

## Novelty 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, 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 whileperiodic 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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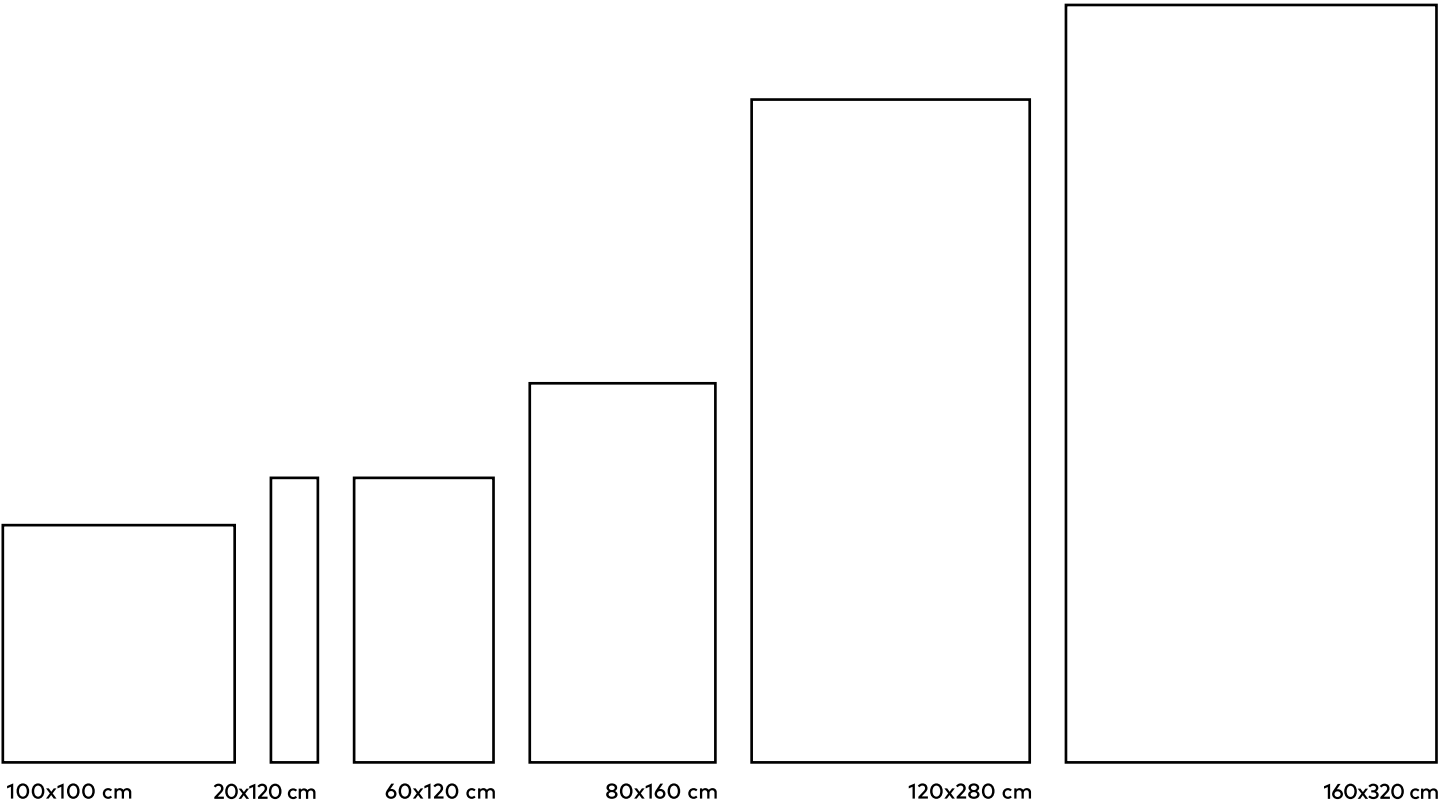
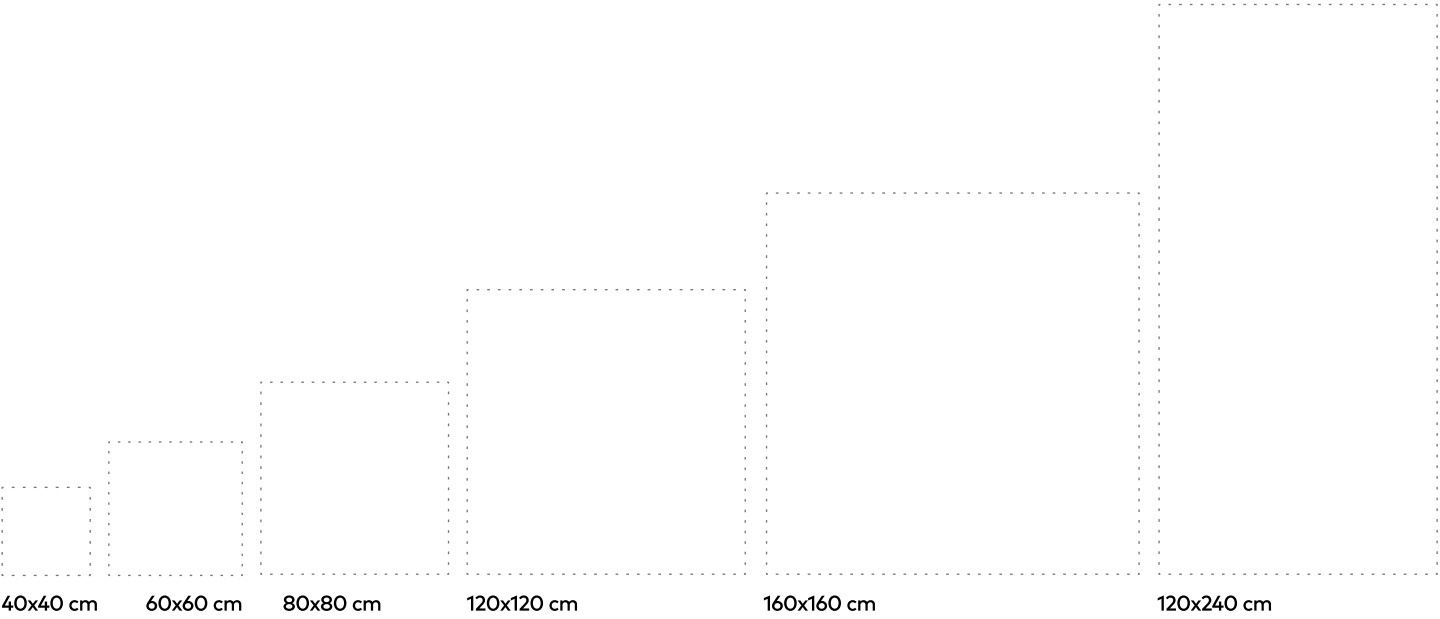
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20x120 cm	60x120 cm	80x160 cm	100x100 cm	120x280 cm	160x320 cm
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By Order  
Standard



PRODUCTS





### Calacatta Gold

Calacatta Gold marble tile is a threat to the eyes. Its creamy white background that is gently infused with deep grey veining and the occasional ribbons of gold, demonstrates 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

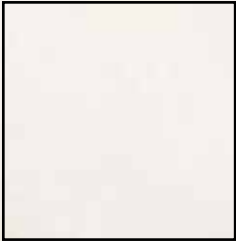


Wall: Calacatta Gold Polished — 120x280 cm  
Floor: Calacatta Gold Polished — 120x280 cm

**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



**120x280 cm**  
FGPB-LS180  
Polished | 5 Faces

LFG-R600  
Semipolished | 9 Faces  
FGM-R600  
Matte | 9 Faces

FGPB-LS155  
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-WS160  
Polished | 10 Faces



120x280 cm  
FGPB-5160  
Polished | 5 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-R12/5  
Polished | 7 Faces



