



## PISHGAMAN **MEMARIARYA** WE WILL ALWAYS BE THERE,

## FOR YOU

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

products in PMA obtained ISIRI CERAMICS together with Europe CE. In addition, PMA is sampling randomly among its producers and sending them to different qualified LABs such as Road, Housing & Urban Development Research Center, and 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.



## To Create an Architectural Dream

PMA celebrates the uniqueness of every architectural narrative. Our porcelain ceramics span a breathtaking spectrum of sizes, ensuring every design ambition materializes. With PMA, embrace boundless possibilities.

## Variety of Sizes

## The Gold Standard in Diverse Ceramic Portfolios

The Pinnacle of Porcelain Facades in Iran

### Finishing

Dive deep into PMA's world where every tactile surface echoes luxury. Whether it's the muted grace of matte, the radiant luster of polished, or the intricate allure of relief – our ceramics elevate sensory experiences.



Polished

SP Semi Polished



/N Matte / Natural

### **Punch Finish**

We offer a variety of punch finishes, including wood, stone, and deep punch designs, to give you the natural feel of these materials, while maintaining the durability and qualities of porcelain. To truly appreciate the texture and authenticity, we invite you to touch and feel them for yourself.





## PMA's Precision Craft, Cutting Services Beyond Par

### Any Shape

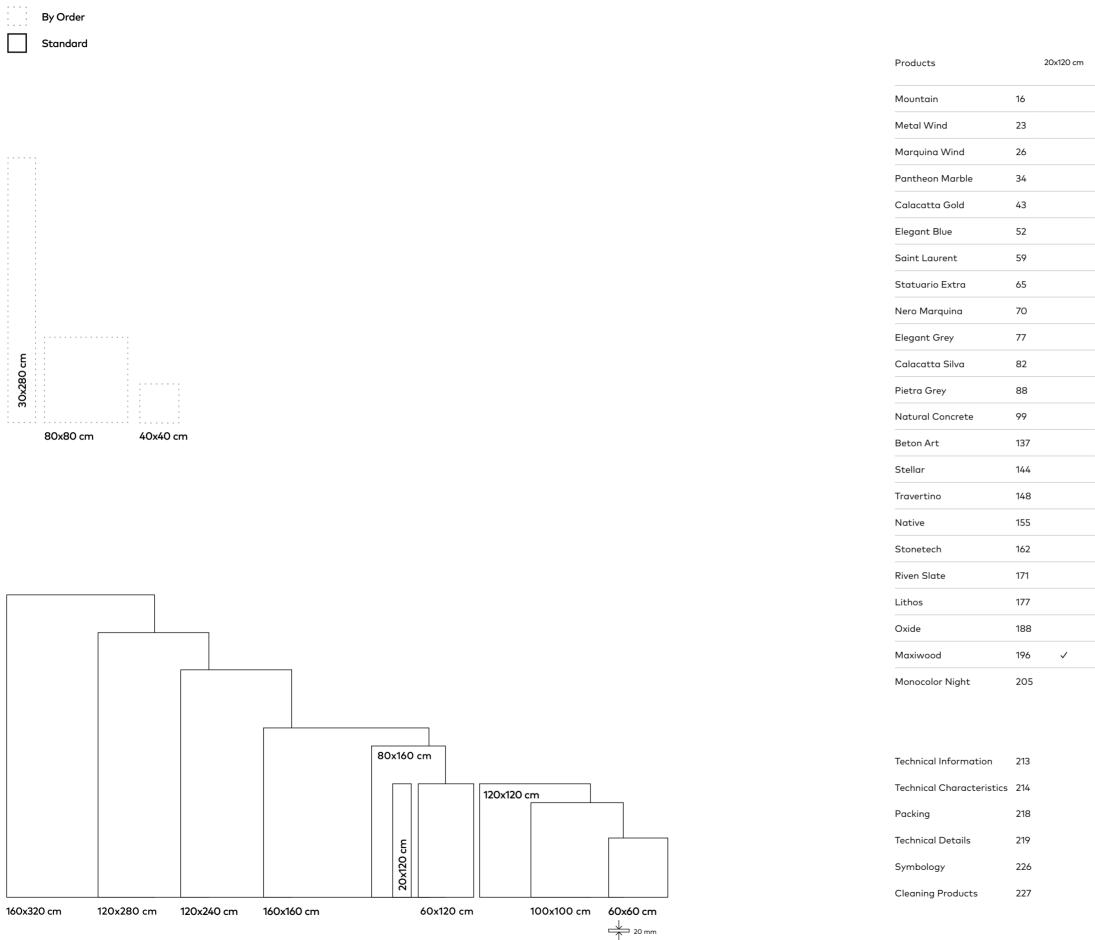
Craftsmanship at PMA transcends creation. With our avant-garde cutting services, we promise impeccable precision, translating every architectural vision into tangible reality. At PMA, perfection is the norm.

### Usage

PMA's ceramic tapestry is not just vast but resplendent in its diversity, showcasing our mastery. Whether it's the commercial core, rejuvenated office spaces, therapeutic hospitals, secure banks, luxurious hotels, or recreational arenas – our footprint is ubiquitous, echoing excellence. At PMA, we don't just shape projects; we create experiences, solidifying our position as the ceramic connoisseur.



### **General Index**



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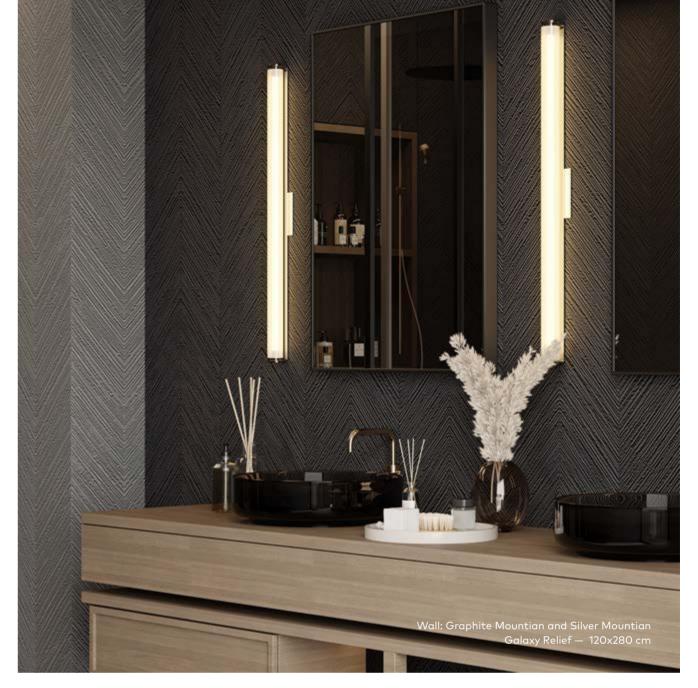
20x120 cm 60x60 cm 60x120 cm 120x120 cm 80x160 cm 100x100 cm 160x160 cm 120x240 cm 120x280 cm 160x320 cm

## PRODUCTS

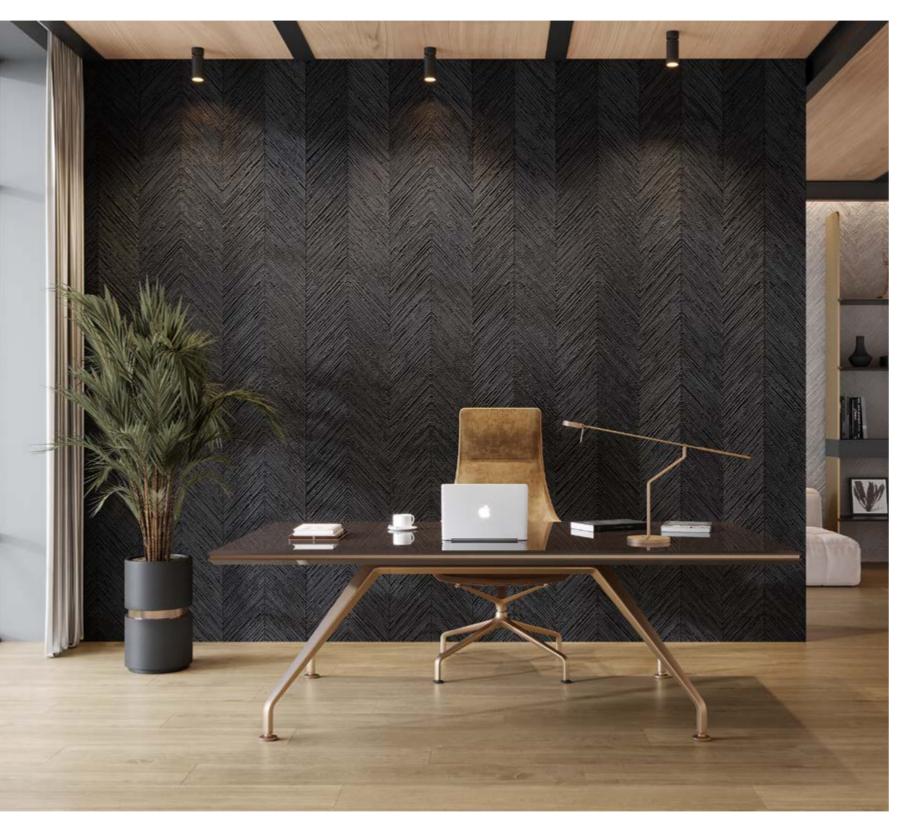


### Mountain

The Chevron pattern has been used in construction since Roman Empire. It gives a sense of strength to the base and surface and that makes it trendy in construction design. Mountain relief which is the modern version of chevron pattern contains some details that perfects the texture and creates balance through variety of thickness and depth. The mono-color development of this product in three tonalities, Silver, Graphite and Coal keeps the simplicity and purity of this product while making the shining glitters more vivid and distinctive. This features also demonstrate the depth in this relief which is the especial characteristic of this collection.









Wall: Coal Mountian Galaxy Relief — 120x280 cm



Wall: Silver Mountian Galaxy Relief — 120x280 cm



Silver **120x280 cm** FGM-L5400 Galaxy Relief



# Graphite Coal 120x280 cm FGM-L5405 Galaxy Relief 120x280 cm FGM-L5410 Galaxy Relief





## **Metal Wind**

Metal characteristics such as radiance and resistance evoke a sense of strength and luxury and metallic surface creates a subtle shine all over the space. The striped pattern of Metal's punch relief is trendy, elegant and modern. The creativity in this design is provided by the combination of the wavy lines in the relief with the dancing reflection of light on the uneven surface.



Wall: Metal Wind Relief — 120x280 cm

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







### Marquina Wind

Marquina Wind design is inspired by Nero Marquina marble originally from Spain, that is one of the most popular black marbles in ceramic industry. The veins in this elegant design are various in thickness which creates the balance and beauty. The deep black in this design captures the bold character of Marquina. Wind relief adds up to the advantages of this classic fashionable marble by balancing the intense dark tone through the movement and reflection of the light.







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



## Design Alcove

A Confluence of Global Aesthetics and Indigenous Artistry

PMA's Design Studio is a sanctuary where global trends harmonize with indigenous creativity. Home to passionate virtuosos, we ensure each creation is an epitome of timeless elegance and modern finesse. At PMA's Design Studio, the future of ceramics is produced today.





### Pantheon Marble

HELE HELE

Pantheon Marble 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 Marble's design. Pantheon Marble's minimal and modern style gives you the chance of experiencing elegance and luminosity.



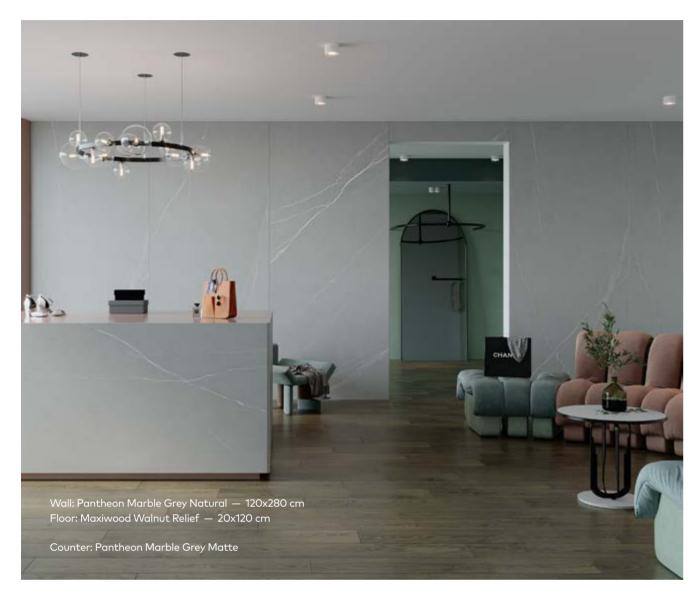








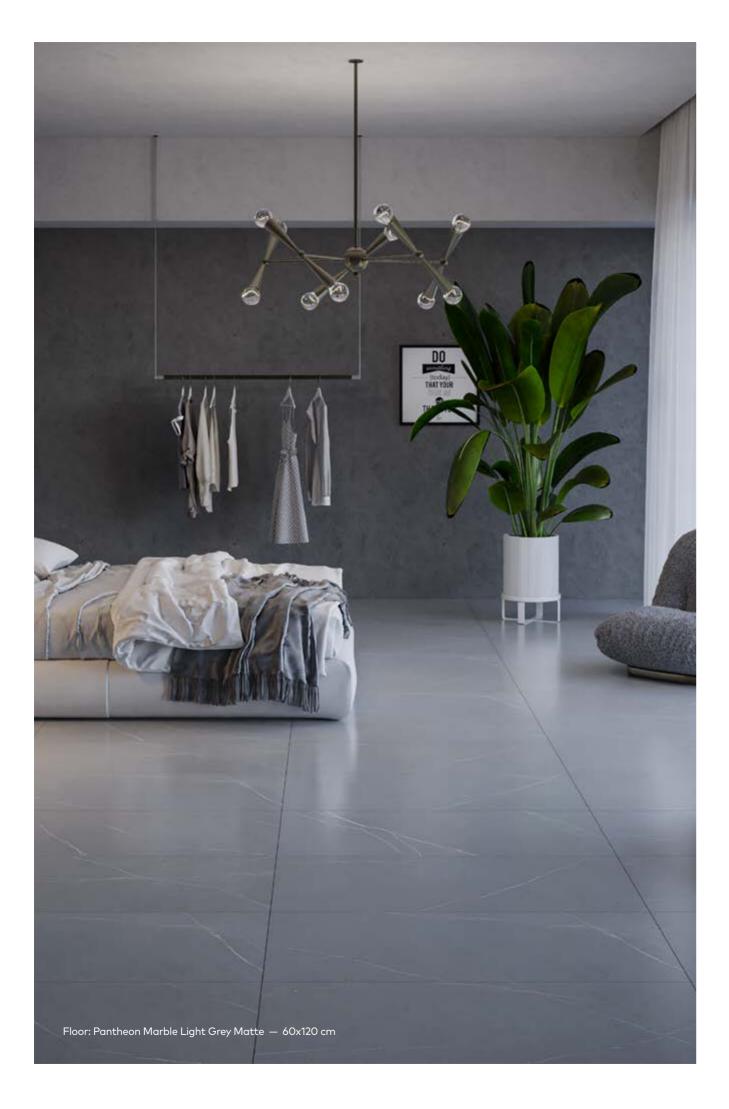








Floor: Pantheon Marble Grey Matte — 120x280 cm Wall: Pantheon Marble Grey Matte — 120x280 cm



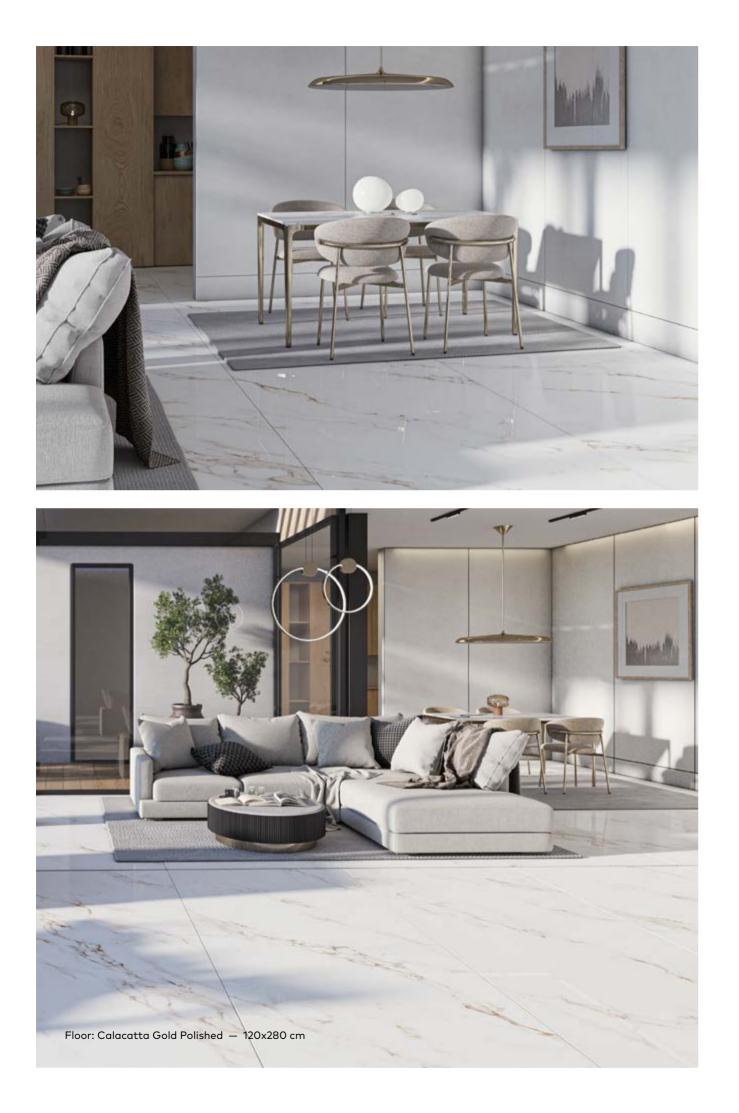
100x100 cm





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

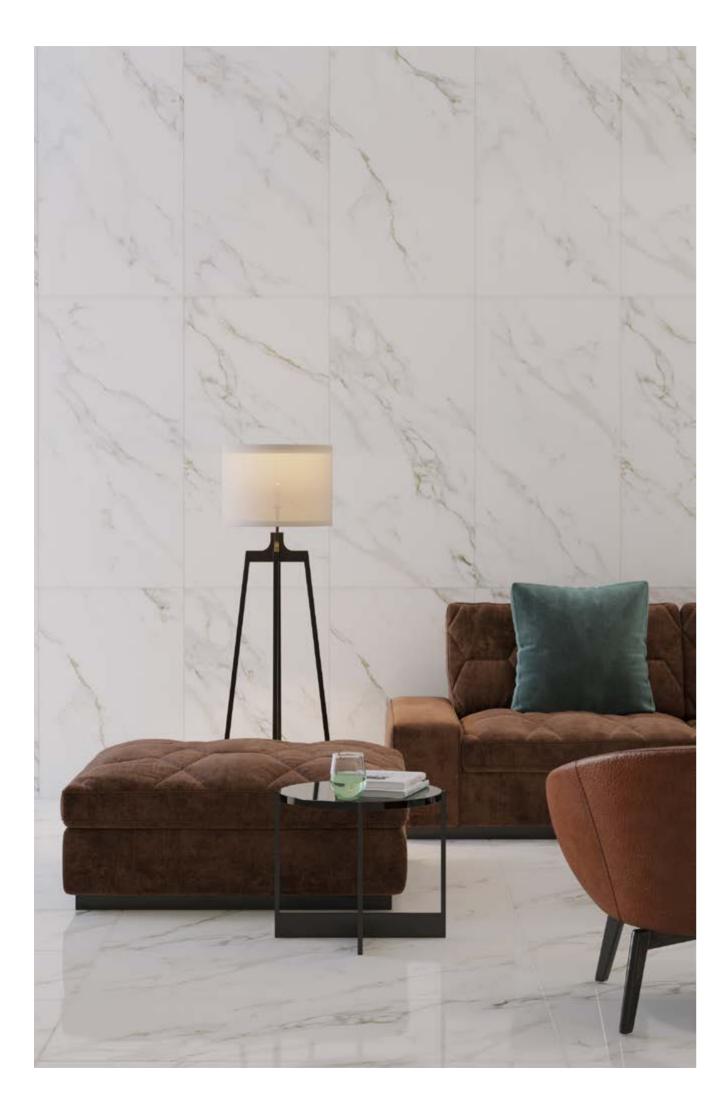






### Calacatta Gold

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.





