detail  
please contact sales department.



**100x100 cm**  
FGM-V1320  
Matte | 11 Faces

**60x120 cm**  
FGM-R1320  
Matte | 6 Faces

**80x160 cm**  
LFG-C1320  
Semipolished | 6 Faces



# Pantheon Grey

Available other sizes upon demand. For more detail please contact sales department.



120x280 cm  
FGM-L1325  
Natural | 5 Faces



80x160 cm  
LFG-C1325  
Semipolished | 6 Faces



60x120 cm  
FGM-R1325  
Matte | 6 Faces



# Pantheon Anthracite

Available other sizes upon demand. For more detail please contact sales department.



60x120 cm  
FGM-R1330  
Matte | 6 Faces



80x160 cm  
LFG-C1330  
Semipolished | 6 Faces



## White Fantasy

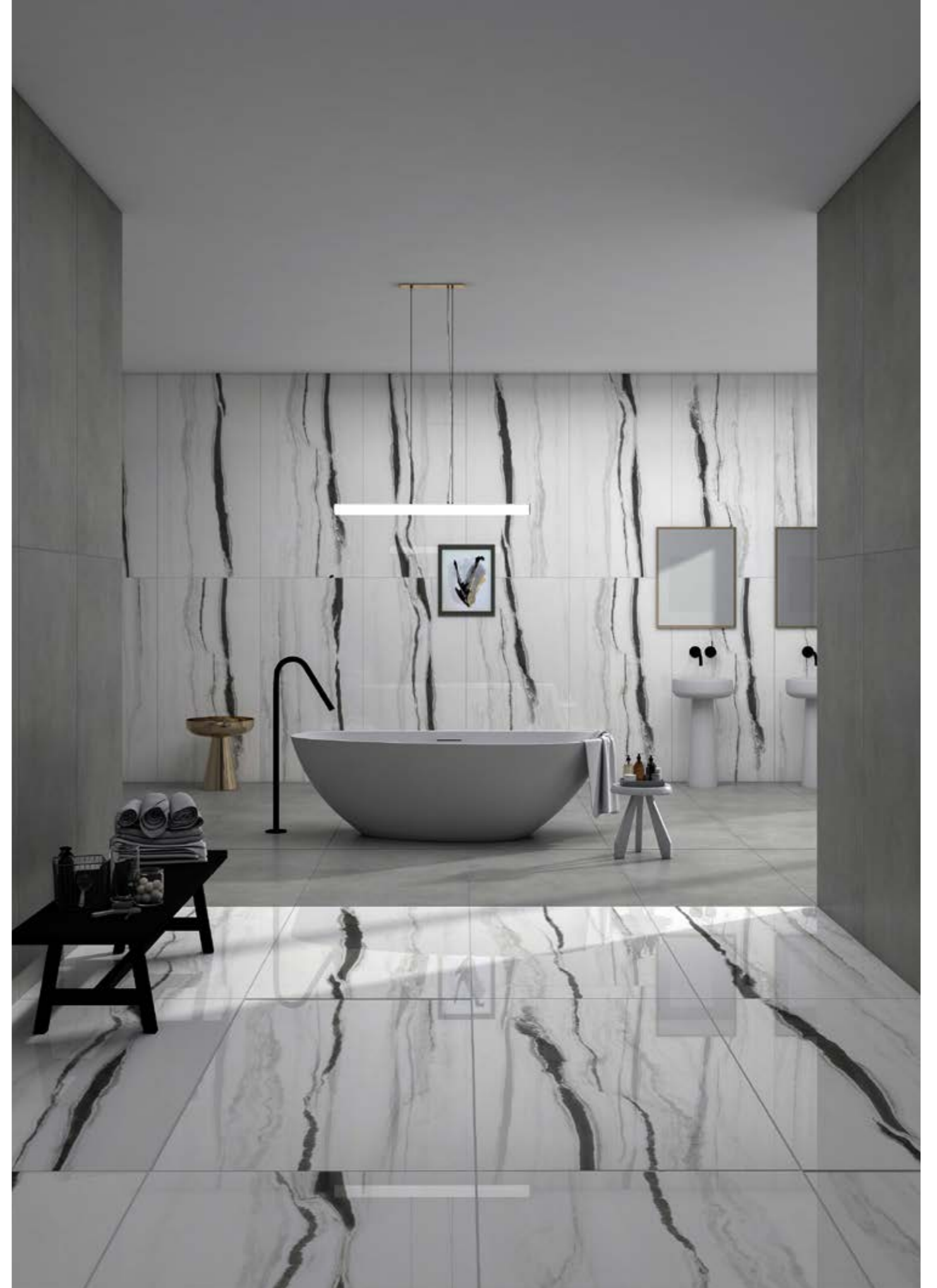
White Fantasy by its high decorative value and its timeless white tones is the leader of chic luxury designing. The contrast between its detailed white background and its sharp and dark eye catching veined structure takes you to the most sophisticated and extravagant side of nature. White Fantasy's modern, luxury and trendy design along with its simplicity is appealing to any taste.

Wall: White Fantasy Polished — 80x160 cm  
Floor: White Fantasy Polished — 80x160 cm





Wall: White Fantasy Polished — 80x160 cm  
Floor: White Fantasy Polished — 80x160 cm

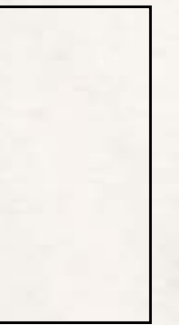
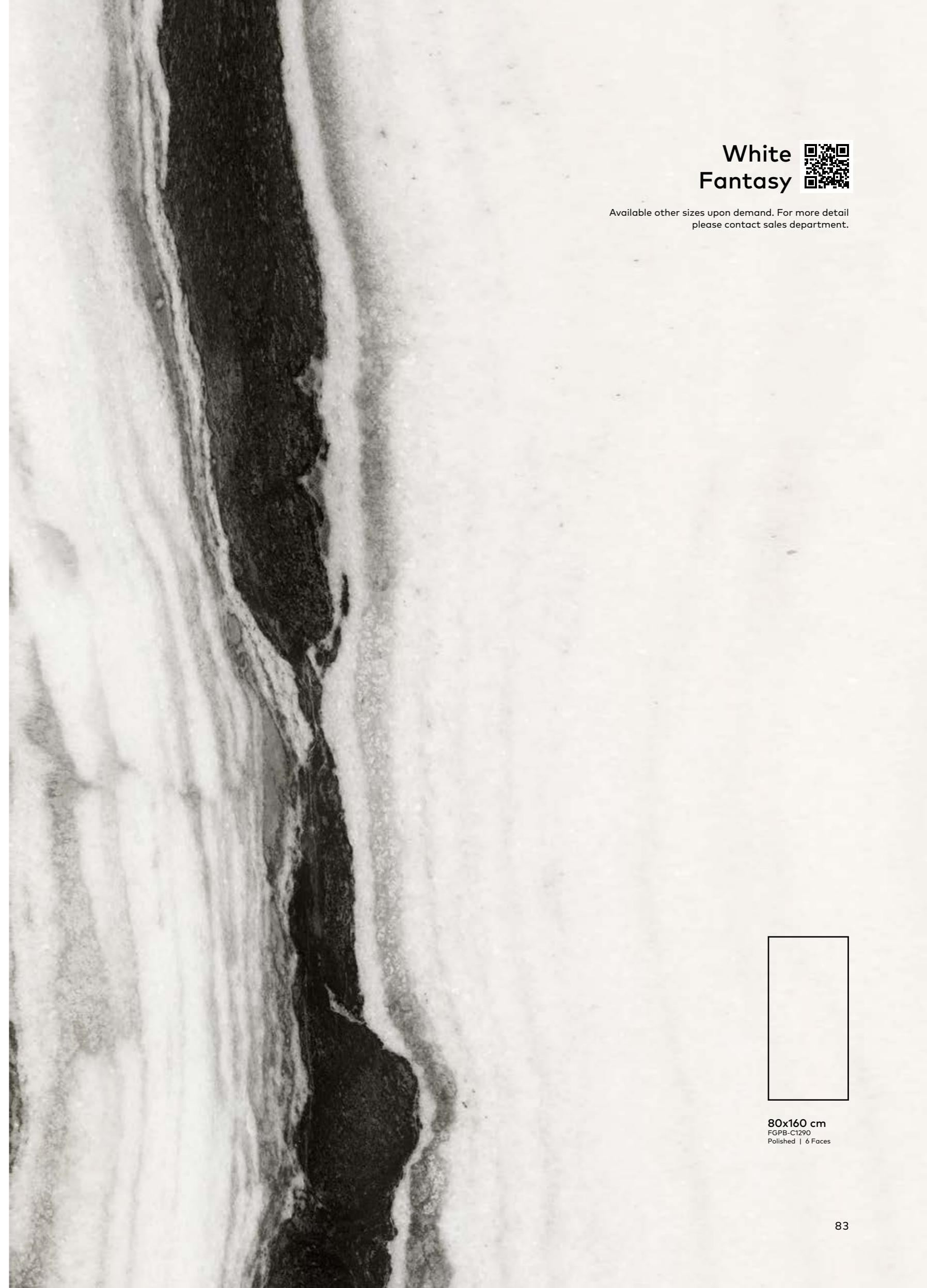


Floor: Pantheon Light Grey Semipolished — 80x160 cm



White Fantasy 

Available other sizes upon demand. For more detail please contact sales department.



80x160 cm  
FGPB-C1290  
Polished | 6 Faces



## Oxide

OXIDE is a remarkable slab that stands out with its unique and captivating design. With fabulous decorations and metal reflections, it offers the perfect opportunity to create dramatic and industrial spaces. Its intriguing mix of corten brown hues, light shades transitioning towards light grey, and a captivating matte metallic aesthetic that adds a touch of interest to any room. Oxide's noticeable oxidized appearance and warm colors instantly infuse character into your space. Combining the beauty of metal with the exceptional performance of ceramic in terms of resistance and ease of maintenance, Oxide is truly a remarkable choice.

Wall: Oxide Metal — 120x280 cm



Wall: Oxide Metal — 120x280 cm



Wall: Oxide Metal — 120x280 cm



Oxide 

Available other sizes upon demand. For more detail  
please contact sales department.



120x280 cm  
FGM-L5300  
Metal | 5 Faces



## Native

Native is an elegant slate with delicate and light veins that are deeply interwoven to create a subtle and sophisticated pattern. Native's relief texture evokes a modern interpretation of natural stone in a way that its low contrast and homogenous theme make it a perfect backdrop for any design style. It is time to upgrade your space with the natural beauty of Native and experience the durability of porcelain with a touch of natural stone charm.

Wall: Native Black Relief — 120x280 cm



Wall: Native Black Relief — 120x280 cm



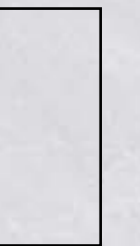
Facade: Native Grey Relief — 60x120 cm



Native  
White



Available other sizes upon demand. For more detail  
please contact sales department.



60x120 cm  
FGM-R1450  
Relief | 10 Faces





# Native Light Grey

Available other sizes upon demand. For more detail  
please contact sales department.



60x120 cm  
FCM-R1455  
Relief | 10 Faces


# Native Grey



Available other sizes upon demand. For more detail  
please contact sales department.



60x120 cm  
FCM-R1460  
Relief | 10 Faces



**Native  
Dark Grey**

Available other sizes upon demand. For more detail  
please contact sales department.

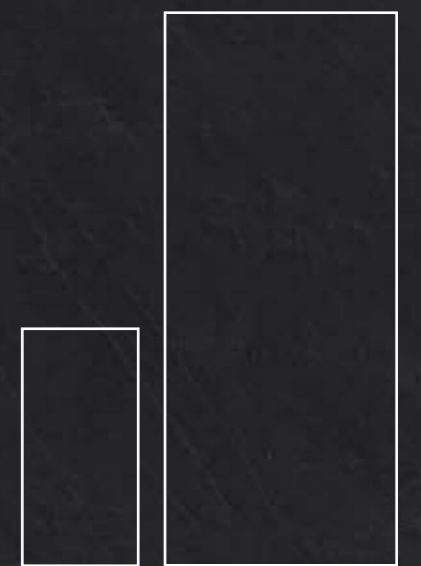


**60x120 cm**  
FGM-R1465  
Relief | 10 Faces



**Native  
Black**

Available other sizes upon demand. For more detail  
please contact sales department.