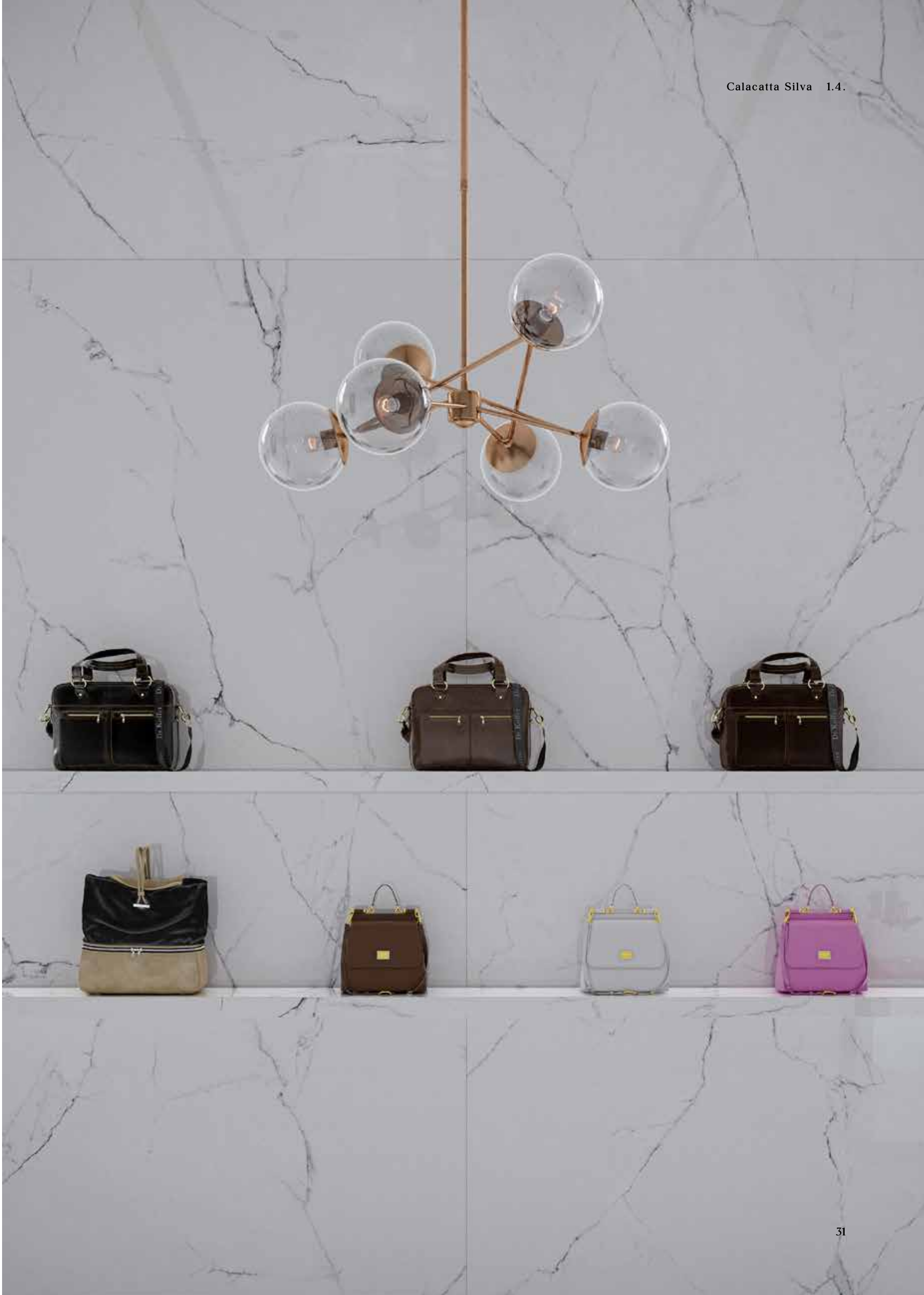
80x160 cm  
FGPB-C12/5  
Polished | 7 Faces



### 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





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

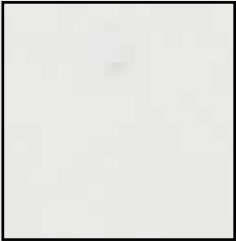


Floor: Calacatta Silva Semipolished — 60x120 cm  
Wall: Calacatta Silva Semipolished — 60x120 cm

Calacatta  
Silva



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



100x100 cm  
FGM-W600  
Matte | 11 Faces



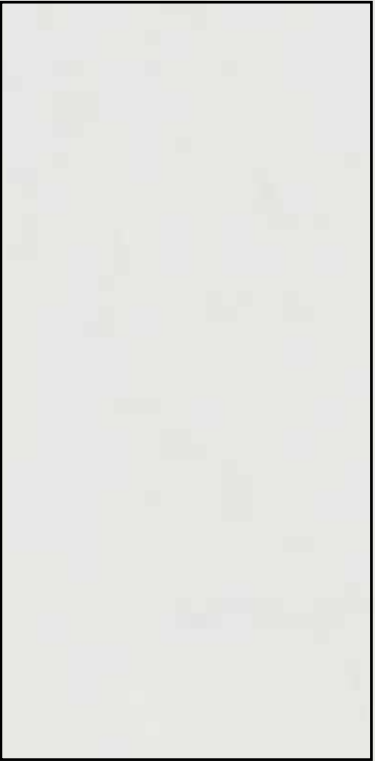
60x120 cm  
FGPB-R600  
Polished | 9 Faces



80x160 cm  
FGPB-C600  
Polished | 7 Faces



120x280 cm  
FGPB-LS015  
Polished | 4 Faces



160x320 cm  
FGPB-XS015  
Natural | 4 Faces

LFG-R600  
Semipolished | 9 Faces  
FGM-R600  
Matte | 9 Faces

FGM-LS015  
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







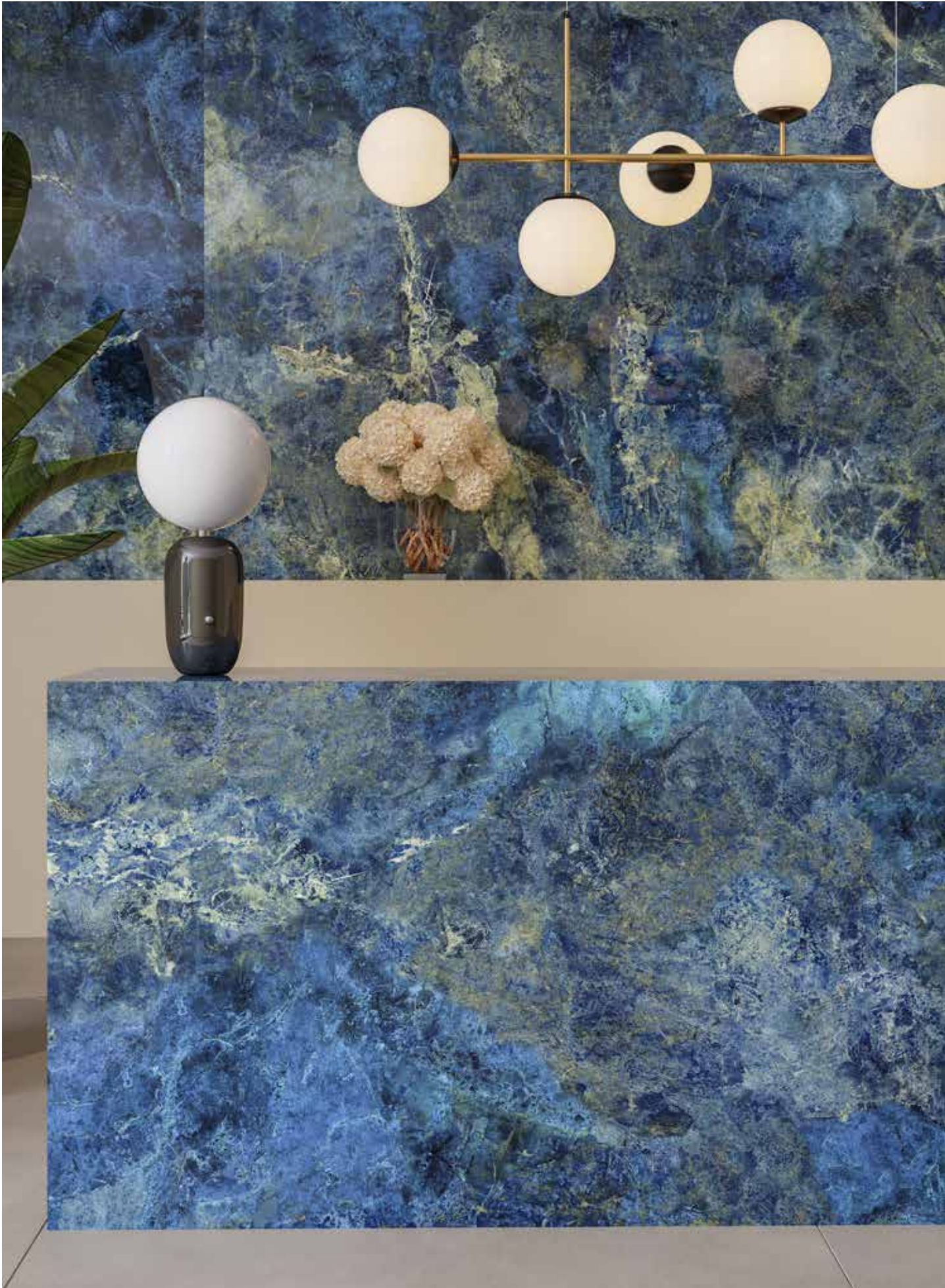
Wall: Elegant Blue Polished — 120x280 cm  
Floor: Natural Concrete Light Grey Soft Matte — 120x280 cm