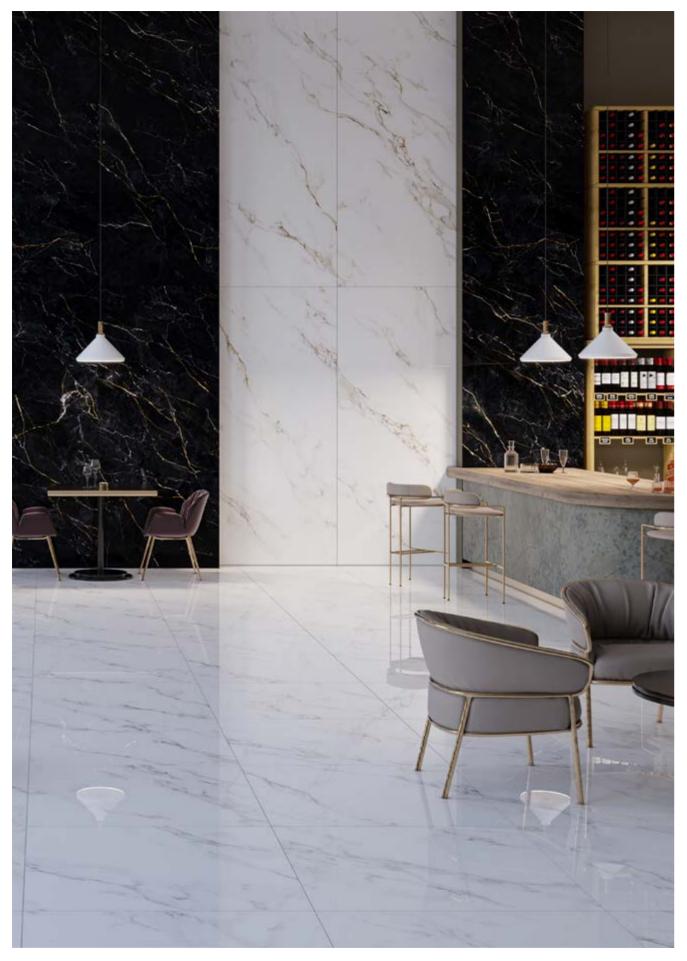
Wall: Calacatta Gold Polished — 80x160 cm Floor: Calacatta Gold Polished — 80x160 cm

45









Novelty

100x100 cm FGPB-W1280 Polished | 12 Faces

120x280 cm FGPB-L5180 Polished | 5 Faces

Wall: Calacatta Gold and Saint Laurent Polished – 120x280 cm Floor: Calacatta Gold Polished — 100x100 cm

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



120x240 cm FGPB-A5180 Polished | 6 Faces

80x160 cm FGPB-C1280 Polished | 8 Faces

60x120 cm FGPB-R1280 Polished | 11 Faces

**160x160 cm** FGM-Y5180 Natural | 8 Faces





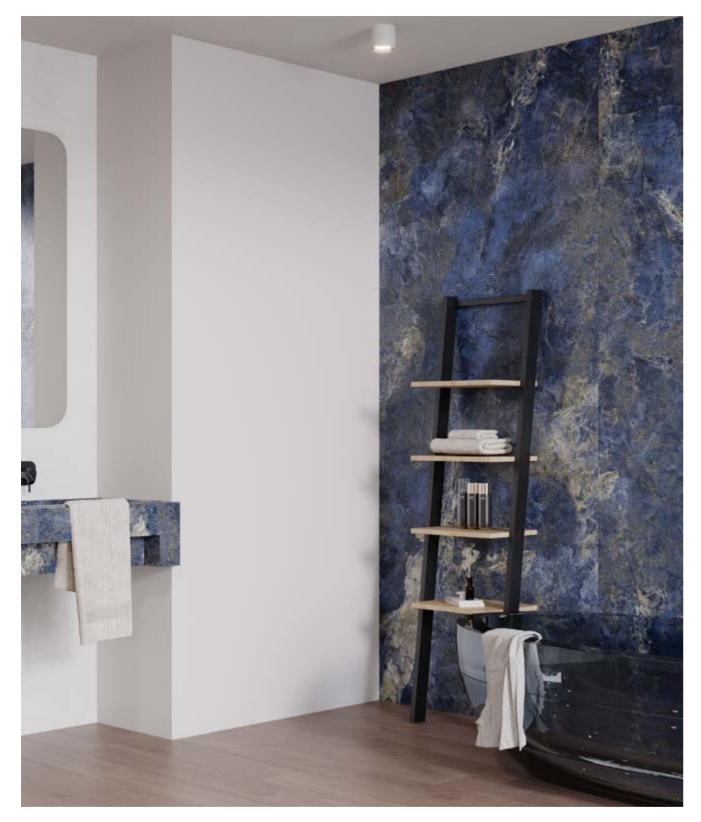
Wall: Calacatta Gold Book Match Polished — 120x280 cm Floor: Calacatta Gold Polished — 120x280 cm

120x280 cm FGPB-L5155 Polished | Book Match









### Elegant Blue

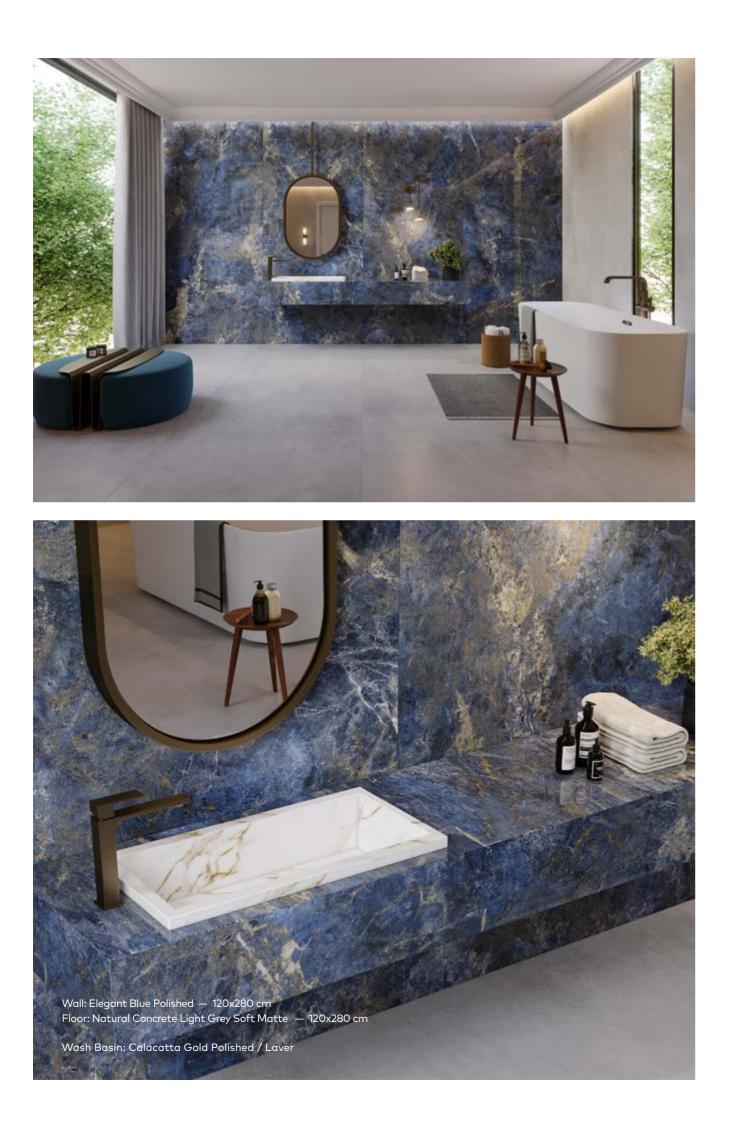
Elegant Blue with its unique design embodies extraordinary charm of precious gems. Appropriate for both classic and contemporary area. Its unique color, sophisticated plays of golden veins and iridescent reflections brings dynamic to any space. Elegant Blue represents a cobalt sea split by golden waves.





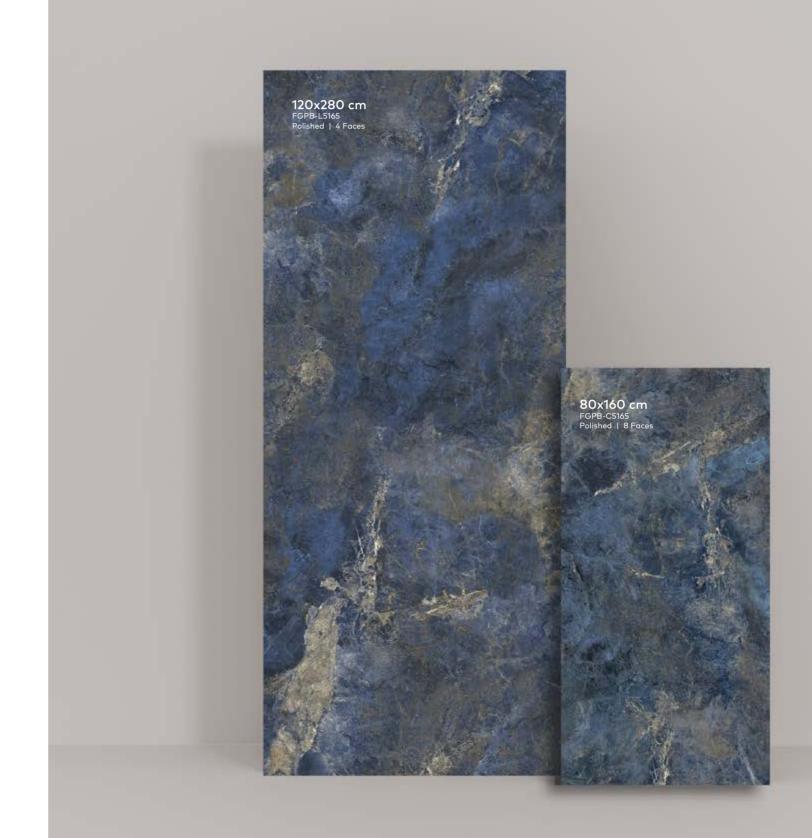








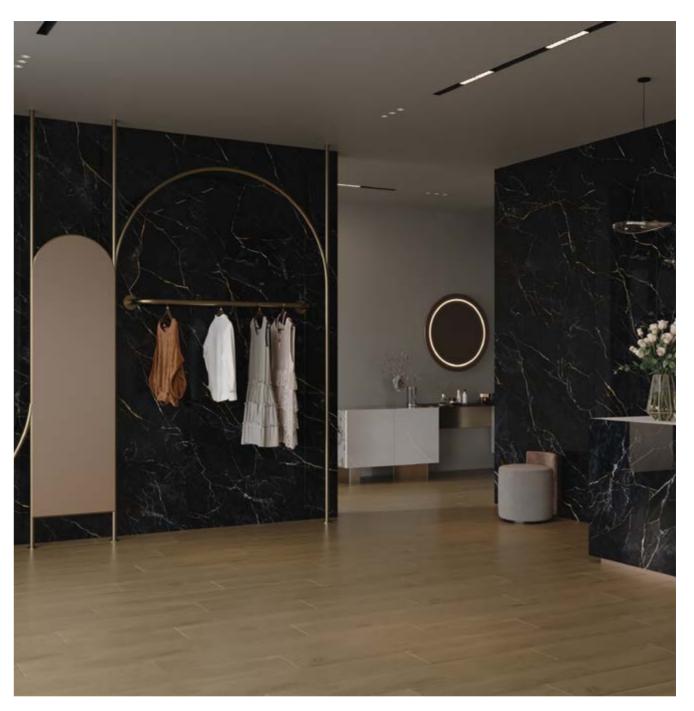












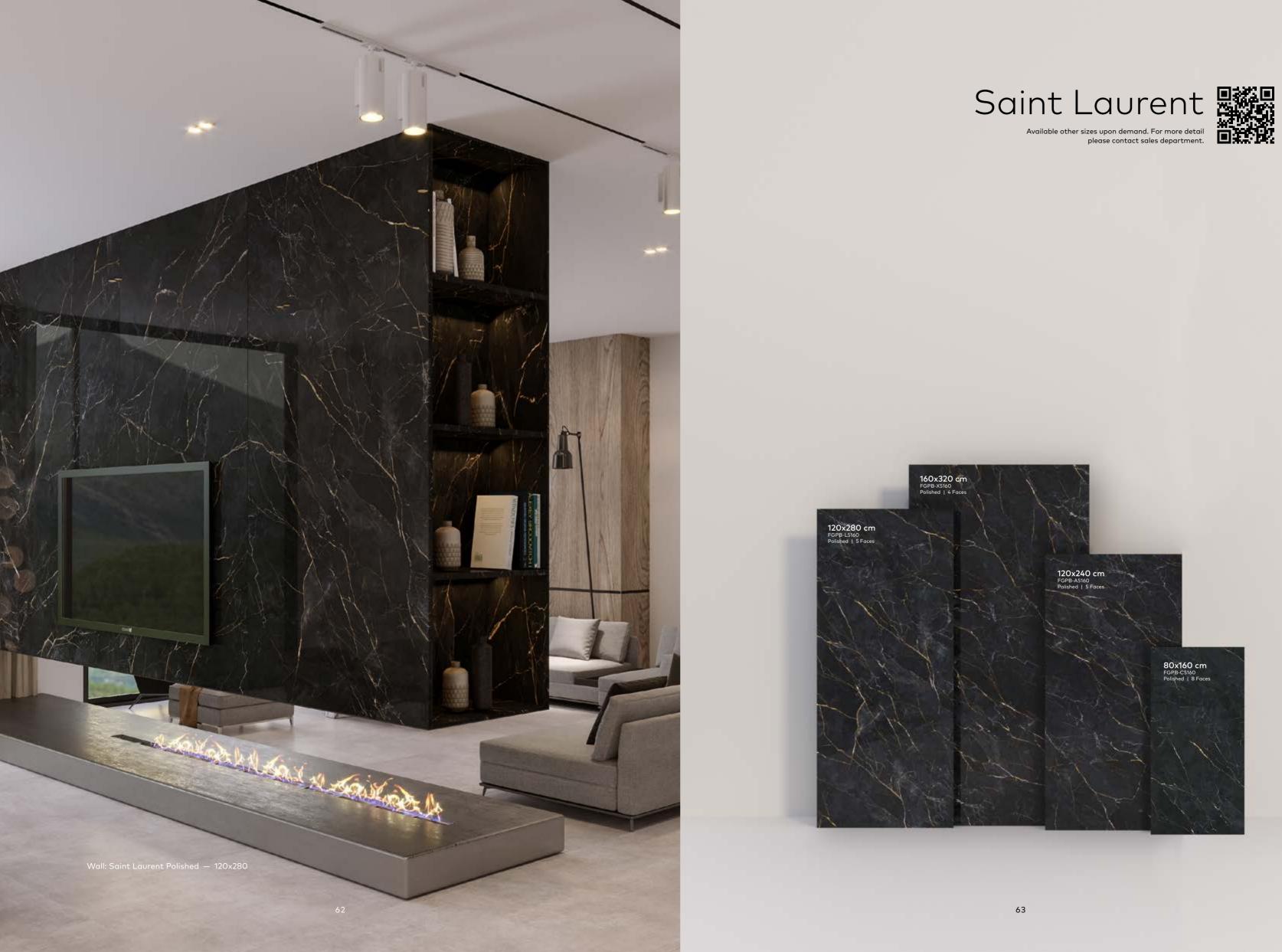
### Saint Laurent

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 Marble effect floor and wall tiles.





