

GENERAL CATALOG 2024



PISHGAMAN MEMARI ARYA

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, producing as full-body porcelain. Different range of porcelain ceramics producing in sizes 20x120,60x120,80x160,100x100,120x240,120x280 and 160x320 cm, carefully monitored by PMA's QC team.

These products are appropriated for different application areas. All products in PMA obtained ISIRI CERAMICS together with Europe CE. In addition, PMA is sampling randomly among its production and sending them to different qualified LAB such as Road, Housing & Urban Development Research Center, SAM institute Turkey, all reports are recorded.

Product Selection Consulting Services are provided by our Sales Forces, considering Customer's need, situation, Project Fields of Application & Products technical characteristics. To enhance the quality of our services after delivering the goods, all sales forces with the support of the technical support department provide different services such as technical visits during project execution, case assistance according to customers need.

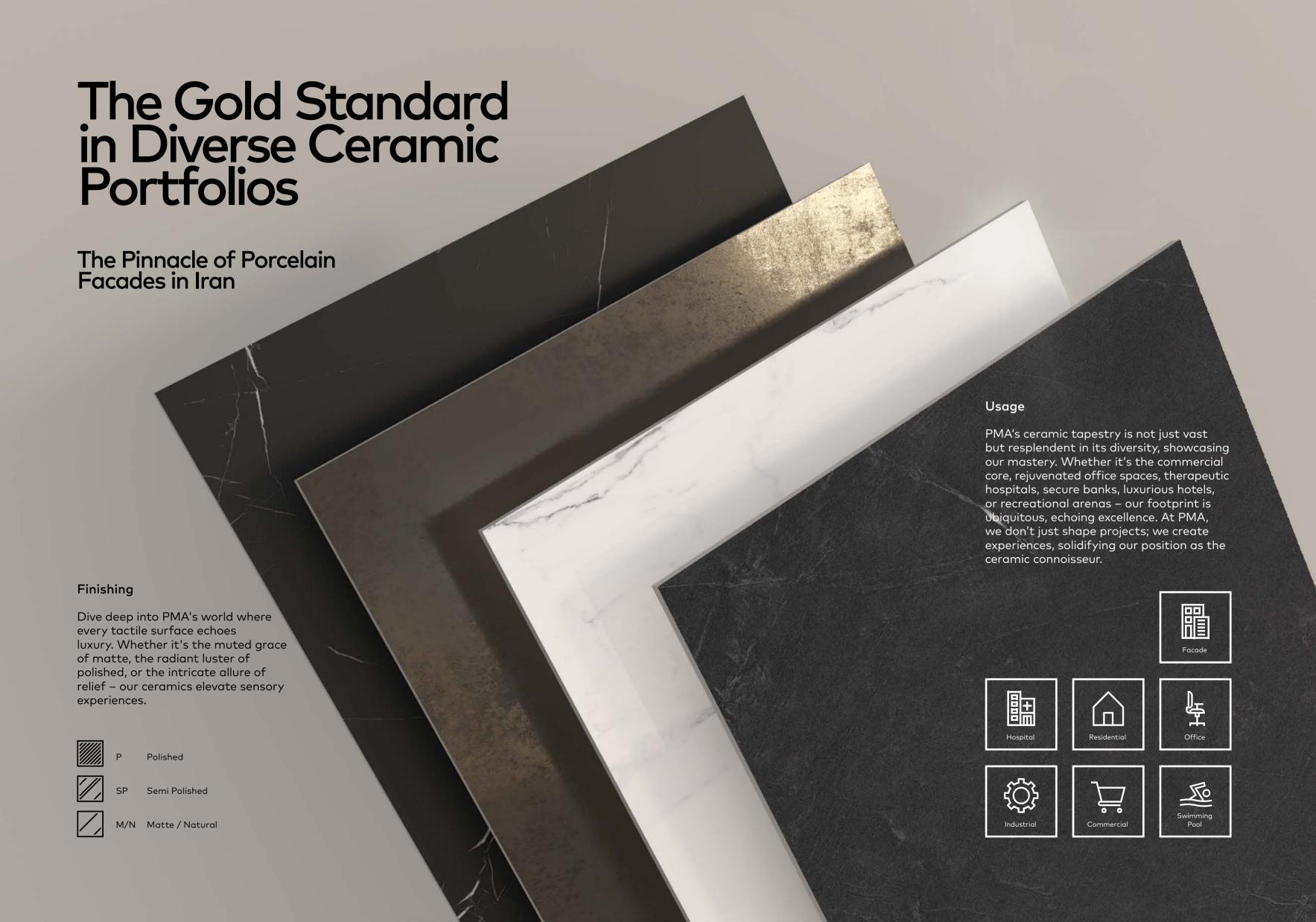
All projects subject to heavy traffic with specific usage are supported by our technical assistance in order to improve their maintenance whileperiodic visits. PMA has set its mission, based on Training & Learning. In this regard, has organized related seminars and workshops.

120x280 cm 120x240 cm 120x120 cm 100x100 cm 50x60 cm 60x60 cm

Variety of Sizes

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.





Complementary product portfolio

Furniture

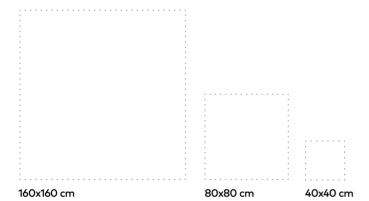
In the ceramic realm, PMA sprawls as a masterpiece. Beyond porcelain ceramics, our offerings resonate with the brand's touch of quality and innovation. Whether it's foundational construction chemicals, exquisite furniture, or precision cutting PMA promises excellence.

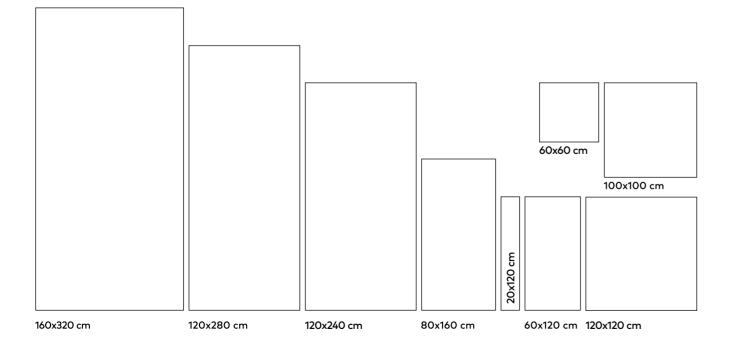
PMA's Precision Craft, Cutting Services Beyond Par

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.

By Order
Standard





General Index

Technical Details

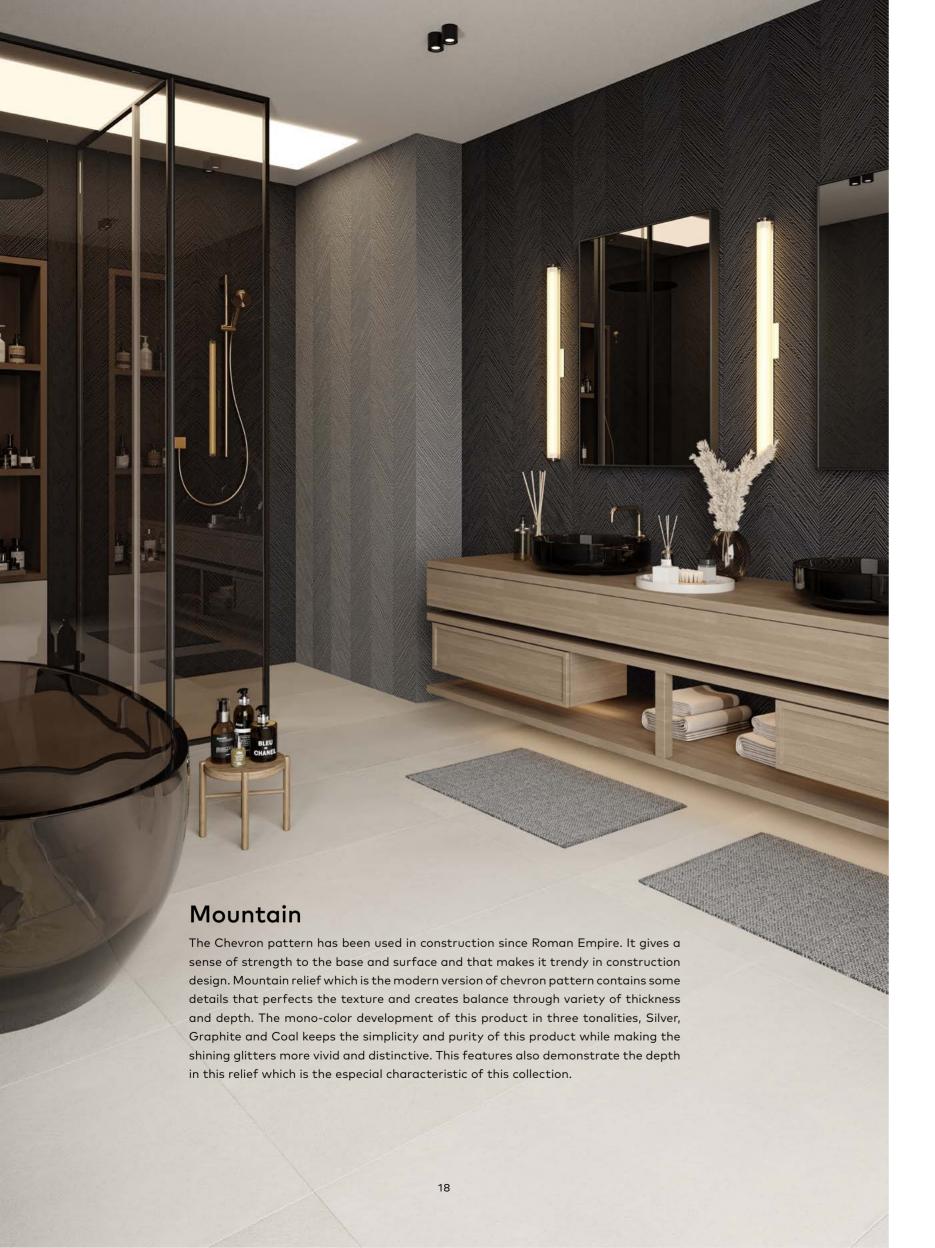
Cleaning Products 253

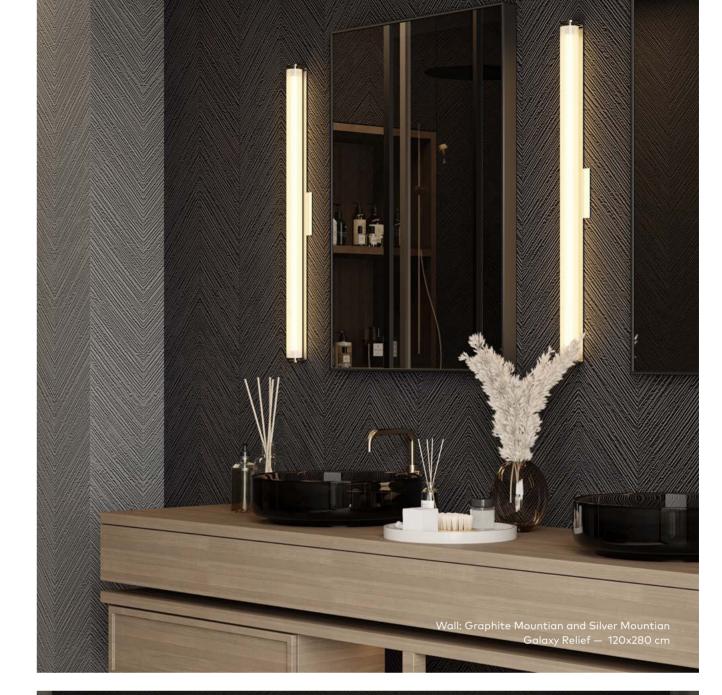
Products		20x120 cm	60x60 cm	60x120 cm	120x120 cm	80x160 cm	100x100 cm	120x240 cm	120x280 cm	160x320 cm
Mountain	18								✓	
Wind	24								✓	
Grace	31				✓				✓	
Pantheon Marble	36			✓		✓	✓		✓	
Calacatta Gold	47			✓	✓	✓	✓	√	✓	
Elegant Blue	59					✓			✓	
Saint Laurent	64					√	√	✓	✓	✓
Statuario Extra	71			✓					✓	
Nero Marquina	78			✓		✓		√	✓	✓
Elegant Grey	85								✓	
Calacatta Silva	90			✓	✓	✓	✓	✓	✓	✓
Diamond	96			✓	✓					
Pietra Grey	104			✓						
Oxide	114								✓	
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PRODUCTS