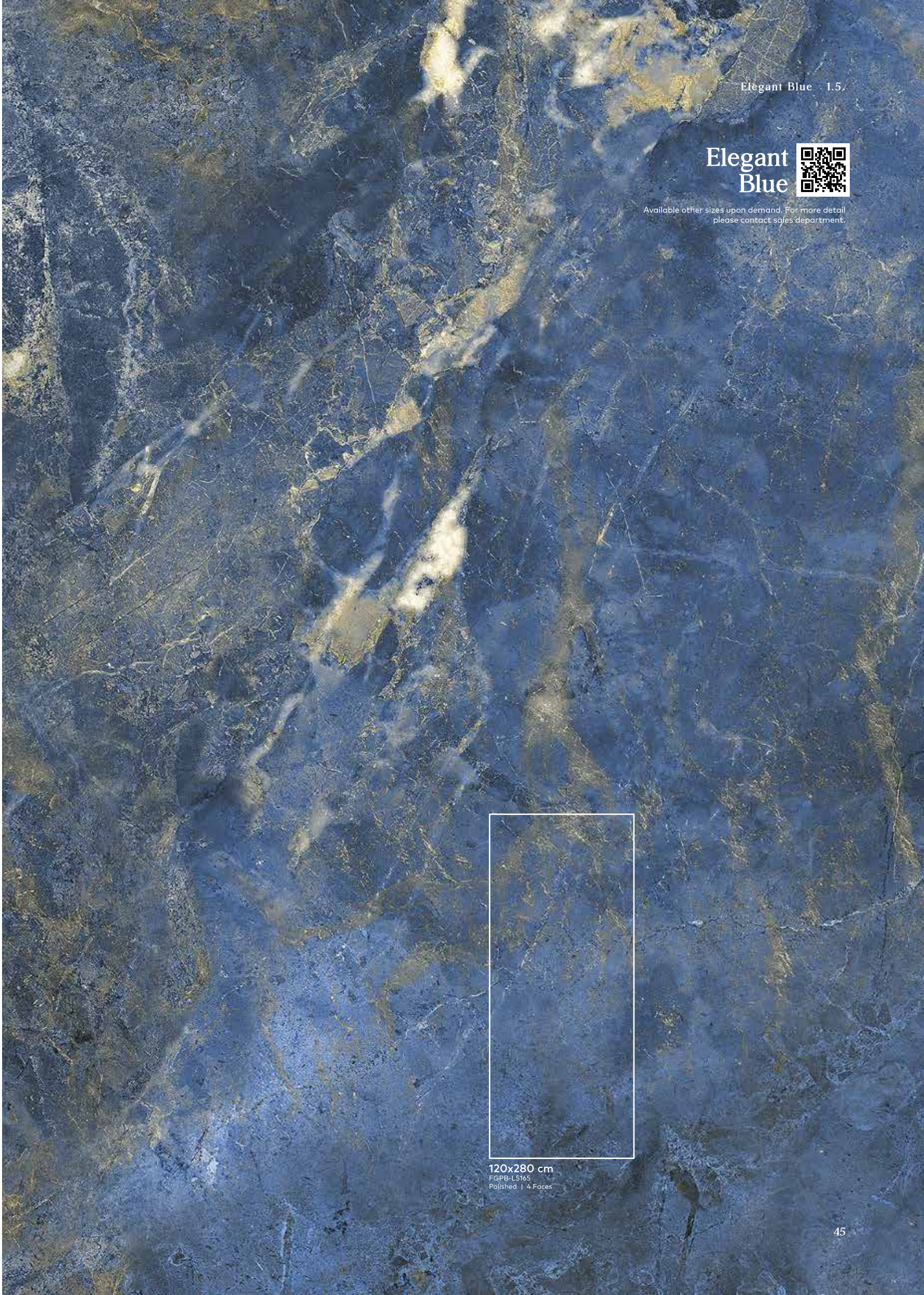


Wall: Elegant Blue Polished — 120x280 cm  
Floor: Calacatta Silva Natural — 120x280 cm





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



Elegant Blue 1.5.

**Elegant Blue**

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



120x280 cm  
FGBB-LS165  
Polished | 4 Faces





Premium Calacatta White

Even the most ingenious room in the house can be transformed into an island of beauty and comfort with the right touch from Premium Calacatta White from PMA collection. Explore the elegance, class, and style that a marble look can give to a space, filling it with color and precious graphic details together with the strength of porcelain stoneware. Premium Calacatta White is the choice of architects and rigorous designers who search for quality and beauty at the same time.

Floor: Premium Calacatta White Polished — 60x120 cm  
Wall: Premium Calacatta White Polished — 60x120 cm





Floor: Premium Calacatta White Polished — 60x120 cm  
Wall: Premium Calacatta White Polished — 60x120 cm





Floor: Premium Calacatta White Polished — 60x120 cm

# Premium Calacatta White



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



60x120 cm  
FGPB-R1310  
Polished | 10 Faces

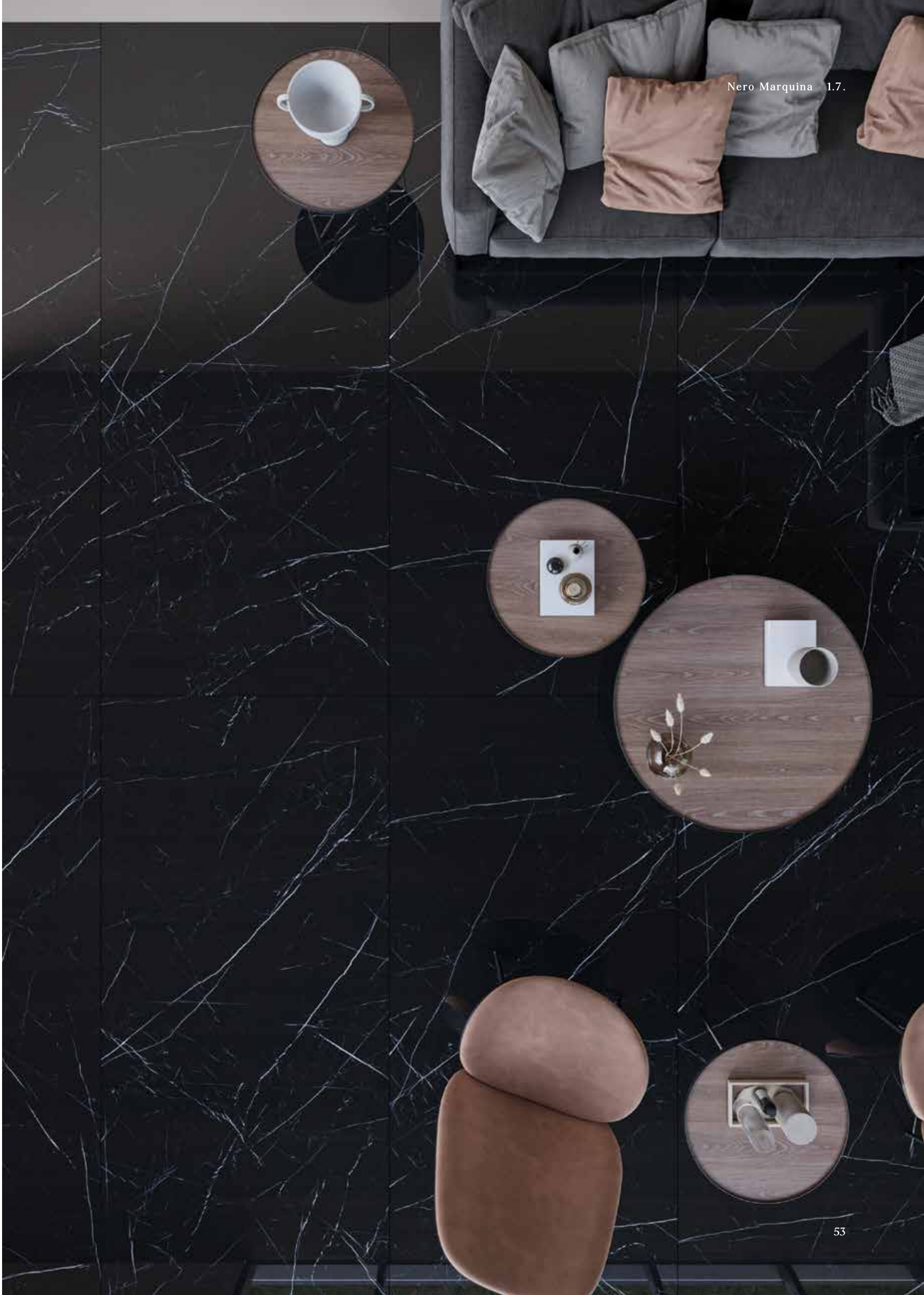




Nero Marquina

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 — 120x280 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  
  
FGM-R5030  
Matte | 9 Faces



120x280 cm  
FGM-L5030  
Natural | 5 Faces



160x320 cm  
FGPB-X5030  
Natural | 4 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

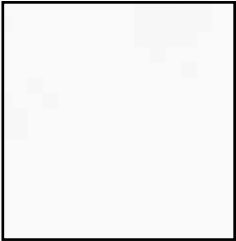


Floor: Statuario Extra Polished — 60x120 cm

Statuario  
Extra



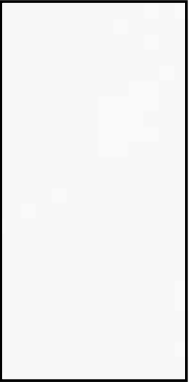
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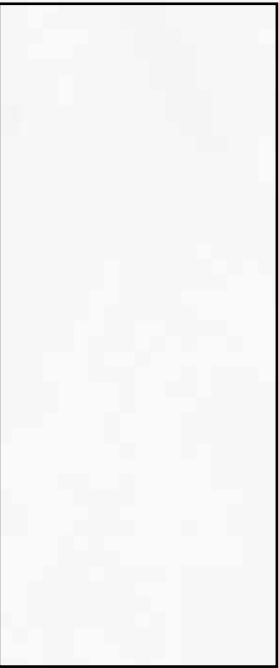
100x100 cm  
FGPB-W1285  
Polished | 9 Faces



60x120 cm  
FGPB-R1285  
Polished | 10 Faces



80x160 cm  
FGPB-C1285  
Polished | 7 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 Polished — 60x120 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.