Wall: Saint Laurent Polished — 120x280 cm









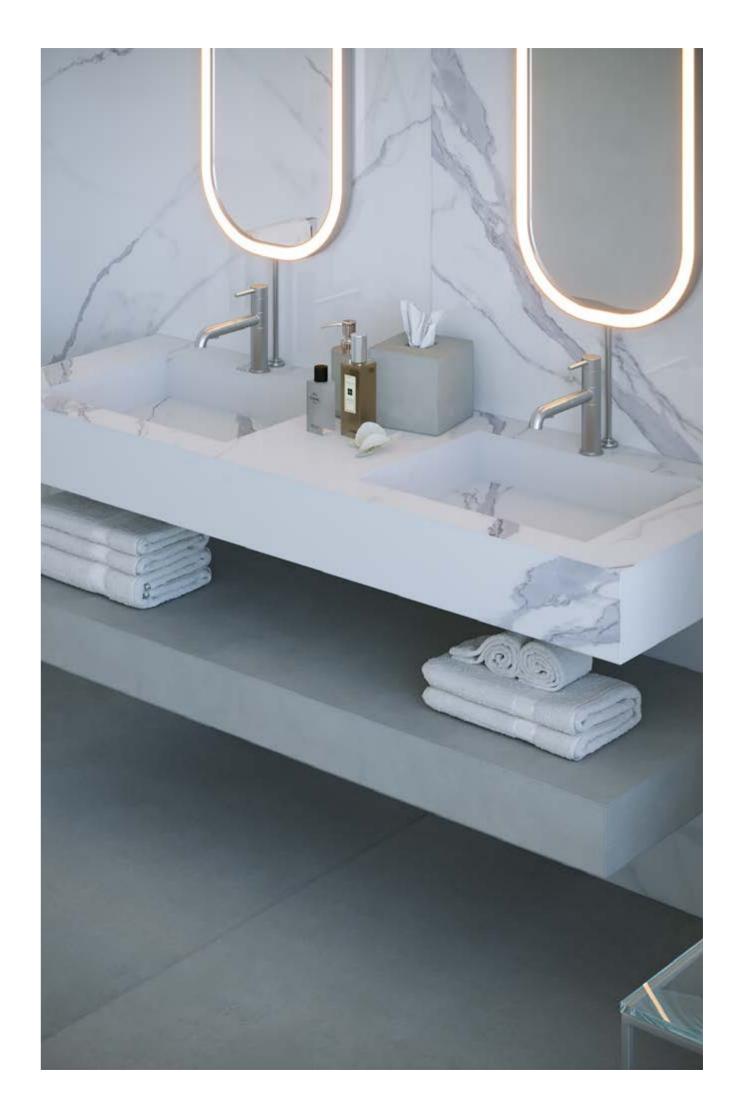
Statuario Extra Statuario Extra marble is one of the most renowned and charming marbles, enriched with dark and grey veins and thinner patterns. Its clean white background contrasted with grey veining doubles its beauty. Statuario Extra with dramatic, artistic, and large-scale singular vein patterns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

64



Wall: Statuario Extra Polished — 120x280 cm Floor: Natural Concrete Light Grey Soft Matte — 120x280 cm

Wash Basin: Statuario Extra Polished / Mirror









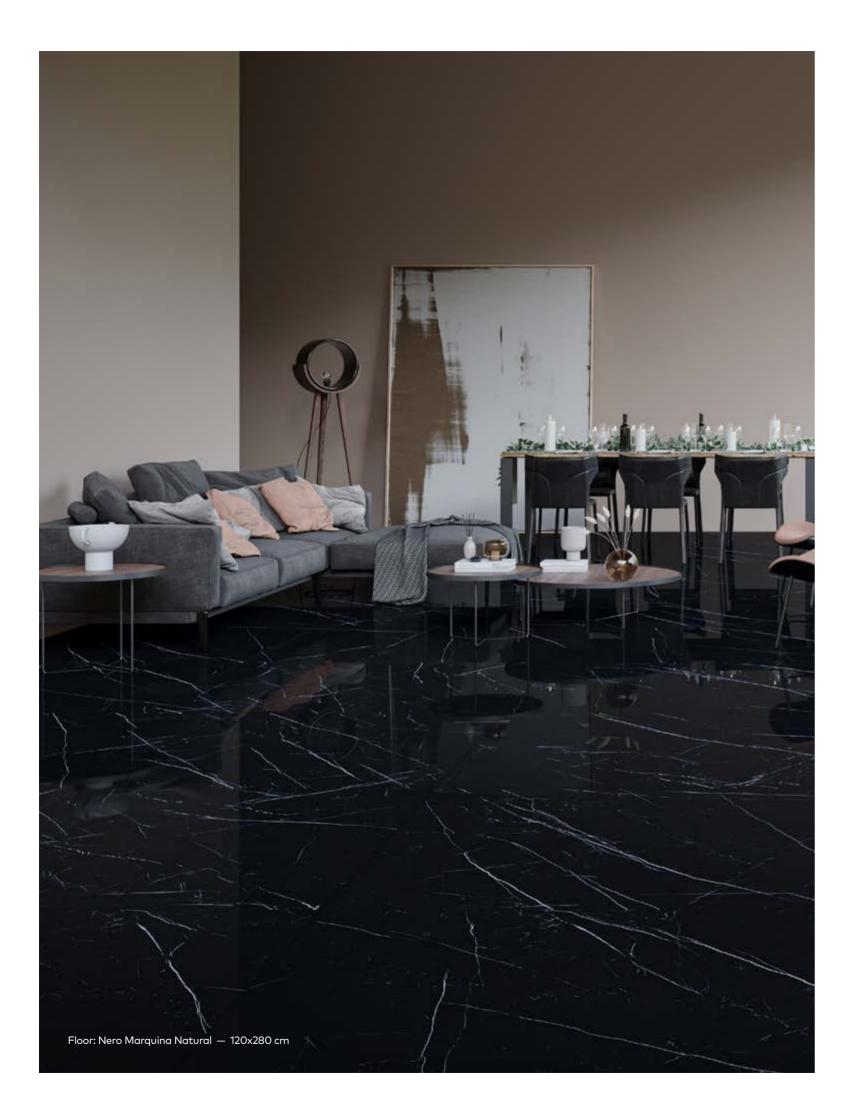


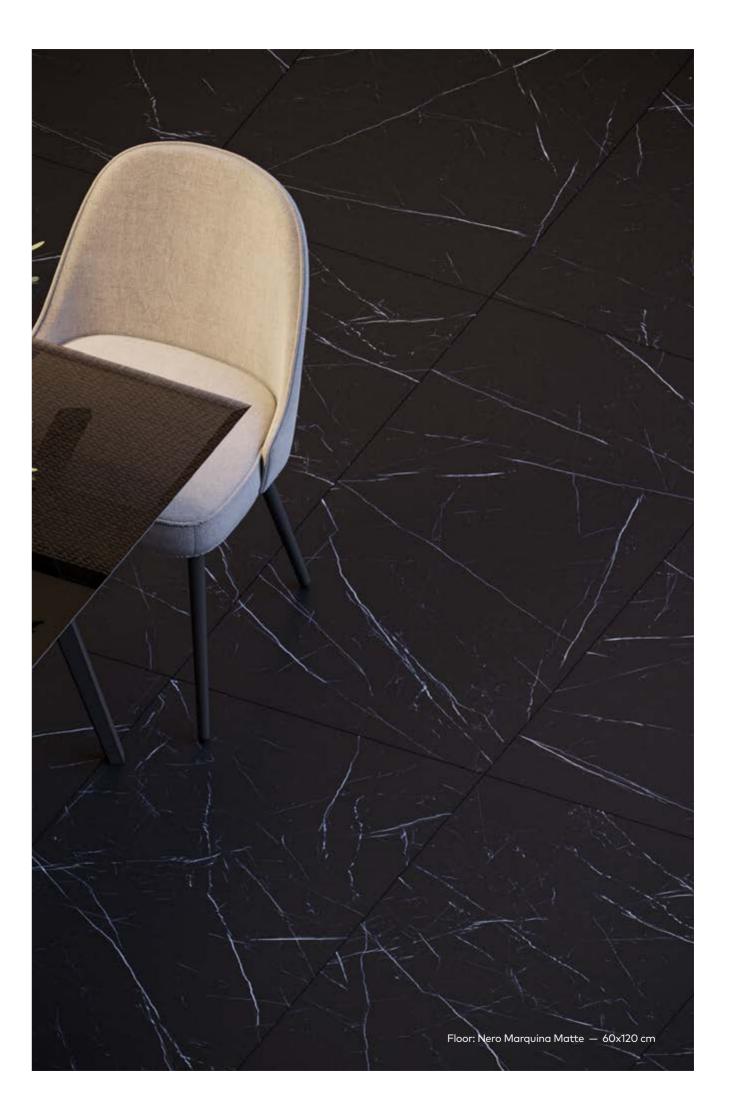
### Nero Marquina

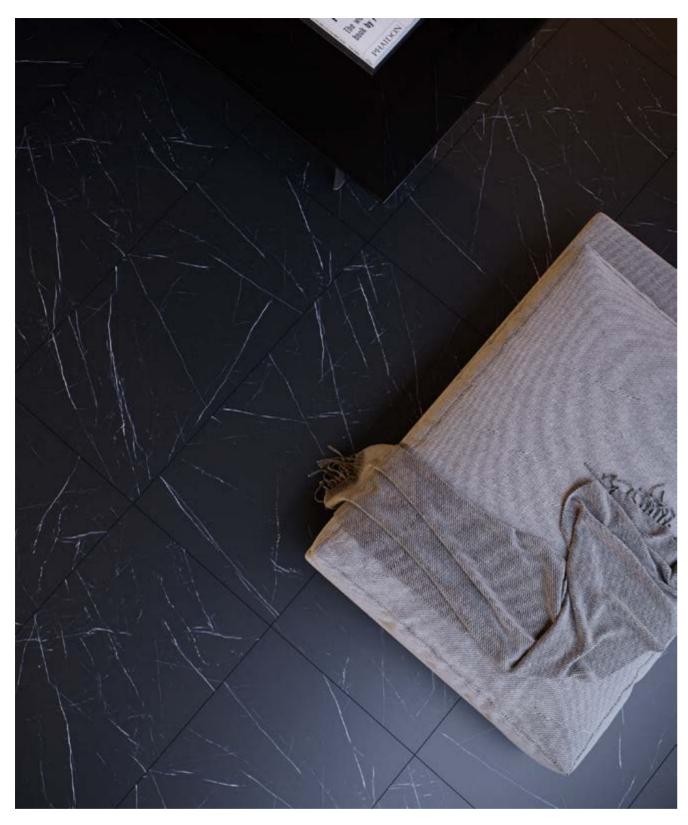
Nero Marquina, has the intense elegance of black marble. With its ultra-thin white veins running along an extreme black surface, Nero Marquina by PMA is a full body porcelain slab suitable for ultra –sophisticated settings. Its visual perfection provides a unique visual impact.











74

Floor: Nero Marquina Matte — 60x120 cm

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

FGPB-L5030 Polished | 5 Faces

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









### 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.

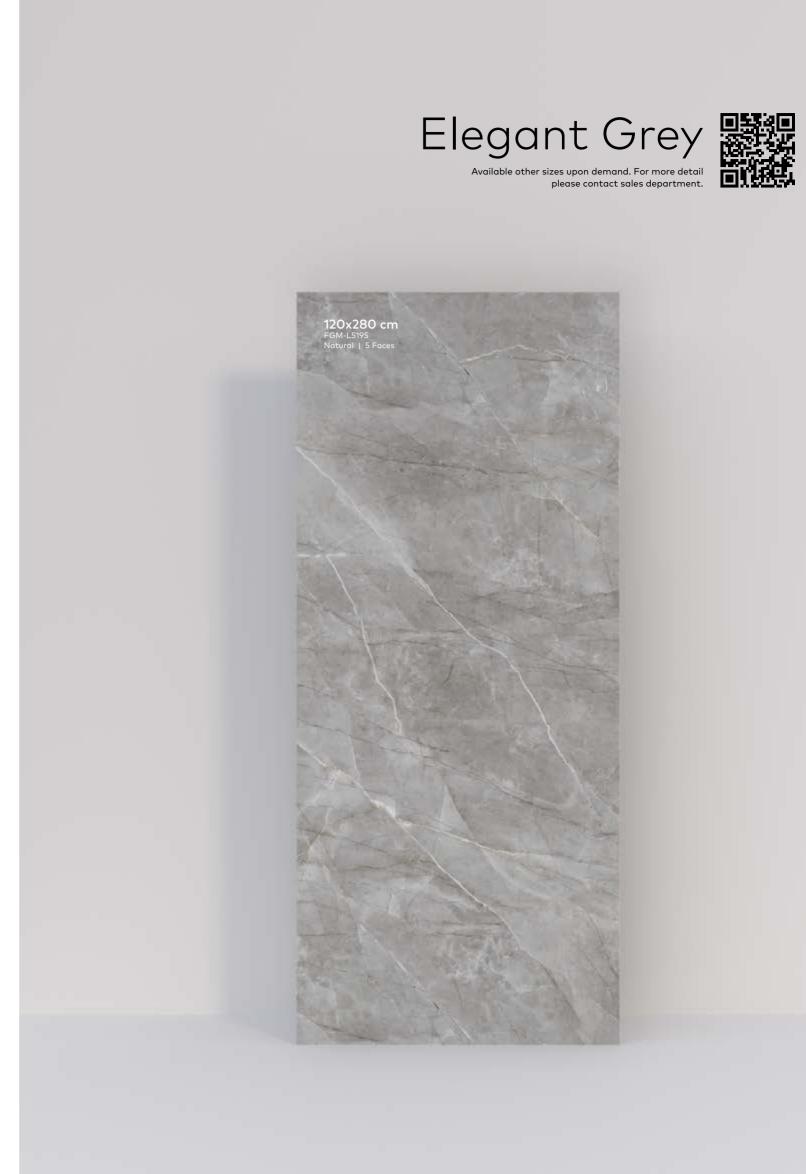


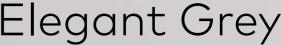




Floor: Elegant Grey Natural — 120x280 cm Wall: Elegant Grey Natural — 120x280 cm









#### 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.

82

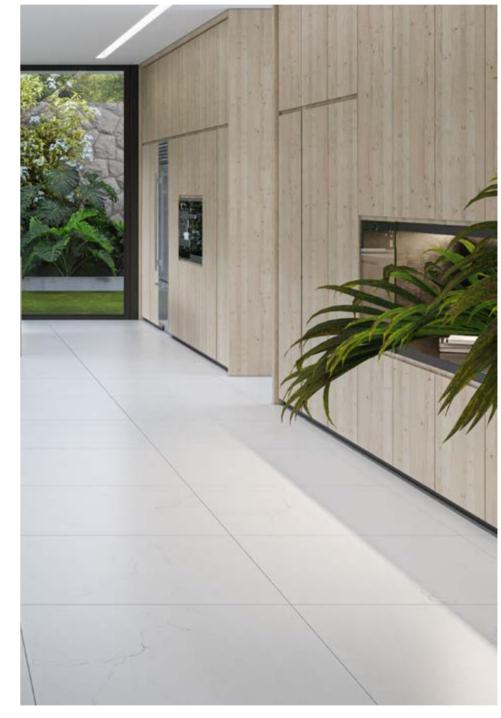
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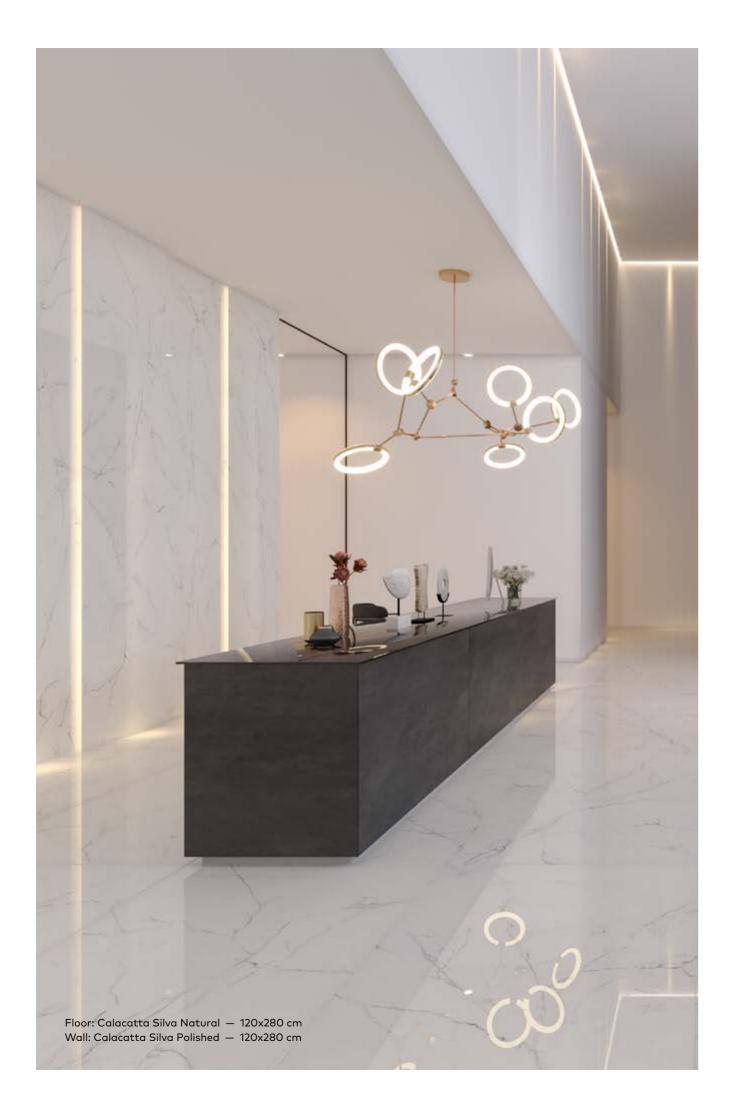


Floor: Calacatta Silva Polished — 60x120 cm





Floor: Calacatta Silva Natural — 100x100 cm



Novelty

120x280 cm FGPB-L5015 Polished | 4 Faces

FGM-L5015 Natural | 4 Faces

100x100 cm FGPB-W600 Polished | 11 Faces

FGM-W600 Matte | 11 Faces

# Calacatta Silva Available other sizes upon demand. For more detail



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



FGM-X5015 Natural | 4 Faces

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

FGM-A5015 Natural | 4 Faces

80x160 cm FGPB-C600 Polished | 7 Faces

FGM-C600 Matte | 7 Faces

60x120 cm FGPB-R600 Polished | 9 Faces

FGM-R600 Matte | 9 Faces **160x160 cm** FGPB-Y5015 Polished | 8 Faces

FGM-Y5015 Natural | 8 Faces

120x120 cm FGPB-E5015 Polished | 11 Faces

FGM-E5015 Matte | 11 Faces

### 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





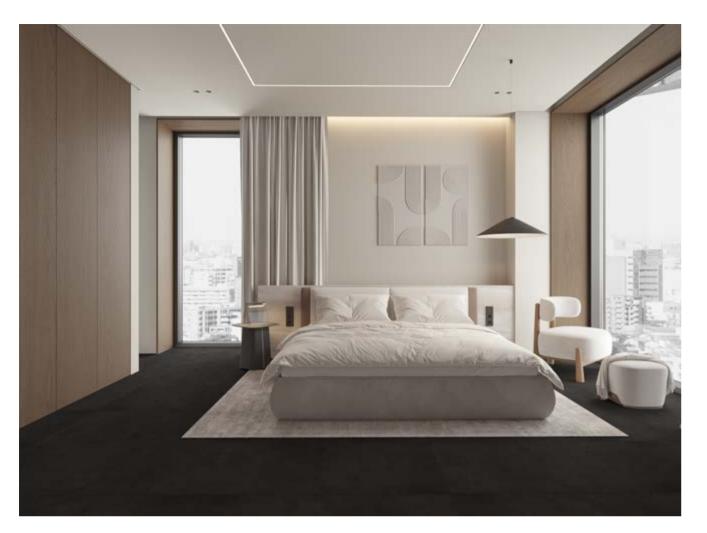
















### Natural Concrete

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.