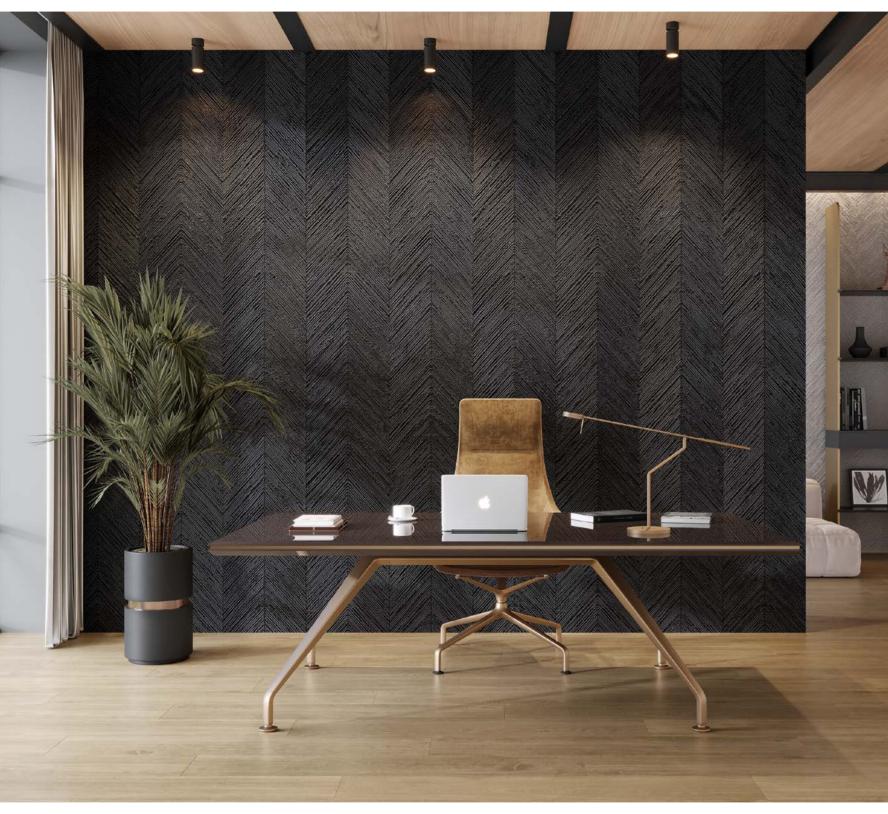
































Novelty





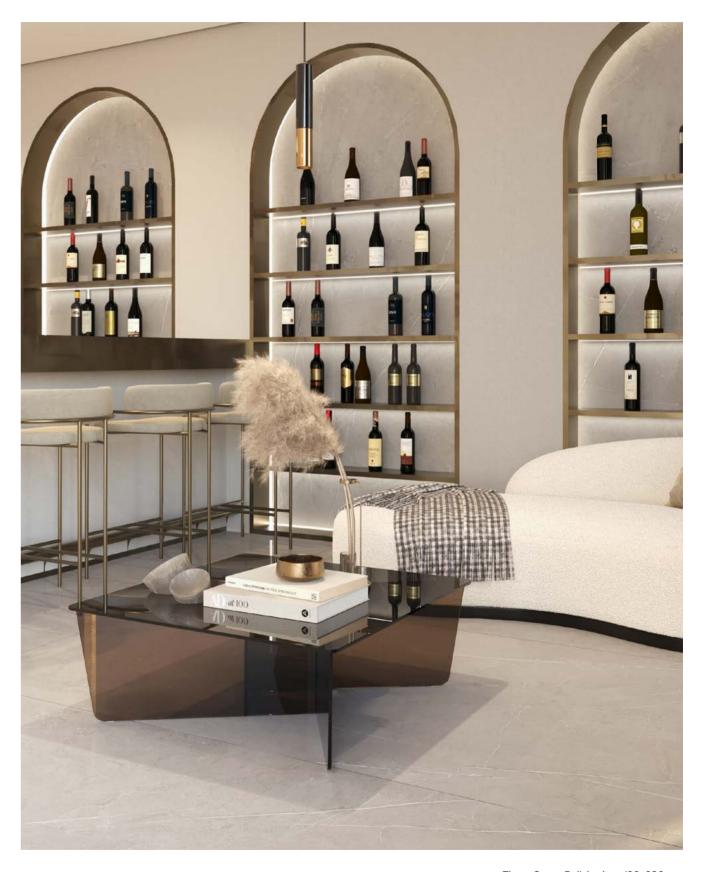












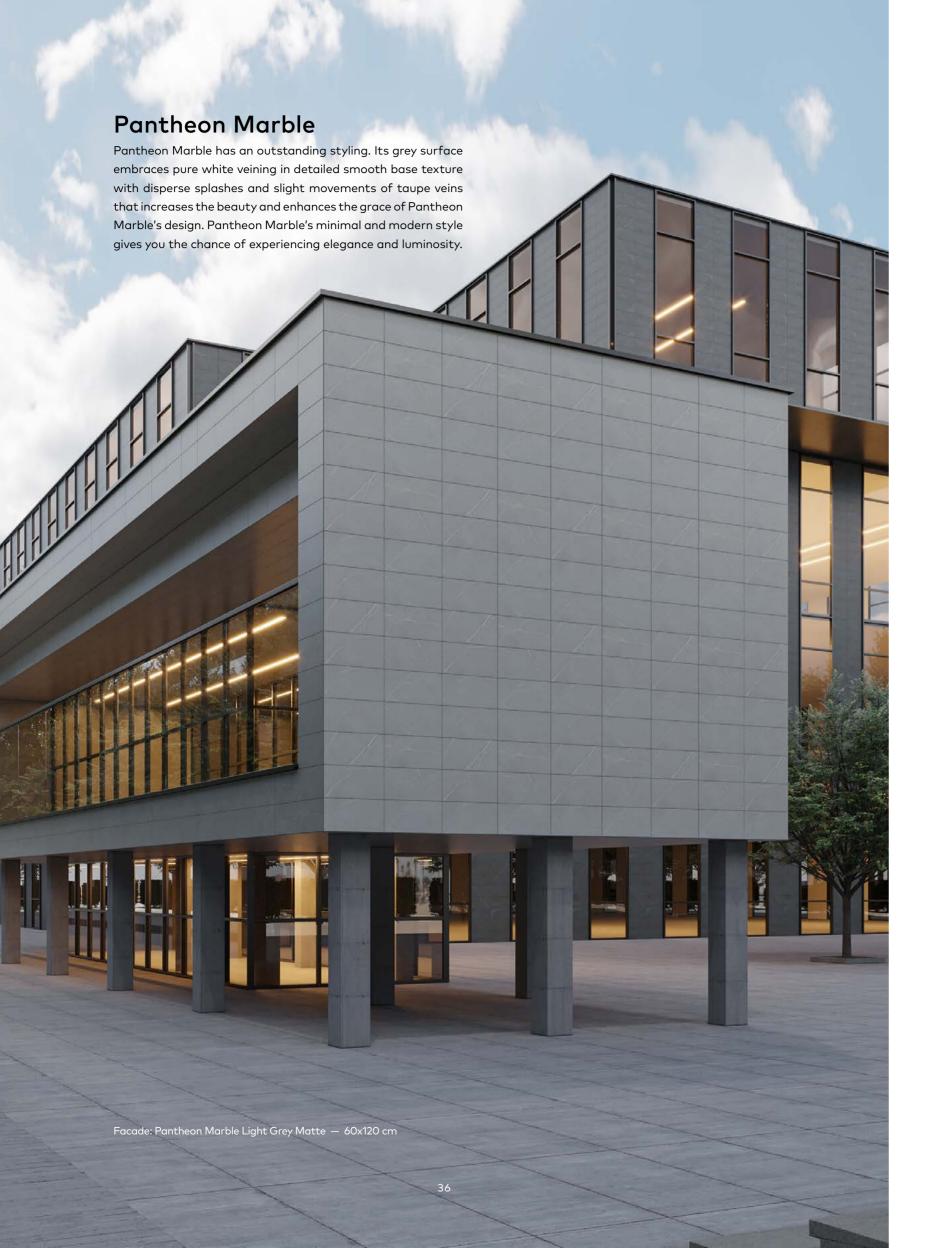
Floor: Grace Polished — 120x280 cm Wall: Grace Polished — 120x280 cm





Floor: Grace Polished — 120x280 cm Wall: Grace Polished — 120x280 cm





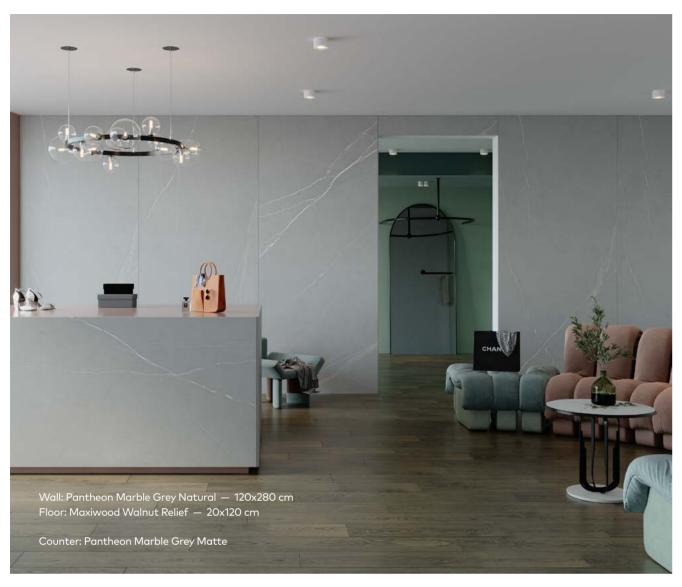
















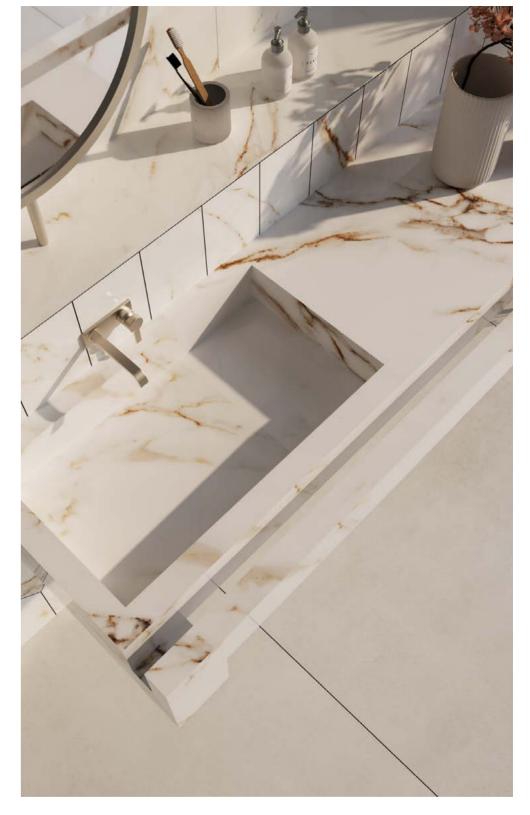


Pantheon Marble Available other sizes upon demand. For more detail please contact sales department.







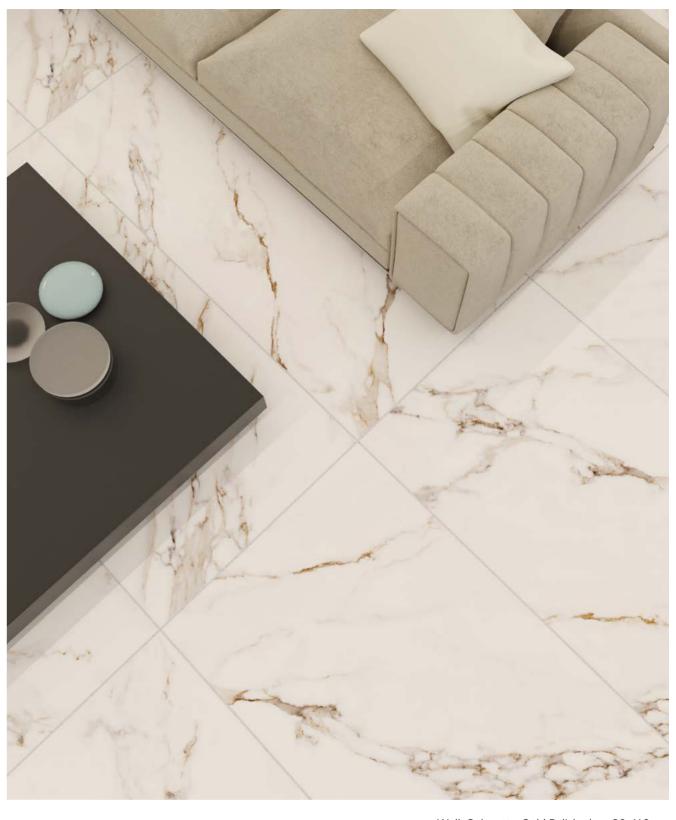


Calacatta Gold

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.

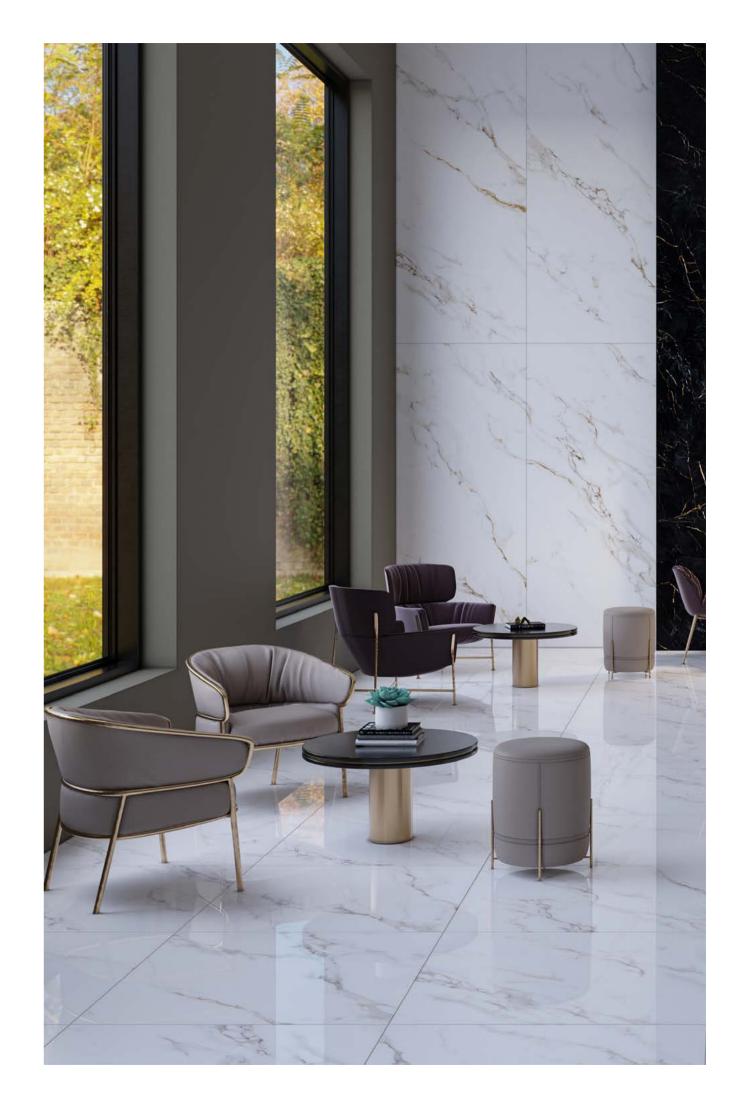






Wall: Calacatta Gold Polished — 80x160 cm Floor: Calacatta Gold Polished — 80x160 cm





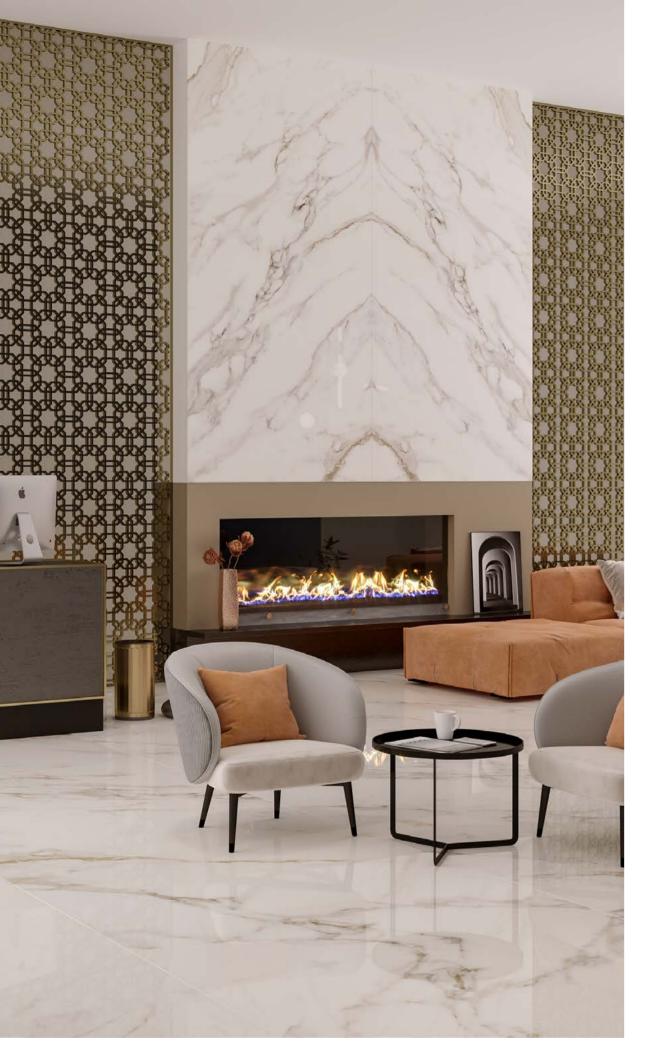


Wall: Calacatta Gold Polished — 120x280 cm Floor: Natural Concrete Light Grey Soft Matte — 120x280 cm

Wash Basin: Calacatta Gold Polished / Mirror

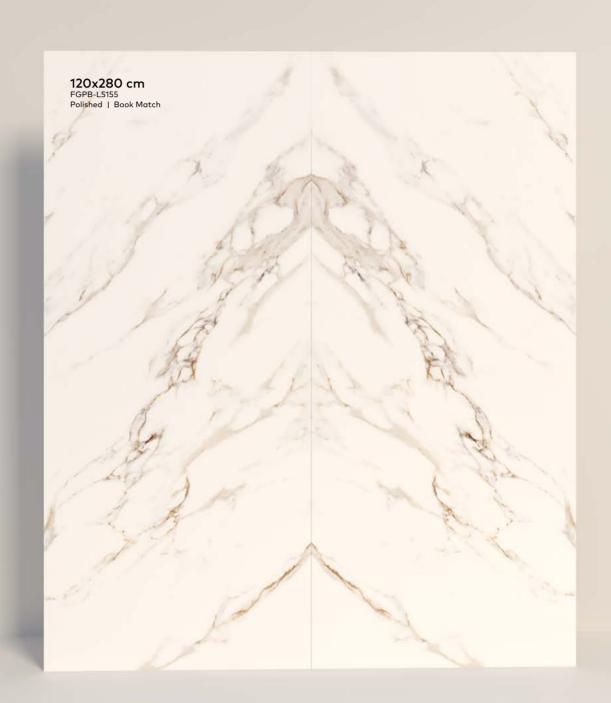






Wall: Calacatta Gold Book Match Polished — 120x280 cm Floor: Calacatta Gold Polished — 120x280 cm