**60x120 cm**    **120x280 cm**  
FGM-R1470    FGM-L1470  
Relief | 10 Faces    Relief | 5 Faces

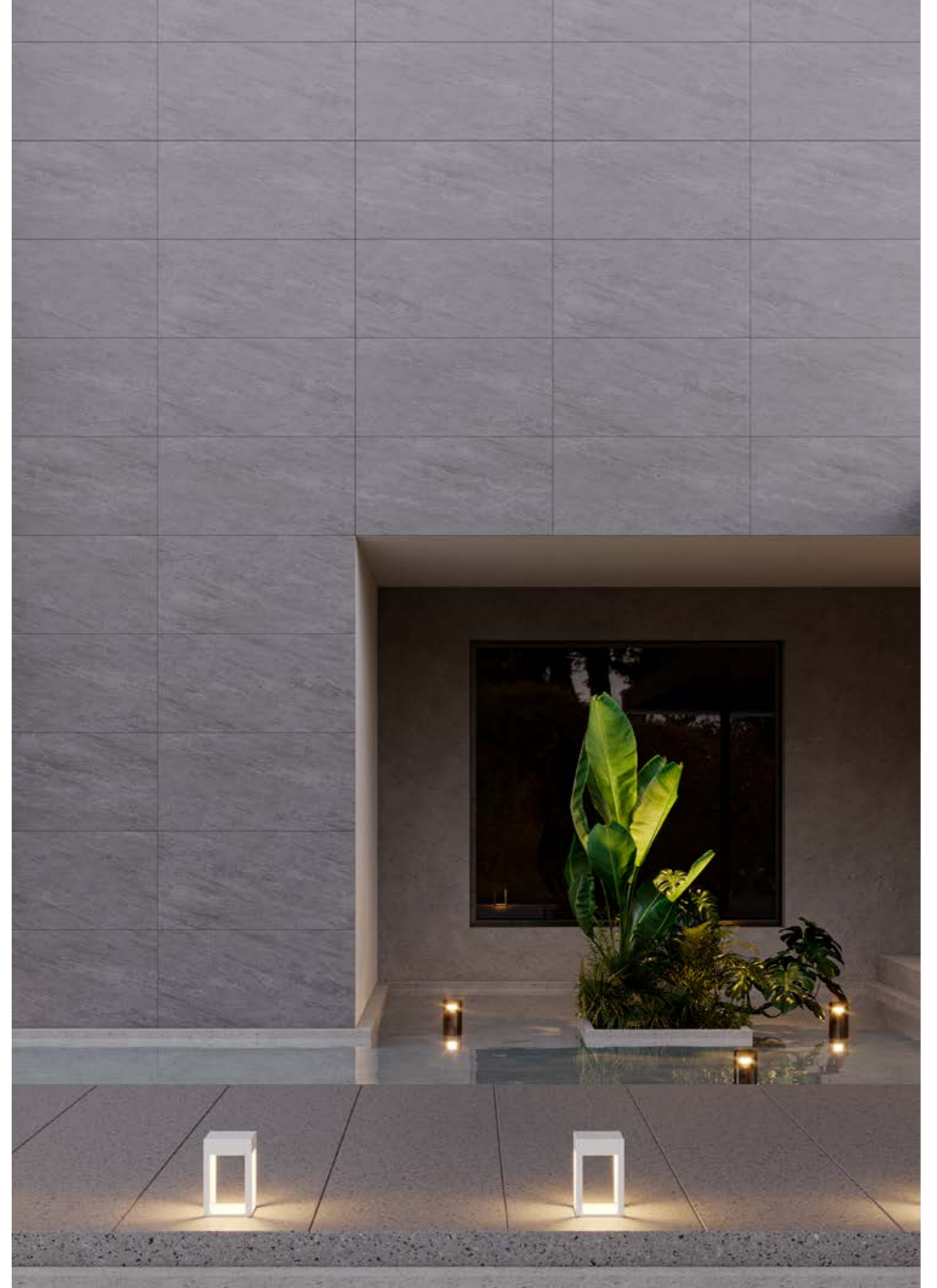
## Stonetech

Stonetech is «monolithic»; it indicates harmony despite being unified. Stonetech comes with a natural stone relief that is soft to touch, yet express a fine natural stone look surface. Parallel details with a sufficient amount of monotone surface make this design fashionable yet suitable for facade and outdoor applications.

Facade: Stonetech Light Grey Relief — 60x120 cm  
Floor: Stonetech Light Grey Relief — 60x120 cm



Facade: Stonetech Grey Relief — 60x120 cm



Facade: Stonetech Grey Relief — 60x120 cm



Stonetech   
Bone 

Available other sizes upon demand. For more detail  
please contact sales department.



60x120 cm  
FGM-R1190  
Relief | 5 Faces



# Stonetech Soil

Available other sizes upon demand. For more detail  
please contact sales department.

# Stonetech Light Grey



Available other sizes upon demand. For more detail  
please contact sales department.



**60x120 cm**  
FGM-R1175  
Relief | 5 Faces



**60x120 cm**  
FGM-R1160  
Relief | 5 Faces

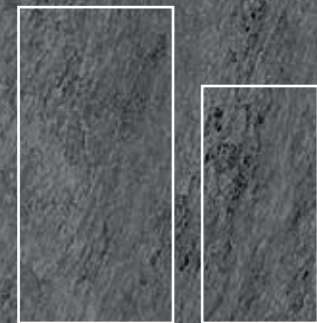


**80x160 cm**  
FGM-C1160  
Relief | 5 Faces



# Stonetech Grey

Available other sizes upon demand. For more detail please contact sales department.



80x160 cm  
FGM-C1165  
Relief | 5 Faces

60x120 cm  
FGM-R1165  
Relief | 5 Faces

# Stonetech Coal Grey



Available other sizes upon demand. For more detail please contact sales department.



60x120 cm  
FGM-R1170  
Relief | 5 Faces

80x160 cm  
FGM-C1170  
Relief | 5 Faces



## Riven Slate

RIVEN SLATE is a mesmerizing creation inspired by volcanic rocks found in the east. It beautifully combines the elements of earth and water, as the magma of volcanoes meets cold waters to form captivating rock formations. This unique design is widely favored in contemporary and modern architecture, particularly for large surfaces. With its sophisticated blend of intense greys and neutral tones, RIVEN SLATE effortlessly infuses any space with a minimal and modern style. The product's relief surface further enhances its appeal, adding depth and texture to its timeless charm and layered structure.

Wall: Riven Slate Light Grey Relief — 120x280 cm  
Floor: Pantheon Marble Grey Natural — 120x280 cm





Wall: Riven Slate Light Grey Relief — 120x280 cm  
Floor: Pantheon Marble Grey Natural — 120x280 cm





Wall: Riven Slate Light Grey Relief — 120x280 cm  
Floor: Pantheon Marble Grey Natural — 120x280 cm



# Riven Slate Light Grey

Available other sizes upon demand. For more detail  
please contact sales department.



120x280 cm  
FGM-L5310  
Relief | 5 Faces

# Riven Slate Grey



Available other sizes upon demand. For more detail  
please contact sales department.



120x280 cm  
FGM-L5311  
Relief | 5 Faces



## Lithos

Lithos combines the characteristics of different European lime stones to bring a feeling of soft delicate surface, yet present a rough sturdy structure. The series is suitable for any type of usage.

Floor: Lithos Soft Grey Matte — 60x120 cm



Floor: Lithos Grey Matte — 60x120 cm  
Wall: Lithos Grey Matte — 60x120 cm



Floor: Lithos Grey Matte — 60x120 cm  
Wall: Lithos Grey Matte — 60x120 cm



Lithos  
Soft Grey



Available other sizes upon demand. For more detail  
please contact sales department.



60x120 cm  
FCM-R115  
Matte | 8 Faces



Lithos  
Grey

Available other sizes upon demand. For more detail  
please contact sales department.



60x120 cm  
FGM-R1120  
Matte | 8 Faces



Lithos  
Fango

Available other sizes upon demand. For more detail  
please contact sales department.



60x120 cm  
FGM-R1125  
Matte | 8 Faces

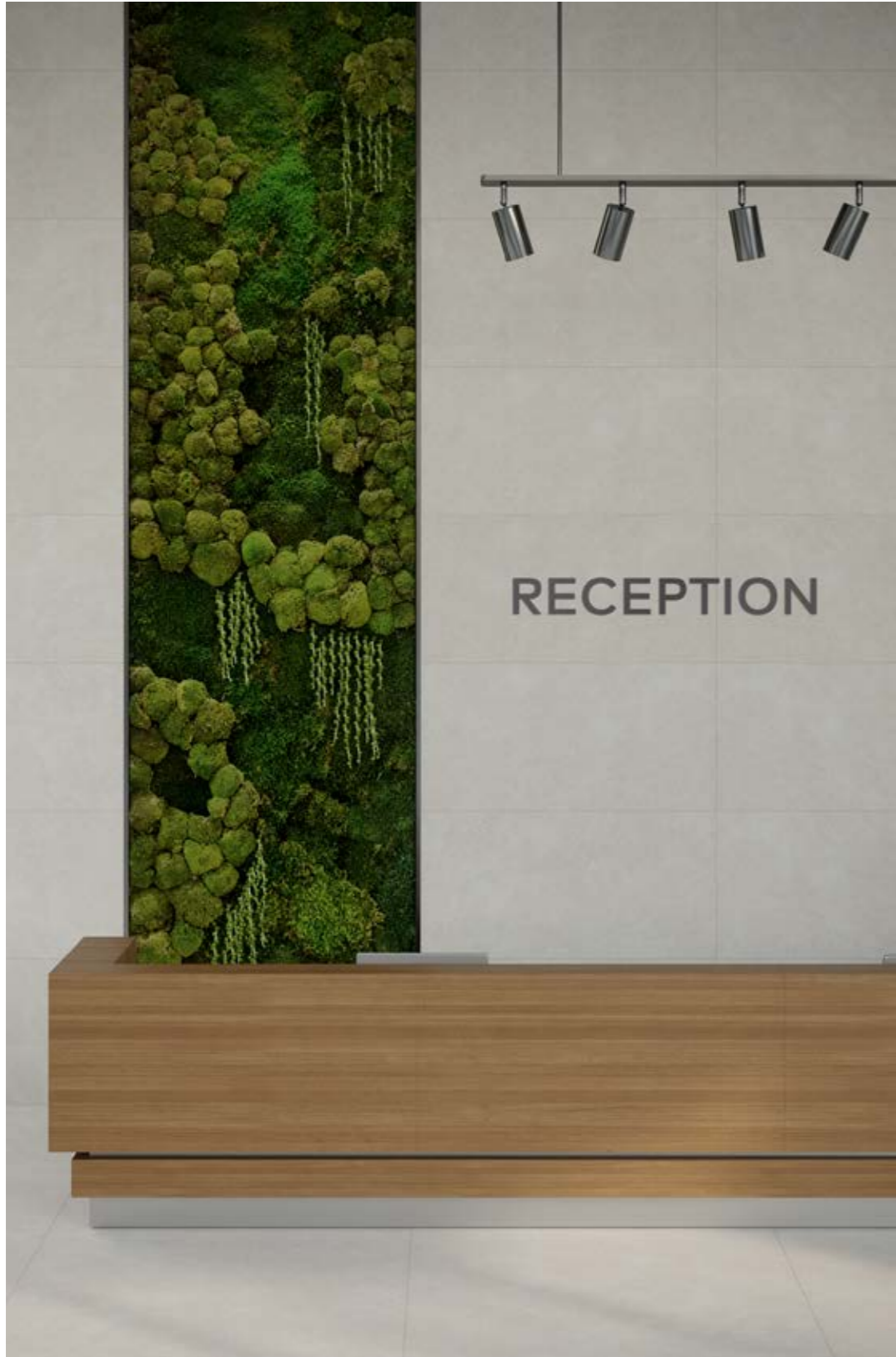


## Branch

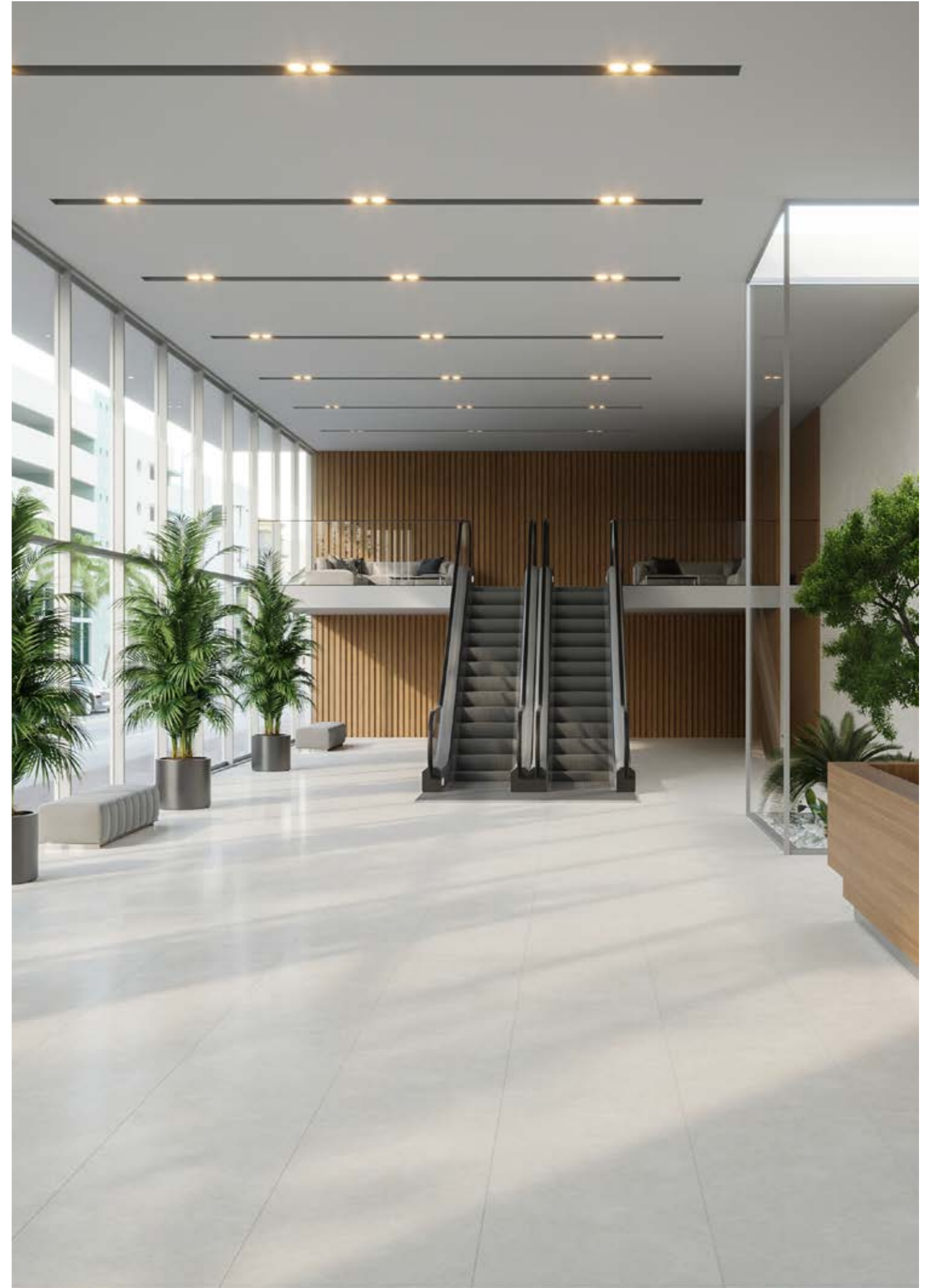
Branch porcelain series represents simplicity, solidity and the chromatic richness of natural stone. The series variety in surface finishing makes it suitable for interior residential to commercial areas.