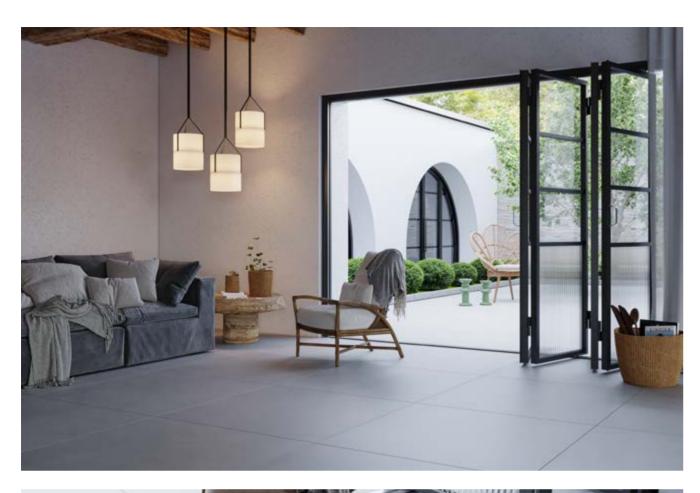
Wall: Natural Concrete Light Grey & Grey Soft Matte — 120x280 cm And Grace Polished — 120x280 cm Floor: Natural Concrete Light Grey Soft Matte — 120x280 cm

Wash Basin: Natural Concrete Dark Grey Soft Matte & Grace Polished

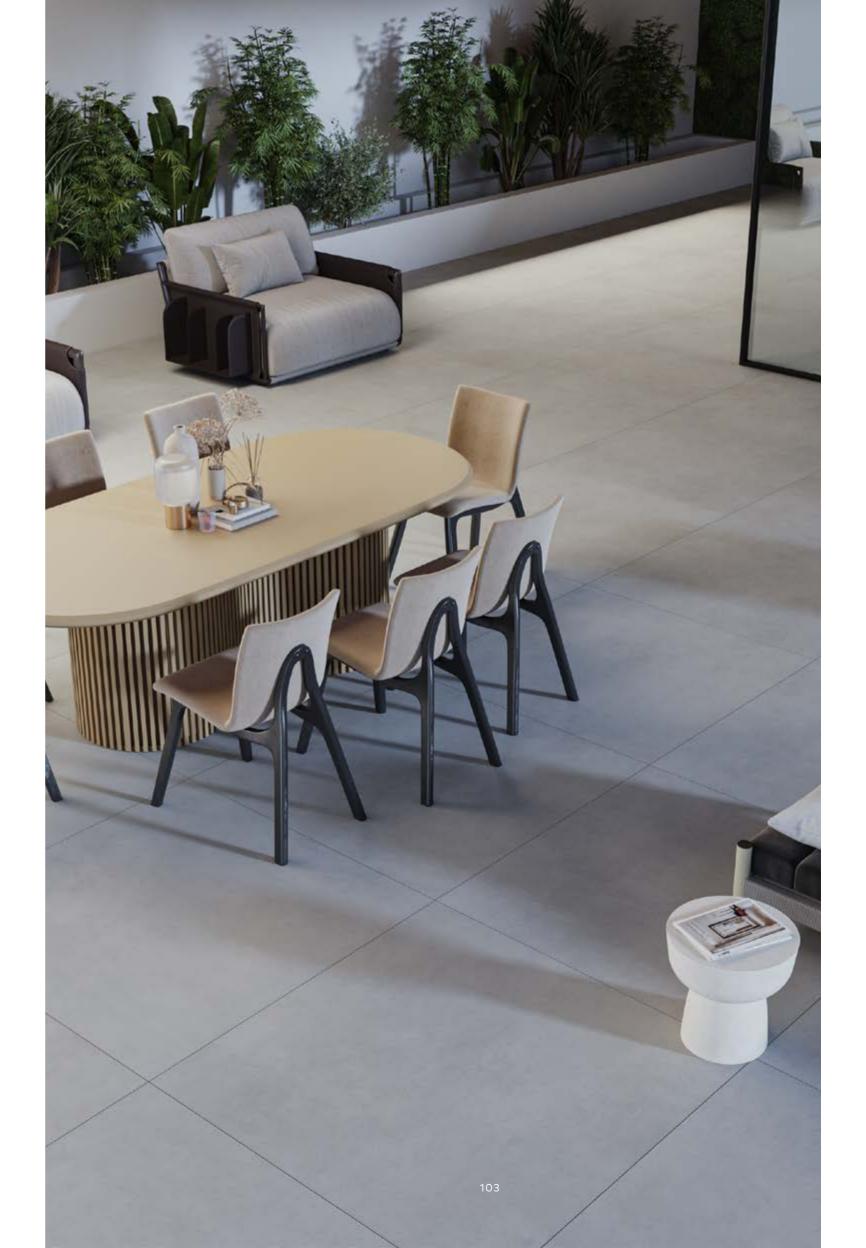


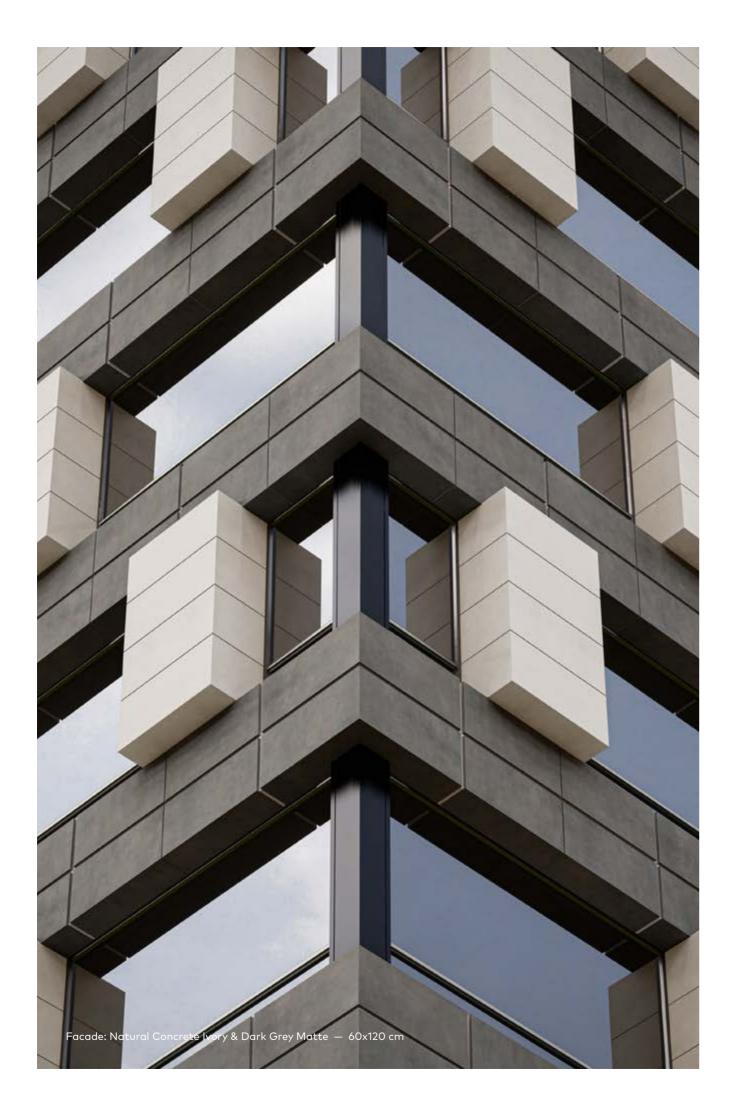








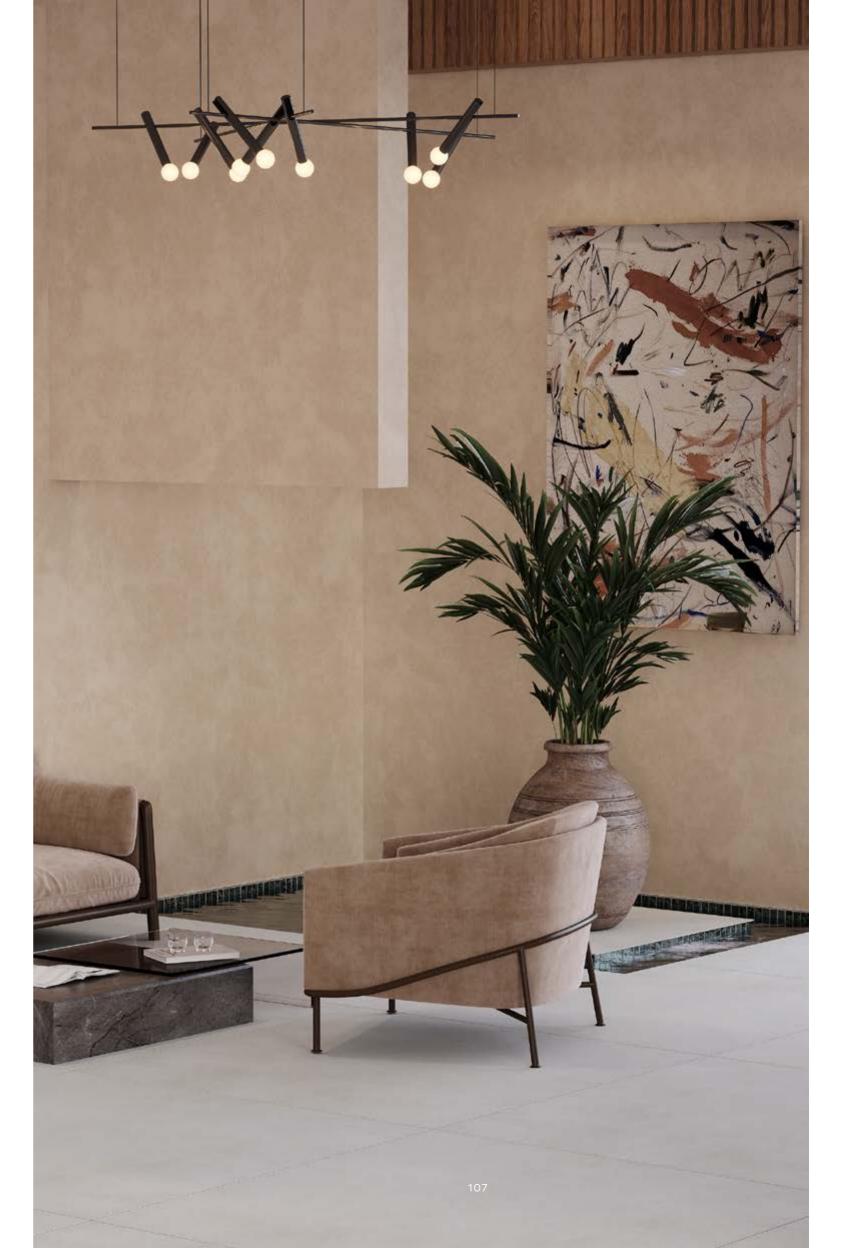






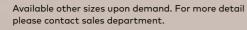








## Natural Concrete



Novelty

Novelty



120x240 cm FGM-A5095 Soft Matte | 4 Faces

FGM-W5095 Matte | 8 Faces

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





# 160x160 cm FGM-C5095 Matte | 4 Faces HGM-Y5095 Matte | 8 Faces

60x120 cm FGM-R5095 Matte | 8 Faces

FGMTH-U5095 Matte | 16 Face

atte | 8 Faces



# Natural Concrete

Novelty







#### Anthracite

120x280 cm FGM-L5250 Soft Matte | 4 Faces

#### Dark Grey

120x280 cm FGM-L5100 Soft Matte | 4 Faces

60x120 cm FGM-R5100 Matte | 8 Faces

Cream

60x120 cm FGM-R5255 Matte | 8 Faces

60x60 cm FGMTH-U5100 Matte | 16 Faces

111









Wash Basin: Natural Concrete Ash Matte Box: Natural Concrete Red Matte

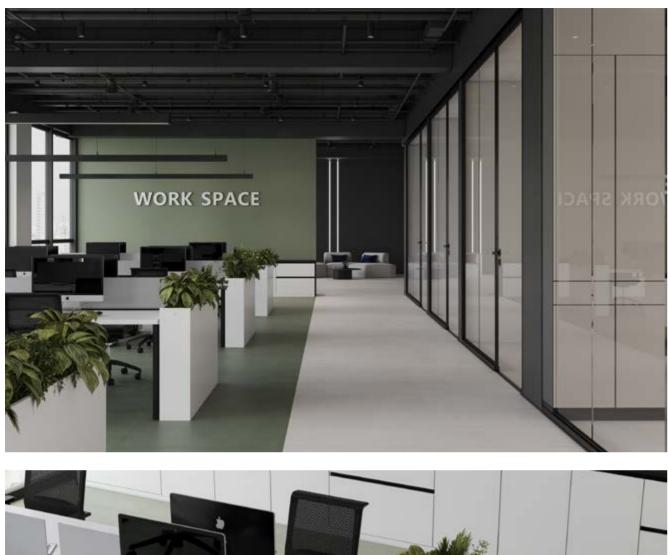




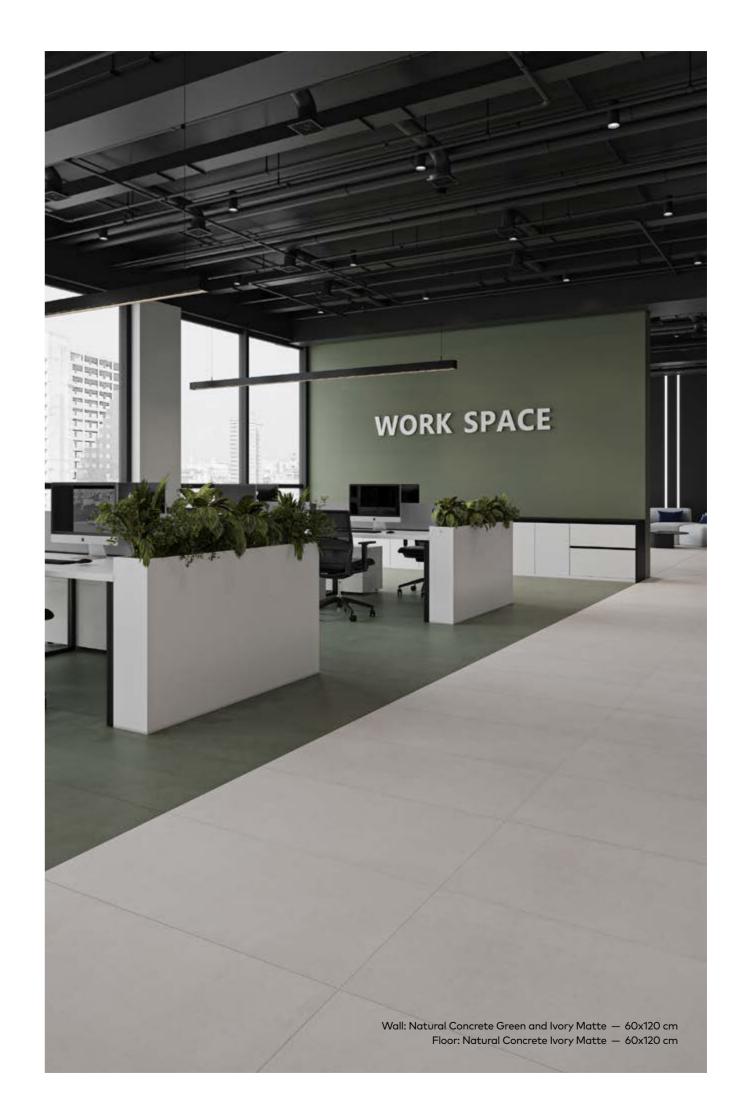


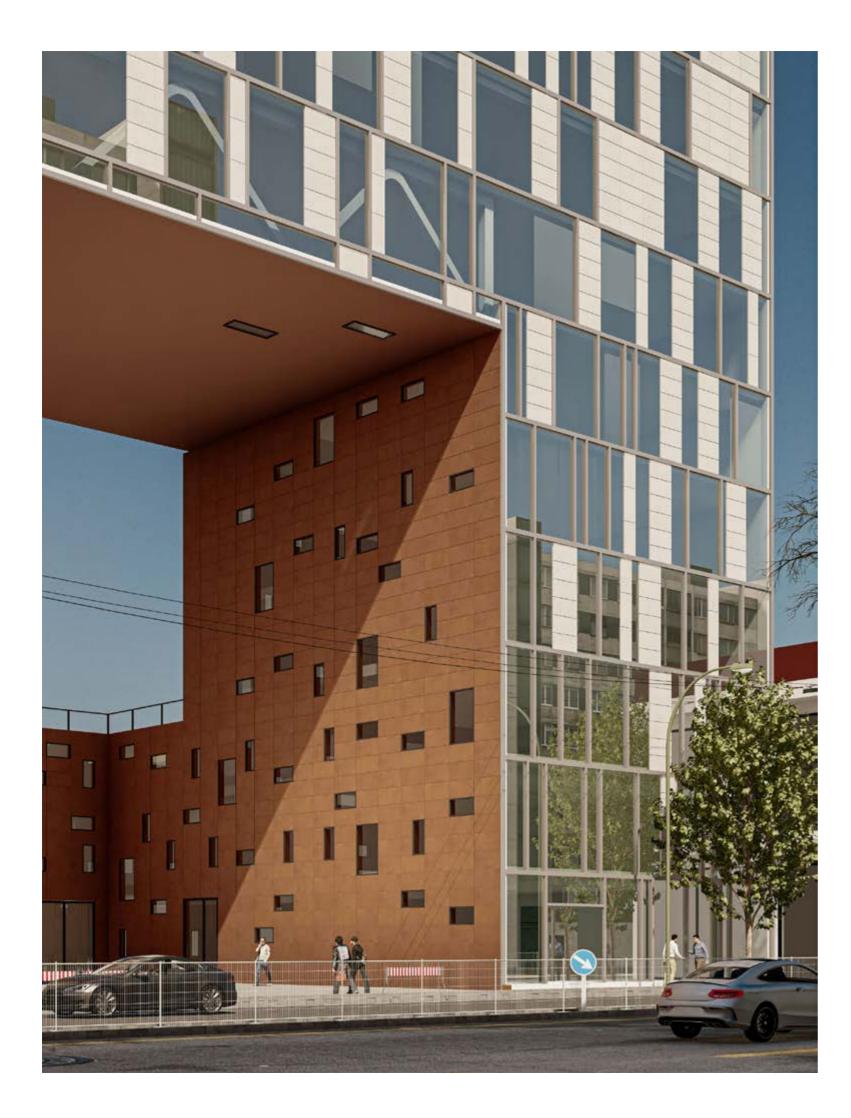


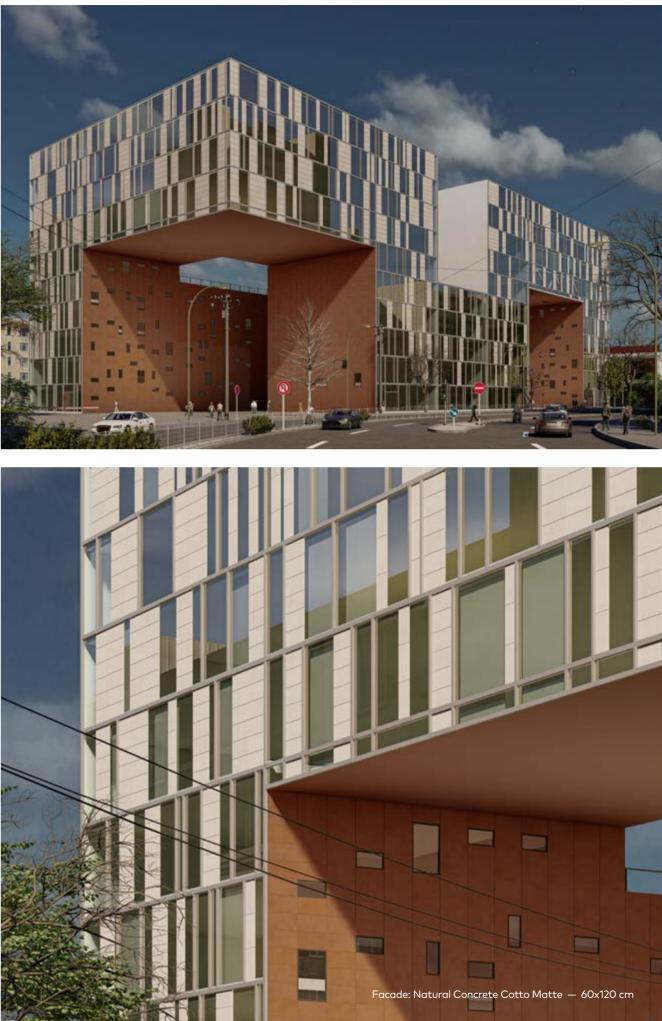


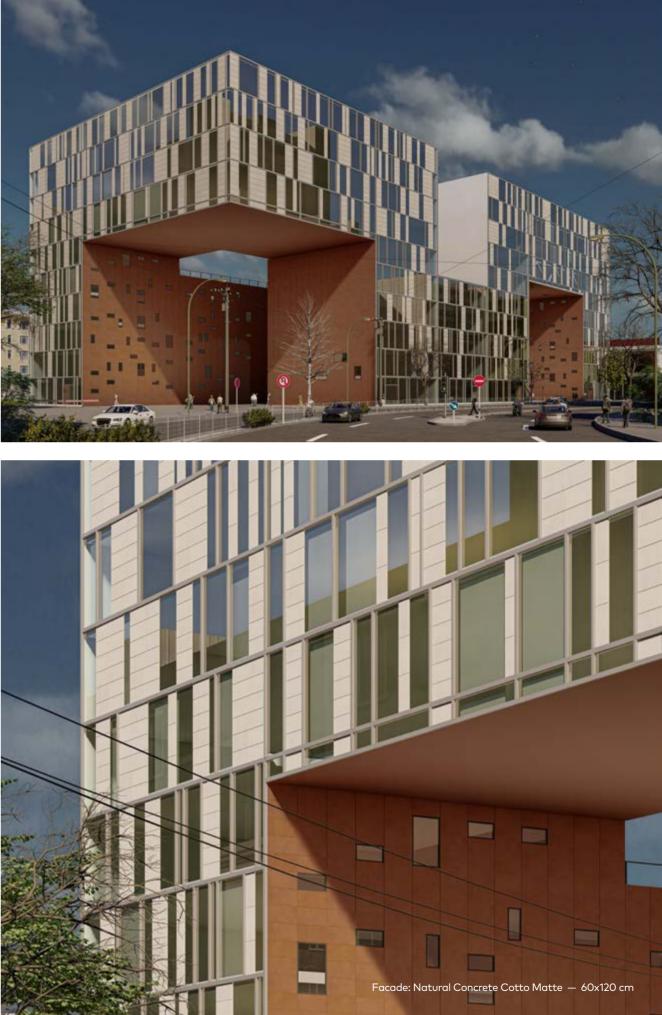


















Wall: Natural Concrete Turquoise and Ivory Matte  $\,-\,$  60x120 cm Floor: Natural Concrete Ivory Matte — 60x120 cm