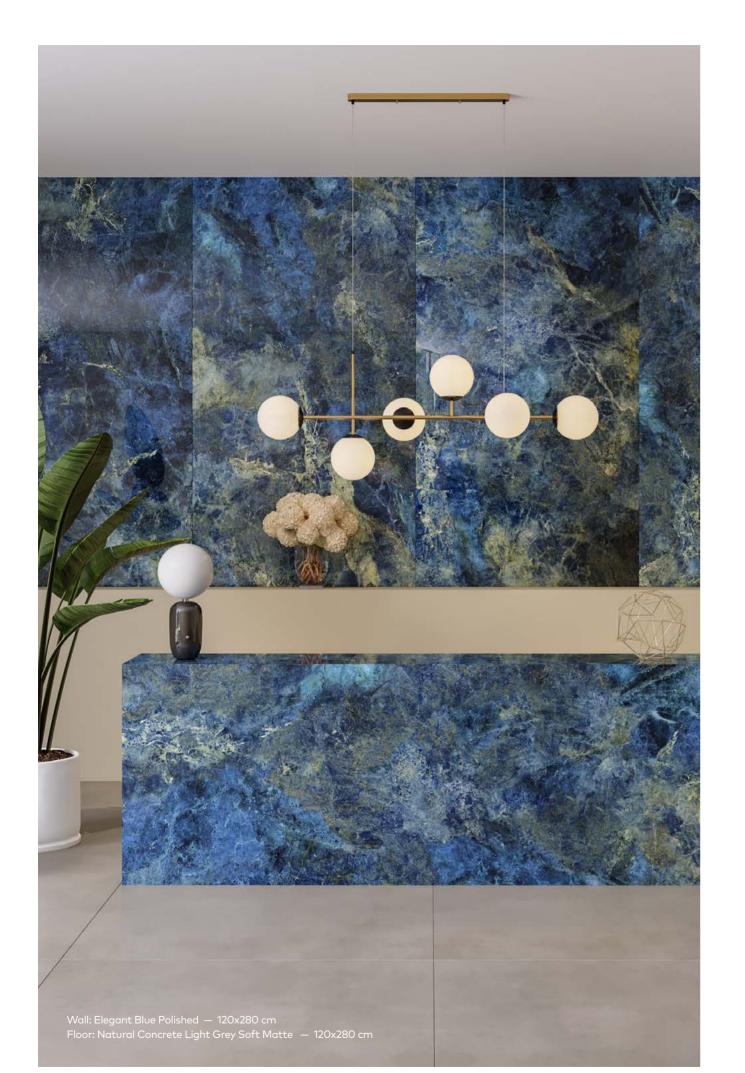






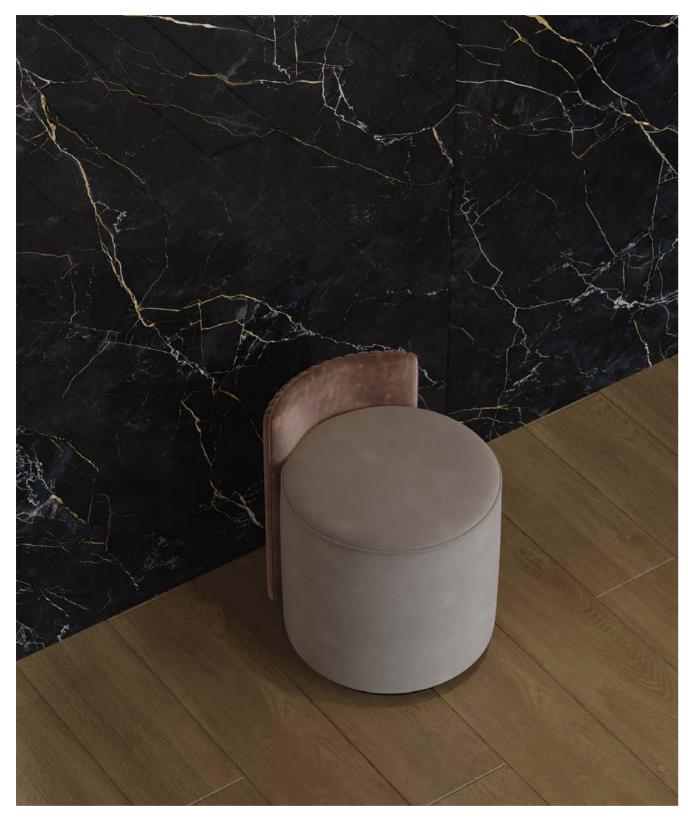








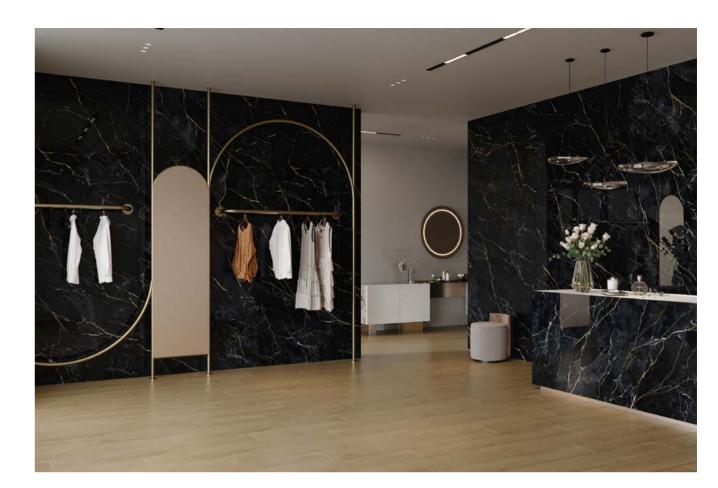




Saint Laurent

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.

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Wall: Saint Laurent Polished — 120x280 cm



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





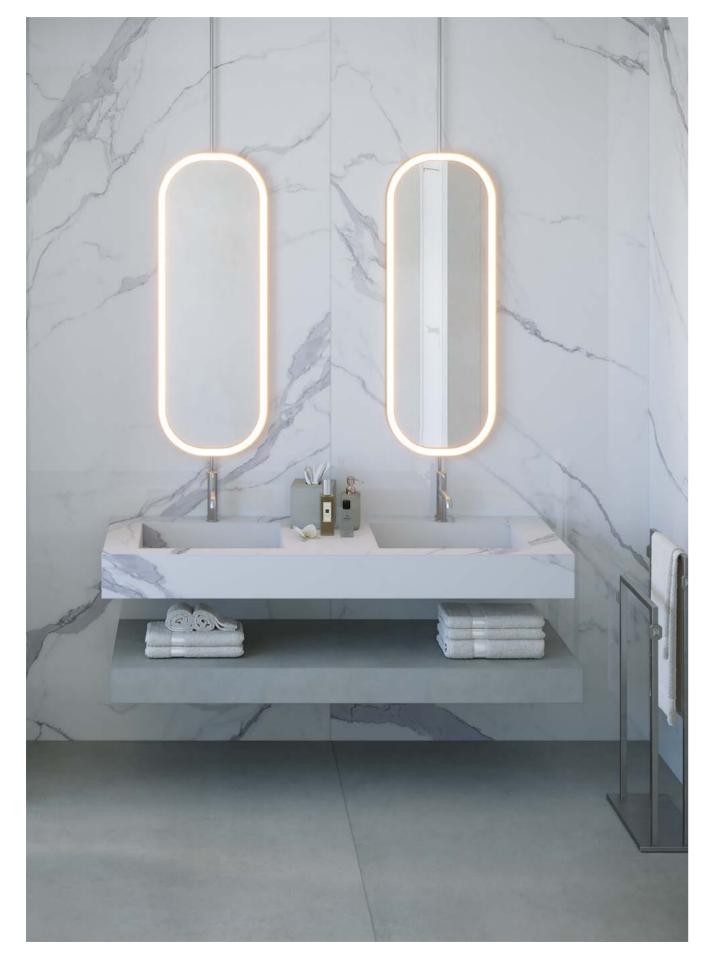


Statuario Extra

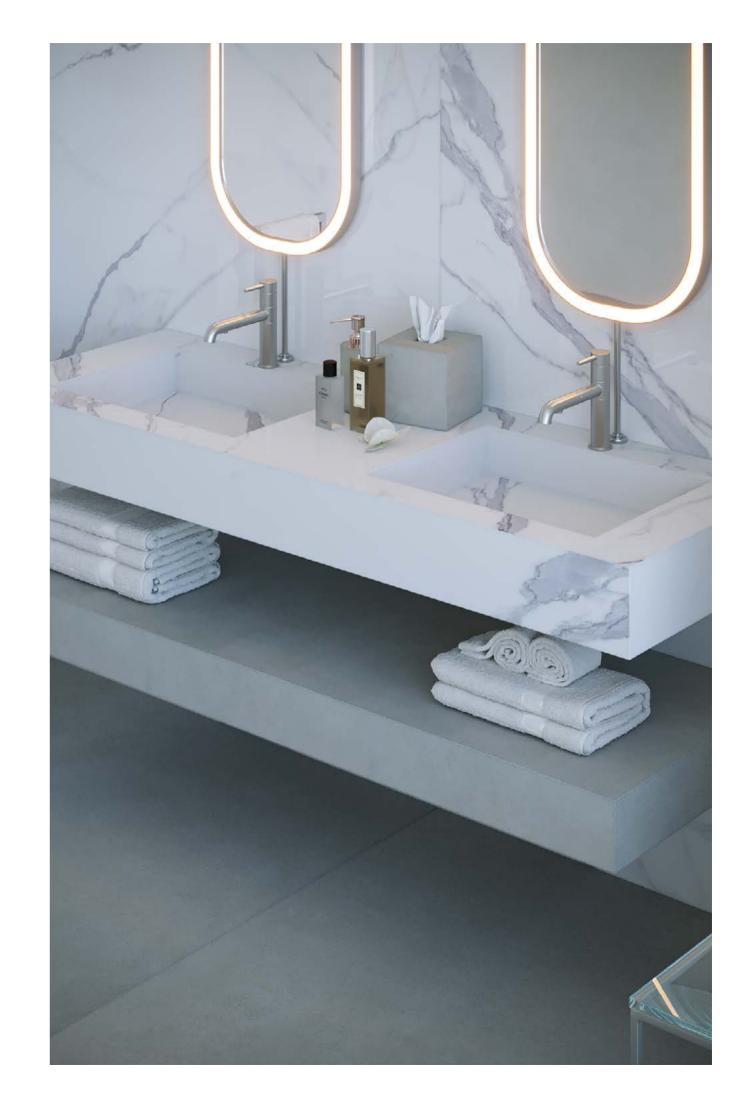
Statuario Extra marble is one of the most renowned and charming marbles, enriched with dark and grey veins and thinner patterns. Its clean white background contrasted with grey veining doubles its beauty. Statuario Extra with dramatic, artistic, and large-scale singular vein patterns brings a refined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

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

Wash Basin: Statuario Extra Polished / Mirror

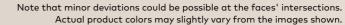


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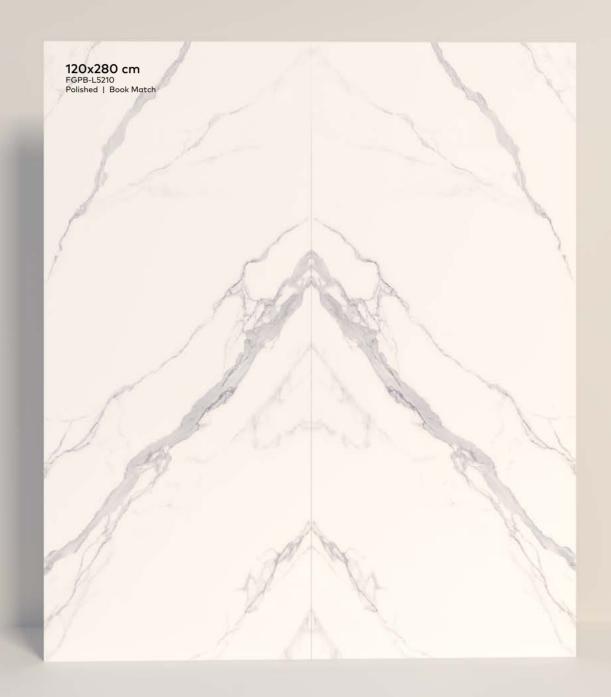




Statuario Extra Note that minor deviations could be possible at the faces' intersections. Actual product colors may slightly vary from the images shown.









Floor: Statuario Extra Polished — 60x120 cm

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

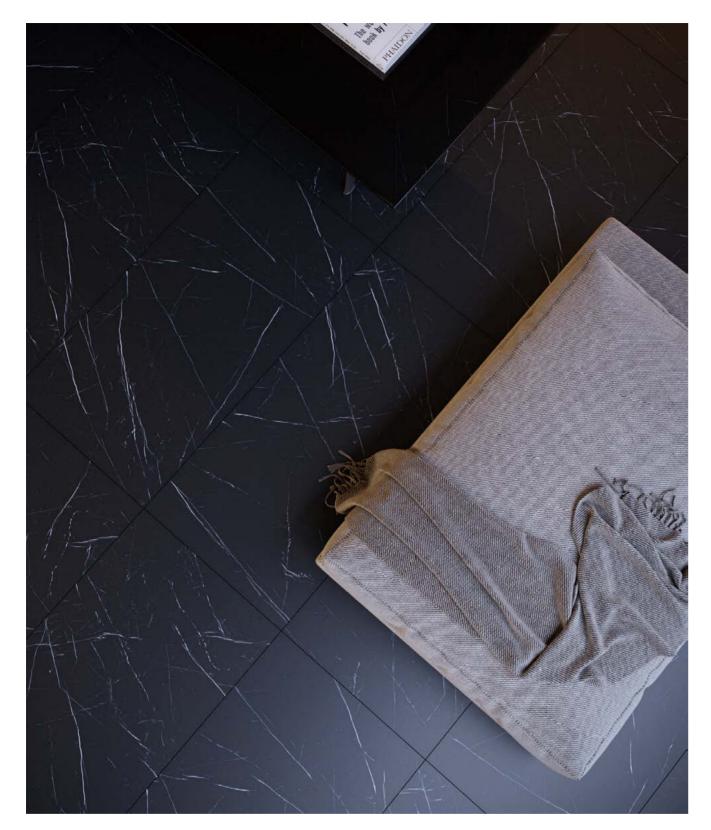






Floor: Nero Marquina Matte — 60x120 cm





Floor: Nero Marquina Matte — 60x120 cm

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







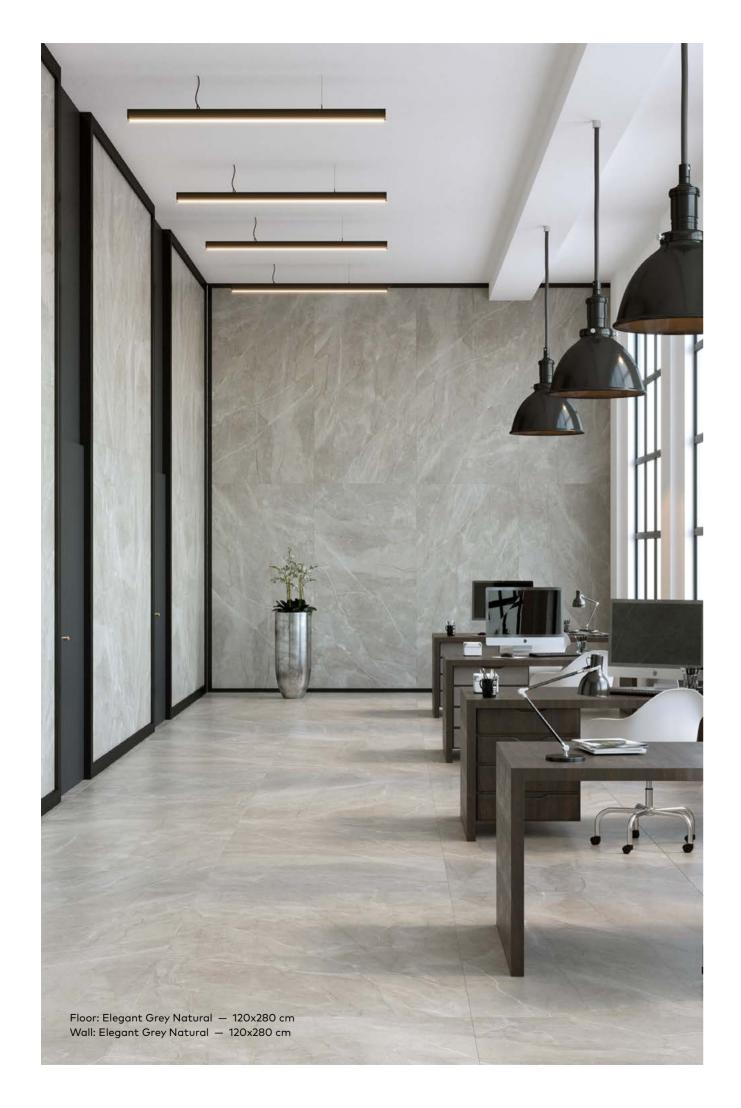
Elegant Grey

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.