**60x120 cm**  
FGPB-R5195  
Polished | 10 Faces



**120x280 cm**  
FGM-L5195  
Natural | 5 Faces





Pantheon

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.

Wall: Pantheon Grey Semipolished — 80x160 cm  
Floor: Pantheon Grey Semipolished — 80x160 cm







Wall: Pantheon Grey Semipolished — 80x160 cm  
Floor: Pantheon Grey Semipolished — 80x160 cm





Wall: Pantheon Anthracite Semipolished — 80x160 cm  
Floor: Pantheon Anthracite Semipolished — 80x160 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-W1320  
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.



60x120 cm  
FGM-R1325  
Matte | 6 Faces



80x160 cm  
LFG-C1325  
Semipolished | 6 Faces



120x280 cm  
FGM-L1325  
Natural | 5 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  
Floor: Natural Concrete Light Grey Matte — 80x160 cm







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



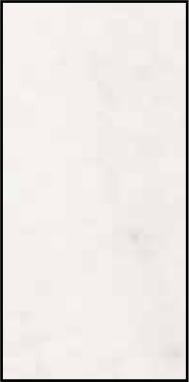


Floor: White Fantasy Polished — 80x160 cm

White  
Fantasy



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



80x160 cm  
FGPB-C1290  
Polished | 6 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 Grey Relief — 60x120 cm

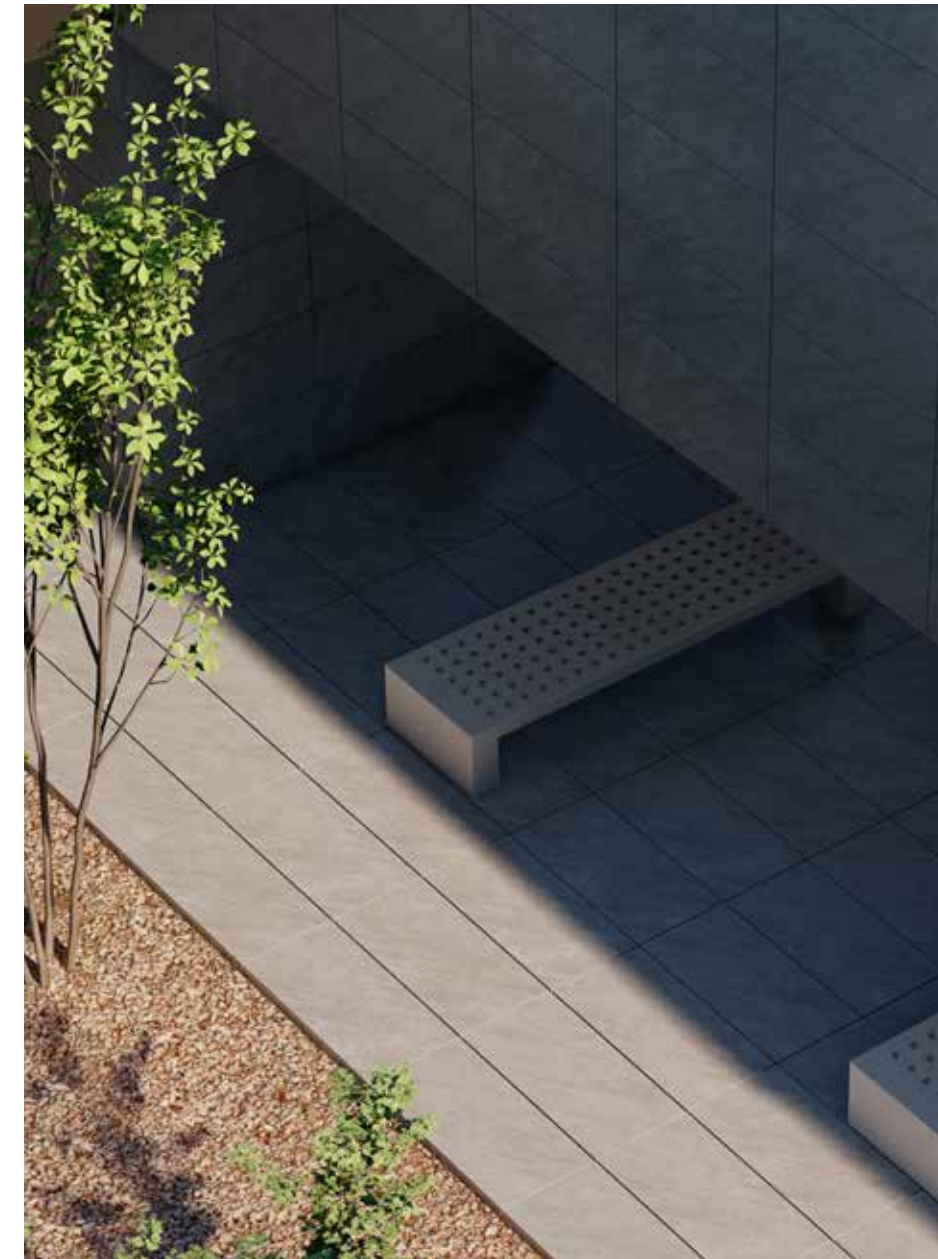






Facade: Stonetech Grey Relief — 60x120 cm





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





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



60x120 cm  
FGM-R1175  
Relief | 5 Faces



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



60x120 cm  
FGM-R1160  
Relief | 5 Faces



80x160 cm  
FGM-CT160  
Relief | 5 Faces





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



60x120 cm  
FGM-R1165  
Relief | 5 Faces



80x160 cm  
FGM-C1165  
Relief | 5 Faces



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





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 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  
FGM-R1115  
Matte | 8 Faces





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



60x120 cm  
FGM-R1120  
Matte | 8 Faces



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



60x120 cm  
FGM-R1125  
Matte | 8 Faces





## 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





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

Monte Viso  
Anthracite



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



60x120 cm  
FGM-R235  
Relief





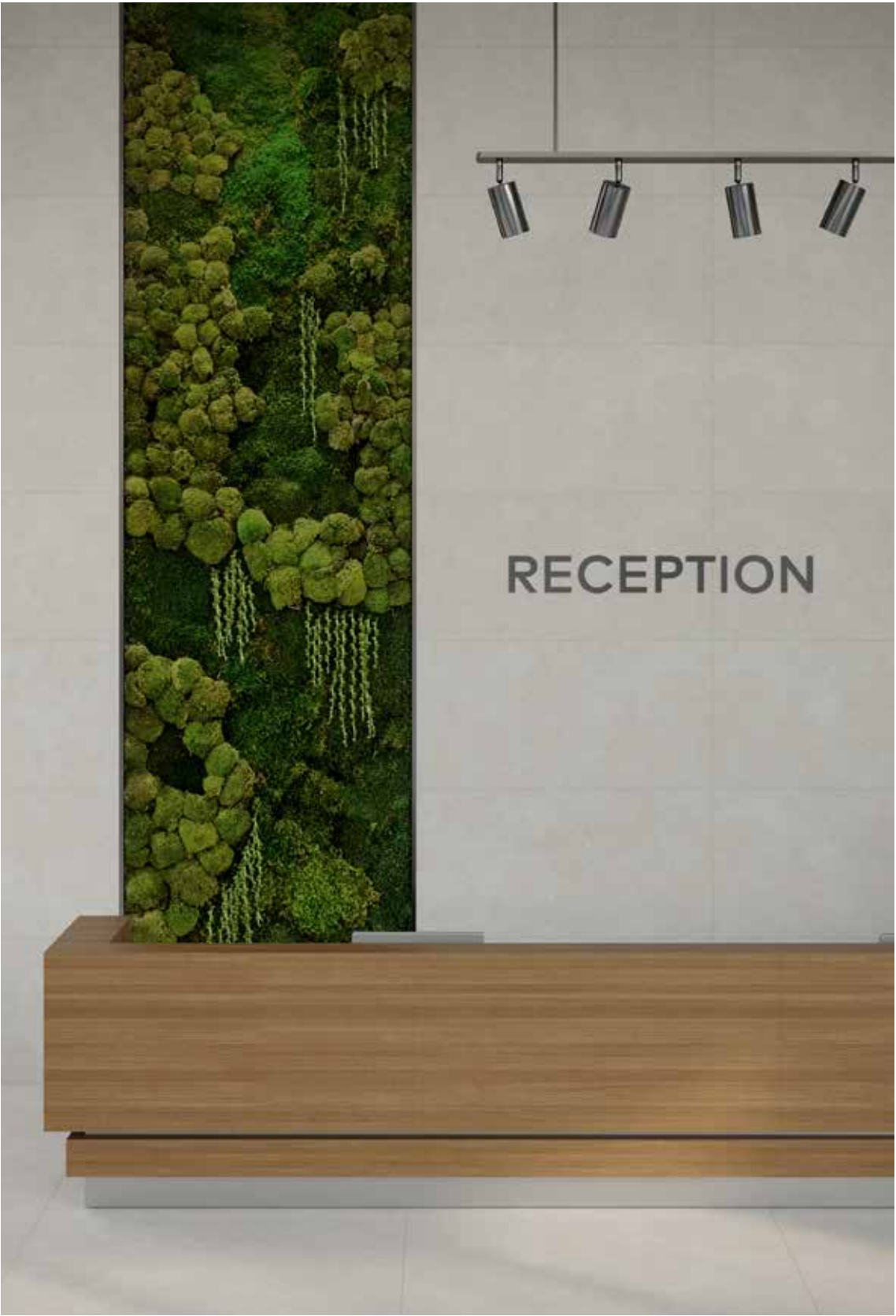
## Branch

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





Wall: Branch Bone Semipolished — 80x160 cm  
Floor: Branch Bone Semipolished — 80x160 cm