#### Blue

**60x120 cm** FGM-R5275 Matte | 8 Faces

## Turquoise

FGM-R5280 Matte | 8 Faces

#### Green

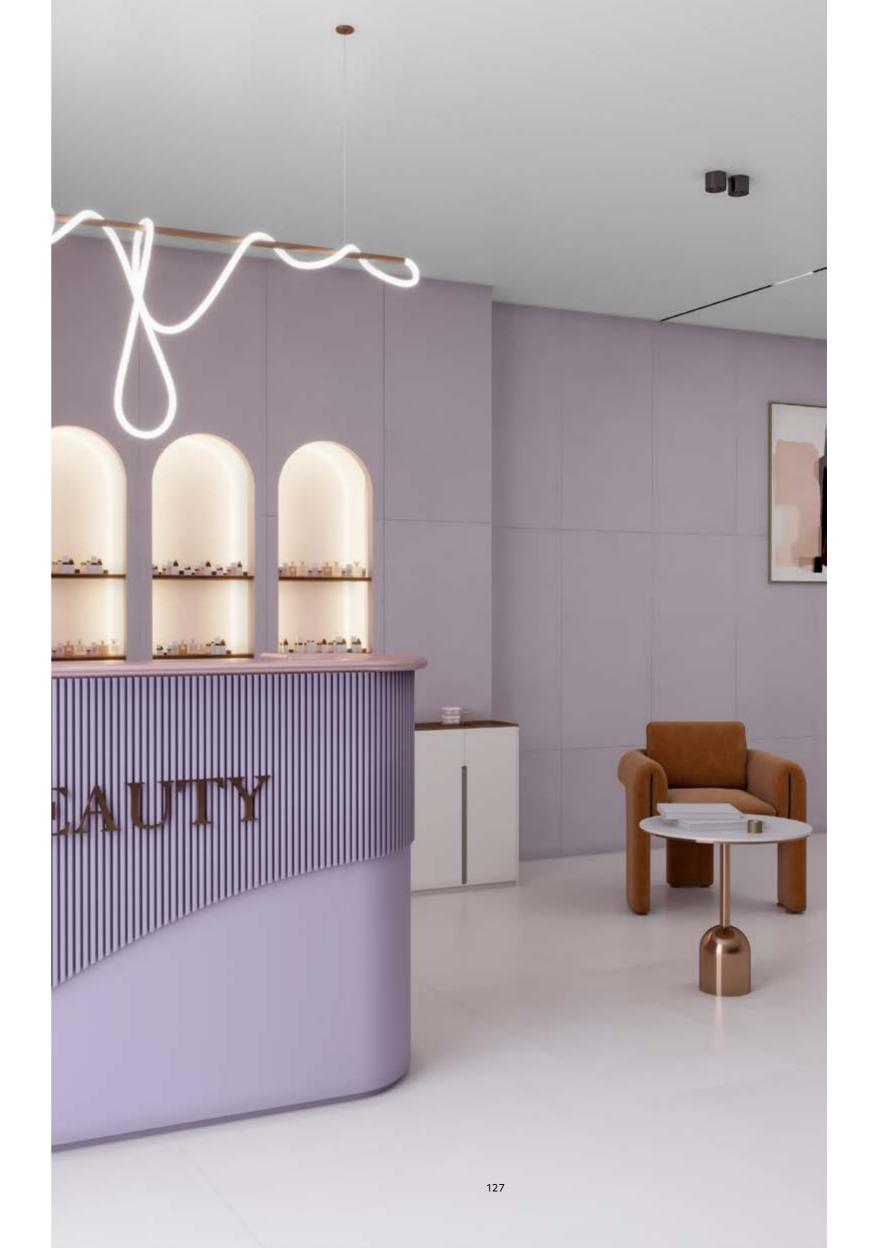
60x120 cm FGM-R5285 Matte | 8 Faces

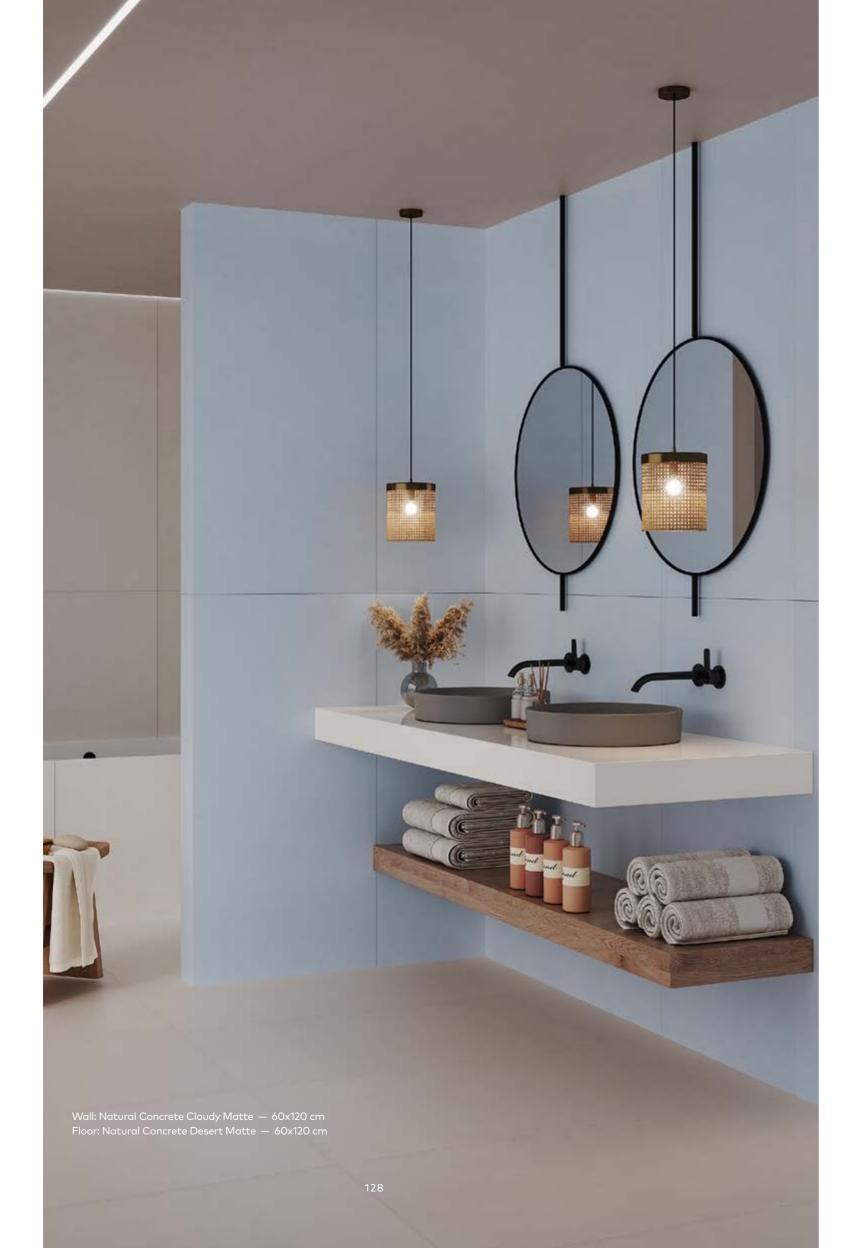
#### Yellow

60x120 cm FGM-R5290 Matte | 8 Faces









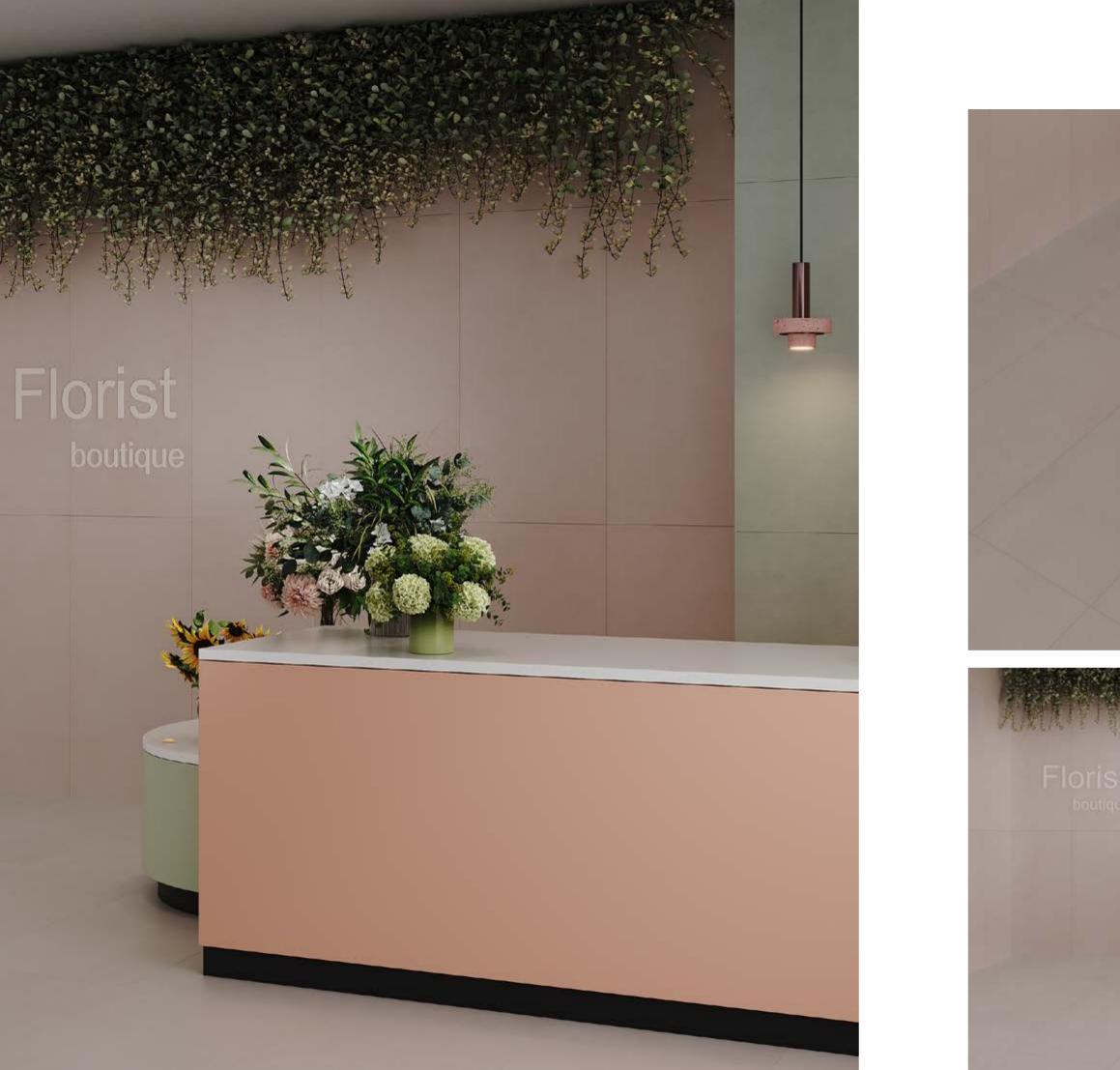












Wall: Natural Concrete Rose Blush Matte — 60x120 cm Floor: Natural Concrete Desert Matte — 60x120 cm











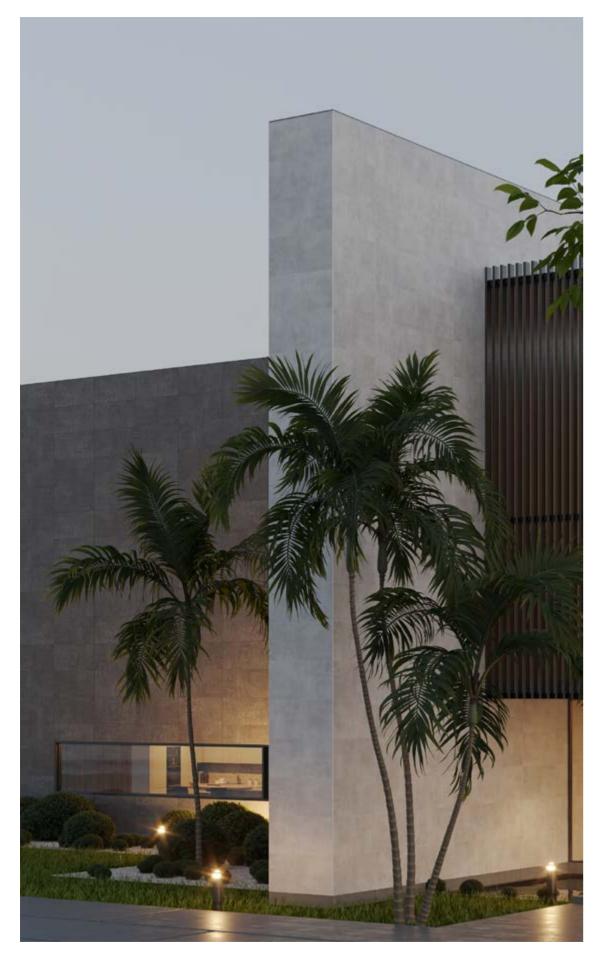




#### Rose Blush

#### Desert

60x120 cm FGM-R5360 Matte | 8 Faces





Facade: Beton Art Smoke Matte — 60x120 cm

### Beton Art

The interpreter of an essential but sophiticated style that tands 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.





Grey

60x120 cm FGM-R780 Matte | 5 Faces





#### Smoke

60x120 cm FGM-R785 Matte | 5 Faces

## Elevating Standards, Crafting Excellence

In an epoch where global standards benchmark quality, PMA endeavors to transcend. Anchored by our avant-garde quality control lab, each ceramic piece evolves into a paragon of perfection. Our alliance with the standards organization amplifies our commitment. At PMA, we don't chase standards; we generate them.



ISO 9001

ISO 9001 is the international standard for quality management system





European standard that defines terms and specifications of ceramic tiles



Institute of Standards and Industrial Research of Iran



Seramik Araştırma Merkezi Turkish Ceramic Research Center Standard testing laboratory



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



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





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5







# Stellar

Imagine a night sky captured in a surface, where the deep black surface shimmers with the subtle brilliance of distant stars. The polished surface reflects light in a way that feels almost otherworldly, casting a warm glow that brings a touch of luxury to any space. This design envelops your interior in a sense of mystery and allure, as if each tiny glimmer holds a secret, waiting to be discovered. It's an invitation to experience elegance at its most profound.



Counter: Stellar Polished — 120x280 cm Wall: Natural Concrete Ash Soft Matte — 120x280 cm

EAT DRINK N



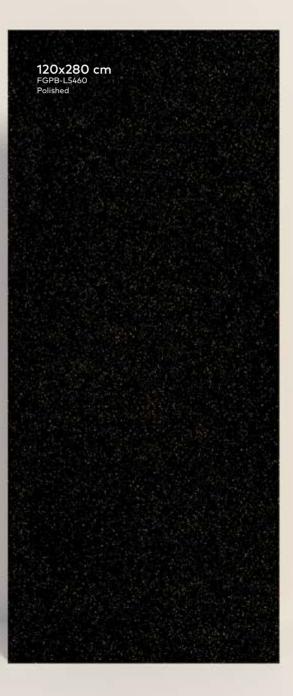
Novelty

Wall: Stellar Polished — 120x280 cm



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





# Travertino

Travertino invites you to step into tranquility, where the aesthetics of travertino provides you an experiencing a highly contemporary moment. Travertino brings an earthy touch to any space and combines the traditional charm of stone with the characteristics of porcelain slabs. Travertino is a suitable substrate for taking inspiration for those seeking a classic look with a chic twist.