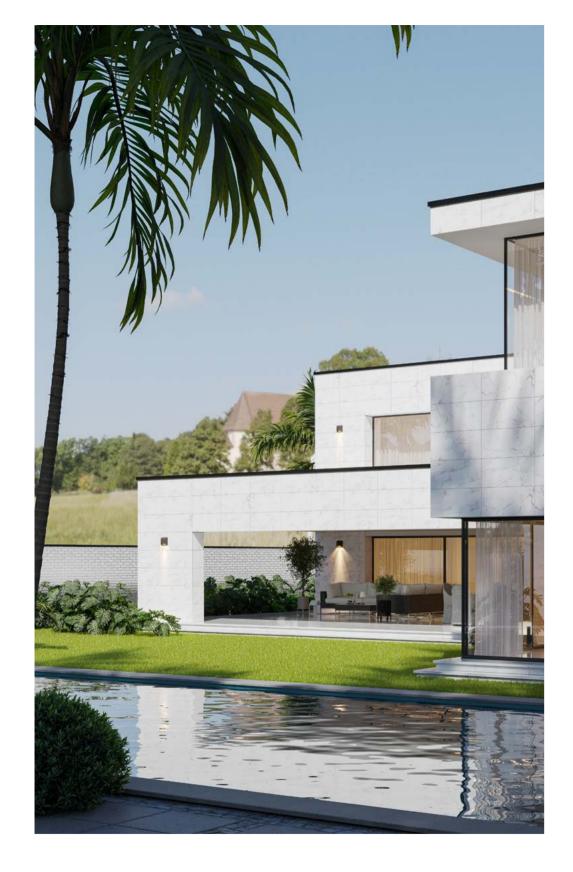
Floor: Elegant Grey Natural — 120x280 cm Wall: Elegant Grey Natural — 120x280 cm



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





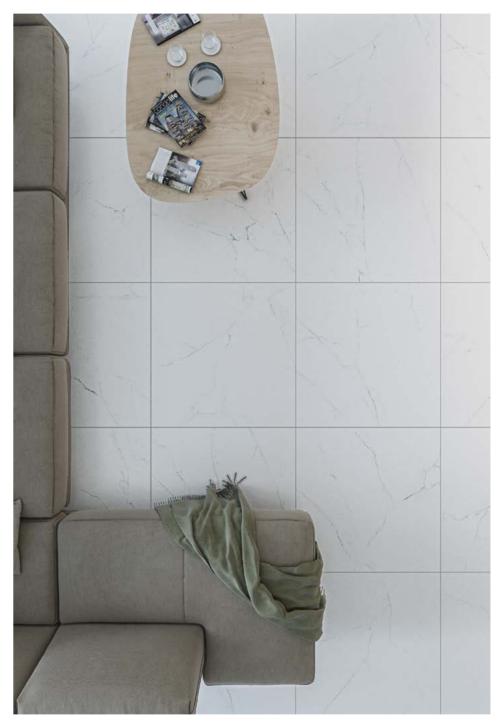


Calacatta Silva

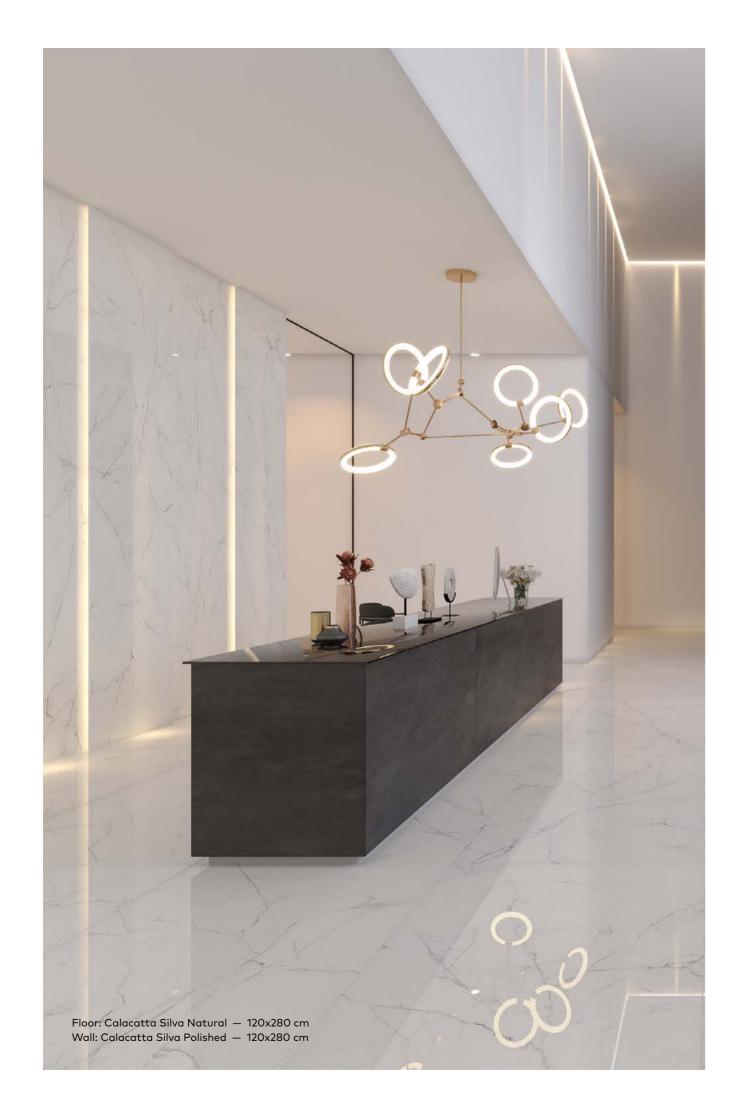
Calacatta Silva has the beauty of natural marble. Thanks to its porcelain character this product is suitable for private spaces to commercial world and helps architects to create a combination of modernity and practicality.







Floor: Calacatta Silva Natural — 100x100 cm



Calacatta Silva

please contact sales department.













Floor: Diamond Polished — 60x120 cm









60x120 cm FGPB-R1315 Polished | 8 Faces **120x120 cm** FGPB-E1315 Polished | 10 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











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 is the international standard for quality management system



Institute of Standards and Industrial Research of Iran



European standard that defines terms and specifications of ceramic tiles



Seramik Araştırma Merkezi Turkish Ceramic Research Center Standard testing laboratory



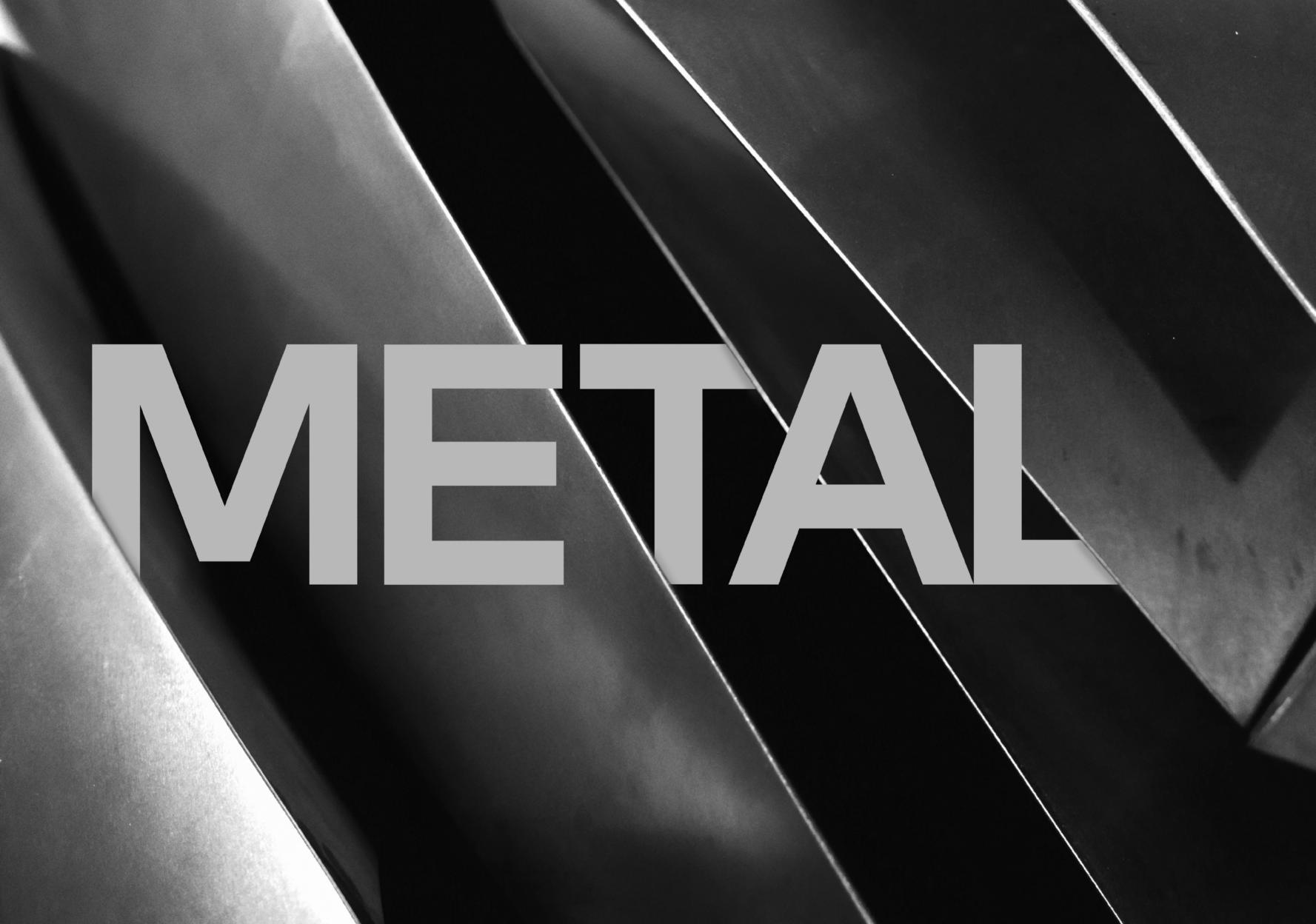
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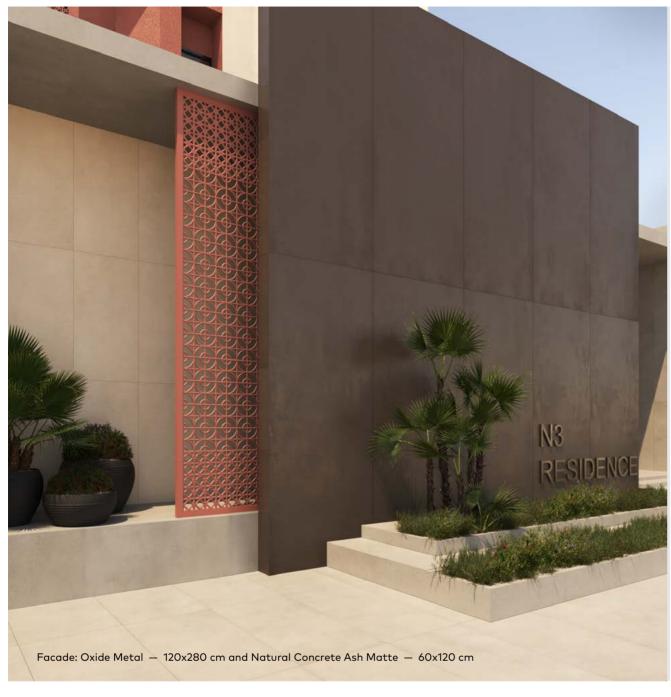
CE marking is an administrative marking that indicates conformity with health, safety, and environmental protection standards for products sold



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







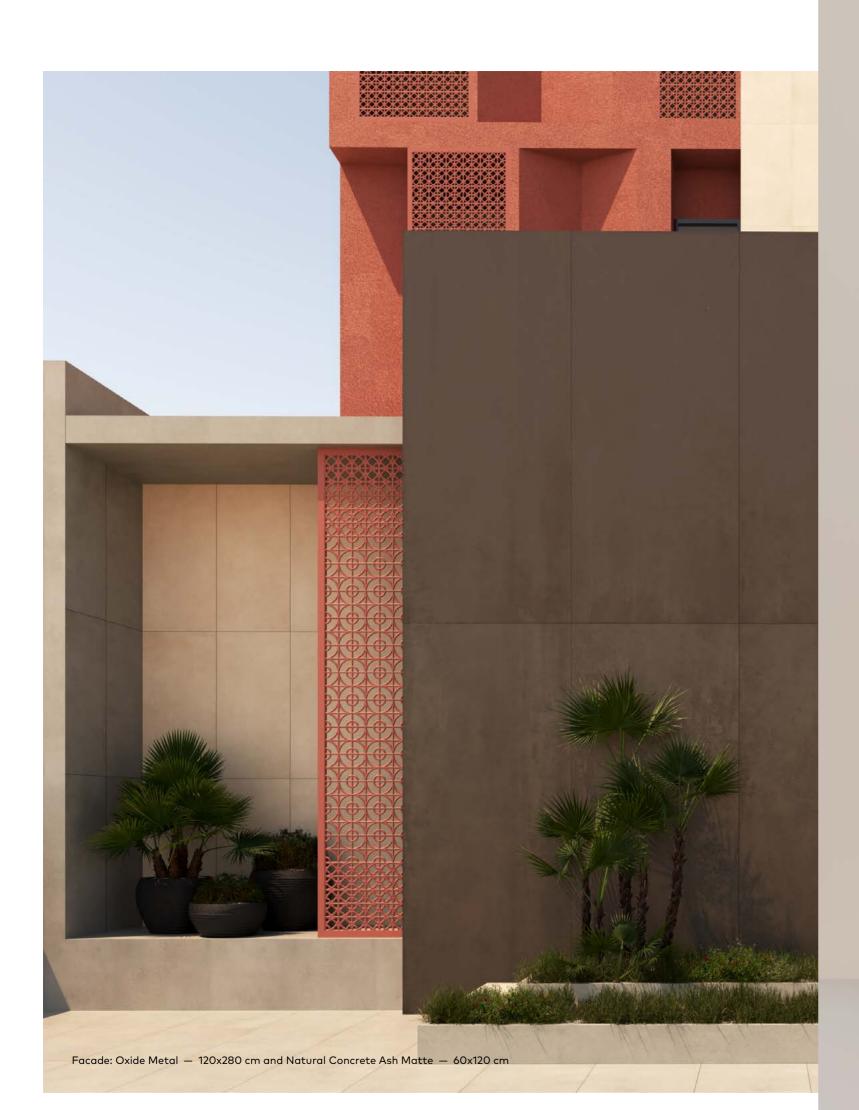
Oxide

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



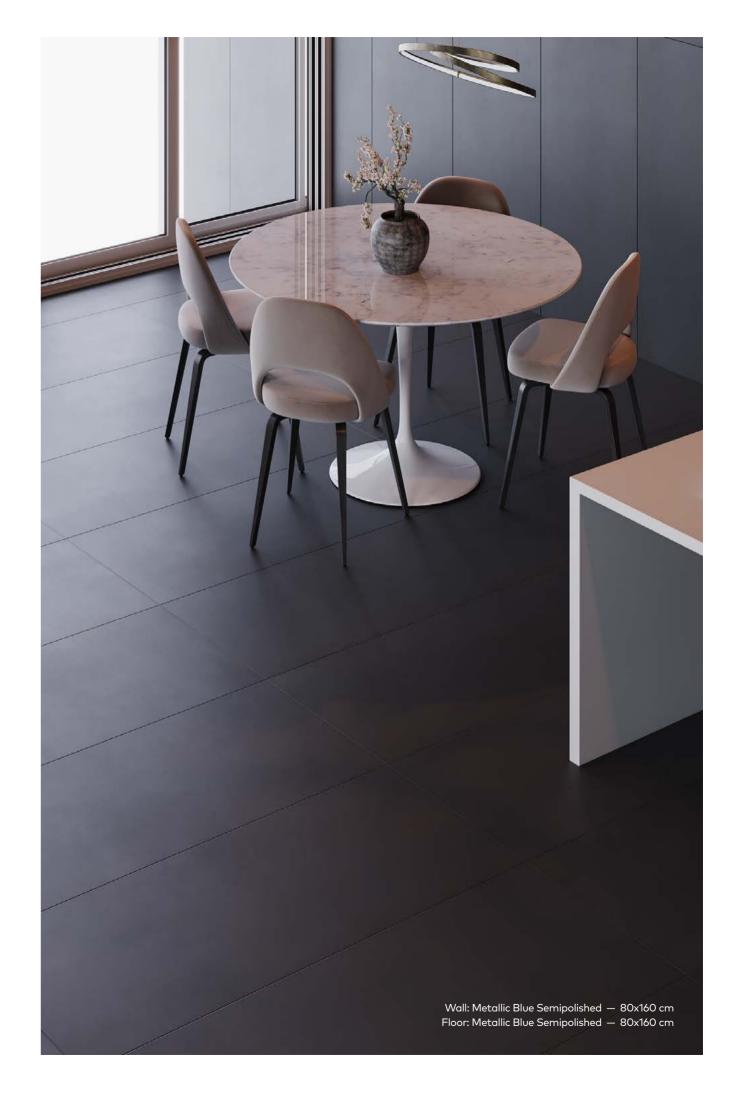














Wall: Metallic Blue Semipolished — 80x160 cm Floor: Metallic Blue Semipolished — 80x160 cm









When it comes to pioneering porcelain facades, PMA doesn't merely lead – they redefine excellence, soaring above all. As Iran's foremost trailblazer in ceramic facades, PMA has transformed architectural dreams into tactile realities. Boasting an illustrious legacy of 4 million square meters of porcelain ceramics across 1100 iconic facade endeavors, PMA is not just about shielding buildings but sculpting skylines. Embark on a journey with PMA – where innovations take wing.