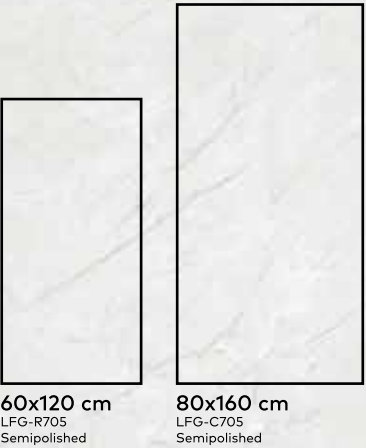


Floor: Branch Bone Semipolished — 80x160 cm

Branch  
Bone



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







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





Wall: Contemporary Ice Matte — 60x120 cm  
Floor: Contemporary 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  
Grey

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



60x120 cm  
FGM-R1375  
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





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







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





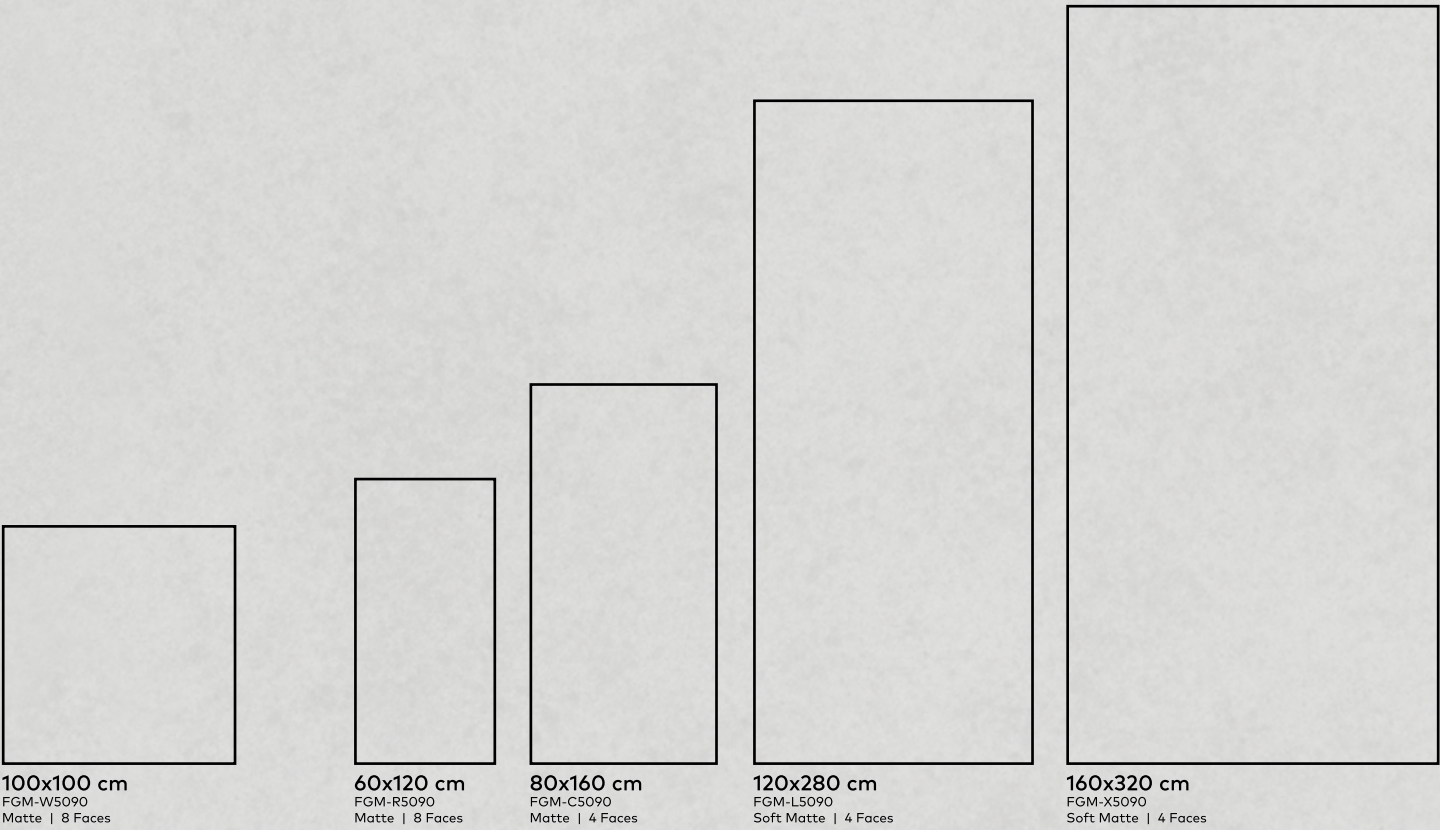
Wall: Natural Concrete Ash & Dark Matte — 80x160 cm  
Floor: Natural Concrete Light Grey Matte — 80x160 cm





Natural Concrete  
Ash

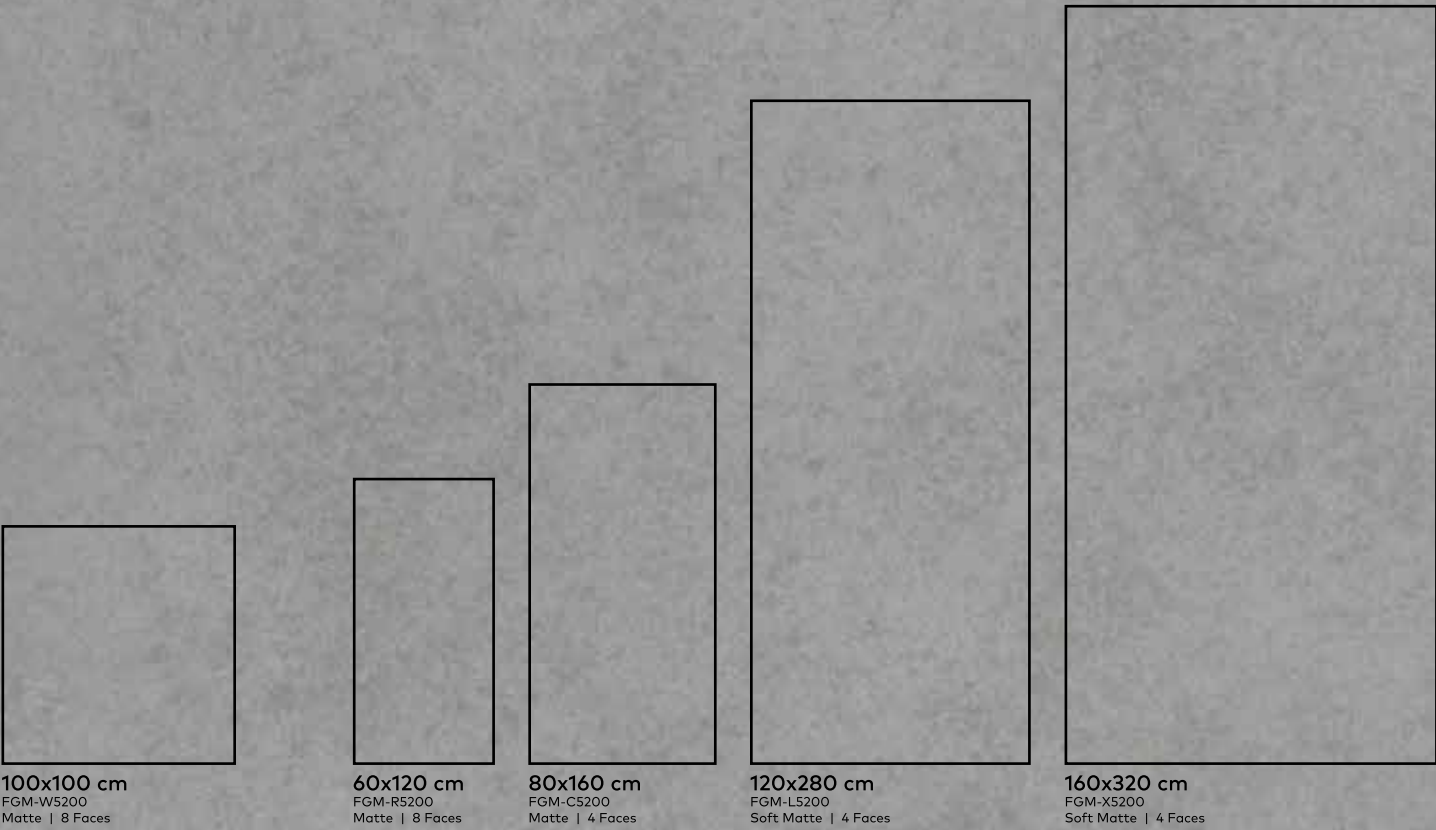
Available other sizes upon demand. For more detail  
please contact sales department.