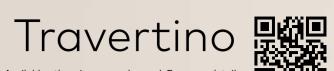








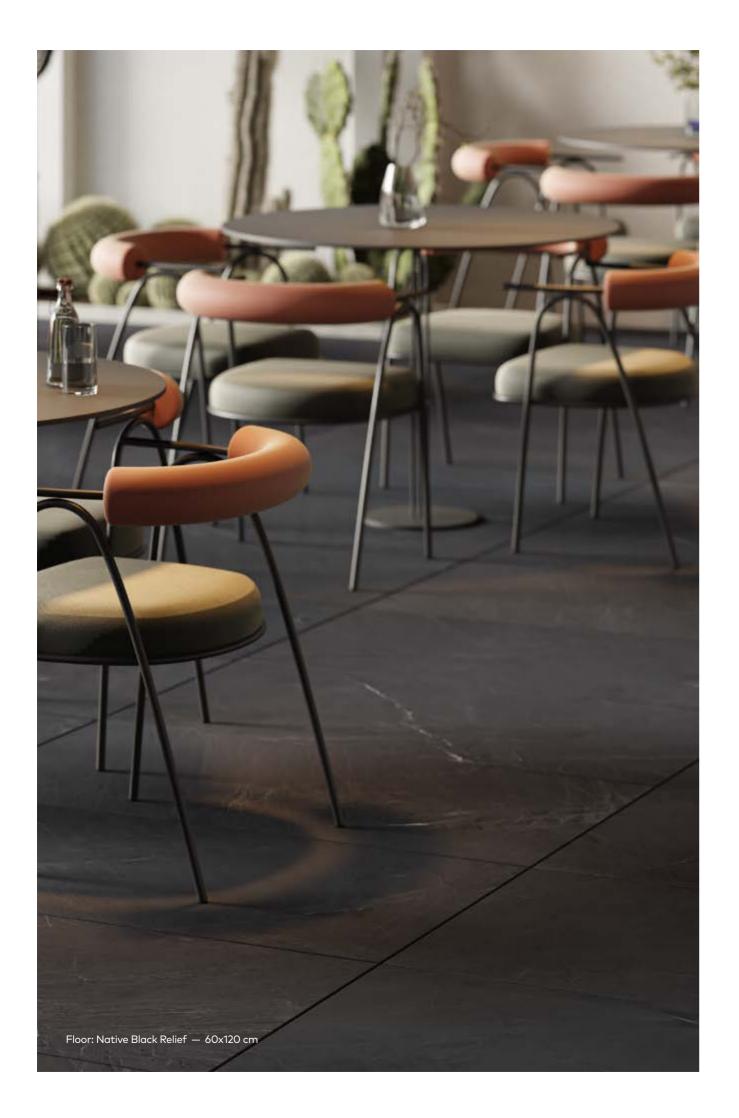
Floor: Travertino Natural — 120x280 cm





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



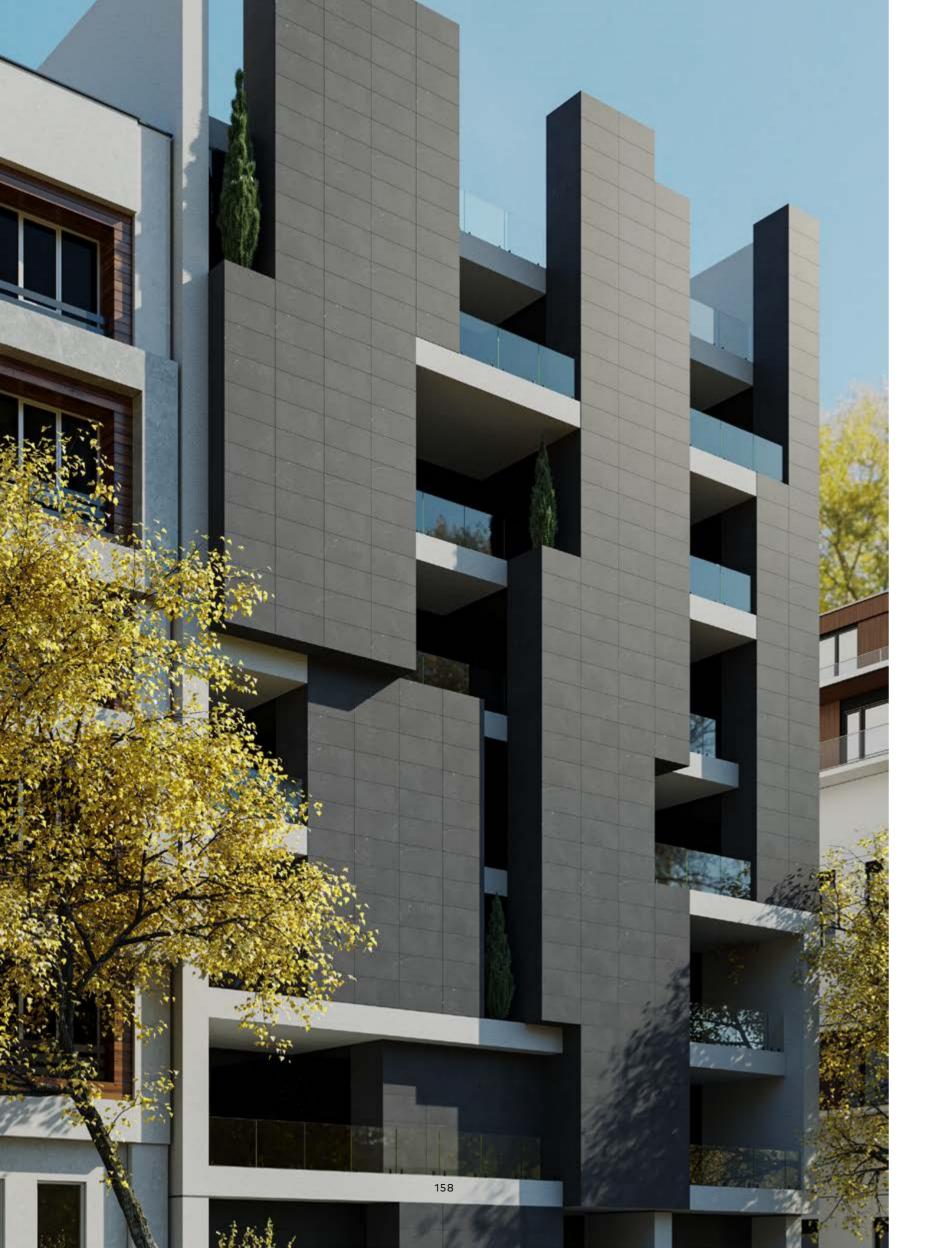




Native Native is an elegant slate with delicate and light veins that are deeply interwoven to create a subtle and sophisticated pattern. Native's relief texture evokes a modern interpretation of natural stone in a way that its low contrast and homogenous theme make it a perfect backdrop for any design 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.



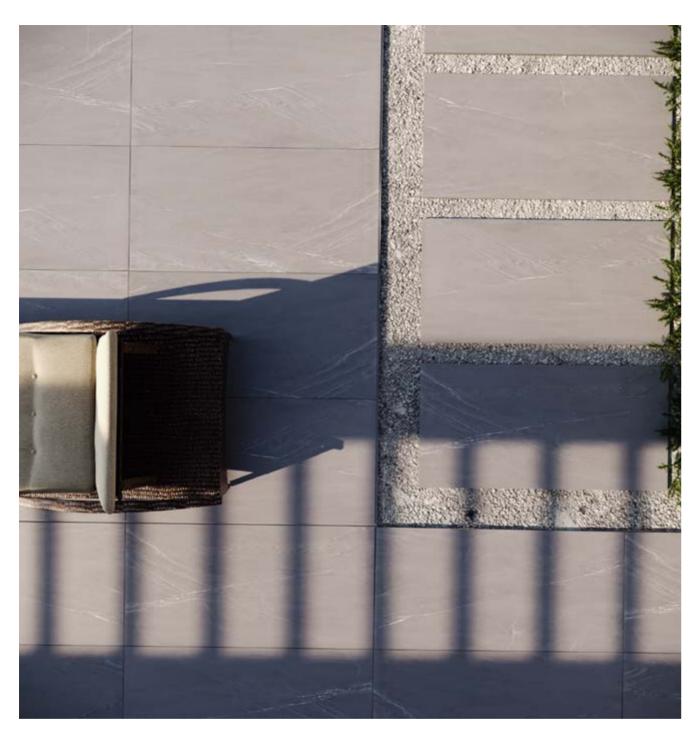








Facade: Native Grey Relief — 60x120 cm



Floor: Native Grey Relief — 60x120 cm

Light Grey

**60x120 cm** FGM-R1455 Relief | 10 Faces

White 60x120 cm FGM-R1450 Relief | 10 Faces

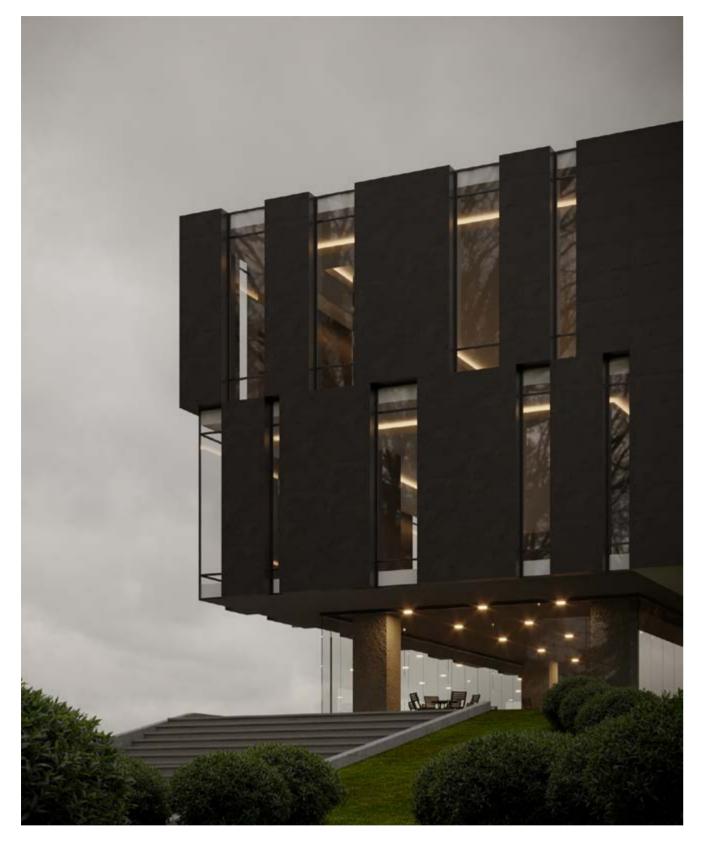


Available other sizes upon demand. For more detail please contact sales department.

Black 120x280 cm FGM-L1470 Relief | 5 Faces Grey **60x120 cm** FGM-R1460 Relief | 10 Faces

Dark Grey Black **60x120 cm** FGM-R1465 Relief | 10 Faces

**60x120 cm** FGM-R1470 Relief | 10 Faces

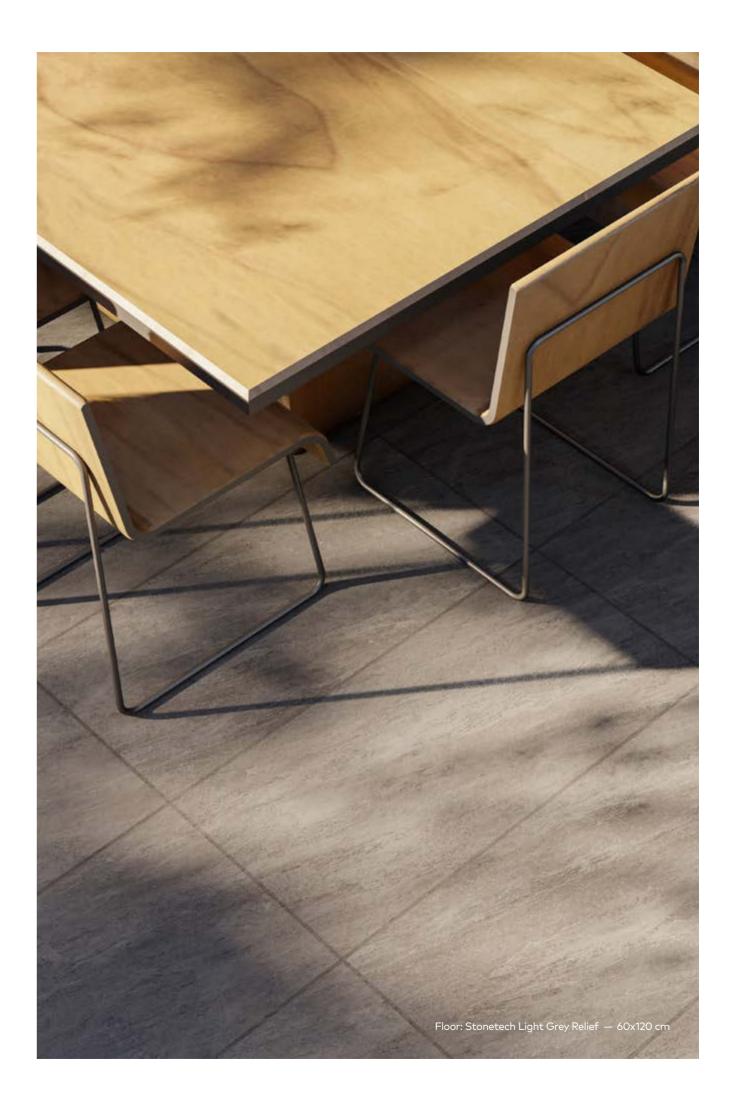


# Stonetech

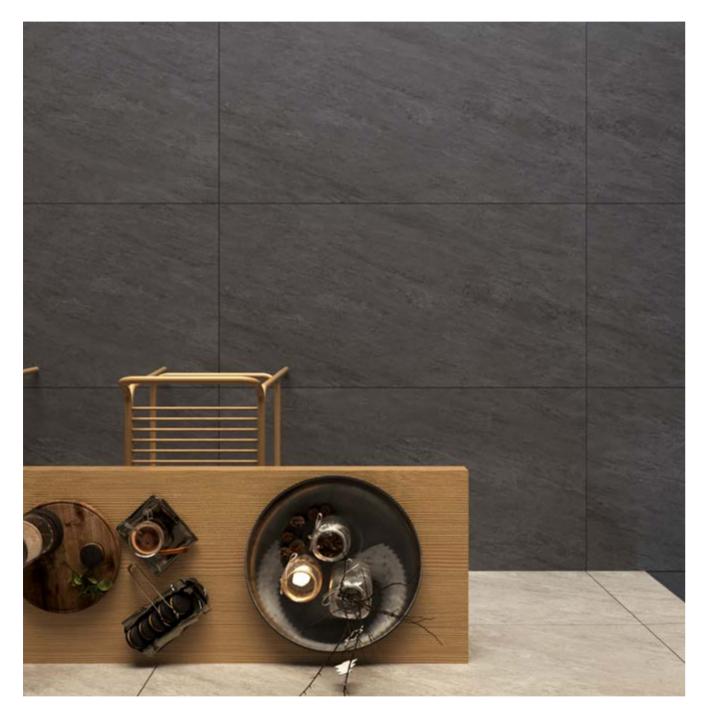
Stonetech is «monolithic»; it indicates harmony despite being unified. Stonetech comes with a natural stone relief that is soft to touch, yet express a fine natural stone look surface. Parallel details with a sufficient amount of monotone surface make this design fashionable yet suitable for facade and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











Wall: Stonetech Soil Grey Relief — 60x120 cm Floor: Stonetech Coal Grey Relief — 60x120 cm Bone 60x120 cm FGM-R1190 Relief | 5 Faces Soil

60x120 cm FGM-R1175 Relief | 5 Faces



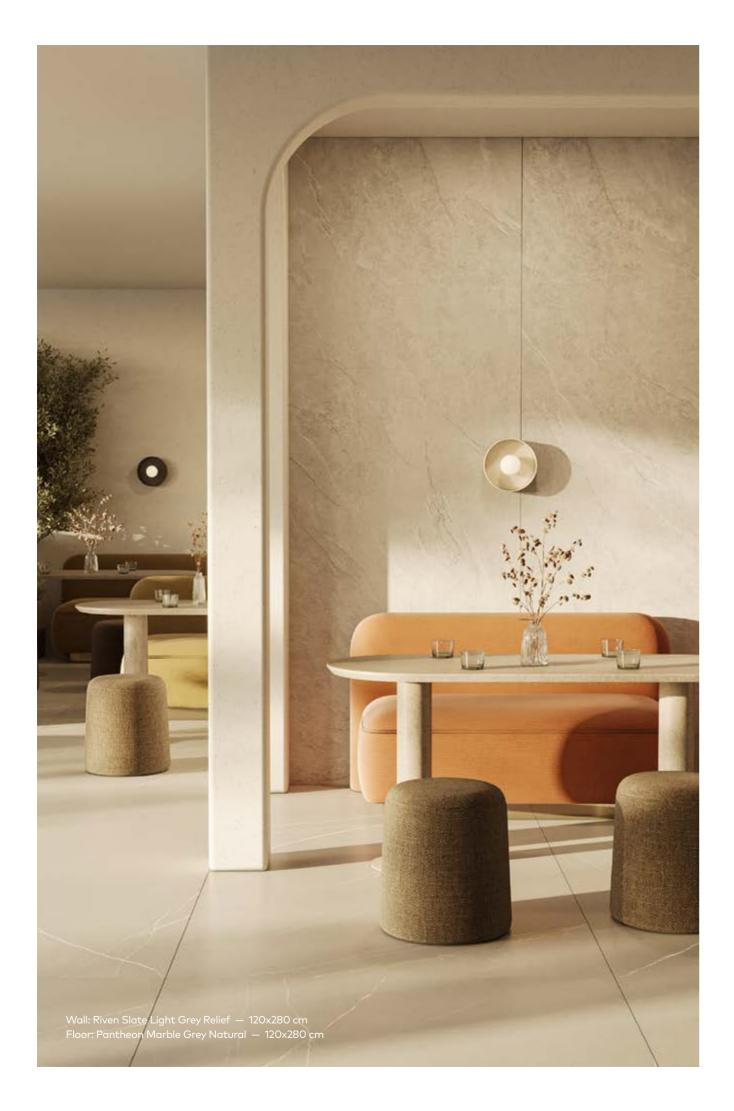


Available other sizes upon demand. For more detail please contact sales department.

## Light Grey

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

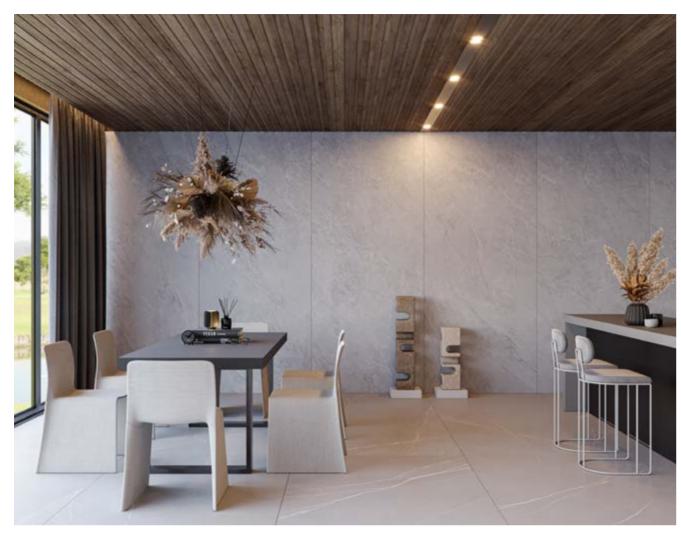
Grey **60x120 cm** FGM-R1165 Relief | 5 Faces Coal Grey 60x120 cm FGM-R1170 Relief | 5 Faces





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.