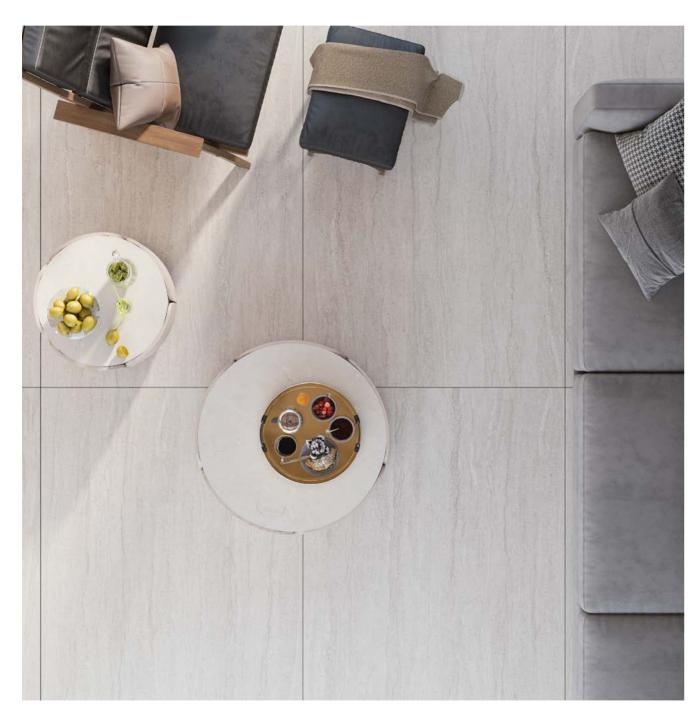
Travertino

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

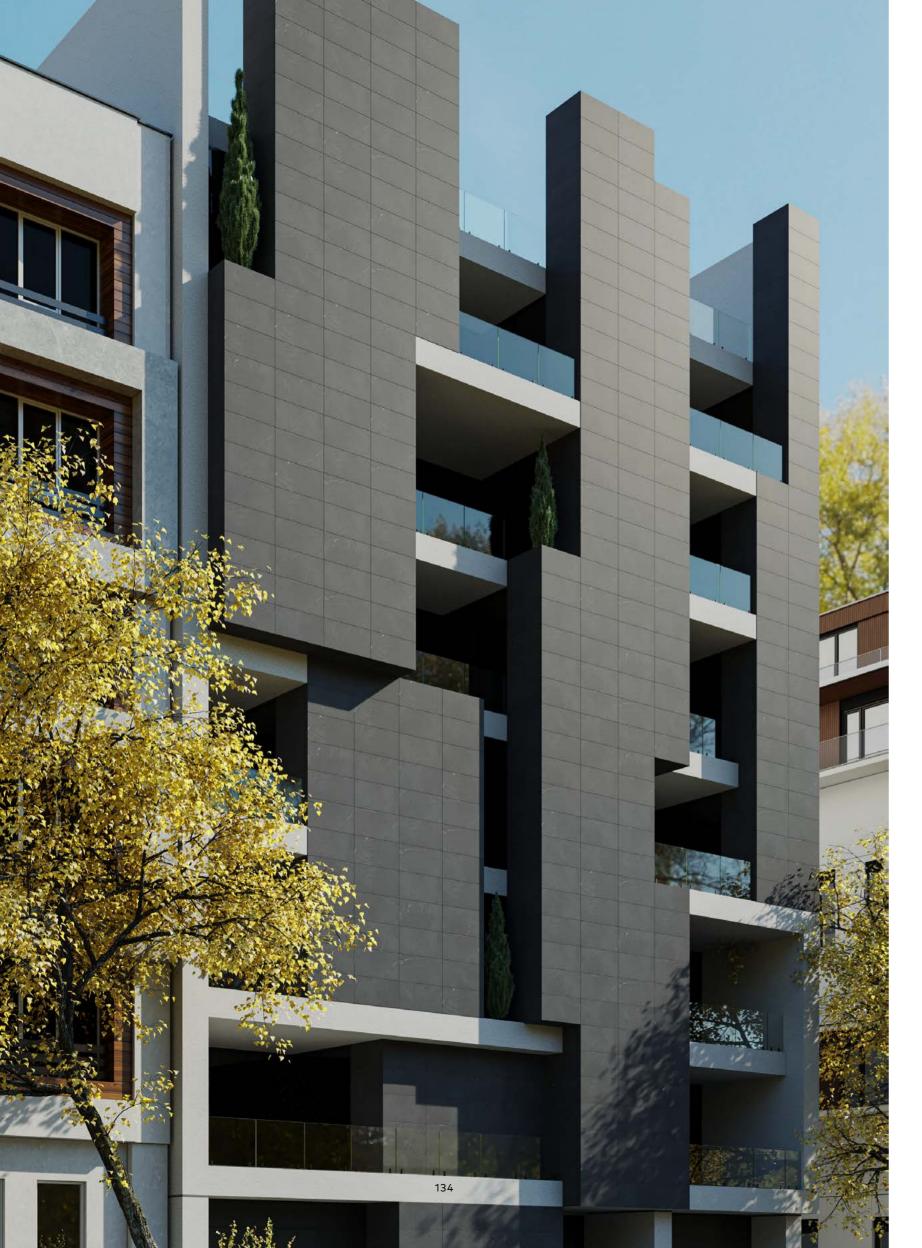


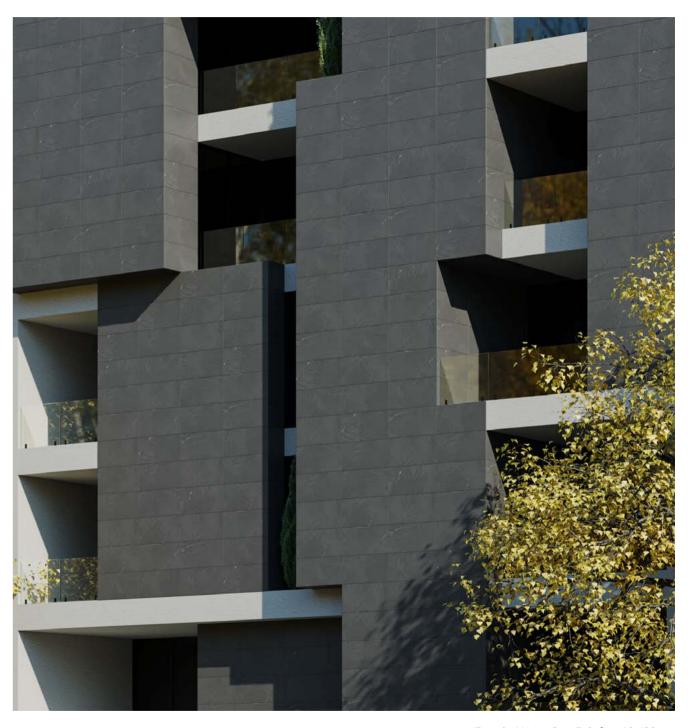




Native

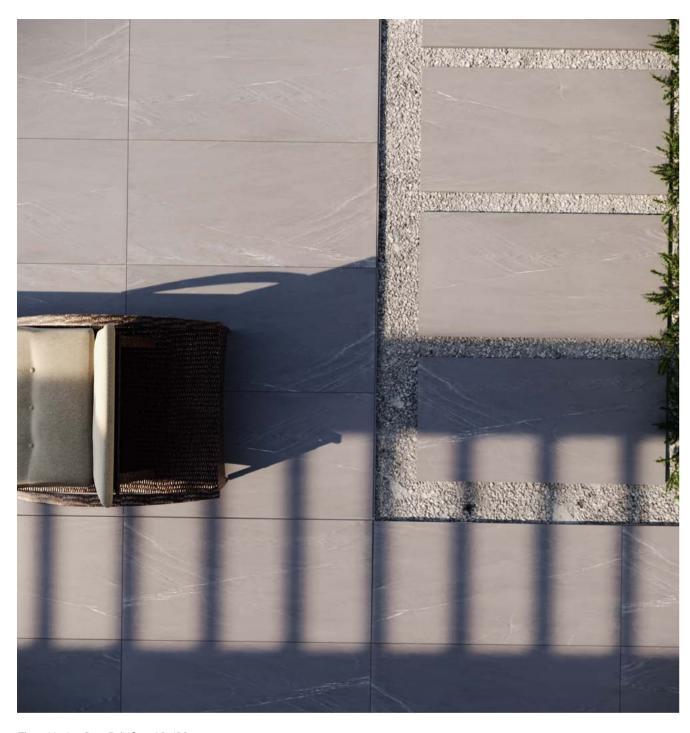
Native is an elegant slate with delicate and light veins that are deeply interwoven to create a subtle and sophisticated pattern. Native's relief texture evokes a modern interpretation of natural stone in a way that its low contrast and homogenous theme make it a perfect backdrop for any design style.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