Wall: Branch Bone Semipolished — 60x120 cm  
Floor: Branch Bone Semipolished — 60x120 cm





Wall: Branch Bone Semipolished — 60x120 cm  
Floor: Branch Bone Semipolished — 60x120 cm



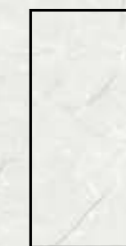
Floor: Branch Bone Semipolished — 80x160 cm



Branch  
Bone



Available other sizes upon demand. For more detail  
please contact sales department.



60x120 cm  
LFG-R705  
Semipolished



## Contemporary


Contemporary is a reflection of modern areas. Rough pattern and texture are combined to depict its modern appeal with a strong reference to its original material coming from the earth. Contemporary is a metropolitan inspiration accompanied by the sensation of durability that creates stylish spaces.

Floor: Contemporary Dark Grey Matte — 60x120 cm



Floor: Contemporary Dark Grey Matte — 60x120 cm





Contemporary  
Ice

Available other sizes upon demand. For more detail  
please contact sales department.

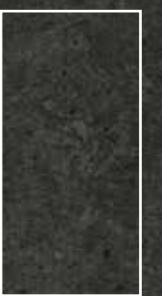


60x120 cm  
FGM-R1370  
Matte | 10 Faces

Contemporary  
Dark Grey



Available other sizes upon demand. For more detail  
please contact sales department.



60x120 cm  
FGM-R1380  
Matte | 10 Faces

Facade: Monte Viso White Relief — 60x120 cm

## Monte Viso

Monte Viso series are inspired by Cottian Alps' solidity that displays the peak, up and downs & integrity of the mountain. The series can be used in both contemporary and modern architecture thanks to its choice of colors.





Facade: Monte Viso White Relief — 60x120 cm



Facade: Monte Viso White Relief — 60x120 cm



## Monte Viso White



Available other sizes upon demand. For more detail  
please contact sales department.



60x120 cm  
FGM-R220  
Relief





## Pietra Grey

The sophisticated grey background color runs through with fine, candid grains that add a harmonious visual effect to Pietra Grey porcelain slabs. An unmistakable style, superb production and high performance make Pietra Grey an irreplaceable surface for enhancing any architecture or interior design project.

Floor: Pietra Grey Polished — 60x120 cm

Floor: Pietra Grey Polished — 60x120 cm



Pietra  
Grey



Available other sizes upon demand. For more detail  
please contact sales department.



60x120 cm  
FGPB-R1005  
Polished | 4 Faces

## Natural Concrete

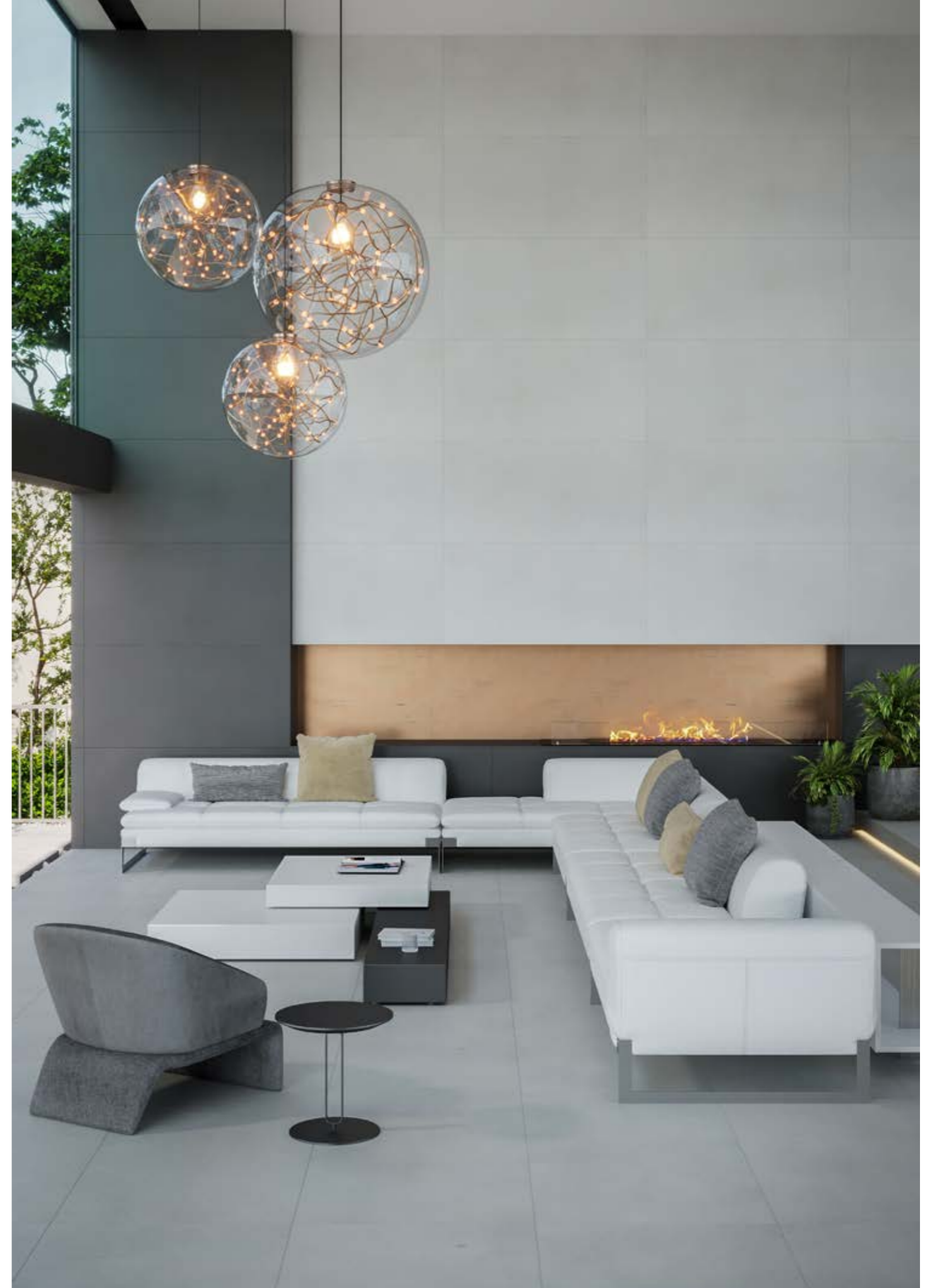
A concrete-effect collection which combines all the advantages of ceramic tiles with a perfect look to create a strong contemporary allure. Thanks to natural textures and neutral colors, concrete effect tiles are the perfect solution to a contemporary and minimalism style of design. Versatile collections to use in residential contexts and also administrative and industrial projects for indoor and outdoor spaces.



Facade: Natural Concrete Grey Matte — 60x120 cm



Wall: Natural Concrete Ash & Dark Matte — 80x160 cm  
Floor: Natural Concrete Light Grey Matte — 80x160 cm

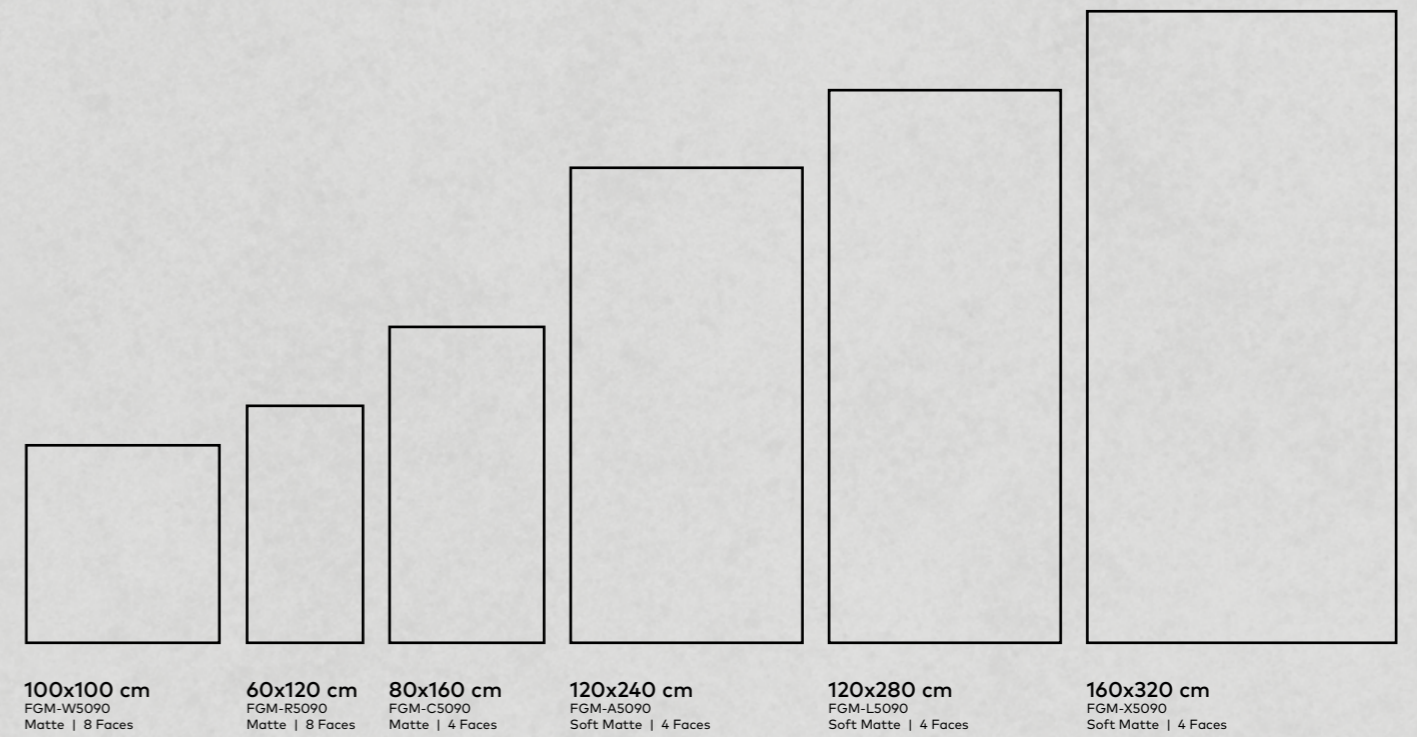


Floor: Natural Concrete Dark Grey and Ash Matte — 120x280 cm



## Natural Concrete Ash

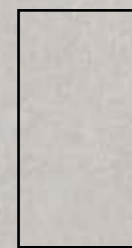
Available other sizes upon demand. For more detail please contact sales department.





## Natural Concrete Ivory

Available other sizes upon demand. For more detail  
please contact sales department.

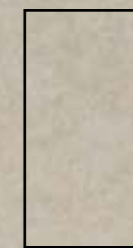


60x120 cm  
FGM-R5260  
Matte | 8 Faces

## Natural Concrete Cream



Available other sizes upon demand. For more detail  
please contact sales department.

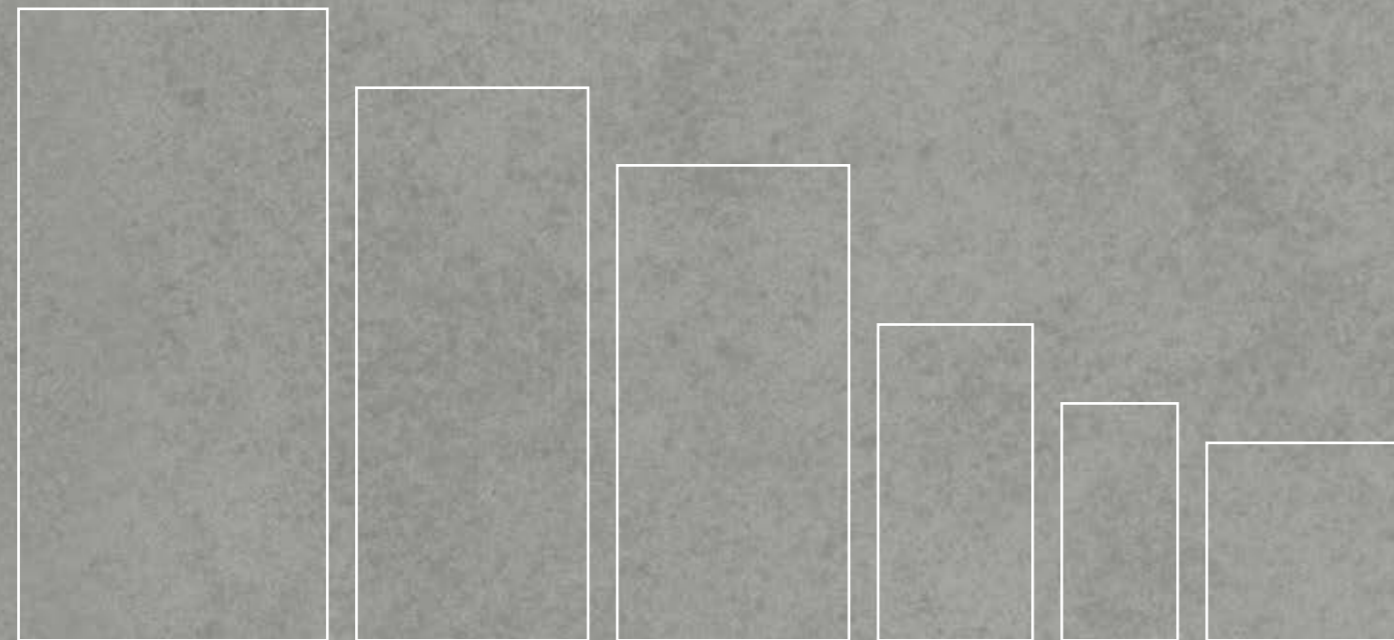


60x120 cm  
FGM-R5255  
Matte | 8 Faces



## Natural Concrete Light Grey

Available other sizes upon demand. For more detail  
please contact sales department.