# **Riven Slate**









Wall: Riven Slate Light Grey Relief — 120x28 loor: Pantheon Marble Grey Natural — 120x28



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

Dark Grey 60x60 cm FGMTH-U5320 Relief | 10 Faces \_\_\_\_\_ 20 mm





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









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







Floor: Lithos Grey Matte — 60x120 cm



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

Soft Grey

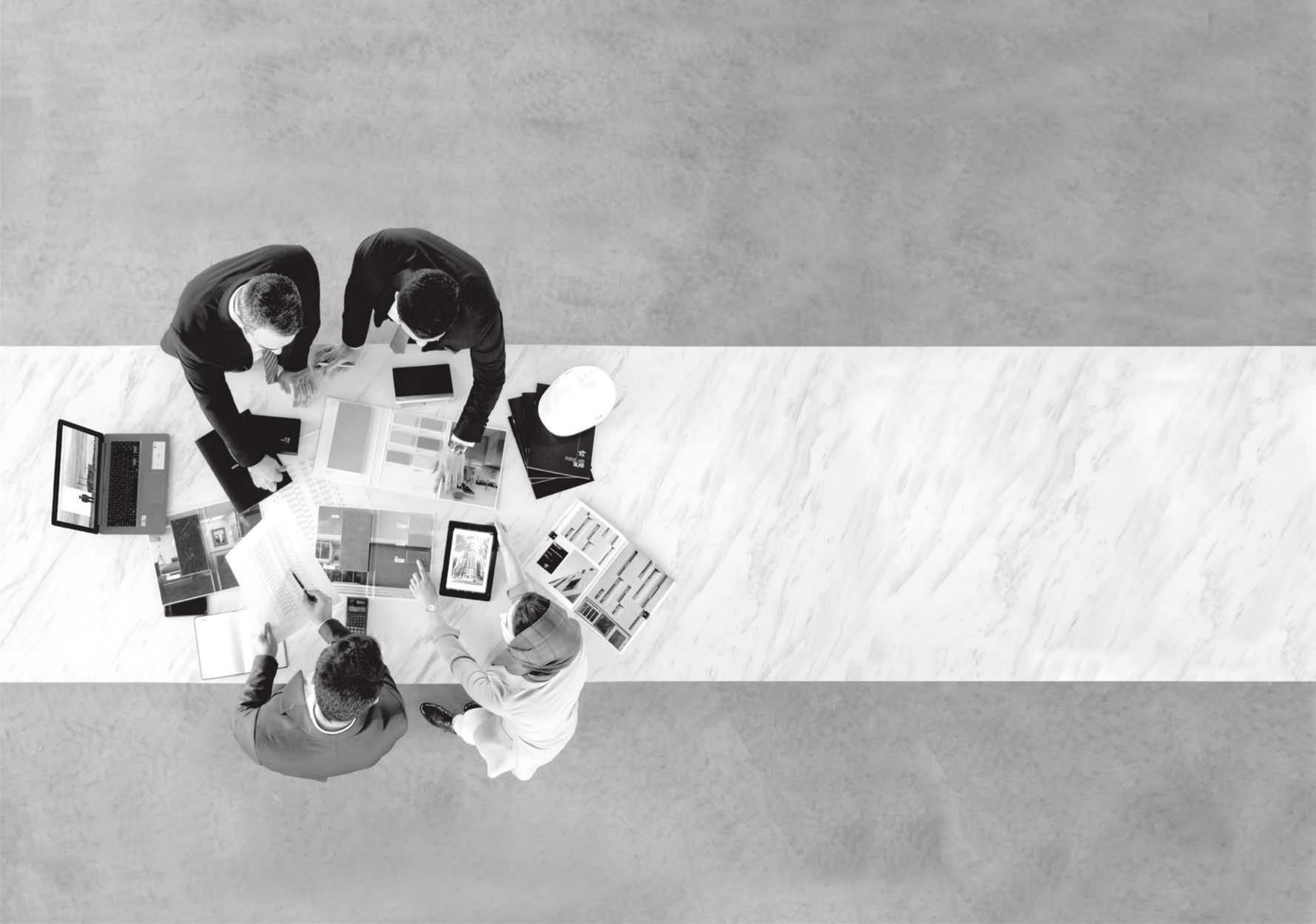
60x120 cm FGM-R1115 Matte | 8 Faces

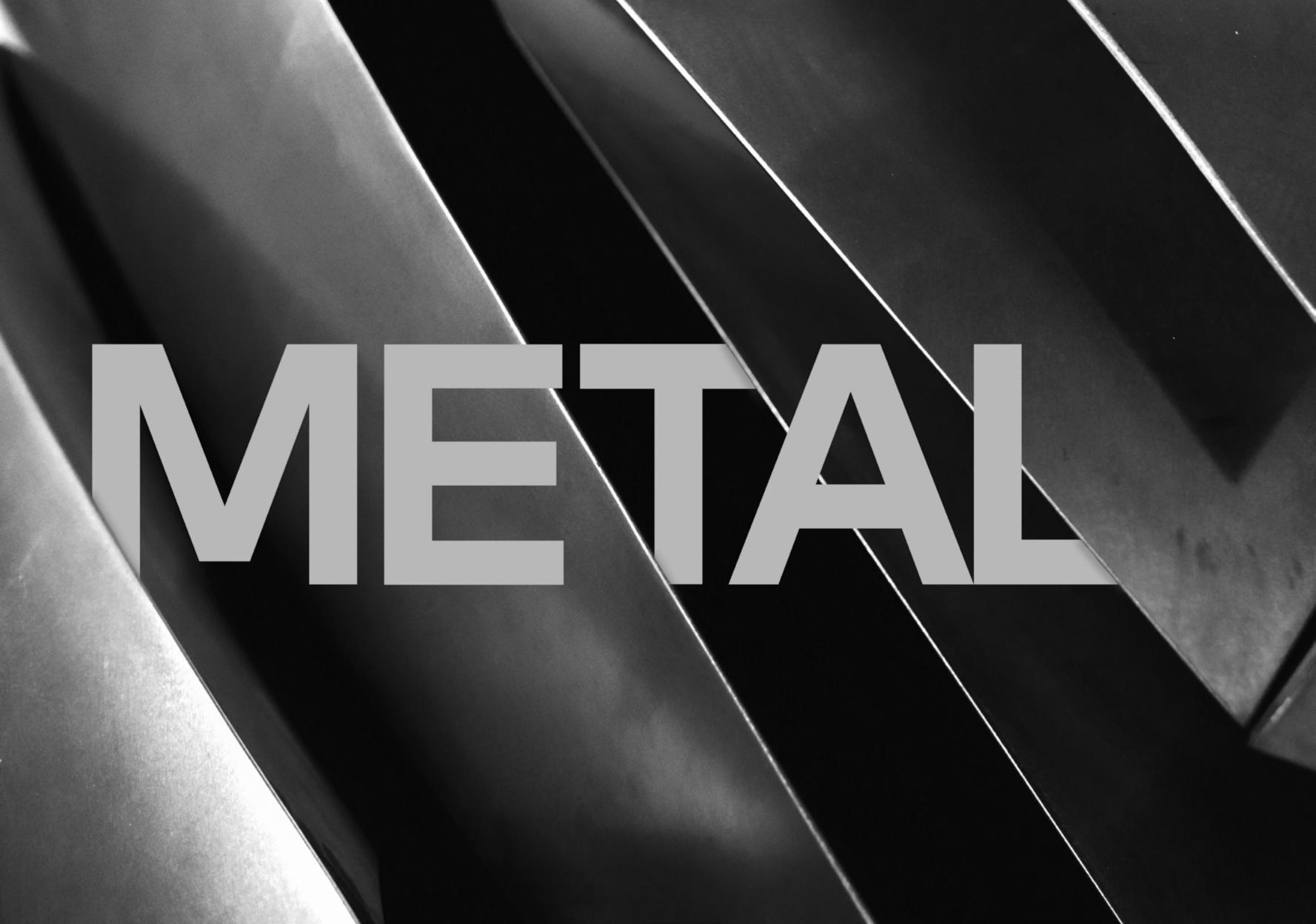


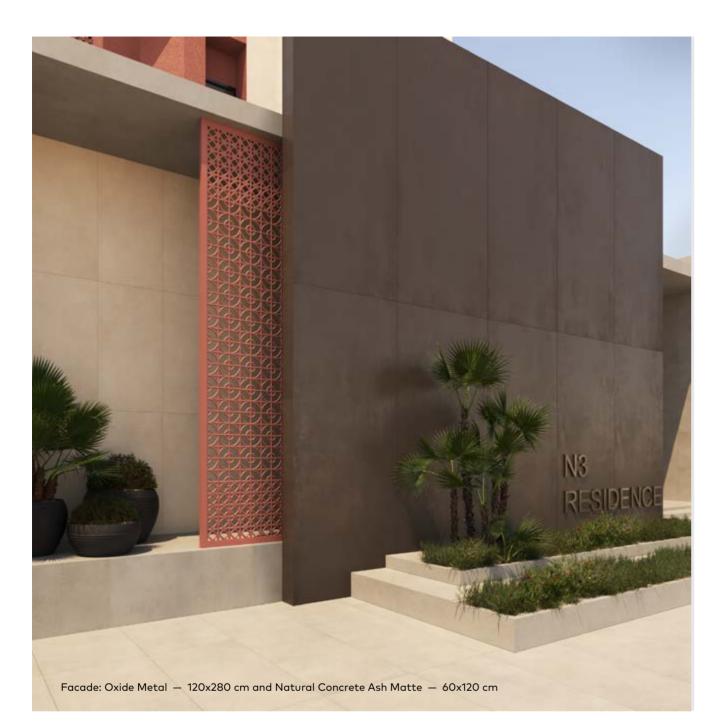
Available other sizes upon demand. For more detail please contact sales department.

### Grey

60x120 cm FGM-R1120 Matte | 8 Faces





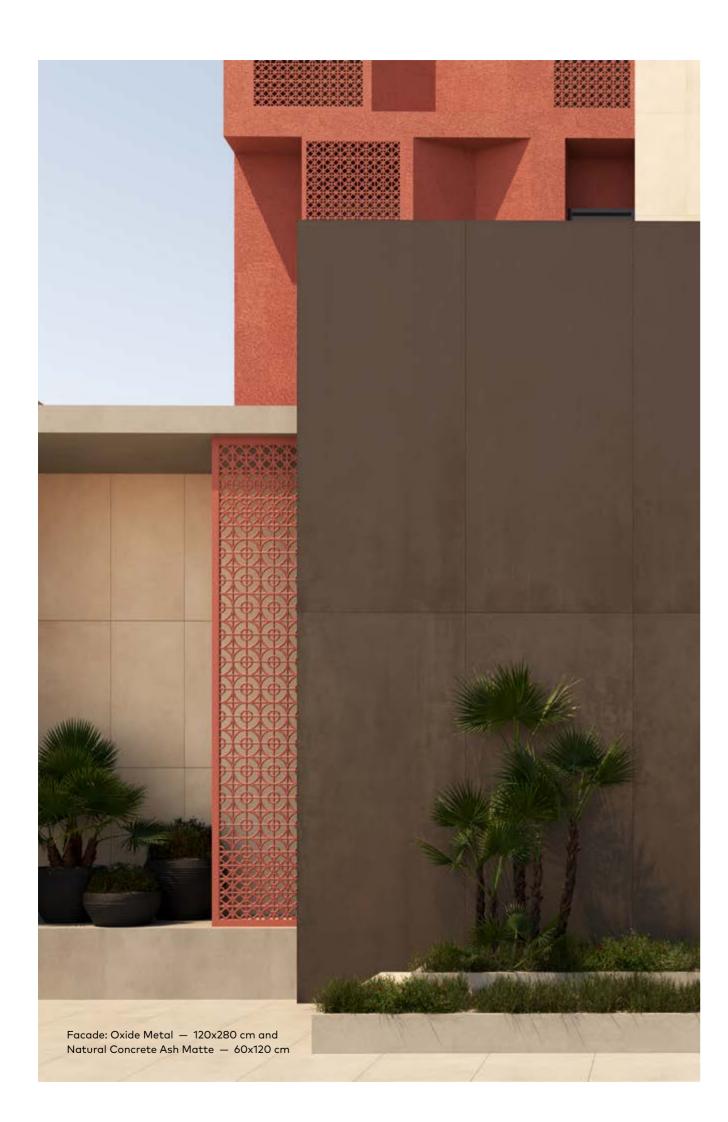


# Oxide

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.



**N3** 









# Complementary product portfolio

In the ceramic realm, PMA sprawls as a masterpiece. Beyond porcelain ceramics, our offerings resonate with the brand's touch of quality and innovation. Whether it's foundational construction chemicals, exquisite furniture, or precision cutting – PMA promises excellence.







# 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.

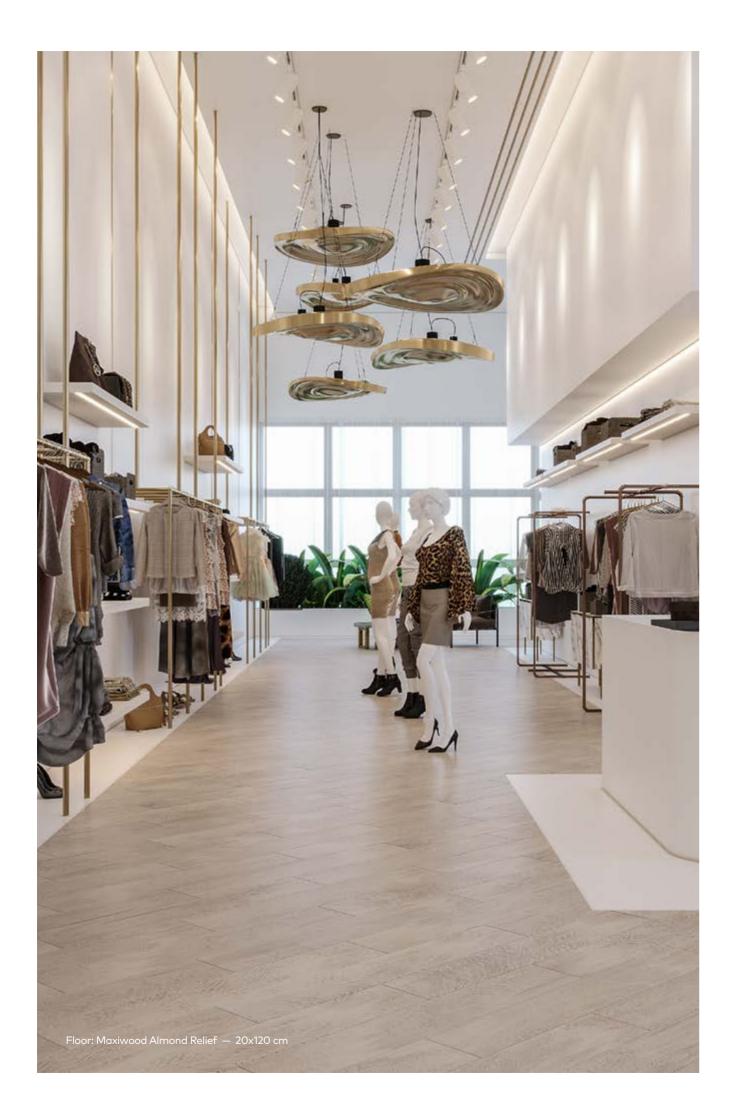


Wall: Maxiwood Platinum Relief — 20x120 cm Floor: Maxiwood Walnut Relief — 20x120 cm





Floor: Maxiwood Almond Relief — 20x120 cm





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



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





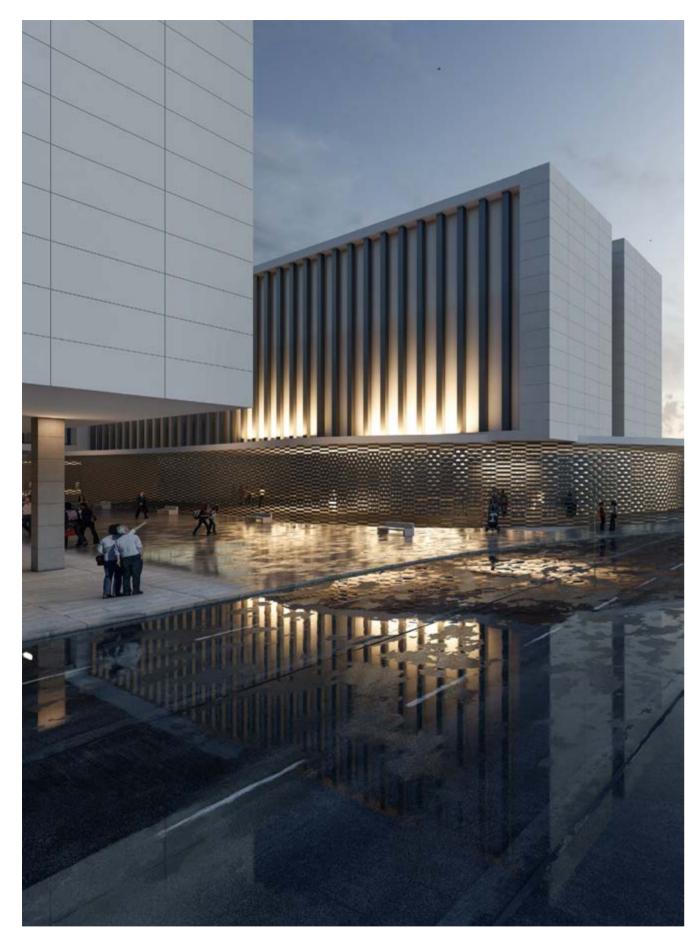


# Monocolor Night

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 and Monocolor Black Matte — 60x120 cm 11110





Facade: Monocolor White Matte — 60x120 cm

White

**60x120 cm** GM-R9305 Matte



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

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

Dark Grey

**60x120 cm** GM-R9385 Matte

Black

**60x120 cm** GM-R9388 Matte

# Crafting Iconic Facades & Beyond

In the architectural sonnet, a facade is the chorus. PMA ceramics are not just crafted for beauty but curated for an everlasting imprint. From bustling commercial hubs to serene hospitals, our ceramics are a symphony of design and durability.