Natural Concrete  
Light Grey



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



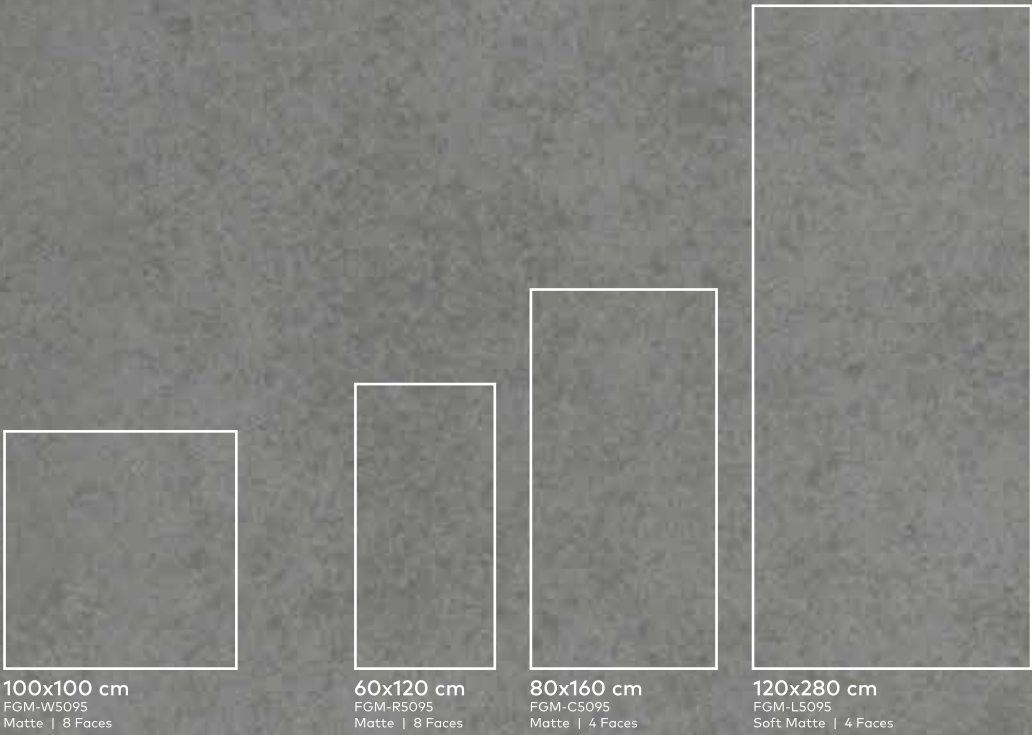




# Natural Concrete

## Grey

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

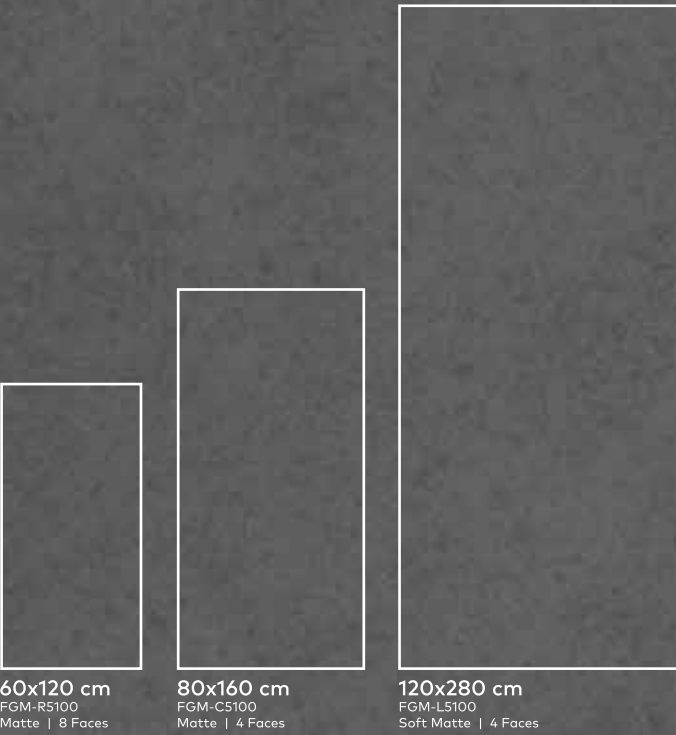


# Natural Concrete

## Dark Grey



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







# Natural Concrete

## Anthracite

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



60x120 cm  
FGM-R5250  
Matte | 8 Faces



120x280 cm  
FGM-L5250  
Soft Matte | 4 Faces

# Natural Concrete

## Cream



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



60x120 cm  
FGM-R5255  
Matte | 8 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.

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







Floor: Beton Art Smoke Matte — 60x120 cm





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



60x120 cm  
FGM-R785  
Matte | 5 Faces



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: Luxury Concept Ivory Matte — 60x120 cm







Floor: Luxury Concept Ivory Matte — 60x120 cm





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

Luxury Concept  
Ash

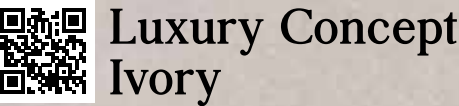


Available other sizes upon demand. For more detail  
please contact sales department.



60x120 cm  
FGM-R430  
Matte





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



60x120 cm  
FGM-R445  
Matte



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



60x120 cm  
FGM-R440  
Matte





### Metallic

Metallic is a trace of an 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 which its delicate, refined and unique textures enhance the natural and precious aesthetics of the material for a space with a timeless charm. Metallic with its semipolished surface brings an elegance and unconventional touch.

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







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





Floor: Metallic Anthracite Semipolished — 80x160 cm





Floor: Metallic Anthracite Semipolished — 80x160 cm

Metallic  
Anthracite



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



80x160 cm  
LFG-C1335  
semipolished | 5 Faces





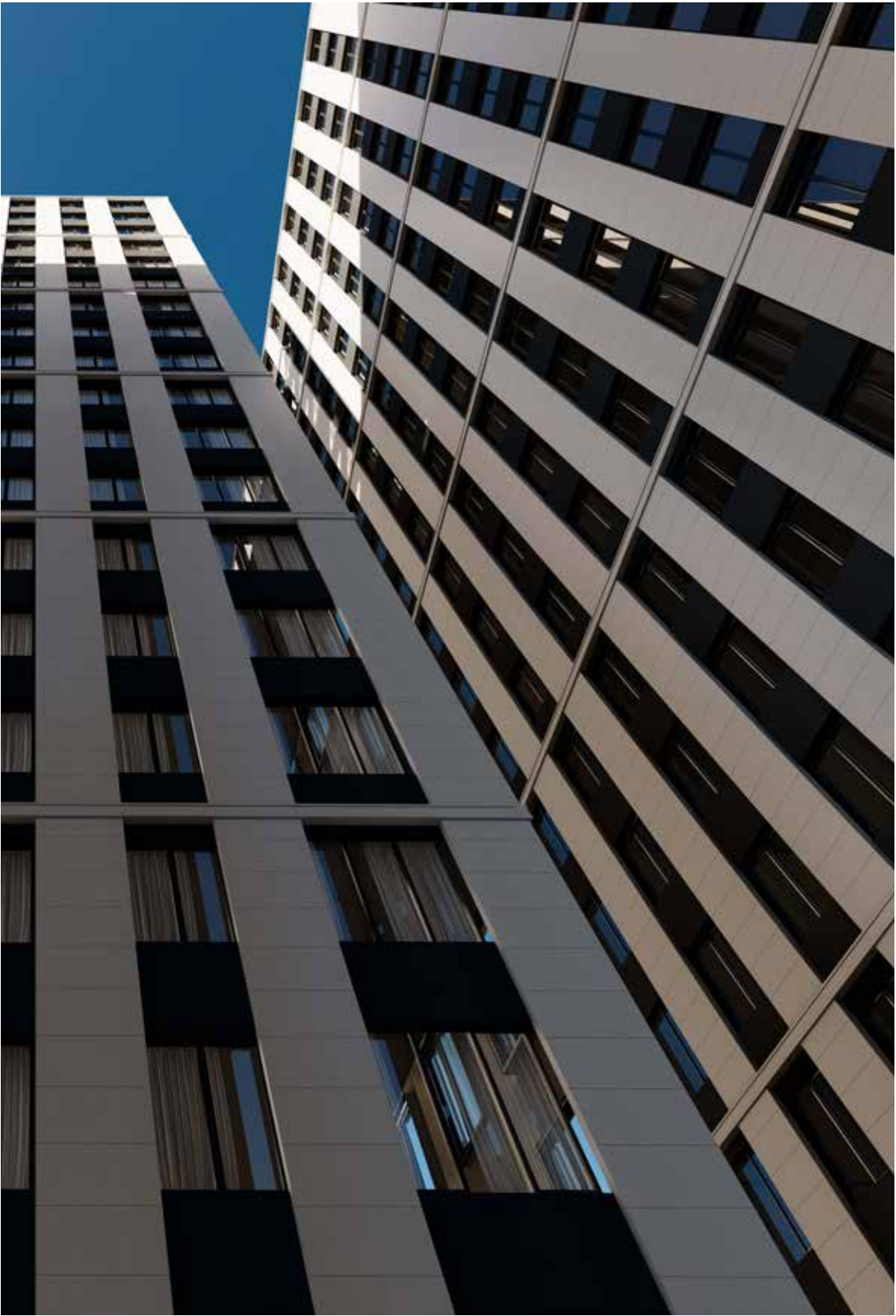
### Monocolor White

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.