**160x320 cm**  
FGM-X5200  
Soft Matte | 4 Faces

**120x280 cm**  
FGM-L5200  
Soft Matte | 4 Faces

**120x240 cm**  
FGM-A5200  
Soft Matte | 4 Faces

**80x160 cm**  
FGM-C5200  
Matte | 4 Faces

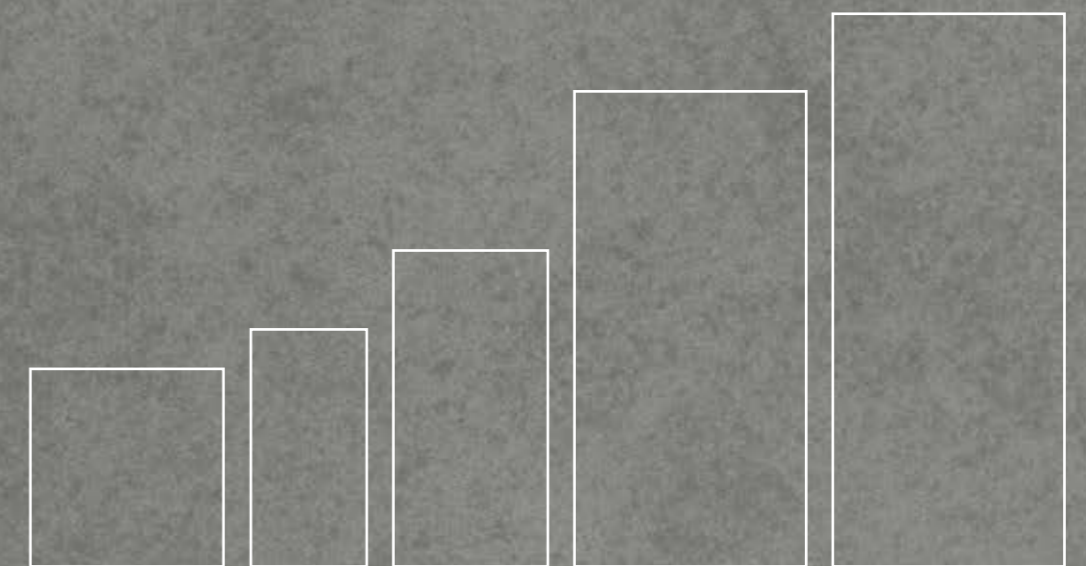
**60x120 cm**  
FGM-R5200  
Matte | 8 Faces

**100x100 cm**  
FGM-W5200  
Matte | 8 Faces

## Natural Concrete Grey



Available other sizes upon demand. For more detail  
please contact sales department.



**100x100 cm**  
FGM-W5095  
Matte | 8 Faces

**60x120 cm**  
FGM-R5095  
Matte | 8 Faces

**80x160 cm**  
FGM-C5095  
Matte | 4 Faces

**120x240 cm**  
FGM-A5095  
Soft Matte | 4 Faces

**120x280 cm**  
FGM-L5095  
Soft Matte | 4 Faces



## Natural Concrete Dark Grey

Available other sizes upon demand. For more detail  
please contact sales department.



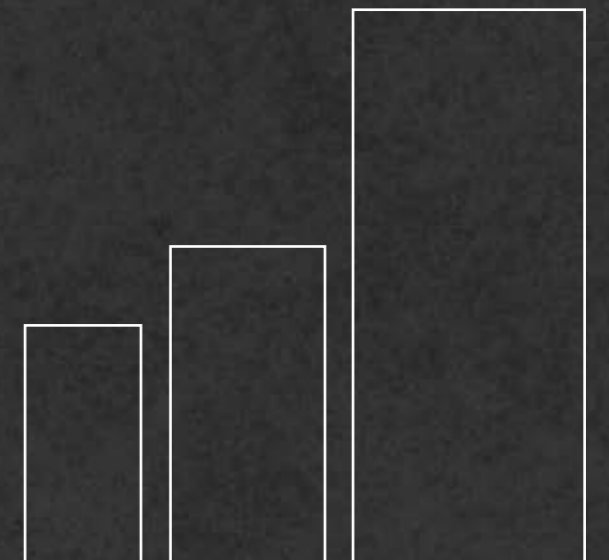
**120x280 cm**  
FGM-L5100  
Soft Matte | 4 Faces

**60x120 cm**  
FGM-R5100  
Matte | 8 Faces

## Natural Concrete Anthracite



Available other sizes upon demand. For more detail  
please contact sales department.



**60x120 cm**  
FGM-R5250  
Matte | 8 Faces

**80x160 cm**  
FGM-C5250  
Matte | 9 Faces

**120x280 cm**  
FGM-L5250  
Soft Matte | 4 Faces





## Beton Art

The interpreter of an essential but sophisticated style that stands out for the possibility of multiple combinations of cement effects designed to create integration, key element of the most attractive combination of concrete surface. Beton Art in 5 different colors and 5 random surfaces helps architects to achieve the esthetic of cement together with durability of porcelain, meet needs of modernity in their designs.

Floor: Beton Art Smoke Matte — 60x120 cm



Wall: Beton Art Grey Matte — 60x120 cm  
Floor: Beton Art Smoke Matte — 60x120 cm





## Beton Art Smoke

Available other sizes upon demand. For more detail  
please contact sales department.



60x120 cm  
FGM-R785  
Matte | 5 Faces

## Beton Art Grey



Available other sizes upon demand. For more detail  
please contact sales department.



60x120 cm  
FGM-R780  
Matte | 5 Faces



## Luxury Concept

For those who love simplicity and looking for the safety and functionality of porcelain, PMA Luxury Concept series in 6 different colors and matte surface provides natural structure of smooth concrete. This multifunctional product with a large variety of application area helps architects to create an environment that draw the viewers' gaze through shapes that make a connection between exterior and interior spaces.

Floor: Beton Art Smoke Matte — 60x120 cm



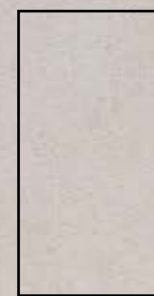
Floor: Luxury Concept Dark Grey Matte — 60x120 cm  
Wall: Luxury Concept Ivory Matte — 60x120 cm





## Luxury Concept Ivory

Available other sizes upon demand. For more detail  
please contact sales department.



60x120 cm  
FGM-R445  
Matte



## Luxury Concept Dark Grey

Available other sizes upon demand. For more detail  
please contact sales department.



60x120 cm  
FGM-R440  
Matte | 5 Faces



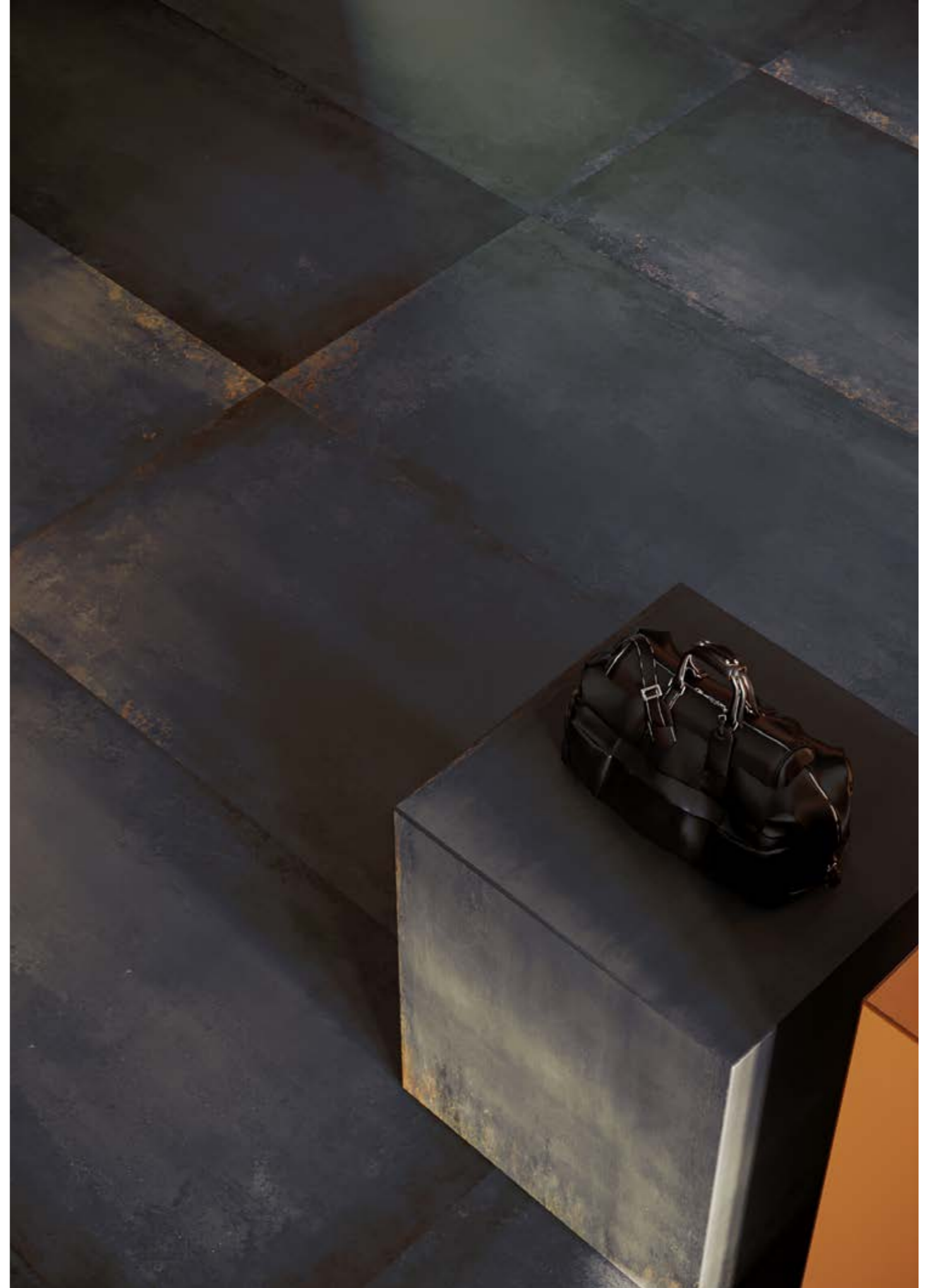
## Metallic

Metallic is a trace of oxidization that covers your surfaces by giving an original and unique accent. By Metallic collection, you can experience the most intimate emotion of metal and the beauty of industrial atmospheres whose delicate, refined, and unique textures enhance the natural and precious aesthetics of the material for a space with a timeless charm. Metallic with its semi polished surface brings an elegance and unconventional touch.

Wall: Metallic Blue Semipolished — 80x160 cm  
Floor: Metallic Blue Semipolished — 80x160 cm



Wall: Metallic Blue Semipolished — 80x160 cm  
Floor: Metallic Blue Semipolished — 80x160 cm





Floor: Metallic Blue Semipolished — 80x160 cm



Metallic  
Blue



Available other sizes upon demand. For more detail  
please contact sales department.