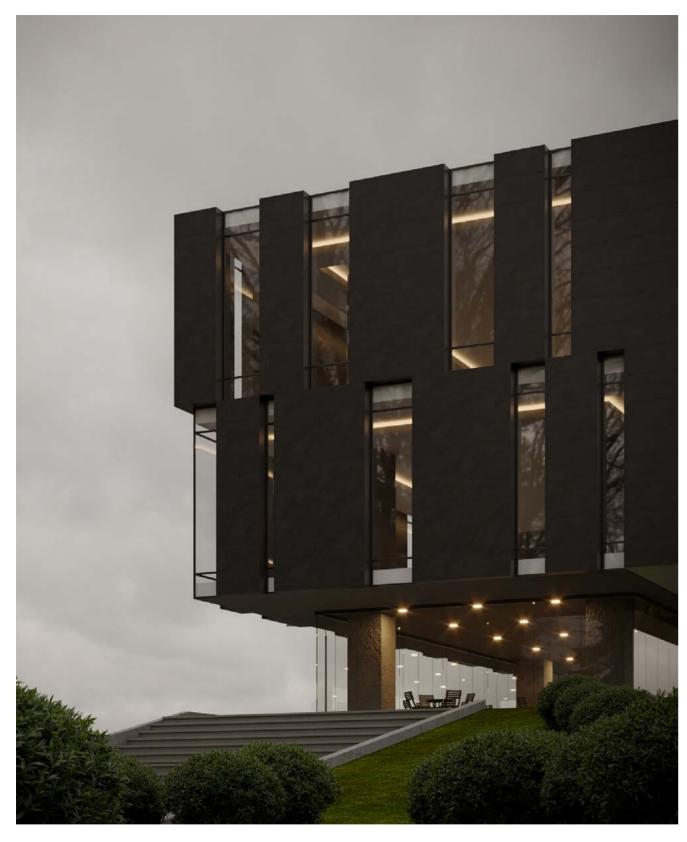




Floor: Native Grey Relief - 60x120 cm



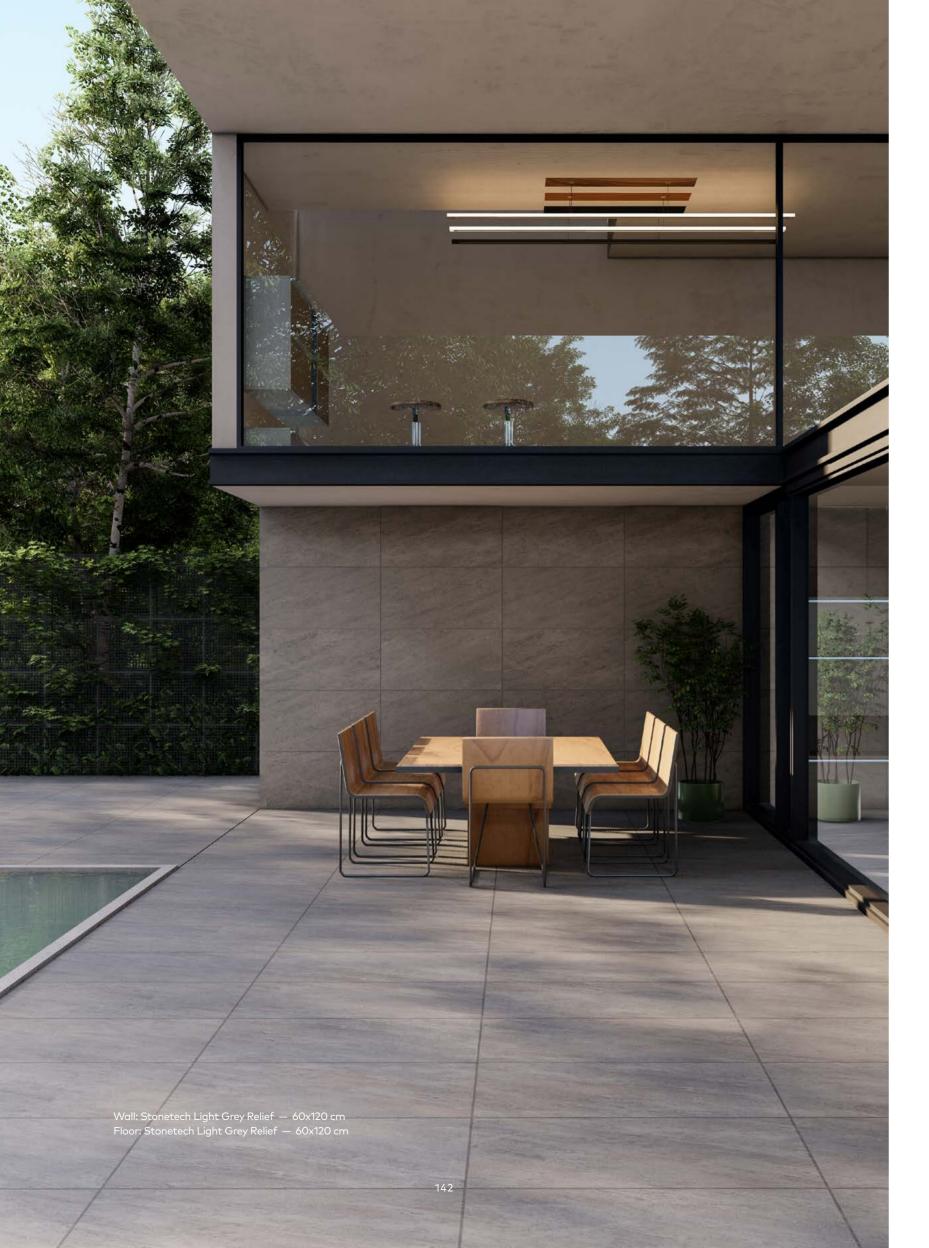




Stonetech

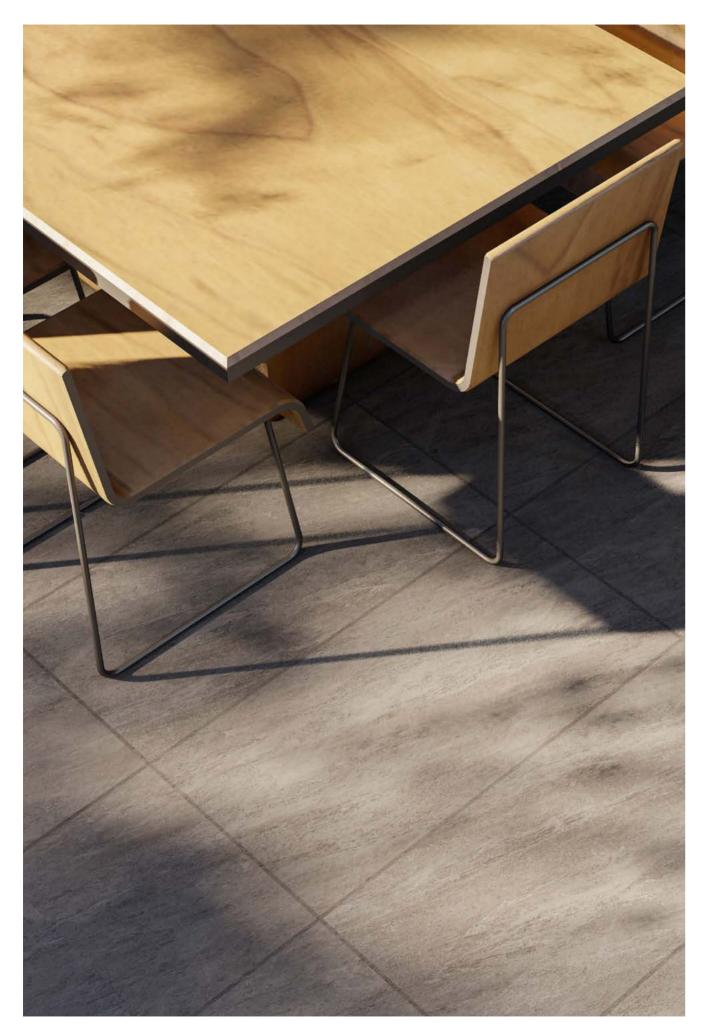
Stonetech is «monolithic»; it indicates harmony despite being unified. Stonetech comes with a natural stone relief that is soft to touch, yet express a fine natural stone look surface. Parallel details with a sufficient amount of monotone surface make this design fashionable yet suitable for facade and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







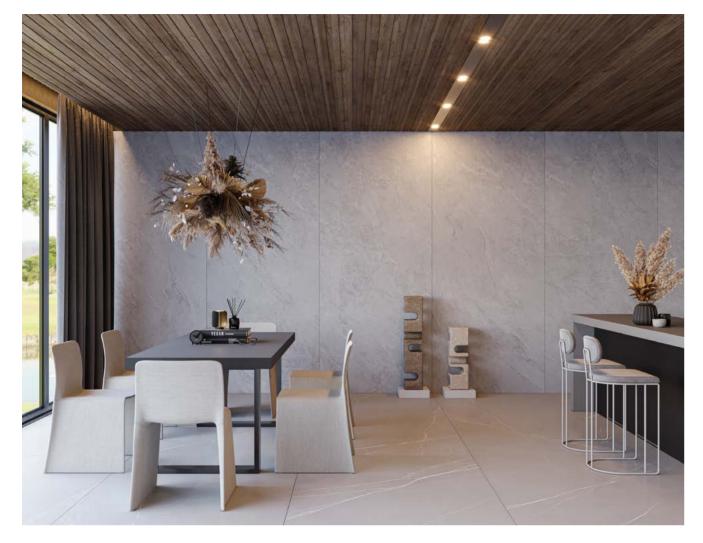




Floor: Stonetech Light Grey Relief -60x120 cm

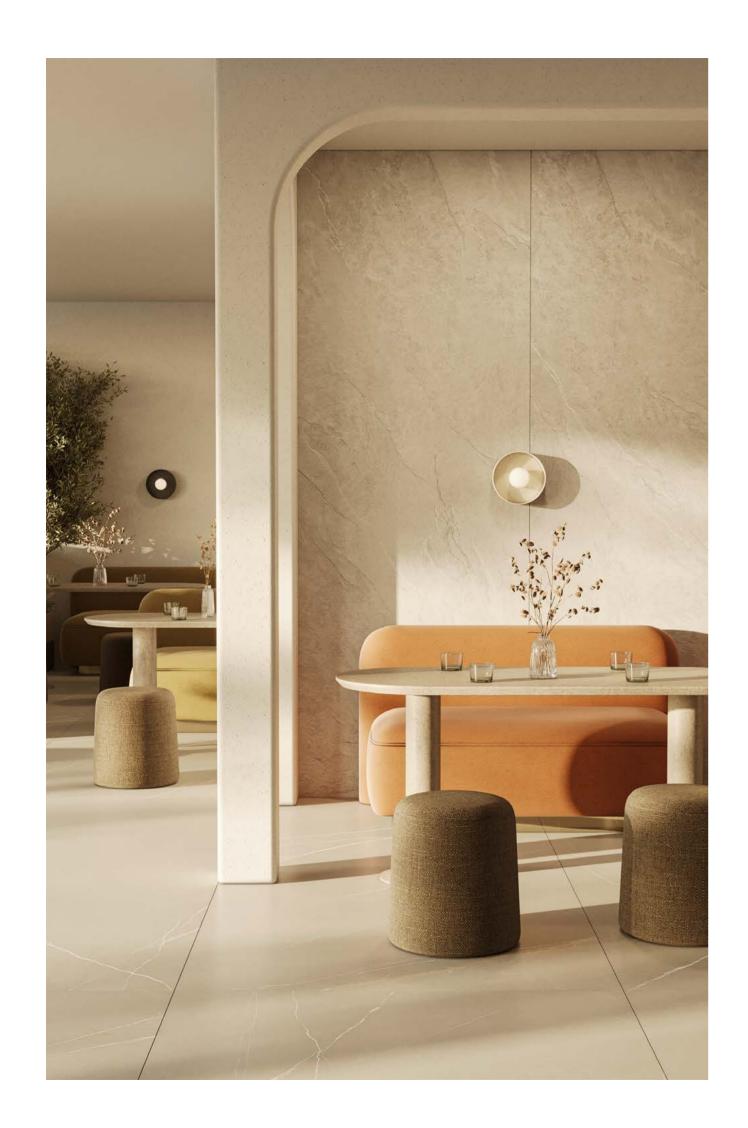














Wall: Riven Slate Light Grey Relief - 120x280 cm Floor: Pantheon Marble Grey Natural - 120x280 cm

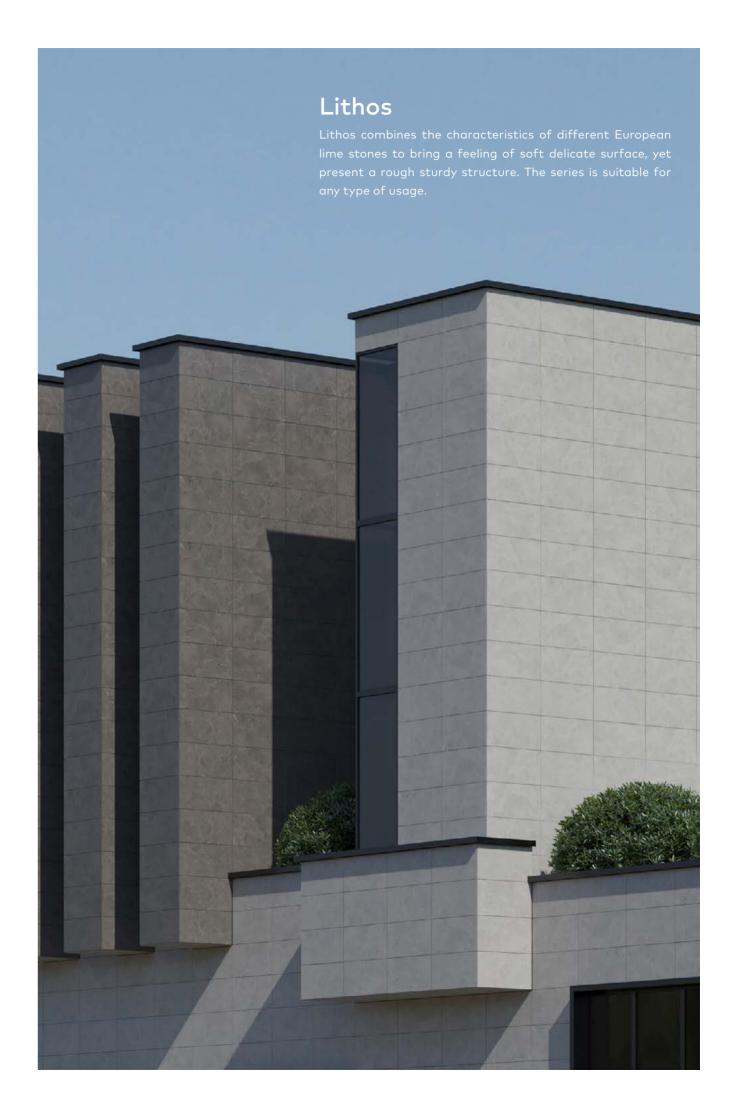


Wall: Riven Slate Dark Grey Relief — 120x280 cm Floor: Pantheon Marble Grey Natural — 120x280 cm











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







Elite Brigade

A Sales Engineering Team Beyond Compare

In the intricate world of ceramics, while the product's quality is paramount, it's the people behind the scenes who truly shape a brand's legacy. And at the heart of PMA's success story lies its formidable sales engineering team.

This isn't just any team; it's a powerhouse of knowledge and expertise. Comprising 30 civil engineers and 21 architects, each member is an alumnus of the country's premier educational institutions. Their academic accolades only scratch the surface of their prowess. Armed with a deep understanding of both engineering intricacies and architectural nuances, they seamlessly bridge the gap between a client's vision and PMA's ceramic masterpieces.

But beyond their technical acumen, what truly sets them apart is their consultative approach. They're not just salespeople; they're partners in creation, ensuring that every project doesn't just meet but exceeds expectations.

With PMA's sales engineering team, clients aren't just purchasing ceramics; they're investing in a legacy of excellence, guided by the industry's brightest minds.

This narrative paints PMA's sales engineering team as an elite group, highlighting their educational background, technical expertise, and consultative approach.



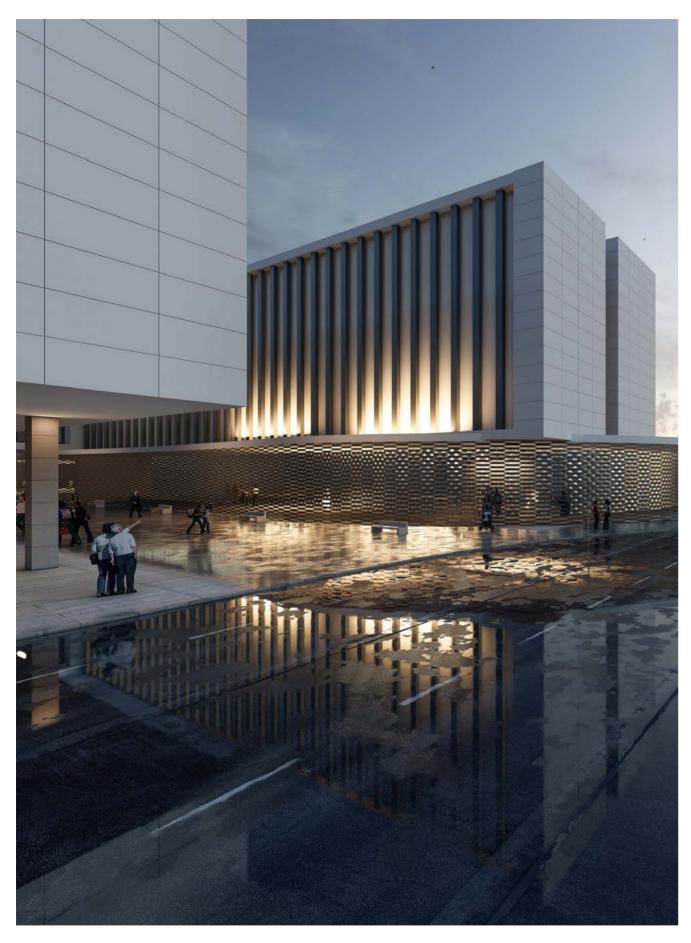




Monocolor Night

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



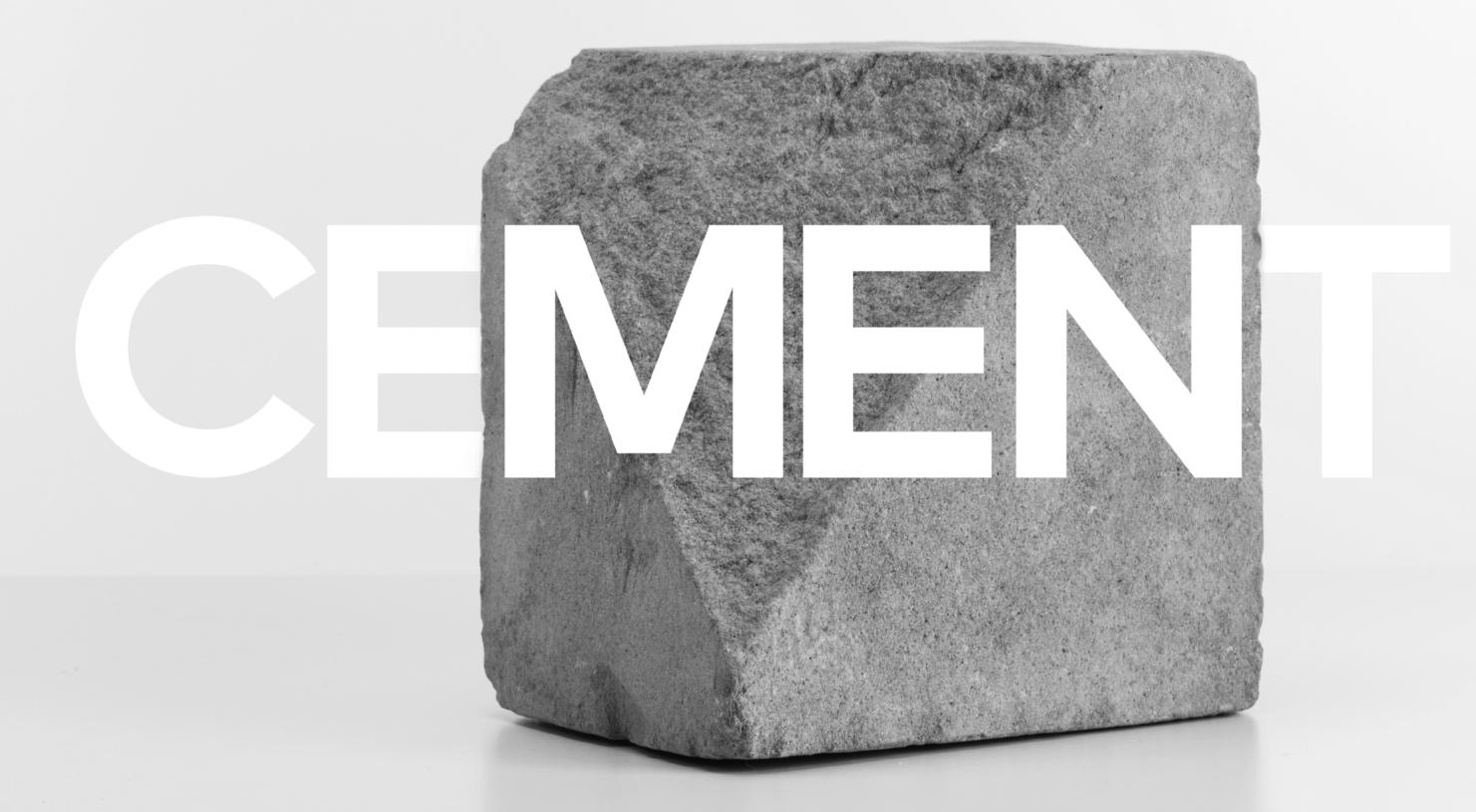


Facade: Monocolor White Matte — 60x120 cm

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

Dark Grey White Black 60x120 cm GM-R9385 Matte 60x120 cm GM-R9388 Matte **60x120 cm** GM-R9305 Matte









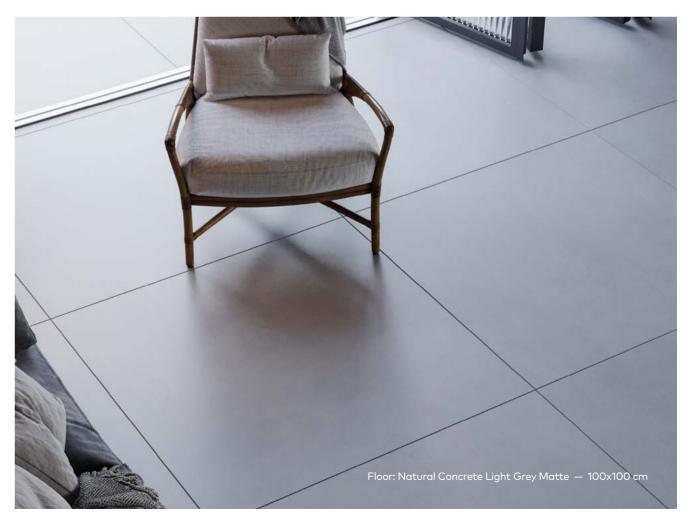
Natural Concrete

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.