Wall: Monocolor White Matte — 60x120 cm







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





### 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





Wall: Maxiwood Almond 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-B810  
Relief | 12 Faces





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



20x120 cm  
FOM-B815  
Relief 1 12 Faces



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



20x120 cm  
FOM-B820  
Relief 1 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 warmness. 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 Dark Grey Matte — 20x120 cm

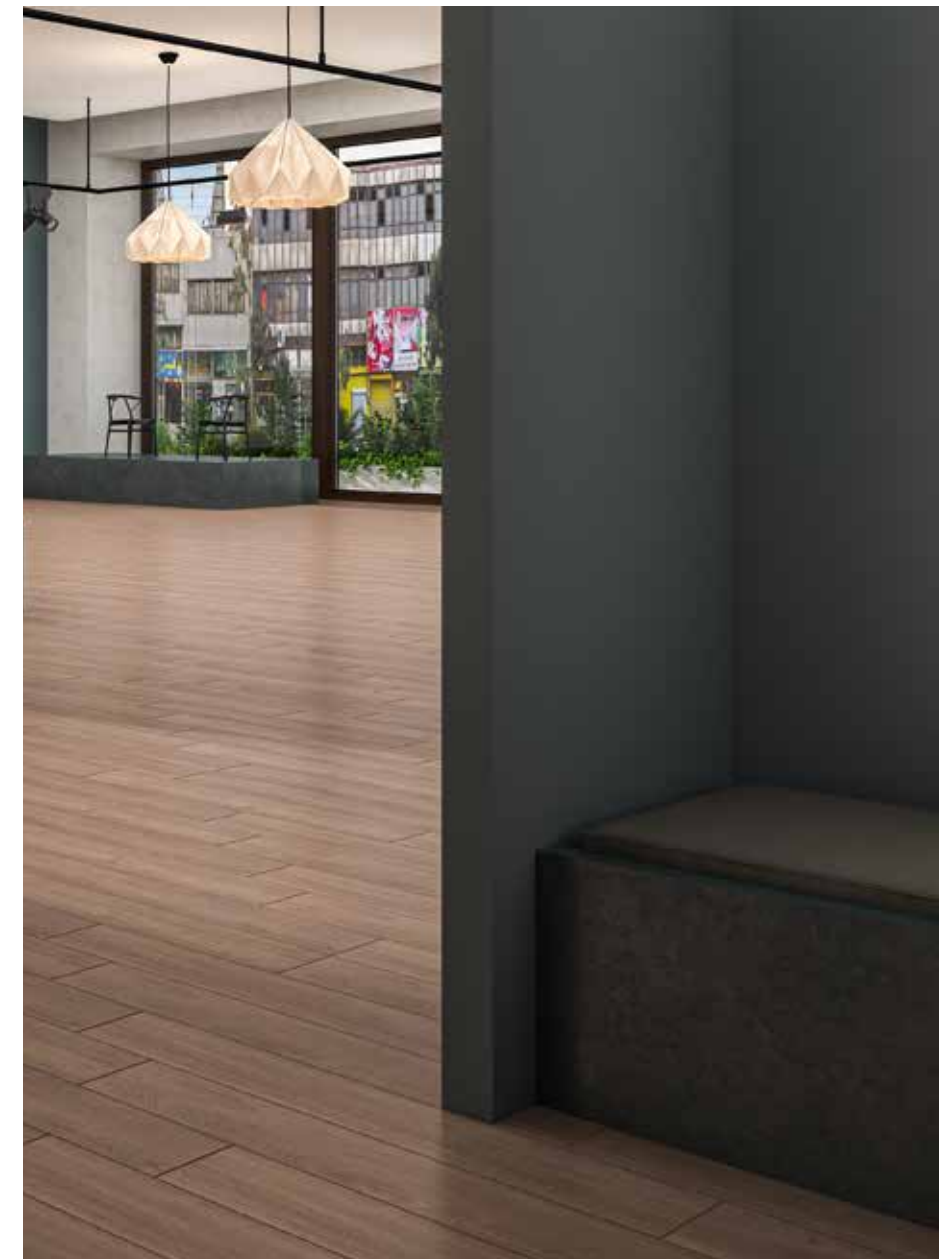






Floor: Selva Silver Matte — 20x120 cm





Floor: Selva Walnut Matte — 20x120 cm





Selva  
Ivory

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



20x120 cm  
FGM-B870  
Matte | 12 Faces

Selva  
Walnut



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



20x120 cm  
FGM-B875  
Matte | 12 Faces





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



20x120 cm  
FGM-B880  
Matte | 12 Faces



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



20x120 cm  
FGM-B860  
Matte | 12 Faces





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



20x120 cm  
FOM-B865  
Matte | 12 Faces



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



20x120 cm  
FOM-B885  
Matte | 12 Faces



TECHNICAL  
INFORMATION



SYMBOLOGY

 Chemical resistance

 Frost resistance

 Stain resistance

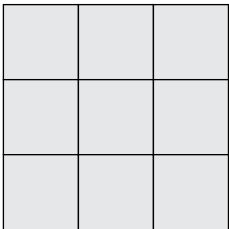
 Deep abrasion resistance

 Thermal shock

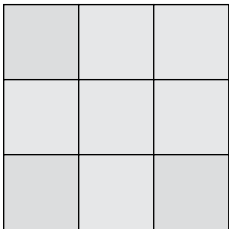
 Breaking strength

 Low water absorption

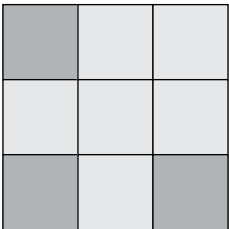
SHADE VARIATION



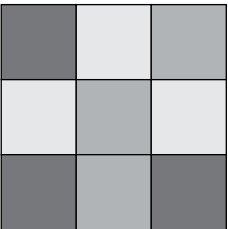
V1 Uniform appearance



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	
	Requirments for normal size n>15cm				
DIMENSIONS AND SURFACE QUALITY					
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
SURFACE FLATNESS					
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	
PHYSICAL PROPERTIES					
Water absorption (in % by mass)	E <sub>b</sub> < 0.5%	Individual Maximum 0.6%	EN ISO 10545-3	Affirmative	
BREAKING STRENGTH (N) for Thickness ≥ 7.5mm	Not Less Than 1300 N		EN ISO 10545-4	Affirmative	
Flexural tensile strength or Modulus of rupture (N/mm²)	Minimum 35 N/mm² Individual Minimum 32 N/mm²			Affirmative	
Impact resistance, as: Coefficient of restitution (COR)	Declared Value		EN ISO 10545-5	Affirmative	
Resistance to deep abrasion of unglazed tiles: Removed value (mm³)	Maximum 175 mm³		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 <sub>b</sub> ≤0.5%	Individual maximum 0.6%	EN ISO 10545-3	Affirmative	
Breaking strength for thickness 7.5mm and more	Not less than 1300 N		EN ISO 10545-4	Affirmative	
Flexural tensile strength or Modulus of rupture (N/mm²)	Minimum 35 N/mm² Individual minimum 32 N/mm²			Affirmative	
Resistance to deep abrasion of unglazed tiles: Removed Volume	Maximum 175 mm³		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	
CHEMICAL PROPERTIES					
Resistance to the low concentration of acids & alkanes	Declared Value		EN ISO 10545-13	Affirmative	
Resistance to the high concentration of acids & alkanes	Declared Value			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		EN ISO 10545-13	Affirmative	
Resistance to the high concentration of acids & alkalis	Declared value			Affirmative	
Resistance to household chemicals & swimming Pool Salts	Minimum class B			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° ≤ to ≤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.

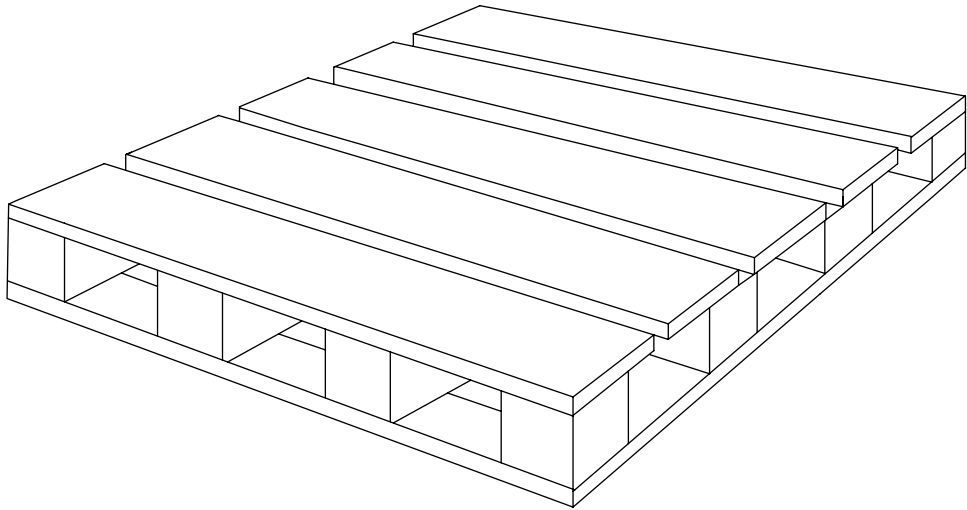
### RAISED FLOORINGS

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.