80x160 cm  
LFG-C1350  
Semipolished | 5 Faces



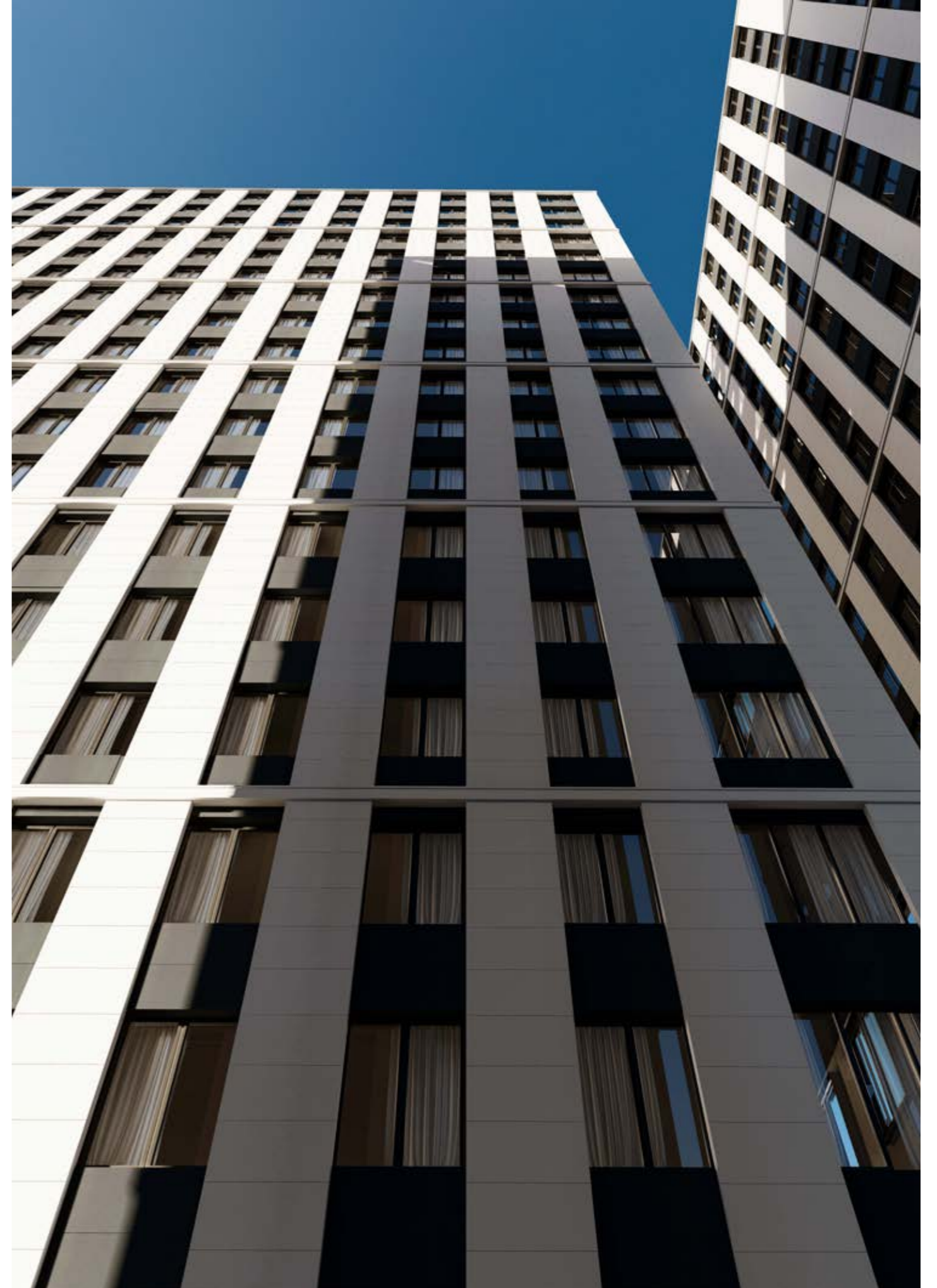
## Monocolor Night

A perfect synthesis of technology, simplicity and pureness, living all in full colors. From light of white to darkness of black with combination of joyful day colors. Monocolor series of PMA make architects dream come true by offering them a range of selected colors to create genial, flawless and solid spaces.

Facade: Monocolor White Matte — 60x120 cm



Facade: Monocolor White Matte — 60x120 cm





## Monocolor White

Available other sizes upon demand. For more detail  
please contact sales department.



60x120 cm  
GM-R9305  
Matte



## Monocolor Light Grey

Available other sizes upon demand. For more detail  
please contact sales department.



60x120 cm  
GM-R9380  
Matte



## Monocolor Dark Grey

Available other sizes upon demand. For more detail  
please contact sales department.



60x120 cm  
GM-R9385  
Matte

## Monocolor Black



Available other sizes upon demand. For more detail  
please contact sales department.



60x120 cm  
GM-R9388  
Matte



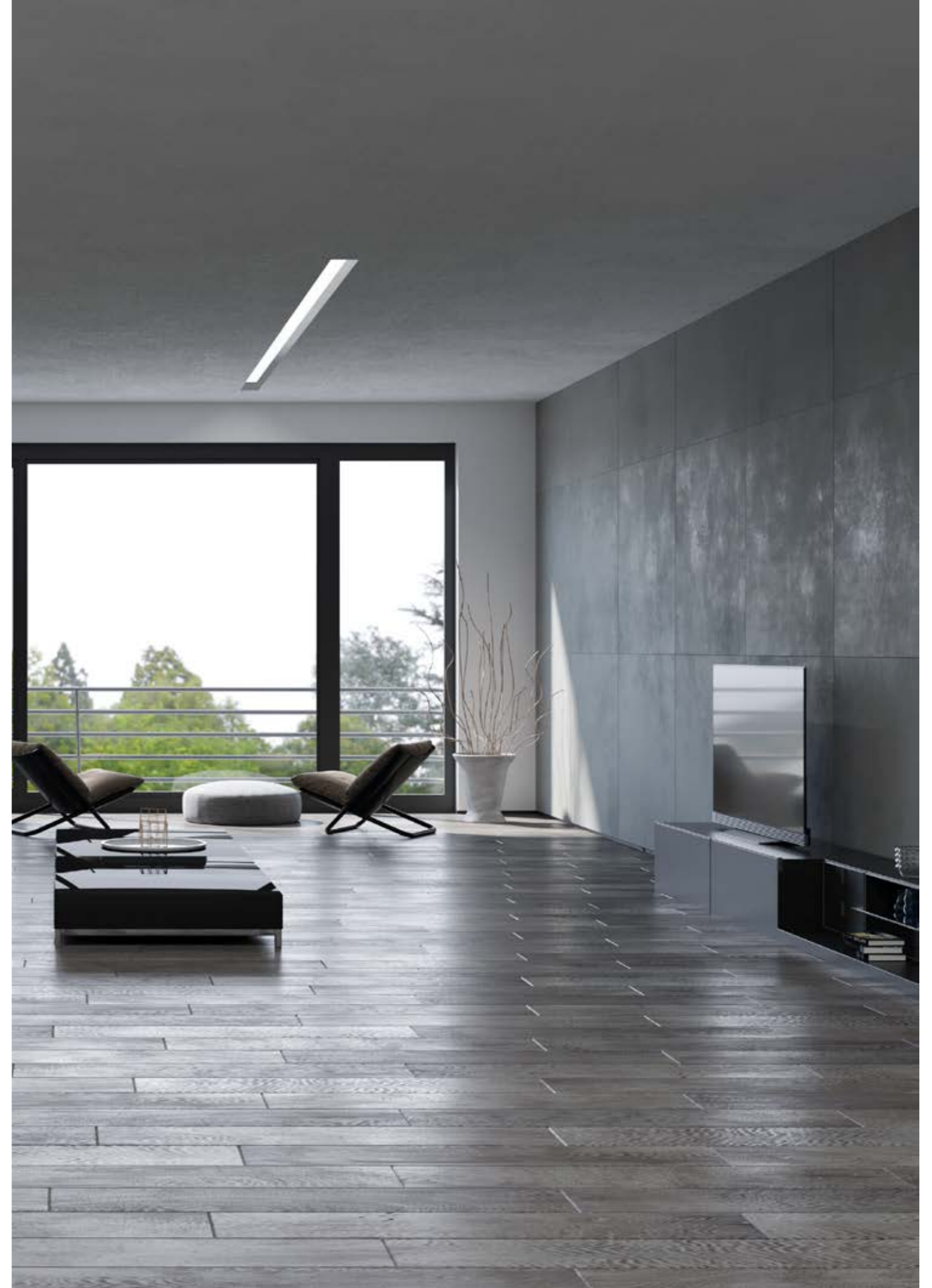
## Maxiwood

Maxiwood is a great mix of warmth and elegance which is perfectly in harmony with the latest innovative trends. Maxiwood surface is enhanced by relief punch that gives natural touch with new emotion of wooden material character and personality to every setting. Thanks to the stable nature of porcelain, Maxiwood is able to tackle every condition and offers new uses of wood for floors and walls in residential and commercial spaces.

Floor: Maxiwood Almond Relief — 20x120 cm



Floor: Maxiwood Venge Relief — 20x120 cm





Floor: Maxiwood Almond Relief — 20x120 cm





## Maxiwood Almond

Available other sizes upon demand. For more detail  
please contact sales department.



20x120 cm  
FGM-BB10  
Relief | 12 Faces

## Maxiwood Walnut



Available other sizes upon demand. For more detail  
please contact sales department.



20x120 cm  
FGM-BB15  
Relief | 12 Faces



## Maxiwood Venge

Available other sizes upon demand. For more detail  
please contact sales department.



20x120 cm  
B820  
Relief | 12 Faces



## Maxiwood Chocolate

Available other sizes upon demand. For more detail  
please contact sales department.



20x120 cm  
FGM-B825  
Relief | 12 Faces



## Maxiwood Silver

Available other sizes upon demand. For more detail  
please contact sales department.

## Maxiwood Platinum



Available other sizes upon demand. For more detail  
please contact sales department.



20x120 cm  
FGM-B835  
Relief | 12 Faces



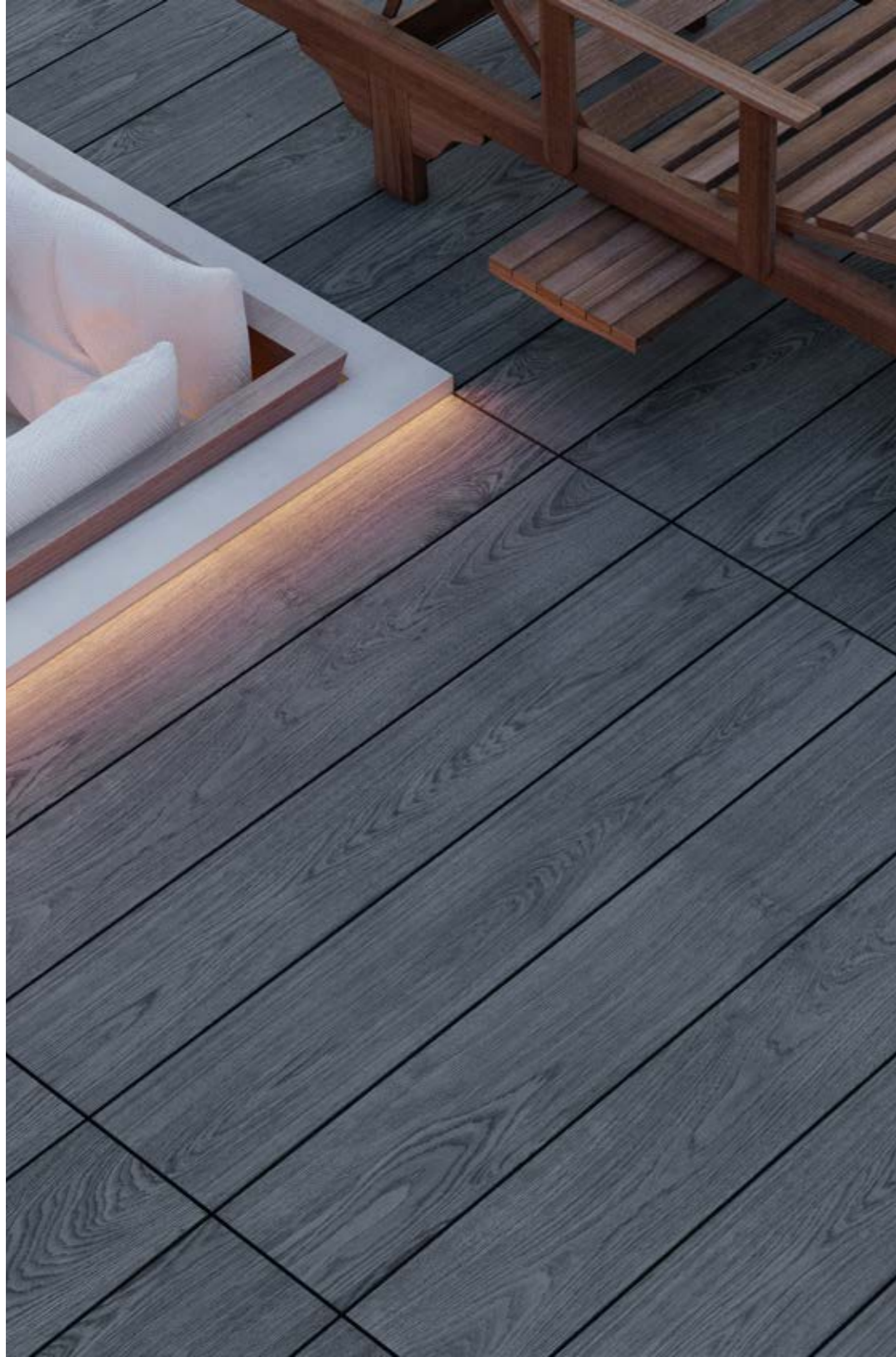
20x120 cm  
FGM-B830  
Relief | 12 Faces