Floor: Natural Concrete Ash Matte — 60x120 cm Wall: Natural Concrete Ash Matte — 120x280 cm

Wash Basin: Natural Concrete Ash Matte / Rexa Box: Natural Concrete Dark Grey Matte















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













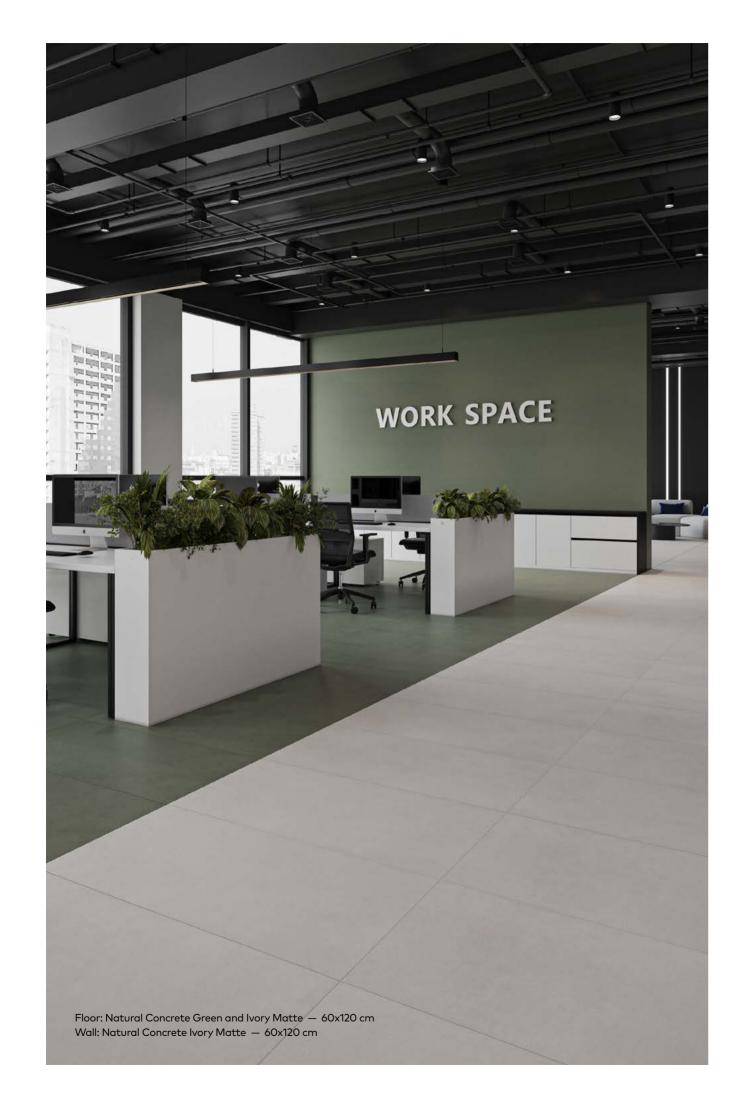


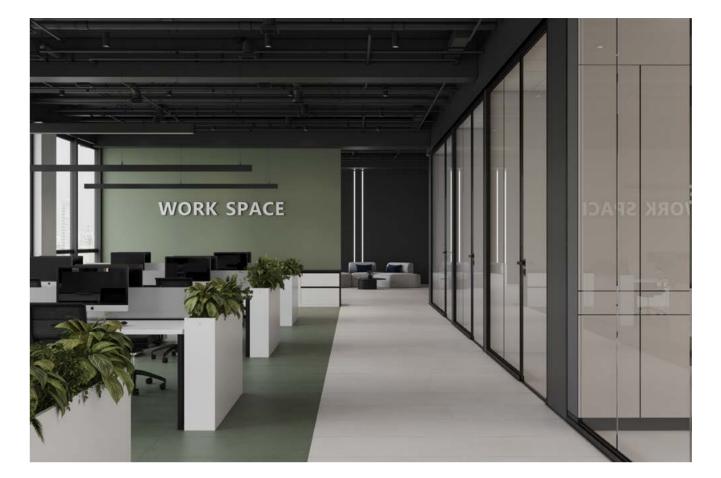




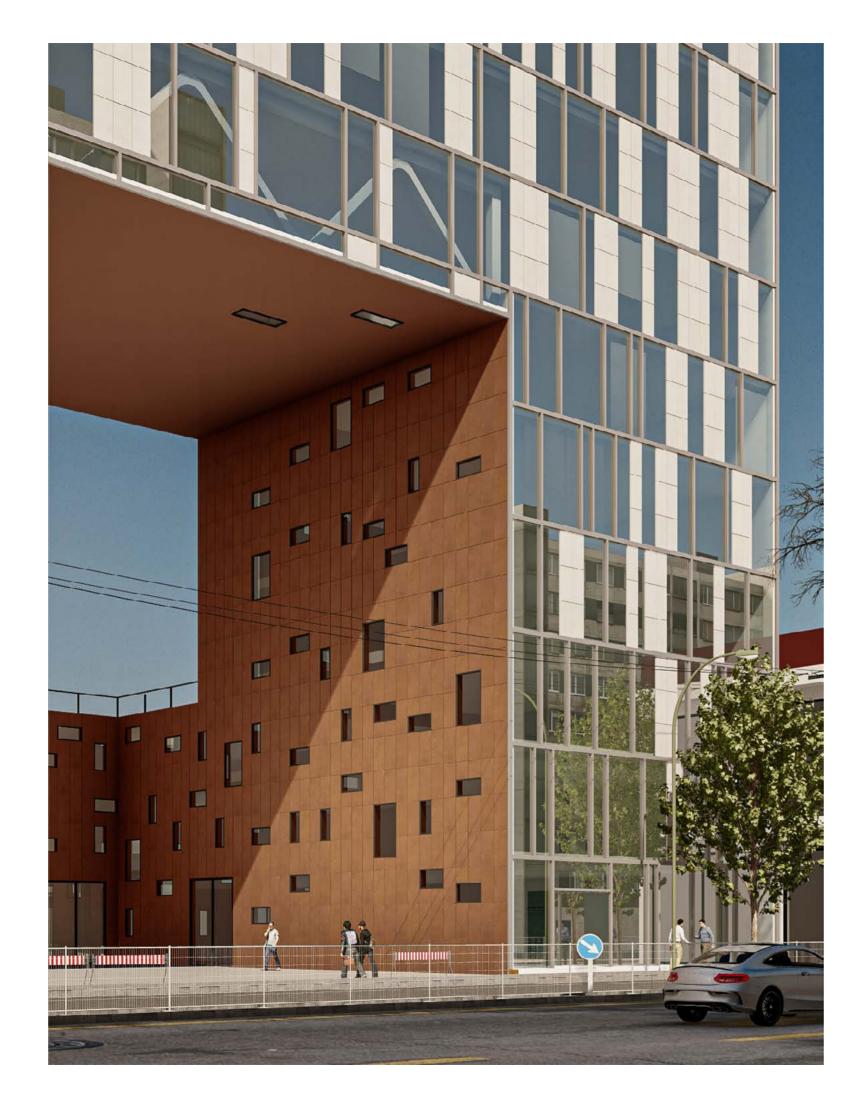




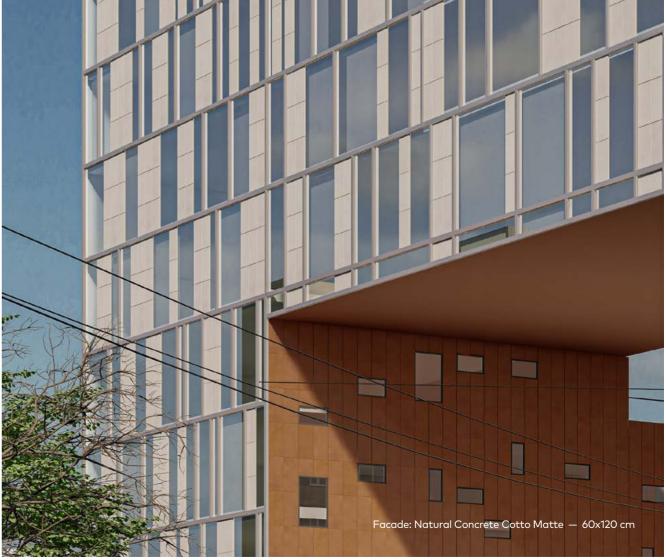
























Natural Concrete Available other sizes upon demand. For more detail please contact sales department.

Novelty





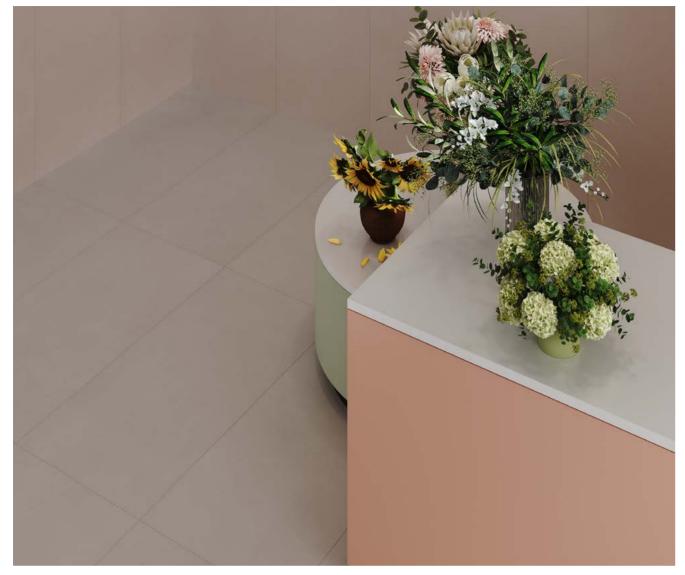






















Natural Concrete Available other sizes upon demand. For more detail please contact sales department.

Novelty

Rose Blush

60x120 cm FGM-R5355 Matte | 8 Faces

Desert

60x120 cm FGM-R5260 Matte | 8 Faces 60x120 cm FGM-R5360 Matte | 8 Faces

lvory



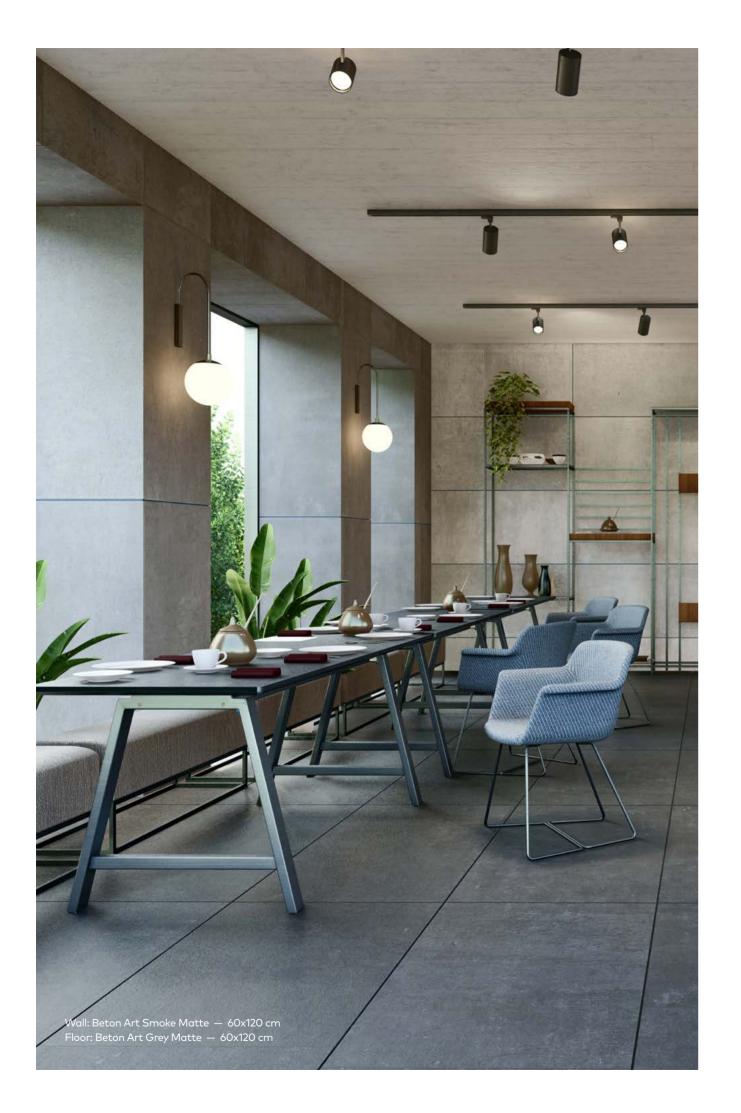
Facade: Beton Art Smoke Matte — 60x120 cm



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.













Maxiwood

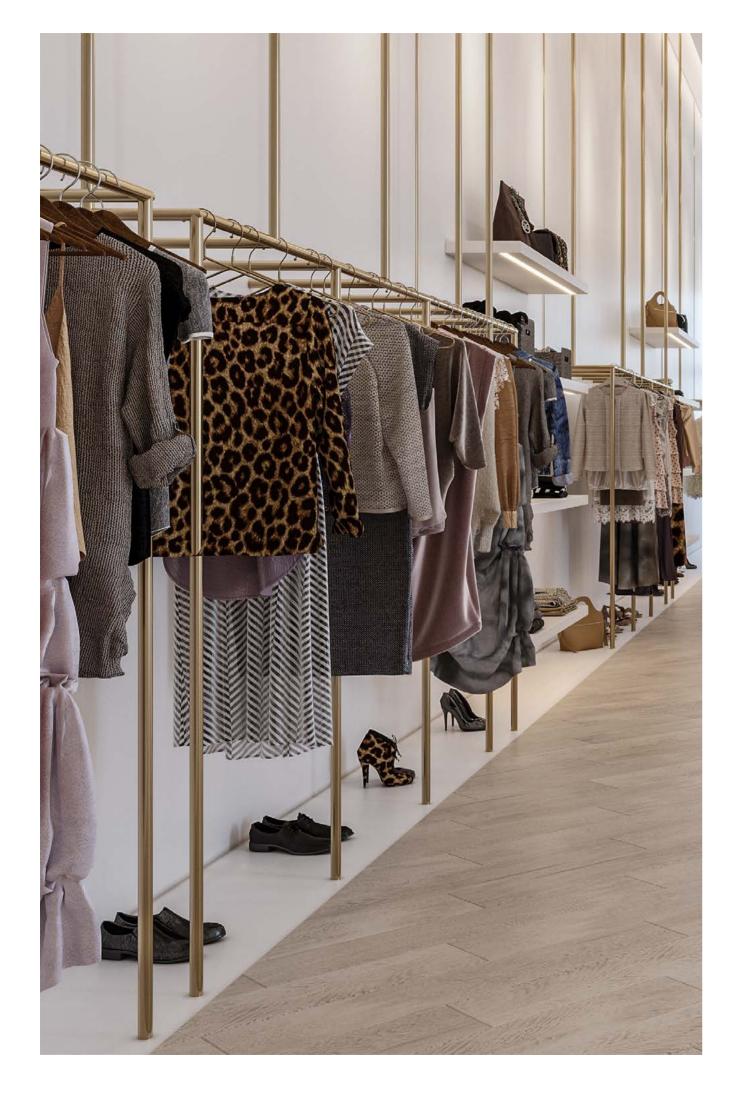
Maxiwood is a great mix of warmth and elegance which is perfectly in harmony with the latest innovative trends. Maxiwood surface is enhanced by relief punch that gives natural touch with new emotion of wooden material character and personality to every setting. Thanks to the stable nature of porcelain, 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











Wall: Maxiwood Almond Relief — 20x120 cm Floor: Maxiwood Almond Relief — 20x120 cm



Refrence Projects

A Resounding Legacy in Iran's Ceramic Expanse

In Iran's ceramic domain, PMA emerges as a beacon of unmatched excellence. With an unparalleled track record in both national and private endeavors, we've adorned a staggering 10 million square meters across 2,500 architectural marvels. In facades alone, our signature graces another 4 million square meters across 1100 landmarks. Beyond numbers, our collaborative journey with 8400+ industry maestros underscores our commitment. For those in quest of ceramic perfection, PMA is the destination.