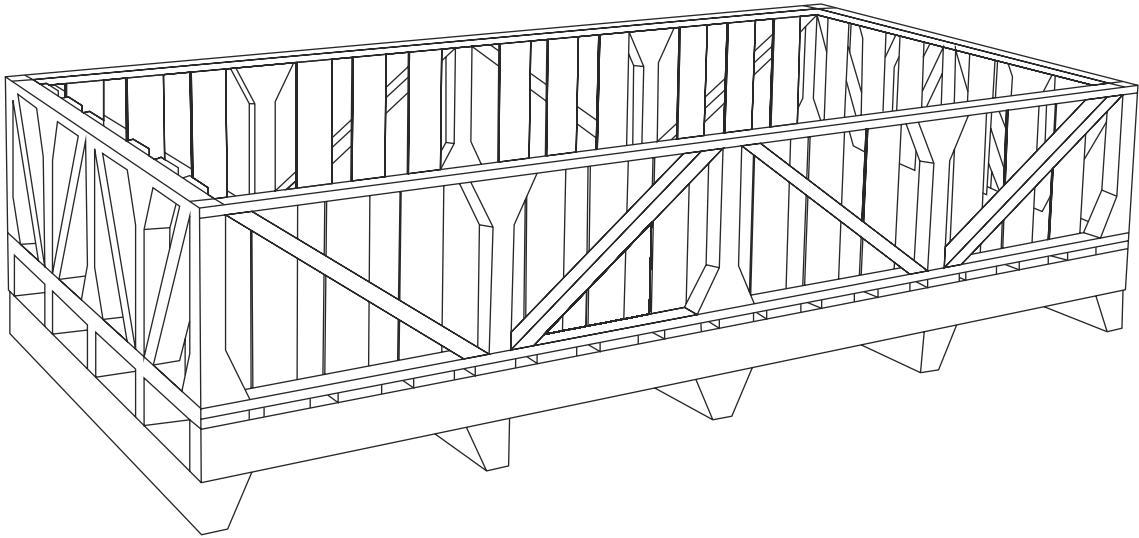
Stains can still be removed using concentrated products directly on the stains.



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	68



Size	Thickness	SQM/Box	Pieces/Box	KG/Box (Aprox)	Box/Pallet	KG/Pallet	SQM/Pallet
80x160 cm	10 mm	1.28	-	31	45	1395	57.6
120x280 cm	9.5 mm	3.36	-	71.55	30	2146.3	100.8
160x320 cm	9.5 mm	5.12	-	109	20	2180	102.4







ISO 9001

ISO 9001 is the international standard for quality management system



8906997838

Institute of Standards and Industrial Research of Iran



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



Seramik Araştırma Merkezi  
Turkish Ceramic Research Center  
Standard testing laboratory



Ministry of Road & Urban Development  
Road, Housing & Urban Development  
Research Center



Ceramic tiles shall be classified into groups according to two parameters: by their method of manufacture (also referred to ‘shaping’) that is, extrusion (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>1-1</sub> <sup>a)</sup> (see Annex B)	Group AII <sub>1-1</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>2-2</sub> <sup>a)</sup> (see Annex C)	Group AII <sub>2-2</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 AII<sub>1</sub> and AII<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 Strenght <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	Leaner Thermal Expansion <sup>d)</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 Crazing <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>l)</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>s)</sup>	X	X	X	X	EN ISO 10545-13
C.3 a	Release of Cadmium - Glazed Tiles <sup>t)</sup>	X	X	X	X	EN ISO 10545-15
C 3 b	Release of Lead - Glazed Tiles <sup>t)</sup>	X	X	X	X	EN ISO 10545-15
C.3 c	Release of Other Dangerous Substances <sup>s)</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 BI<sub>a</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 BI<sub>a</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)	
A) DIMENSIONS AND SURFACE QUALITY				
A.1 LENGTH AND WIDTH				
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
A.2 THICKNESS				
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
A.3 STRAIGHTNESS OF SIDES <sup>b</sup> (Facial Sides)				
The Maximum Permissible Deviation from Straightness, Related to the Corresponding Wok Size	±0.75 mm	±0.5%	±1.5 mm	EN ISO 10545-2
A.4 RECTANGULARITY <sup>b</sup>				
The Maximum Permissible Deviation from Rectangularity, Related to the Corresponding Work Size	±0.75 mm	±0.5%	±2 mm	EN ISO 10545-2
A.5 SURFACE FLATNESS				
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
A.6 SURFACE QUALITY <sup>c</sup>	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) PHYSICAL PROPERTIES				
B.1 WATER ABSORPTION (IN % BY MASS)	Eb≤0.5 Individual maximum 0.6%			EN ISO 10545-3
B.2 BREAKING STRENGTH, FOR:				
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.3 FLEXURAL TENSILE STRENGTH OR MODULUS OF RUPTURE <sup>d</sup>	Minimum 35 N/mm² Individual minimum 32 N/mm²			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) PHYSICAL PROPERTIES				
B.4 ABRASION RESISTANCE				
a) Resistance to Deep Abrasion of Unglazed Tiles: Removed Volume	Maximum 175 mm³			EN ISO 10545-6
b) Resistance to Surface Abrasion of Glazed Tiles Intended for Use on Floors*	Abrasion class and cycles passed			EN ISO 10545-7
B.5 COEFFICIENT OF LINEAR THERMAL EXPANSION				
- From Ambient Temperature to 100 °C	Declared value <sup>f</sup>			EN ISO 10545-8
B.6 THERMAL SHOCK RESISTANCE	Pass according to EN ISO 10545-1 <sup>g</sup>			EN ISO 10545-9
B.7 CRAZING RESISTANCE: Glazed Tiles <sup>h</sup>	Pass according to EN ISO 10545-1 <sup>g</sup>			EN ISO 10545-11 <sup>h</sup>
B.8 FROST RESISTANCE	Pass according to EN ISO 10545-1 <sup>g</sup>			EN ISO 10545-12
B.9 SLIPPERINESS	Declared value(s) <sup>g</sup>			PrCEN/TS 16165:2011 <sup>i</sup>
B.10 BOND STRENGHT / ADHESION <sup>j</sup> , FOR:				
a) Cementitious Adhesives <sup>k</sup>	Declared value(s)			EN 12004:2007 , 4.1 <sup>l</sup>
b) Dispersion Adhesives <sup>k</sup>	Declared value(s)			EN 12004:2007 , 4.2 <sup>l</sup>
c) Reaction Resin Adhesives <sup>k</sup>	Declared value(s)			EN 12004:2007 , 4.3 <sup>l</sup>
a) Mortar	Declared value(s)			EN 1015-12 <sup>l</sup>
B.11 MOISTURE EXPANSION (IN mm/m)	Declared value <sup>f</sup>			EN ISO 10545-10
B.12 SMALL COLOR DIFFERENCES <sup>f</sup> FOR:				
a) Glazed Tiles	ΔE<0.75			EN ISO 10545-16
b) Unglazed Tiles	ΔE<1.0			EN ISO 10545-16
B.13 IMPACT RESISTANCE, as:				
- Coefficient of Restitution (COR)	Declared value <sup>f</sup>			EN ISO 10545-5
B.14 REACTION TO FIRE	(Class A1 or A1 <sub>FL</sub> ) <sup>m</sup>			-
B.15 TACTILITY <sup>n</sup>	Declared surface description <sup>g</sup>			CEN/TS 15209 <sup>o</sup>
C) CHEMICAL PROPERTIES				
C.1 RESISTANCE TO STAINING, FOR:				
a) Glazed Tiles	Minimum calss 3			EN ISO 10545-14
b) Unglazed Tiles	Declared value <sup>f</sup>			EN ISO 10545-14
C.2 RESISTANCE TO CHEMICAL				
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 calss B			EN ISO 10545-13
C.3 RELEASE OF DANGEROUS SUBSTANCES				
a) Cadmium (in mg/dm²)	Declared value <sup>g</sup>			EN ISO 10545-15
b) Lead (in mg/dm²)	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 material7. 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.



2.6. TECHNICAL DETAILS

CLEANING PRODUCTS

TYPES OF DETERGENT	SOLVENTS			ACIDS			ALKALINE-BASED DETERGENTS – ALKALI		
Where the sale is permitted	(bleach, turpentine, acetone, trichloroethylene, nitro thinner)			(muriatic acid, hydrochloric acid, phosphoric acid)			(professional alkaline detergents)		
SURFACE	Matte	Satin	Polished	Matte	Satin	Polished	Matte	Satin	Polished
TYPE OF STAINS									
Coffee			■						
Lime scail				■	■	■			
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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