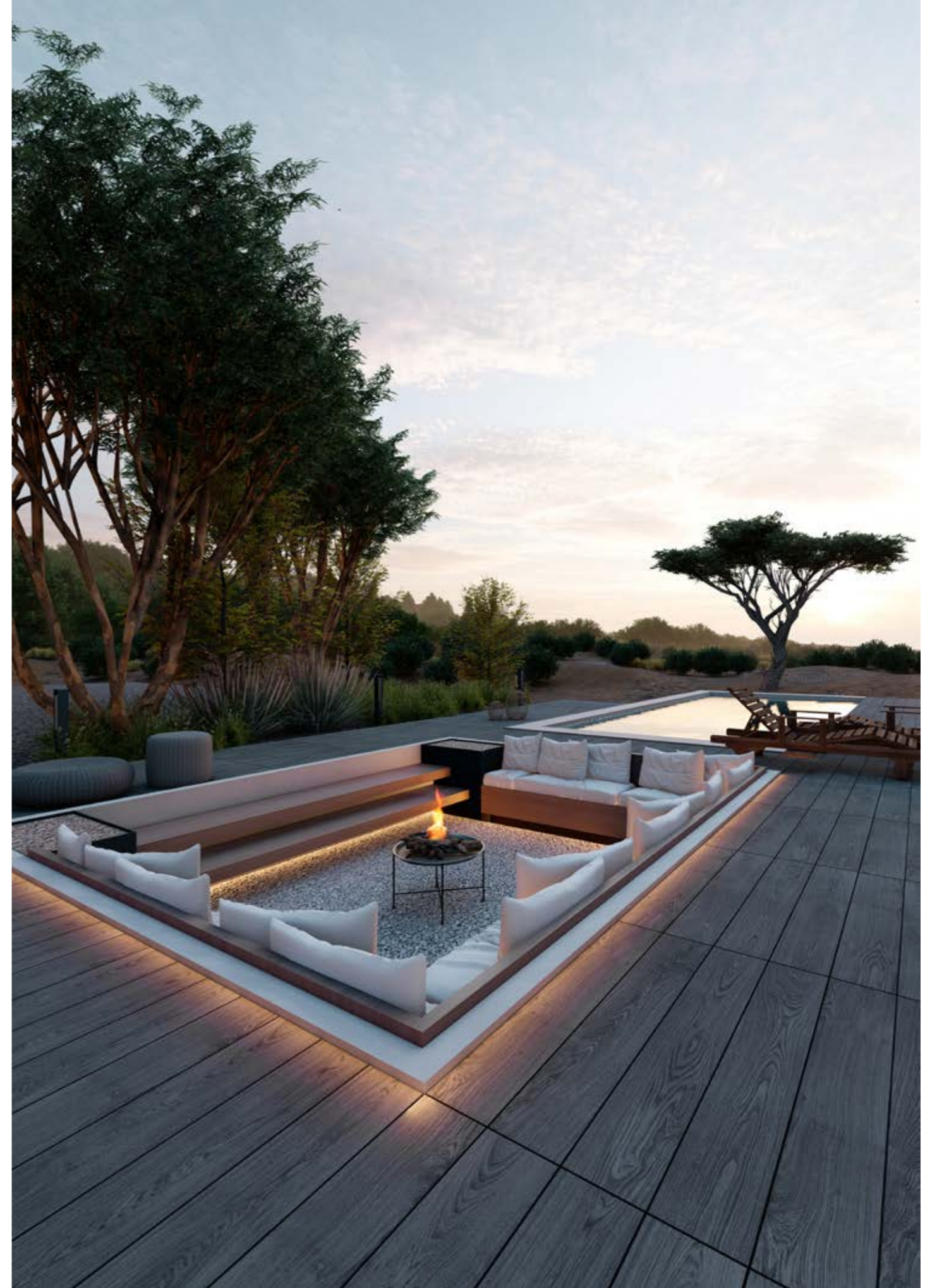
## Selva

Selva with its extraordinary touch that represents the natural wood looks, evokes the finest oaks. Thanks to porcelain surface which is inspired by the charm of wood material you will experience durability and warmth. Selva makes a clean and soft texture to bring beauty to any architect's needs. This collection is available in 6 shades of natural colors that are designed to ensure maximum versatility yet convey the most authentic and essential flavor of wood.

Floor: Selva Silver Matte — 20x120 cm



Floor: Selva Silver Matte — 20x120 cm



Floor: Selva Walnut Matte — 20x120 cm



Selva  
Ivory 

Available other sizes upon demand. For more detail  
please contact sales department.



20x120 cm  
FGM-BB70  
Matte | 12 Faces



Selva  
Silver

Available other sizes upon demand. For more detail  
please contact sales department.

Selva  
Dark Grey



Available other sizes upon demand. For more detail  
please contact sales department.



20x120 cm  
FGM-B865  
Matte | 12 Faces



20x120 cm  
FGM-B885  
Matte | 12 Faces

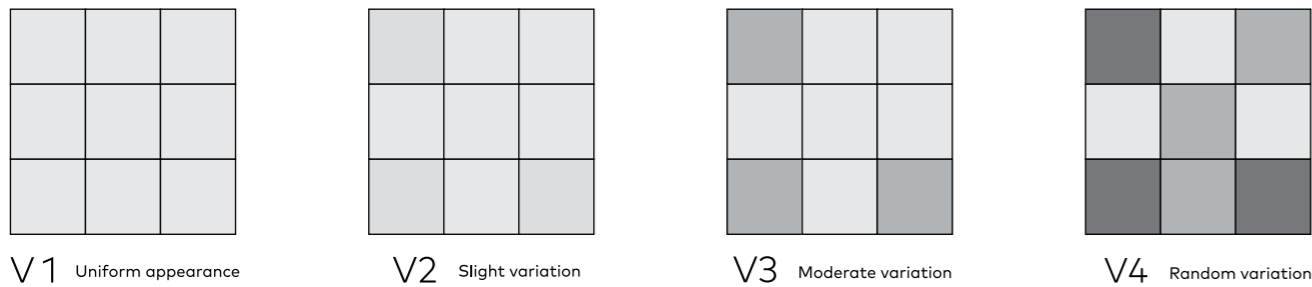
TECHNICAL  
INFORMATION



## SYMBOLOLOGY



## SHADE VARIATION



V1 Uniform appearance

V2 Slight variation

V3 Moderate variation

V4 Random variation

## PMA PORCELAIN TILE TECHNICAL CHARACTERISTICS

EUROPEAN STANDARD EN 14411

CHARACTERISTICS	Annex G Group Bla		Test Method	PMA Test Result
	Requirements for normal size n>15cm			
<b>DIMENSIONS AND SURFACE QUALITY</b>				
Length and width (cm)	±0.6%	max ±2 mm	EN ISO 10545-2	Affirmative
Thickness	±5%	max ±0.5 mm	EN ISO 10545-2	Affirmative
Rectangularity	±0.5%	max ±2 mm	EN ISO 10545-2	Affirmative
Straightness of sides	±0.5%	max ±1.5 mm	EN ISO 10545-2	Affirmative
Length and width (cm)	N>15 cm ±0.6%	max ±2 mm	EN ISO 10545-2	Affirmative
Thickness	±5%	max ±0.5 mm	EN ISO 10545-2	Affirmative
Rectangularity	±0.5%	max ±2 mm	EN ISO 10545-2	Affirmative
Straightness of sides	±0.5%	max ±1.5 mm	EN ISO 10545-2	Affirmative
Surface flatness	±0.5%	max ±2 mm	EN ISO 10545-2	Affirmative
<b>SURFACE FLATNESS</b>				
a) Center curvature, related to diagonal calculated from the work sizes	±0.5%	max ±2 mm	EN ISO 10545-2	Affirmative
b) Edge curvature, related to the corresponding work size	±0.5%	max ±2 mm	EN ISO 10545-2	Affirmative
c) Warpage, related to diagonal calculated from the work size	±0.5%	max ±2 mm	EN ISO 10545-2	Affirmative
<b>PHYSICAL PROPERTIES</b>				
Water absorption (in % by mass)	$E_w < 0.5\%$	Individual Maximum 0.6%	EN ISO 10545-3	Affirmative
BREAKING STRENGTH (N) for Thickness ≥ 7.5mm	Not Less Than 1300 N			Affirmative
Flexural tensile strength or Modulus of rupture (N/mm <sup>2</sup> )	Minimum 35 N/mm <sup>2</sup> Individual Minimum 32 N/mm <sup>2</sup>		EN ISO 10545-4	Affirmative
Impact resistance, as: Coefficient of restitution (COR)	Declared Value		EN ISO 10545-5	Affirmative
Resistance to deep abrasion of unglazed tiles: Removed value (mm <sup>3</sup> )	Maximum 175 mm <sup>3</sup>		EN ISO 10545-6	Affirmative
Resistance to surface abrasion of glazed tiles intended for use on floors	Abrasion class and cycles passed		EN ISO 10545-7	Affirmative
Coefficient of linear thermal expansion	Declared Value		EN ISO 10545-8	Affirmative
Resistance to thermal shock	Pass according to EN ISO 10545-1		EN ISO 10545-9	Affirmative
Frost resistance	Pass according to EN ISO 10545-1		EN ISO 10545-12	Affirmative
Water absorption (in % by mass)	$E_w \leq 0.5\%$	Individual maximum 0.6%	EN ISO 10545-3	Affirmative
Breaking strength for thickness 7.5mm and more	Not less than 1300 N			Affirmative
Flexural tensile strength or Modulus of rupture (N/mm <sup>2</sup> )	Minimum 35 N/mm <sup>2</sup> Individual minimum 32 N/mm <sup>2</sup>		EN ISO 10545-4	Affirmative
Resistance to deep abrasion of unglazed tiles: Removed Volume	Maximum 175 mm <sup>3</sup>		EN ISO 10545-6	Affirmative
Coefficient of linear thermal expansion	Declared value		EN ISO 10545-8	Affirmative
Resistance to thermal shock	Pass according to EN ISO 10545-1		EN ISO 10545-9	Affirmative
Frost Resistance	Pass according to EN ISO 10545-1		EN ISO 10545-12	Affirmative
<b>CHEMICAL PROPERTIES</b>				
Resistance to the low concentration of acids & alkanes	Declared Value			Affirmative
Resistance to the high concentration of acids & alkanes	Declared Value		EN ISO 10545-13	Affirmative
Resistance to household chemicals & swimming pool salts	Minimum Class B			Affirmative
Resistance to staining (unglazed tiles)	Declared Value		EN ISO 10545-14	Affirmative
Resistance to staining (Unglazed tiles)	Declared value		EN ISO 10545-14	Affirmative
Resistance to the low concentration of acids & alkalis	Declared value			Affirmative
Resistance to the high concentration of acids & alkalis	Declared value		EN ISO 10545-13	Affirmative
Resistance to household chemicals & swimming Pool Salts	Minimum class B			Affirmative
				Affirmative

# TECHNICAL CHARACTERISTICS

## WATER ABSORPTION

### ISO 10545-3

The water absorption of PMA slabs is minimized thanks to production and quality control standards of an extremely high level, which guarantees compactness and a reduced level of porosity. The value given in the tables of technical characteristics refers to the percentage of water absorbed with respect to the mass.

## BENDING RESISTANCE

### ISO 10545-4

The value expressed allows an analysis of the ability of the slabs to withstand static and dynamic stress in the test conditions.

## ABRASION RESISTANCE

### ISO 10545-6

The test is performed on unglazed (UGL) surfaces in order to determine the quantity of material that is removed following the action of an abrasive disc (150 revs). The PMA slabs prove to be more resistant the less material is removed by the disc.

## FROST RESISTANCE

### ISO 10545-12

Outdoor applications are particularly prone to deterioration due to frost, because in the event that any water absorbed turns into ice, this can lead to the tile breaking. The PMA slabs are not damaged by frost in any way thanks to their compactness and low porosity.

## RESISTANCE TO CHEMICAL AGGRESSION

### ISO 10545-13

The laboratory analysis is able to determine the resistance of glazed (GL) and unglazed (UGL) surfaces to chemical aggression by using acids and bases with a high concentration in line with the following classification: LA, HA, A: no visible effect.

## SLIPPERINESS

### DIN 51130-1

In this test, a person is asked to stand on a flat surface covered with tiles and sprinkled with oil. This surface is then tilted until the person, wearing specific footwear, starts to slip. The following classification is established by the angle of inclination of the tiled surface at the moment the person starts to slip:

up to <6°    unclassified

6° ≤ < 10°    R9

## STAIN RESISTANCE

### ISO 10545-14

Three different elements (oil, iodine solution, and green chrome solution) are applied to and left on the tiles for 24 hours, after which they are then cleaned:

› **Class E 5**

The stain is removed with hot running water for 5 minutes.

› **Class E 4**

The stain is removed using a weak neutral detergent and a non-abrasive sponge.

› **Class E 3**

The stain is removed using a basic detergent containing an abrasive agent and a rotating brush with hard bristles.

› **Class E 2**

The stain is removed using a suitable solvent, left on the stain for 24 hours.

› **Class E 1**

The stain cannot be removed.

## CHARACTERISTICS OF THE PMA SLABS

The PMA slabs are produced only with natural, mineral raw materials.

Research on the product has made it possible to obtain an effect that is extremely close to the natural material, with the advantage that the typical defects and blemishes in the original product found in nature can be removed using technology.

› Basic formats and special trims can be supplied in autonomous shades. Any minor variations in size fall within the standard tolerance values;

› Any minor dots add to the natural feel of the material;

› Any second choice or discontinued products are sold on an “as seen” basis and may not be returned;

› The use of PMA slabs with non-rectified edges is allowed only after the de-tensioning of the slab by removing any excess from the outer edges, as per the specifications in the technical manual.

## DOCUMENTATION

The engineered surface reserves the right to make changes to the products illustrated in this catalog for production requirements or with the aim of improving the technical/aesthetic quality.

The samples are purely indicative.

The packaging and weight information is shown may vary for production requirements.

To avoid any problems, we recommend contacting the sales department at the time of placing an order.

# USE AND MAINTENANCE

## SUGGESTIONS FOR CORRECT FITTING AND CLEANING

Although the slabs are mainly intended for furnishing, PMA slabs may also be fitted in the traditional way as flooring and wall coverings to create spaces with a “total look”. The following specifications refer to slabs fitted as flooring and wall coverings. With regard to the gluing of the slabs on furnishing elements, we recommend you consult the PMA technical manual.

## FITTING

When you receive the material ordered and in any case before fitting, it is important to check carefully the characteristics of the material (compliance with size, shade, and quality). No complaints will be accepted for any materials that have already been fitted if the defects were visible prior to fitting. To obtain the best aesthetic results, we recommend mixing the graphics accurately to avoid repeating patterns and to obtain the best possible results in terms of layout and color.