# TECHNICAL INFORMATION

# **Technical Characteristics**

	Annex G	Group Bla	<b>T</b> . <b>M</b> . <b>I</b> . <b>I</b>	PMA Test	
CHARACTERISTICS	Requirments for normal size n >15cm		Test Method	Result	
DIMENSIONS AND SURFACE QUALITY					
Length and width (cm )	±0.6%	max ±2mm	EN ISO 10545-2	Affirmative	
Thickness	+5%	max ±0.5mm	EN ISO 10545-2	Affirmative	
Rectangularity	±0.5%	max ±2mm	EN ISO 10545-2	Affirmative	
Straightness of sides	±0.5%	max ±1.5mm	EN ISO 10545-2	Affirmative	
Length and width (cm )	N >15cm ±0.6%	max ±2mm	EN ISO 10545-2	Affirmative	
Thickness	±5%	max ±0.5mm	EN ISO 10545-2	Affirmative	
Rectangularity	±0.5%	max ±2mm	EN ISO 10545-2	Affirmative	
Straightness of sides	±0.5%	max ±1.5mm	EN ISO 10545-2	Affirmative	
Surface flatness	±0.5%	max ±2mm	EN ISO 10545-2	Affirmative	
SURFACE FLATNESS					
a) Center curvature ,related to diagonal calculated from the work sizes	+0.5%	max ±2mm	EN ISO 10545-2	Affirmative	
b) Edge curvature, related to the corresponding work size	±0.5%	max ±2mm	EN ISO 10545-2	Affirmative	
c) Warpage, related to diagonal calculated from the work size	±0.5%	max ±2mm	EN ISO 10545-2	Affirmative	
PHYSICAL PROPERTIES					
Water absorption (in %by mass )	E <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 35N /mm² Individual Minimum 32N /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	

	Annex G Group Bla	T . M .! .	PMA Test				
CHARACTERISTICS	Requirments for normal size n >15cm	Test Method	Result				
CHEMICAL PROPERTIES							
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				

#### PMA PORCELAIN TILE TECHNICAL CHARACTERISTICS

EUROPEAN STANDARD EN 14411

# **Technical Characteristics**

WATER ABSORPTION

100 105/5 2

1SO 10545-3	150
The water absorption of IMPERIO 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.	Th sol wC Th » C Th
BENDING RESISTANCE	» C
1SO 10545-4	Th ag
	» C
The value expressed allows an analysis of the ability of the slabs to withstand static and dynamic stress in the test conditions.	The » C The
ABRASION RESISTANCE 1SO 10545-6	CF
	Th
The test is performed on unglazed (UGL) surfaces in order to determine the quantity of material that is removed following the action of an	Re is e
abrasive disc (150 revs). The IMPERIO slabs prove to be more resistant the less material is removed by the disc.	ty: cai
	» B
	An
	»А
FROST RESISTANCE	
1SO 10545-12	» A ba
Outdoor applications are particularly prone to deterioration due to	bu
frost, because in the event that any water absorbed turns into ice,	»Т
this can lead to the tile breaking. The IMPERIO slabs are not damaged	the
by frost in any way thanks to their compactness and low porosity.	as

RESISTANCE TO CHEMICAL AGGRESSION 1SO 10545-13

The laboratory analysis is able to determine theresistance 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 anale of inclination of the tiled surface at the moment the person starts to slip:

up to <6° unclassified 6°< to 10° R9

#### STAIN RESISTANCE

1SO 10545-14

hree different elements (oil, iodine solution, and areen chrome olution) are applied to and left on the tiles for 24 hours, after which nev are then cleaned: Class E5 he stain is removed with hot running water for 5 minutes. Class E4 he stain is removed using a weak neutral detergent and a non-abrasive oonge. Class E3 he stain is removed usina a basic detergent containing an abrasive gent and a rotating brush with hard bristles. Class F2 he stain is removed using a suitable solvent, left on the stain for 24 hours. Class E1 he stain cannot be removed.

HARACTERISTICS OF THE IMPERIO SLABS

he IMPERIO slabs are produced only with natural, mineral raw materials. esearch on the product has made it possible to obtain an effect that extremely close to the natural material, with the advantage that the vpical defects and blemishes in the original product found in nature an be removed using technology.

Basic formats and special trims can be supplied in autonomous shades. ny 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" asis and may not be returned;

The use of IMPERIO slabs with non-rectified edges is allowed only after ne de-tensioning of the slab by removing any excess from the outer edges. s 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/gesthetic guality. 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, IMPERIO 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 aluing of the slabs on furnishing elements, we recommend you consult the IMPERIO technical manual

#### FITTING

When you receive the material ordered and in any case before fitting, it IMPERIO recommends taking special care when cleaning the surface is important to check carefully the characteristics of the material (compliance using buffered acids, as the surface may be damaged if the acid is not with size, shade, and quality). No complaints will be accepted for any removed quickly. For polished surfaces, the use of non-abrasive cleaning materials that have already been fitted if the defects were visible prior equipment is necessary to prevent the surface from losing its shine or to fitting. To obtain the best gesthetic results, we recommend mixing the becomina scratched. 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 ROUTINE CLEANING 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 For routine cleaning of the IMPERIO slabs, we strongly advise against that it is necessary in any case to follow the instructions provided by the use of waxes, greasy soaps, fillers and various treatments (water the manufacturers of the materials for the specific substrates and adrepellent) treatments. In order to prevent any shiny patinas from forming on hesives used. Cement-based adhesives must be applied at room the slabs, IMPERIO would like to point out that hydrofluoric acid (HF) temperature, in general between 5°c and 30/35°c. It is hereby understood and its derivatives cause irrevocable damage to its products. For routine that we recommend observing the technical times indicated by the cleaning operations. IMPERIO recommends the use of bleach and ammonia. manufacturers of the adhesives used. The most suitable adhesives for appropriately diluted in water; for the Polished finish, it suggests drying fitting the IMPERIO slabs are listed in the European Standard currently the floor after cleaning to avoid any marks. 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 IMPERIO 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 test the detergents on a small area before applying them to the entire recommend a minimum joint of 3 mm (this type of fitting allows the surface, particularly on Polished surfaces. 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 RAISED ELOORINGS 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 In the case of raised floorings, it is not possible to use a large quantity of board or with the wall covering. Please refer in any case to the advice/ water; we, therefore, recommend using a floor cloth that has been properly suggestions of the planner, the works director, or the tile fitter to avoid wrung. Routine cleaning must be carried out using purpose made floor problems of any sort. For the best possible results, we suggest using cloths, lukewarm water, and detergent, reducing the amount of water used. Stains can still be removed using concentrated products directly tone-on-tone arouting. It is important to remove any excess arouting immediately and accurately after application while still fresh, using a on the stains. 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 arouting 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,

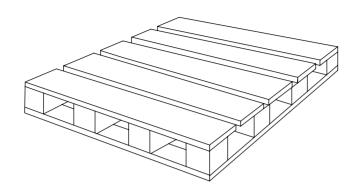
#### EXTRAORDINARY CLEANING

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

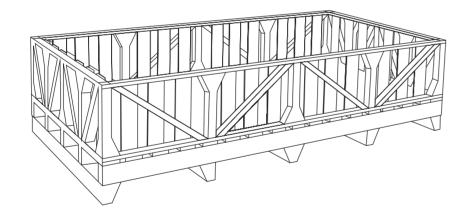
# Packing

# **Technical Details**





Size (cm)	Thickness (mm)	Weight Pallet	Sqm Box	Pieces Box	Kg Box	Box Pallet	Sqm Pallet
60x120 Polished	11	2,292	1.44	2	38.2	60	86.4
60x120 Matte	11	2,250	1.44	2	37.5	60	86.4
60x120	9	2,160	1.44	2	30	72	103.68
20x120	11.5	2,021	0.96	4	26	84	80.64
60x60	20	1,241.6	0.72	2	31.04	40	28.8
100x100	10	2,208	2	2	46	48	96



Size (cm)	Thickness (mm)	Weight Pallet	Sqm Box	Pieces Box	Kg Box	Box Pallet	Sqm Pallet
80x160	9	1,370	1.28	-	27.4	50	64
120x120	9	1,530	1.44	-	32.5	45	64.8
120x240	9	2,354	2.88	-	62	36	103.68
120×280	9	2,730	3.36	_	72	36	120.96
120x280	6	2,208	3.36	-	48	46	154.56
160x320	9	2,600	5.12	-	110	22	112.64

		FLOO	RINGS	WA	LLS	TEST METHOD
A)	DIMENSIONS AND SURFACE QUALITY	INTERIOR	EXTERIOR	INTERIOR	EXTERIOR	REFERENCE
A.1	Length and Width (cm)	х	х	х	х	EN ISO 10545-2
A.2	Thickness	х	х	х	х	EN ISO 10545-2
A.3	Straightness of Sides (i.e. Facial Sides) <sup>b)</sup>	х	Х	Х	х	EN ISO 10545-2
A.4	Rectangularityb <sup>b)</sup>	х	Х	Х	х	EN ISO 10545-2
A.5	Surface Flatness	Х	Х	Х	Х	EN ISO 10545-2
A.6	Surface Quality	х	х	х	х	EN ISO 10545-2
B)	PHYSICAL PROPERTIES	INTERIOR	EXTERIOR	INTERIOR	EXTERIOR	REFERENCE
B.1	Water Absorption	Х	Х	Х	Х	EN ISO 10545-3
B.2	Breaking Strength <sup>c)</sup>	х	Х	Х	Х	EN ISO 10545-4
B.3	Flexural Tensile Strenght <sup>d)</sup> or Modules of Ruptured <sup>d)</sup>	х	Х	Х	Х	EN ISO 10545-4
B.4 a	Resistance to Deep Abrasion -Unglazed Tilesd <sup>d)</sup>	Х	Х			EN ISO 10545-6
B.4 b	Resistance to Surface Abrasion -Glazed Tiles <sup>c)</sup>	х	Х			EN ISO 10545-7
B.5	Leaner Thermal Expansion®	Х	Х	Х	Х	EN ISO 10545-8
B.6	Resistance to Thermal Shock <sup>f)</sup>	х	х	х	х	EN ISO 10545-9
B.7	Resistance to Crazing <sup>g)</sup>	х	х	х	х	EN ISO 10545-11
B.8	Freeze -Thaw Resistanceh <sup>h)</sup>		х		х	EN ISO 1015-12
B.9	Slipperiness	х	х			FprCEN /TS 16165:2011 <sup>))</sup>

### Table -2 Characteristic of Ceramic Tiles Required for Different Applications

		FLOO	RINGS	WA	LLS	TEST METHOD
B.10 a	Bond Strength / Adhesion <sup>k)</sup> - Cementitious Adhesives			х	х	EN 12004:2007,4.1
B.10 b	Bond Strength / Adhesion <sup>k)</sup> - Dispersion Adhesives			х	х	EN 12004:2007,4.2
B.10 c	Bond Strength / Adhesion <sup>k)</sup> - Reaction Resin Adhesives			х	х	EN 12004:2007,4.3
B.10 d	Bond Strength / Adhesion <sup>k)</sup> - Mortar			х	х	EN ISO 10545-12
B.11	Moisture Expansion <sup>0</sup>	х	x	х	х	EN ISO 10545-10
B.12	Small Color Differences <sup>m)</sup>	x	х	х	х	EN ISO 10545-16
B.13	Impact Resistance <sup>n)</sup>	x	х			EN ISO 10545-5
B.14	Reaction to Fire®	х		х	х	WT
B.15	Tactility <sup>p)</sup>	x	х			CEN TS 15209)
C)	CHEMICAL PROPERTIES	INTERIOR	EXTERIOR	INTERIOR	EXTERIOR	REFERENCE
C.1 a	Resistance to Staining -Glazed Tiles <sup>a</sup> )	х	Х	Х	Х	EN ISO 10545-14
C.1 b	Resistance to Staining -Unglazed Tiles <sup>9</sup> )	х	х	х	х	EN ISO 10545-14
C.2 a	Resistance to Acids and Alkalis of Low Concentration')	x	х	х	х	EN ISO 10545-13
C.2 b	Resistance to Acids and Alkalis of High Concentration')	x	х	х	х	EN ISO 10545-13
C.2 c	Resistance to Household Cleaning Agents and Swim- ming Pool Chemicals')	х	х	х	х	EN ISO 10545-13
C.3 a	Release of Cadmium -Glazed Tilest <sup>t</sup> )	х	х	х	х	EN ISO 10545-15
C.3 b	Release of Lead -Glazed Tilest <sup>t</sup> )	х	х	х	х	EN ISO 10545-15
C.3 c	Release of Other Dangerous Substances <sup>s</sup> )	х	х	х	х	As Relevant

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

	Water Absorption (E <sub>b</sub> )					
Shaping	Group   E <sub>b</sub> ≤ 3%	Group II <sub>。</sub> 3% < E <sub>ь</sub> ≤ 6%	Group II <sub>ь</sub> 6% < E <sub>ь</sub> ≤ 10%	Group III E <sub>b</sub> > 10%		
Method A Extruded	Group Al E⊾ ≤ 0.5% (see Annex L)	Group All <sub>a1</sub> <sup>a)</sup> (see Annex B)	Group All <sub>ь1</sub> <sup>a)</sup> (see Annex D)	Group AllI (see Annex F)		
	Group Al <sub>b</sub> 0.5% < E <u>≤</u> 3% (see Annex A)	Group All <sub>a-2</sub> <sup>a)</sup> (see Annex C)	Group All <sub>b-2</sub> ° <sup>)</sup> (see Annex E)	Group BIII <sub>b</sub> (see Annex K)		
Method B Dry-pressed	Group Bl E₅ ≤ 0.5% (see Annex G)	Group Bll_	Group Bll <sub>b</sub> (see Annex J)			
	Group Bl₅ 0.5% < E₅ ≤ 3% (see Annex H)	(see Annex  )				
a) Groups All and All, are divided into two parts (parts 1and 2) with different product specifications. Part 1 covers most of the tiles in the group; part 2covers 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 great- er than 10% that is not covered by this product group.						

- 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).
- 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.
- I 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.
- For glazed ceramic tiles only, when intended to be used on worktops and on wall surfaces where food t preparation takes place and food may be in direct contact with the glazed tile surface. As indicative limits,
- reference could be made to Direct 2005/31/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).

ANNEX G (Normative)

# Requirements for Dry-pressed Ceramic Tiles With Low Water Absorption of GROUP $BI_a$ ( $E_b \le 0.5\%$ )

Accordance With Table G.1

CHARACTERISTICS

A) DIMENSIONS AND SURFACE QUALIT

A.1 LENGTH AND WIDTH

The Work Size Sall be Chosen as Follows f

a) Modular Tiles :

b) Non -modular Tiles :

The Permissible Deviation of the Average S Each Tile (2 or 4Sides) From the Work Size

A.2 THICKNESS

a) The Thickness Shall be specified

b) The Permissible Deviation ,of the Average Each Tile from the Work Size Thickness

A.3 STRAIGHTNESS OF SIDES (Facial Side

The Maximum Permissible Deviation from S Related to the Corresponding Wok Size

A.4 RECTANGULARITY

The Maximum Permissible Deviation from Related to the Corresponding Work Size

A.5 SURFACE FLATNESS

Requirements for Dimension and Surface Quality and for Physical and Chemical Properties of this Group of Ceramic Tiles Shall be in

#### Table G.1 - Requirements for Dry-pressed Ceramic Tiles with Low Water Absorption, GROUP BI₂ (E₂ ≤0.5%)

	Require			
	7 cm< N <15 cm	N ≥ 1	Test Method	
	(mm)	%	(mm)	
Y				
or :				
	In order to allow a n	ominal joint width of b	between 2 and 5mm	-
	So that the differer size is not more that	-		
Size for the e (W)	+0.9 mm	±0.6%	±2.0 mm	EN ISO 10545-2
	Declared thickness			-
ge Thickness of	+0.5 mm	±5%	+0.5 mm	EN ISO 10545-2
es)				-
Straightness,	+0.75 mm	±0.5%	+1.5 mm	EN ISO 10545-2
				-
Rectangularity,	+0.75 mm	±0.5%	+2 mm	EN ISO 10545-2

	Requiren	nents for Nomina	I Size N	
CHARACTERISTICS	7 cm< N <15 cm	N ≥ 1	5 cm	Test Method
	(mm)	%	(mm)	
b) Edge Curvature, Related to the Corresponding Work Size	+0.75 mm	±0.5%	+2 mm	EN ISO 10545-2
B) PHYSICAL PROPERTIES				
B.1 WATER ABSORPTION (IN %BY MASS )	E <sub>b</sub> ≤ 0.5 Individual maximum	0.6%		EN ISO 10545-3
B.2 BREAKING STRENGTH, FOR :				
a) Thickness ≥ 7.5mm	Not less than 1300N			EN ISO 10545-4
b) Thickness < 7.5mm	Not less than 700N			EN ISO 10545-4
B.3 FLEXURAL TENSILE STRENGTH OR MODULUS OF RUPTURE <sup>d</sup>	Minimum 35N /mm² Individual minimum 3	Minimum 35N /mm² Individual minimum 32N / mm²		
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 <sup>e</sup>	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	N ISO 10545-1º		EN ISO 10545-9
B.7 CRAZING RESISTANCE: Glazed Tiles <sup>h</sup>	Pass according to EN	N ISO 10545-1º		EN ISO 10545-11
B.8 FROST RESISTANCE	Pass according to EN ISO 10545-19			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>i</sup> , FOR :				
a) Cementitious Adhesives <sup>k</sup>	Declared value (s)			EN 12004:2007,4

CHARACTERISTICS b) Dispersion Adhesives<sup>k</sup> a) Glazed Tiles b) Unglazed Tiles B.13 IMPACT RESISTANCE, as: - Coefficient of Restitution (COR) **B.14 REACTION TO FIRE** B.15 TACTILITY<sup>n</sup> C) CHEMICAL PROPERTIES C.1 RESISTANCE TO STAINING, FOR : a) Glazed Tiles b) Unglazed Tiles C.2 RESISTANCE TO CHEMICAL a) Resistance to Low Concentration of Acids ar b) Resistance to High Concentration of Acids c) Resistance to Household Chemicals and Swi Salts C.3 RELEASE OF DANGEROUS SUBSTANCES a) Cadmium (in mg /dm²) b) Lead (in mg /dm²) c) Other Dangerous Substances°

	Requirer	al Size N		
	7 cm< N <15 cm		15 cm	Test Method
	(mm)	%	(mm)	
	Declared value (s)			EN 12004:2007,4.2
	ΔE<0.75			EN ISO 10545-16
	ΔE <1.0			EN ISO 10545-16
	Declared value <sup>f</sup>			EN ISO 10545-5
	(Class A1 or $A1_{FL}$ ) <sup>m</sup>	-		
	Declared surface de	CEN /TS 15209 <sup>i</sup>		
	Minimum calss 3			EN ISO 10545-14
	Declared value <sup>f</sup>			EN ISO 10545-14
and Alkalis	Declared value <sup>f</sup>			EN ISO 10545-13
and Alkalis	Declared value <sup>f</sup>			EN ISO 10545-13
vimming Pool	Minimum calss B			EN ISO 10545-13
S				
	Declared value <sup>9</sup>			EN ISO 10545-15
	Declared value <sup>9</sup>			EN ISO 10545-15
	Declared value			As Relevant

а	Similar joint widths may be used to apply to the traditional systems based on non-metric s	izes.
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- 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.
- See Annex N additional information on applicability. f
- g See table 2 for uses where it is applicable.
- Certain decorative effects may have a tendency to craze. They are to be identified by the manufacturer, in which case the h crazing test given in EN ISO 11-10545 is not applicable.
- Unless a different test method is required by national regulations in the market of the relevant member state(s) for the i 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).
- For intended uses subject to requirements against accidental fall of the object on to transit areas only. Tests are to be i performed using the actual tiles and suitable adhesive and/or mortar.
- k For the types of adhesives, defined in EN 12004:2007 only.
- The proposed test methods are intended to determine the adhesion strength of the adhesive and have not been developed Т 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 AT material7. The reaction to the fire performance of ceramic tiles may also be classified also as class AT 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.

# Symbology



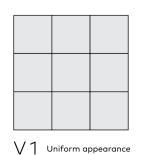


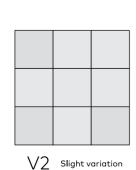
3	Stain	resistance	
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Deep abrasion resistance

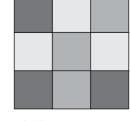
Thermal shock  $\xrightarrow{\downarrow}$  Breaking strength  $\bigcirc$  Low water absorption

#### SHADE VARIATION





V3	Moderate	variation



V4 Random variation

# **Cleaning Products**

TYPES OF DETERGENT Where the sale is permitted	SOLVENTS (bleach, turpentine, trichloroethylene, ni		cone, hinner)	ACIDS (muriatic acid ,hydrochloric phosphoric acid)		oric acid,		IE -BASED I nal alkaline de	
SURFACE	Matte	Satin	Polished	Matte	Satin	Polished	Matte	Satin	Polishe
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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