The slabs can be fitted using specific high-performance adhesives for porcelain stoneware, adhesives in category C2 or above. We recommend applying the adhesive on both sides to prevent any breakages of the material once fitted.

Please remember that at the time of fitting, the substrate must be stable, dry, and properly prepared, not frosted, and not too hot and that it is necessary in any case to follow the instructions provided by the manufacturers of the materials for the specific substrates and adhesives used.

Cement-based adhesives must be applied at room temperature, in general between 5°c and 30/35°c.

It is hereby understood that we recommend observing the technical times indicated by the manufacturers of the adhesives used.

The most suitable adhesives for fitting the PMA slabs are listed in the European Standard currently in force: EN12004.

When fitting the material, avoid using pencils (graphite) or permanent markers to make marks on the surface, particularly on polished products.

The PMA slabs can be shaped and cut using purpose-built diamond discs and equipment for porcelain stoneware.

## JOINTS AND GROUTING

We strongly advise against fitting the slabs without joints. We also recommend a minimum joint of 3 mm (this type of fitting allows the grout to have a better grip on the sides of the slabs, greater absorption of any movements of the substrate, and consequently of the slabs themselves).

In large, open spaces it is absolutely essential to position the expansion joints at regular intervals; in smaller rooms, on the other hand, it is sufficient to leave a slight space between the tiled surface and the walls around the room, adding a final touch with a skirting board or with the wall covering.

Please refer in any case to the advice/suggestions of the planner, the works director, or the tile fitter to avoid problems of any sort.

For the best possible results, we suggest using tone-on-tone grouting. It is important to remove any excess grouting immediately and accurately after application while still fresh, using a sponge and plenty of water.

A few days after fitting, once the joints are completely dry, it is essential to thoroughly clean the tiled surface using buffered acids (see the after fitting instructions) in order to completely remove all cement-based residues.

## CLEANING “AFTER FITTING”

Properly cleaning the files after they have been fitted is crucial.

If residues of grouting are not properly removed, this may leave marks that are difficult to remove later, due to a film of cement that can absorb any kind of dirt. It is essential to loosen and eliminate these residues completely using buffered acids diluted in water (read the instructions for use on the packages of the products used), soon after fitting, and to thoroughly rinse any residues from the fitted surface in order to prevent any damage to the material.

It is preferable to try cleaning a small part of the surface first; if the results are good, the entire surface can then be cleaned.

After this, the floor must then be cleaned using a basic or alkaline detergent.

These must be degreasing because the surface treatment might help to trap dirt.

For Polished slabs with a marble effect, PMA recommends taking special care when cleaning the surface using buffered acids, as the surface may be damaged if the acid is not removed quickly.

For polished surfaces, the use of non-abrasive cleaning equipment is necessary to prevent the surface from losing its shine or becoming scratched.

## ROUTINE CLEANING

For routine cleaning of the PMA slabs, we strongly advise against the use of waxes, greasy soaps, fillers and various treatments (water repellent) treatments.

In order to prevent any shiny patinas from forming on the slabs, PMA would like to point out that hydrofluoric acid (HF) and its derivatives cause irrevocable damage to its products.

For routine cleaning operations, PMA recommends the use of bleach and ammonia, appropriately diluted in water; for the Polished finish, it suggests drying the floor after cleaning to avoid any marks.

## EXTRAORDINARY CLEANING

In the case of particularly stubborn stains, we recommend the use of specific detergents, which are indicated in greater detail in the table entitled “cleaning products”. Furthermore, it should not be forgotten that it is easier to remove any stain when still fresh.

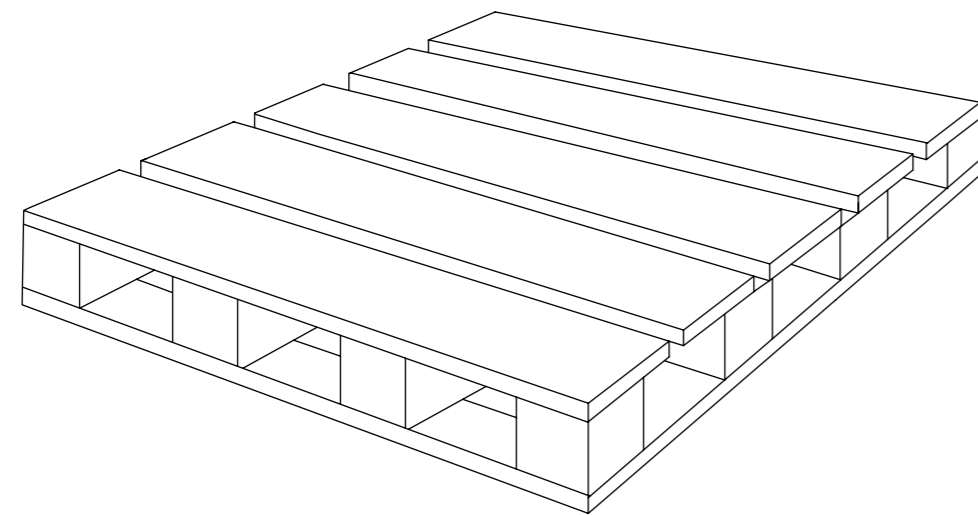
It is always important to test the detergents on a small area before applying them to the entire surface, particularly on Polished surfaces.

## RAISED FLOORINGS

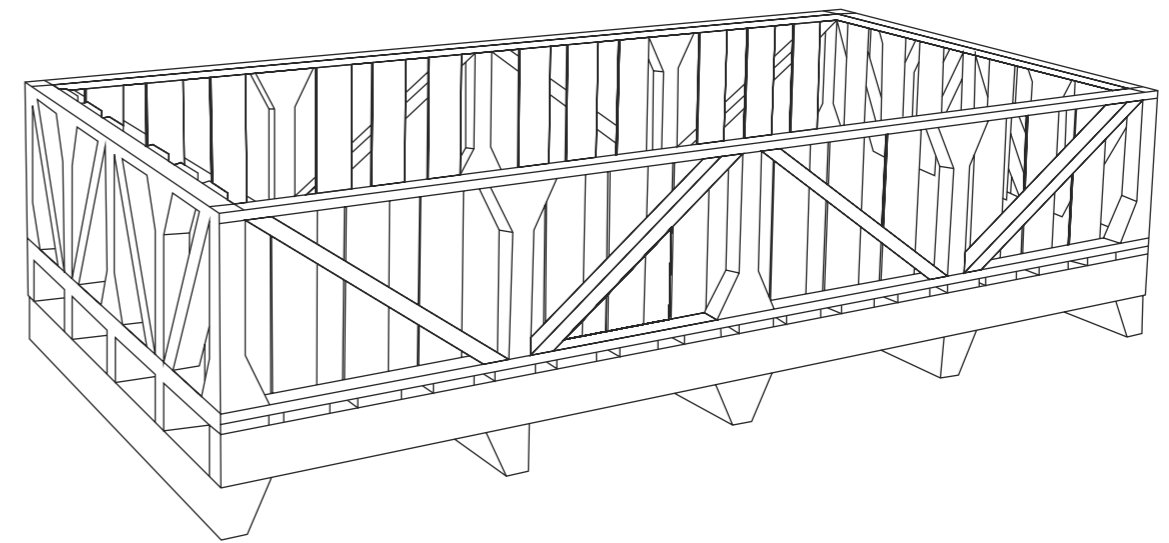
In the case of raised floorings, it is not possible to use a large quantity of water; we, therefore, recommend using a floor cloth that has been properly wrung. Routine cleaning must be carried out using purpose made floor cloths, lukewarm water, and detergent, reducing the amount of water used.

Stains can still be removed using concentrated products directly on the stains.

Size	Thickness	SQM/Box	Pieces/Box	KG/Box (Aprox)	Box/Pallet	KG/Pallet	SQM/Pallet
20x120 cm	11.5 mm	0.96	4	26	84	2021	80.64
60x120 cm Polished	11.5 mm	1.44	2	38.2	60	2292	86.4
60x120 cm Matte	11.5 mm	1.44	2	37.5	60	2250	86.4
100x100 cm	10 mm	2	2	46	42	1930	84



Size	Thickness	SQM/Box	Pieces/Box	KG/Box (Aprox)	Box/Pallet	KG/Pallet	SQM/Pallet
80x160 cm	9 mm	1.28	-	27.6	50	1380	64
120x240 cm	9.5 mm	2.88	-	61.33	36	2650	103.68
120x280 cm	9.5 mm	3.36	-	71.55	36	2910	120.96
160x320 cm	9.5 mm	5.12	-	109	24	3000	122.88





ISO 9001

ISO 9001 is the international standard for quality management system



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12/10271

CE marking is an administrative marking that indicates conformity with health, safety, and environmental protection standards for products sold within the European Economic Area.



European standard that defines terms and specifications of ceramic tiles



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(method A) or dry-pressing (method B), and by their water absorption level (see 3.9 and Table 1). The groups do not presuppose the usage of the products. The requirements for each product group shall be as given in Annexes A to L.

Table 1 - Classification of ceramic tiles with respect to water absorption and shaping

Shaping	Water Absorption ( $E_b$ )			
	Group I $E_b \leq 3\%$	Group II <sub>a</sub> $3\% < E_b \leq 6\%$	Group II <sub>b</sub> $6\% < E_b \leq 10\%$	Group III $E_b > 10\%$
Method A Extruded	Group AI <sub>1</sub> $E_b \leq 0.5\%$ (see Annex L)	Group AII <sub>1</sub> <sup>a)</sup> (see Annex B)	Group AII <sub>2</sub> <sup>a)</sup> (see Annex D)	Group AIII (see Annex F)
	Group AI <sub>2</sub> $0.5\% < E_b \leq 3\%$ (see Annex A)	Group AII <sub>2</sub> <sup>a)</sup> (see Annex C)	Group AII <sub>3</sub> <sup>a)</sup> (see Annex E)	Group BIII <sub>b</sub> (see Annex K)
Method B Dry-pressed	Group BI <sub>1</sub> $E_b \leq 0.5\%$ (see Annex G)	Group BII <sub>a</sub> (see Annex I)	Group BII <sub>b</sub> (see Annex J)	
	Group BI <sub>2</sub> $0.5\% < E_b \leq 3\%$ (see Annex H)			

a) Groups AI<sub>1</sub> and AI<sub>2</sub> are divided into two parts (parts 1 and 2) with different product specifications. Part 1 covers most of the tiles in the group; part 2 covers certain specific products, which are manufactured under different names (e.g. terre cuite in France and Belgium, cotton in Italy, and baldosin Catalan in Spain).

b) Group BIII covers glazed ceramic tiles only. There is no quantity of dry-pressed unglazed tiles produced with water absorption greater than 10% that is not covered by this product group.

Table 2 - Characteristic of Ceramic Tiles Required for Different Applications

CHARACTERISTICS <sup>a)</sup>		FLOORINGS		WALLS		TEST METHOD
A)	DIMENSIONS AND SURFACE QUALITY	INTERIOR	EXTERIOR	INTERIOR	EXTERIOR	REFERENCE
A.1	Length and Width (cm)	X	X	X	X	EN ISO 10545-2
A.2	Thickness	X	X	X	X	EN ISO 10545-2
A.3	Straightness of Sides (i.e. Facial Sides) <sup>b)</sup>	X	X	X	X	EN ISO 10545-2
A.4	Rectangularity <sup>b)</sup>	X	X	X	X	EN ISO 10545-2
A.5	Surface Flatness	X	X	X	X	EN ISO 10545-2
A.6	Surface Quality	X	X	X	X	EN ISO 10545-2
B)	PHYSICAL PROPERTIES	INTERIOR	EXTERIOR	INTERIOR	EXTERIOR	REFERENCE
B.1	Water Absorption	X	X	X	X	EN ISO 10545-3
B.2	Breaking Strength <sup>c)</sup>	X	X	X	X	EN ISO 10545-4
B.3	Flexural Tensile Strength <sup>d)</sup> or Modules of Rupture <sup>d)</sup>	X	X	X	X	EN ISO 10545-4
B.4 a	Resistance to Deep Abrasion - Unglazed Tiles <sup>d)</sup>	X	X			EN ISO 10545-6
B.4 b	Resistance to Surface Abrasion - Glazed Tiles <sup>d)</sup>	X	X			EN ISO 10545-7
B.5	Linear Thermal Expansion <sup>e)</sup>	X	X	X	X	EN ISO 10545-8
B.6	Resistance to Thermal Shock <sup>f)</sup>	X	X	X	X	EN ISO 10545-9
B.7	Resistance to Cracking <sup>g)</sup>	X	X	X	X	EN ISO 10545-11
B.8	Freeze-Thaw Resistance <sup>h)</sup>		X		X	EN ISO 1015-12
B.9	Slipperiness <sup>i)</sup>	X	X			FprCEN/TS 16165:2011 <sup>j)</sup>
B.10 a	Bond Strength / Adhesion <sup>k)</sup> - Cementitious Adhesives			X	X	EN 12004:2007, 4.1
B.10 b	Bond Strength / Adhesion <sup>k)</sup> - Dispersion Adhesives			X	X	EN 12004:2007, 4.2
B.10 c	Bond Strength / Adhesion <sup>k)</sup> - Reaction Resin Adhesives			X	X	EN 12004:2007, 4.3
B.10 d	Bond Strength / Adhesion <sup>k)</sup> - Mortar			X	X	EN ISO 10545-12
B.11	Moisture Expansion <sup>l)</sup>	X	X	X	X	EN ISO 10545-10
B.12	Small Color Differences <sup>m)</sup>	X	X	X	X	EN ISO 10545-16
B.13	Impact Resistance <sup>n)</sup>	X	X			EN ISO 10545-5
B.14	Reaction to Fire <sup>o)</sup>	X		X	X	WT
B.15	Tactility <sup>p)</sup>	X	X			CEN TS 15209 <sup>q)</sup>
C)	CHEMICAL PROPERTIES	INTERIOR	EXTERIOR	INTERIOR	EXTERIOR	REFERENCE
C.1 a	Resistance to Staining - Glazed Tiles <sup>r)</sup>	X	X	X	X	EN ISO 10545-14
C.1 b	Resistance to Staining - Unglazed Tiles <sup>r)</sup>	X	X	X	X	EN ISO 10545-14
C.2 a	Resistance to Acids and Alkalis of Low Concentration <sup>s)</sup>	X	X	X	X	EN ISO 10545-13
C.2 b	Resistance to Acids and Alkalis of High Concentration <sup>s)</sup>	X	X	X	X	EN ISO 10545-13
C.2 c	Resistance to Household Cleaning Agents and Swimming Pool Chemicals <sup>t)</sup>	X	X	X	X	EN ISO 10545-13
C.3 a	Release of Cadmium - Glazed Tiles <sup>u)</sup>	X	X	X	X	EN ISO 10545-15
C.3 b	Release of Lead - Glazed Tiles <sup>u)</sup>	X	X	X	X	EN ISO 10545-15
C.3 c	Release of Other Dangerous Substances <sup>u)</sup>	X	X	X	X	As Relevant

- a Requirements for these characteristics are given in Annex A to L.
- b Not applicable for ceramic tiles having curved shapes.
- c For floorings only.
- d For walls only.
- e See N.2.2.
- f For ceramic tiles which intended use is subject to localized thermal shock
- g For glazed ceramic tiles only.
- h For ceramic tiles that are intended to be used where frost may apply.
- i For floorings on pedestrian circulation areas (where required are regulation).
- j Unless a different test method is required by national regulations in the market of the relevant Member State(s) for the intended use, in which case the test method and results shall be declared as given therein.
- k For walls when performing the test with actual ceramic tiles and suitable adhesive(s) or mortar only.
- l See N.2.3.
- m See N.2.6.
- n See N.2.1.
- o For ceramic tiles intended to be used for internal floorings and for internal and external walls only.
- p For tactile paving surface only i.e. when required for blind or vision impaired persons.
- q See N.2.5.
- r See N.2.4.
- s When relevant, see Notes 1 and 2 in ZA.1 for the release of other dangerous substances, if any.
- t For glazed ceramic tiles only, when intended to be used on worktops and on wall surfaces where food preparation takes place and food may be in direct contact with the glazed tile surface. As indicative limits, reference could be made to Direct 31/2005/CE.

NOTE 1 Characteristics given in this table in "plain" text are relevant to all intended uses, while those in "italics" are additionally relevant for the specific intended use(s) only.

NOTE 2 Characteristics, given in this table in "bold" text, are the mandated essential characteristics or the corresponding proxy characteristics (for CE marketing, see Annex ZA) and those in "normal" text, the voluntary characteristics (not for CE marketing).

## Requirements for Dry-pressed Ceramic Tiles With Low Water Absorption of GROUP B<sub>I<sub>a</sub></sub> (E<sub>b</sub> ≤ 0.5%)

Requirements for Dimension and Surface Quality and for Physical and Chemical Properties of this Group of Ceramic Tiles Shall be in Accordance With Table G.1

Table G.1 - Requirements for Dry-pressed Ceramic Tiles with Low Water Absorption, GROUP B<sub>I<sub>a</sub></sub> (E<sub>b</sub> ≤ 0.5%)

CHARACTERISTICS	Requirements for Nominal Size N			Test Method
	7 cm < N < 15 cm	N ≥ 15 cm		
	(mm)	%	(mm)	
<b>A) DIMENSIONS AND SURFACE QUALITY</b>				
<b>A.1 LENGTH AND WIDTH</b>				
The Work Size Shall be Chosen as Follows for:				
a) Modular Tiles:	In order to allow a nominal joint width of between 2 and 5 mm			-
b) Non-modular Tiles:	So that the difference between the work size and normal size is not more than 2% (max 0.5mm)			-
The Permissible Deviation of the Average Size for the Each Tile (2 or 4 Sides) From the Work Size (W)	±0.9 mm	±0.6%	±2.0 mm	EN ISO 10545-2
<b>A.2 THICKNESS</b>				
a) The Thickness Shall be specified	Declared thickness			-
b) The Permissible Deviation, of the Average Thickness of Each Tile from the Work Size Thickness	±0.5 mm	±5%	±0.5 mm	EN ISO 10545-2
<b>A.3 STRAIGHTNESS OF SIDES<sup>b</sup> (Facial Sides)</b>				
The Maximum Permissible Deviation from Straightness, Related to the Corresponding Work Size	±0.75 mm	±0.5%	±1.5 mm	EN ISO 10545-2
<b>A.4 RECTANGULARITY<sup>b</sup></b>				
The Maximum Permissible Deviation from Rectangularity, Related to the Corresponding Work Size	±0.75 mm	±0.5%	±2 mm	EN ISO 10545-2
<b>A.5 SURFACE FLATNESS</b>				
The Maximum Permissible Deviation from Flatness				
a) Center Curvature, Related to Diagonal Calculated from Work Size	±0.75 mm	±0.5%	±2 mm	EN ISO 10545-2
b) Edge Curvature, Related to the Corresponding Work Size	±0.75 mm	±0.5%	±2 mm	EN ISO 10545-2
c) Warpage, Related to Diagonal Calculated from the Work Size	±0.75 mm	±0.5%	±2 mm	EN ISO 10545-2
<b>A.6 SURFACE QUALITY<sup>c</sup></b>	A minimum of 95% of the tiles shall be free from visible defects that would impair the appearance of a major area of tiles			EN ISO 10545-2
<b>B) PHYSICAL PROPERTIES</b>				
<b>B.1 WATER ABSORPTION (IN % BY MASS)</b>	E <sub>b</sub> ≤ 0.5 Individual maximum 0.6%			EN ISO 10545-3
<b>B.2 BREAKING STRENGTH, FOR:</b>				
a) Thickness ≥ 7.5 mm	Not less than 1300 N			EN ISO 10545-4
b) Thickness < 7.5 mm	Not less than 700 N			EN ISO 10545-4
<b>B.3 FLEXURAL TENSILE STRENGTH OR MODULUS OF RUPTURE<sup>d</sup></b>	Minimum 35 N/mm <sup>2</sup> Individual minimum 32 N/mm <sup>2</sup>			EN ISO 10545-4

Table G.1 - Continued

CHARACTERISTICS	Requirements for Nominal Size N			Test Method
	7 cm < N < 15 cm	N > 15 cm		
	(mm)	%	(mm)	
<b>B) PHYSICAL PROPERTIES</b>				
<b>B.4 ABRASION RESISTANCE</b>				
a) Resistance to Deep Abrasion of Unglazed Tiles: Removed Volume	Maximum 175 mm <sup>3</sup>			EN ISO 10545-6
b) Resistance to Surface Abrasion of Glazed Tiles Intended for Use on Floors <sup>a</sup>	Abrasion class and cycles passed			EN ISO 10545-7
<b>B.5 COEFFICIENT OF LINEAR THERMAL EXPANSION</b>				
- From Ambient Temperature to 100 °C	Declared value <sup>f</sup>			EN ISO 10545-8
<b>B.6 THERMAL SHOCK RESISTANCE</b>	Pass according to EN ISO 10545-1 <sup>g</sup>			EN ISO 10545-9
<b>B.7 CRAZING RESISTANCE:</b> Glazed Tiles <sup>h</sup>	Pass according to EN ISO 10545-1 <sup>g</sup>			EN ISO 10545-11 <sup>h</sup>
<b>B.8 FROST RESISTANCE</b>	Pass according to EN ISO 10545-1 <sup>g</sup>			EN ISO 10545-12
<b>B.9 SLIPPERINESS</b>	Declared value(s) <sup>g</sup>			Pr-CEN/TS 16165:2011 <sup>i</sup>
<b>B.10 BOND STRENGTH / ADHESION<sup>i</sup>, FOR:</b>				
a) Cementitious Adhesives <sup>k</sup>	Declared value(s)			EN 12004:2007 , 4.1 <sup>j</sup>
b) Dispersion Adhesives <sup>k</sup>	Declared value(s)			EN 12004:2007 , 4.2 <sup>j</sup>
c) Reaction Resin Adhesives <sup>k</sup>	Declared value(s)			EN 12004:2007 , 4.3 <sup>j</sup>
a) Mortar	Declared value(s)			EN 1015-12 <sup>j</sup>
<b>B.11 MOISTURE EXPANSION (IN mm/m)</b>	Declared value <sup>f</sup>			EN ISO 10545-10
<b>B.12 SMALL COLOR DIFFERENCES<sup>f</sup> FOR:</b>				
a) Glazed Tiles	$\Delta E < 0.75$			EN ISO 10545-16
b) Unglazed Tiles	$\Delta E < 1.0$			EN ISO 10545-16
<b>B.13 IMPACT RESISTANCE, as:</b>				
- Coefficient of Restitution (COR)	Declared value <sup>f</sup>			EN ISO 10545-5
<b>B.14 REACTION TO FIRE</b>	(Class A1 or A1 <sub>FL</sub> ) <sup>m</sup>			-
<b>B.15 TACTILITY<sup>n</sup></b>	Declared surface description <sup>g</sup>			CEN/TS 15209
<b>C) CHEMICAL PROPERTIES</b>				
<b>C.1 RESISTANCE TO STAINING, FOR:</b>				
a) Glazed Tiles	Minimum class 3			EN ISO 10545-14
b) Unglazed Tiles	Declared value <sup>f</sup>			EN ISO 10545-14
<b>C.2 RESISTANCE TO CHEMICAL</b>				
a) Resistance to Low Concentration of Acids and Alkalis	Declared value <sup>f</sup>			EN ISO 10545-13
b) Resistance to High Concentration of Acids and Alkalis	Declared value <sup>f</sup>			EN ISO 10545-13
c) Resistance to Household Chemicals and Swimming Pool Salts	Minimum class B			EN ISO 10545-13
<b>C.3 RELEASE OF DANGEROUS SUBSTANCES</b>				
a) Cadmium (in mg/dm <sup>2</sup> )	Declared value <sup>g</sup>			EN ISO 10545-15
b) Lead (in mg/dm <sup>2</sup> )	Declared value <sup>g</sup>			EN ISO 10545-15
c) Other Dangerous Substances <sup>g</sup>	Declared value			As Relevant

- a Similar joint widths may be used to apply to the traditional systems based on non-metric sizes.
- b Not applicable for tiles having curved shapes.
- c Because of firing, a slight variation from the standard color is unavoidable. This does not apply to intentional irregularities of color variation of the face of tiles (which can be unglazed, glazed, or partly glazed) or to the color variation over a tile area which is characteristic of the given tile and desirable. Spots or colored dots which are introduced for decorative purposes are not considered a defect.
- d Not applicable to ceramic tiles with breaking strength > 3000 N
- e Where required, the abrasion class resistance according to Annex M may be declared.
- f See Annex N additional information on applicability.
- g See table 2 for uses where it is applicable.
- h Certain decorative effects may have a tendency to craze. They are to be identified by the manufacturer, in which case the crazing test given in EN ISO 11-10545 is not applicable.
- i Unless a different test method is required by national regulations in the market of the relevant member state(s) for the intended use, in which case the test method and result shall be declared as given therein (as long as consolidated European test method is not available).
- j For intended uses subject to requirements against accidental fall of the object on to transit areas only. Tests are to be performed using the actual tiles and suitable adhesive and/or mortar.
- k For the types of adhesives, defined in EN 12004:2007 only.
- l The proposed test methods are intended to determine the adhesion strength of the adhesive and have not been developed to determine ceramic the characteristics. Thus, there might be no correlation between the declared bond strength and the performance of the tile in use (other factors proper installation techniques and type of background support will influence the final performance).
- m Ceramics, as a homogeneously distributed material used for ceramic tiles, is considered as a material of known and stable performance with respect to the reaction to fire performance as it does not consist of any organic material. As such it does not contribute to the fire and it may be considered without the need for testing (CWT) as the class A1 material<sup>7</sup>. The reaction to the fire performance of ceramic tiles may also be classified also as class A1 according to EN ISO 1-13501.
- n For tactile paving surface i.e. when required for blind or vision impaired persons.
- o When relevant, see notes 1 and 2 in ZA.1 for the performance of the product concerning these characteristics, if any to be declared.

**CLEANING PRODUCTS**

TYPES OF DETERGENT <small>Where the sale is permitted</small>	SOLVENTS <small>(bleach, turpentine, acetone, trichloroethylene, nitro thinner)</small>			ACIDS <small>(muriatic acid, hydrochloric acid, phosphoric acid)</small>			ALKALINE-BASED DETERGENTS - ALKALI <small>(professional alkaline detergents)</small>		
	Matte	Satin	Polished	Matte	Satin	Polished	Matte	Satin	Polished
<b>SURFACE</b>									
<b>TYPE OF STAINS</b>									
Coffee			■						
Lime scall				■	■	■			
Tar	■	■							
Concrete				■	■	■			
Candle wax	■	■	■						
Coca Cola			■						
Glue	■	■	■						
Chewing gum	■	■	■				■	■	
Rubber marks from tyres or shoes	■	■	■						
Grease, Oil							■	■	■
Ink	■	■	■						
Nicotine	■	■	■						
Felt-tip pen	■	■	■						
Tomato			■						
Resins	■	■	■						
Rust				■	■	■			
Nail varnish	■	■	■						
Cigarette burns				■	■	■			
Tea		■	■						
Wall paint	■	■	■	■	■	■			

For information and advice, please contact PMA directly.

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