Α.	Years	Category	City
Abali Hotel	1394	Hotel	Tehran
Administrative Building Of Pishgaman Trade Center Yazd	1395	Commercial	Yazd
Agha Gol Residence	1400	Residential	Tehran
Almati Residence	1393	Residential	Almati
Ana Service And Exhibition Center	1396	Showroom	Kish
Ano	1401	Commercial	Mashhad
Anzali Free Zone Building	1394	Administrative	Anzali
Arad Tower Mashhad	1397	-	Mashhad
Aren Shopping Center	1393	Commercial	Tehran
Arg Twin Towers	1396	Residential	Qom
Arian	1401	Administrative	Mashhad
Armitaj	1392	Administrative	Mashhad
Arsh Ajoudaniyeh Commercial Complex	1394	Commercial	Tehran
Arzesh Afarinane Saba	1398	Commercial	Tehran
Atana Hotel	1399	Administrative	Tehran
Azadi Clinic	1394	Hospital- Health Center	Tehran
В.	Years	Category	City
Bahonar Hospital Kerman	1395	Hospital- Health Center	Kerman
Bank Afarin Farmaniye Branch	1395	Bank	Tehran

Bank Kar Afarin Mashhad	1396	Bank	Mashhad
Bank Mellat Niavaran Branch	1393	Bank	Tehran
Baqiyatallah Dormitory	1400	Hotel	Tehran
Baqiyatullah Dormitory	1400	Hotel	Tehran
Baran 14	1400	Residential	Tehran
Blood Research And Fractionation Building	1395		Tehran
С.	Years	Category	City
Central Administrative Building Of Shiraz City Train	1396	Administrative	Shiraz
Central Bank Multi -Story Prking Lot	1400	Bank	Tehran
Central Branch Of Karafarin Bank	1399	Administrative	Tehran
Commercial Jordan	1399	Administrative	Tehran
Court Of Administrative Justice	1396	Administrative	Tehran
D.	Years	Category	City
Dadman Administrative	1397	Administrative	Tehran
Darlan Daro	1397	Administrative	Pardis
Darulshafa Hospital	1397	Hospital- Health Center	Basra
Dena Hospital	1391	Hospital- Health Center	Shiraz
Dornika	1400	Commercial	Mashhad
Ε.	Years	Category	City
Ecomal Commercial Center	1397	Commercial	Karaj

Ecomall	1397	Commercial	Karaj
Ecomall Hyperstar	1397	Hyper - Market	Karaj
Faculty Of Agriculturee And Art Of Shahid University	1395	Educational	Tehran
Fannavaran Office Building	1396	Administrative	Tehran-Pardis
F.	Years	Category	City
Farkhonde Jordan	1401	Administrative	Mashhad
Farkhunde Jordan Office	1401	Administrative	Mashhad
Forensic Medicine Of Urmia	1399	Administrative	Tehran
G .	Years	Category	City
Golbaran Commercial & Recreational	1397	Commercial	Khuzestan
Gueno	1396	Administrative	Tehran
Gueno Administrative	1396	Administrative	Tehran
н.	Years	Category	City
Hajir Sanat Administrative	1396	Administrative	Tehran
Hisense	1400	Administrative	Tehran
1.	Years	Category	City
Imam Ali Najaf Hospital	1391	Hospital - Health Center	Najaf
Industry Mine Bank-Yazd	1395	Bank	Yazd
Iran Darouk	1397	Administrative	Tehran
Iran Elevator Trade Center	1400	Commercial	Tehran

Iranmall Official Building	1394	Administrative	Tehran
Islamic Azad University North Tehran Branch	1395	Educational	Tehran
Islamic Azad University Of Science And Research	1395	Educational	Tehran
Istak	1400	Administrative	Tehran
J.	Years	Category	City
Jamaran Office	1395	Administrative	Tehran
Jordan Commercial	1400		Tehran
Jordan Skin And Hair Clinic	1397	Hospital- Health Center	Tehran
К.	Years	Category	City
Karestan Commercial Center	1397	Commercial	Tehran
Karina Mall Kish	1395	Commercial	Kish
Kerman Airport	1400	Airport	Kerman
Khalije Fars Commercial Center	1394	Commercial	Tehran
Kish Research Center	1397	Administrative	Kish
Koohsangi Residential & Commercial Complex	1392	Commercial	Mashhad
Kourosh Commercial & Recreation Center	1393	Commercial	Tehran
L.	Years	Category	City
Laleh	1400	Residential	Tehran
Lamkadeh Sofa Gallery	1393	Showroom	Tehran
Library Of Allameh Tabatabai University	1396	Educational	Tehran

М.	Years	Category	City
Madinah Al-Reza Hotel	1392	Hotel	Mashhad
Mapna	1396	Administrative	Kish
Mashhad City Council Hall	1394	Administrative	Mashhad
Mehre Of Iranian Kuhsangi	1397	Commercial	Mashhad
Mellat Bank Branches Administration Building	1396	Bank	Gorgan
Milad Hospital-Urmia	1397	Hospital- Health Center	Urmia
Ministry Of Agriculture Central Building	1397	Administrative	Tehran
Moallem Insurance 1395		Administrative	Tehran
Mofid University Qom	1395	Educational	Qom
Moheb Kosar Hospital	1393	Hospital- Health Center	Tehran
Mollasadra Administrative	1400	Administrative	Tehran
Mr. Pazuki Residence	1399	Administrative	Tehran
N .	Years	Category	City
Nazeran Hospital	1399	Administrative	Tehran
Negin-E Alborz	1400	Administrative	Ahvaz
Negine Pasargad Hotel	1394	Hotel	Mashhad
Nobahar Commercial Center	1393	Commercial	Kermanshah
Novin Pelas Hotel	1401	Hotel	Mashhad
O.	Years	Category	City

Official Building Of Mapna Company	1395	Administrative	Tehran
Official Building Pharmacy Of Iran Hormun	1394	Administrative	Tehran
P.	Years	Category	City
Pars Hospital-Rasht	1394	Hospital- Health Center	Rasht
Pars Residence	1395	Residential	Kerman
Parsian Shahr Kord Hospital	1397	Hospital- Health Center	Shahrekord
Penta Exhibition And Office Building	1398	Administrative	Parand
Q.	Years	Category	City
Qeshm Airport	1396	Airport	Qeshm
R.	Years	Category	City
Rayan Business Complex	1394	Administrative	Tehran
Razi Hospital	1398	Hospital- Health Center	Tehran
Razi Hospital	1397	Hospital- Health Center	Tehran
Refah Sanandaj Bank	1397	Bank	Sanandaj
Residence Raspina	1395	Residential	Saari
Rodhen Azad University	1396	Educational	Rodhen
Royal Commercial	1395	Commercial	Tehran
Royal-E Mirdamad	1397	Commercial	Tehran
Royaye Shargh	1397	Commercial	Tehran

Saadi Hospital-Basra	1396	Hospital- Health Center	Basra	
Salsabil Hotel	1394	Hotel	Mashhad	
Sam Group	1400	Commercial	Tehran	
Saman Bank Branch Of Sajjad Boulevard Mashhad	1386	Bank	Mashhad	
Sana Center	1397	Commercial	Tehran	
Sarafha Administrative	1401	Administrative	Mashhad	
Seoul Hospital South Korea	1401	Hospital- Health Center	Mashhad	
Setareh Vanak	1400	Administrative	Tehran	
Shahr-E Aftab	1394	Service - Recreational	Tehran	
Shaparak	1394	Service - Recreational	Tehran	
Shiraz International Airport	1396	Airport	Shiraz	
Shiraz Railway Station	1388	Metro - Train Station	Shiraz	
Simin Farmanieh Administrative	1400	Administrative	Tehran	
Sina Hospital	1401	Hospital- Health Center	Mashhad	
Sina Noor Shahriyar	1395	Hospital- Health Center	Shahriyar	
Spadana Administrative Office	1396	Administrative	Mashhad	
Subhanian Office	1399	Administrative	Tehran	
Sunstar	1400	Administrative	Tehran	
т.	Years	Category	City	
Taha Powish Drilling Company	1399	Administrative	Tehran	

Tax Administrative	1400	Administrative	Tehran
Tax Office	1400	Administrative	Tehran
Toranj Tower	1395	Residential	Tehran
U.	Years	Category	City
Urmia International Airport	1396	Airport	Urmia
V.	Years	Category	City
Vanak Administrative	1399	Administrative	Tehran
Velayat Official Building	1395	Administrative	Tehran
Vina Administrative	1394	Administrative	Tehran
W.	Years	Category	City
Water And Sewage Area2	1395	Administrative	Tehran
Υ.	Years	Category	City
Yas Kerman Doctors Building	1395	Hospital- Health Center	Kerman

Winner of the 23rd Construction Industry Exhibition



TECHNICAL INFORMATION

Technical Characteristics

PMA PORCELAIN TILE TECHNICAL CHARACTERISTICS

EUROPEAN STANDARD EN 14411

CHARACTERISTICS	Annex G Group Bla		Test Method	P <mark>M</mark> A Test
CHARACTERISTICS	Requirments for n	ormal size n >15cm	rest 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 100 105 (5 (Affirmative
Flexural tensile strength or Modulus of rupture (N /mm²)	Minimum 35N /mm² Individual Minimum		EN ISO 10545-4	Affirmative
Impact resistance ,as: Coefficient of restitution (COR)	Declared Value		EN ISO 10545-5	Affirmative
Resistance to deep abrasion of unglazed tiles : Removed value (mm³)	Maximum 175 mm³		EN ISO 10545-6	Affirmative
Resistance to surface abrasion of glazed tiles intended for use on floors	Abrasion class and a	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 E	N ISO 10545-1	EN ISO 10545-9	Affirmative

CHARACTERISTICS	Annex G Group Bla	T . M .! !	PMA Test	
CHARACTERISTICS	Requirments for normal size n >15cm	Test Method	Result	
PHYSICAL PROPERTIES				
Frost resistance	Pass according to EN ISO 10545-1	EN ISO 10545-12	Affirmative	
Water absorption (in %by mass)	E ≤0.5% Individual maximum 0.6%	EN ISO 10545-3	Affirmative	
Breaking strength for thickness 7.5mmand more	Not less than 1300N		Affirmative	
Flexural tensile strength or Modulus of rupture (N /mm²)	Minimum 35N /mm² Individual minimum 32N /mm²	EN ISO 10545-4	Affirmative	
Resistance to deep abrasion of unglazed tiles: Removed Volume	Maximum 175mm³	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	Aft mative	
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		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	

Technical Characteristics

WATER ABSORPTION

1SO 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

1SO 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

1SO 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

1SO 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

1SO 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

1SO 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

» Class E1

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 gesthetic 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.

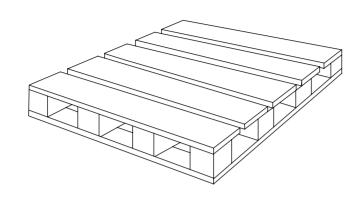
EXTRAORDINARY CLEANING

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.

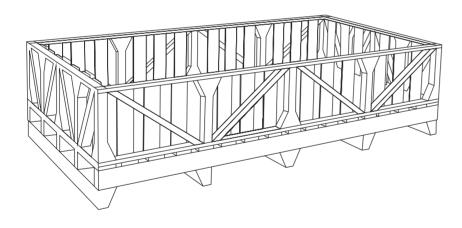
RAISED FLOORINGS

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.

Packing



Size	Thickness	Weight Pallet	Sqm Box	Pieces Box	Kg/Box	Box/Pallet	Sqm Pallet
60x120 Polished	11.5	2292	1.44	2	38.2	60	86.4
60x120 Matte	11.5	2250	1.44	2	37.5	60	86.4
60x120	9	2160	1.44	2	30	72	103.68
20x120	11.5	2021	0.96	4	26	84	80.64
60*60	20	1241.6	0.72	2	31.04	40	28.8



Size	Thickness	Weight Pallet	Sqm Box	Pieces Box	Kg/Box	Box/Pallet	Sqm Pallet
100x100	10	2208	2	2	46	48	96
80x160	9.5	1370	1.28	-	27.4	50	64
120x120	9.5	1530	1.44	-	32.5	45	64.8
120x240	9.5	2354	2.88	-	62	36	103.68
120x280	9.5	2730	3.36	-	72	36	120.96
160x320	9.5	2600	5.12	-	110	22	112.64

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Technical Details

Table -2 Characteristic of Ceramic Tiles Required for Different Applications

CHARACTERISTICS ^{o)}		FLOO	FLOORINGS		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	X	Х	Х	Х	EN ISO 10545-2	
A.3	Straightness of Sides (i.e. Facial Sides) ^{b)}	X	X	Х	X	EN ISO 10545-2	
A.4	Rectangularityb ^{b)}	X	X	Х	X	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	
В)	PHYSICAL PROPERTIES	INTERIOR	EXTERIOR	INTERIOR	EXTERIOR	REFERENCE	
B.1	Water Absorption	X	X	Х	X	EN ISO 10545-3	
B.2	Breaking Strength ^{c)}	X	X	X	X	EN ISO 10545-4	
B.3	Flexural Tensile Strenght ^d)or Modules of Ruptured ^d)	X	X	X	Х	EN ISO 10545-4	
B.4 a	Resistance to Deep Abrasion -Unglazed Tilesd ^{d)}	X	X			EN ISO 10545-6	
B.4 b	Resistance to Surface Abrasion -Glazed Tiles ^{c)}	X	X			EN ISO 10545-7	
B.5	Leaner Thermal Expansion ^{g)}	Х	Х	Х	Х	EN ISO 10545-8	
B.6	Resistance to Thermal Shock ^{f)}	Х	Х	Х	Х	EN ISO 10545-9	
B.7	Resistance to Crazing ^{g)}	Х	Х	Х	Х	EN ISO 10545-11	
B.8	Freeze -Thaw Resistanceh ^{h)}		Х		X	EN ISO 1015-12	
B.9	Slipperiness	X	Х			FprCEN /TS 16165:2011 ⁾⁾	

	CHARACTERISTICS®)		RINGS	WA	LLS	TEST METHOD
B.10 a	Bond Strength / Adhesion ^{k)} - Cementitious Adhesives			х	Х	EN 12004:2007,4.1
B.10 b	Bond Strength / Adhesion ^{k)} - Dispersion Adhesives			Х	Х	EN 12004:2007,4.2
В.10 с	Bond Strength / Adhesion ^{k)} - Reaction Resin Adhesives			Х	Х	EN 12004:2007,4.3
B.10 d	Bond Strength / Adhesion ^{k)} - Mortar			X	X	EN ISO 10545-12
B.11	Moisture Expansion ⁽⁾	Х	Х	X	X	EN ISO 10545-10
B.12	Small Color Differences ^{m)}	Х	Х	Х	Х	EN ISO 10545-16
B.13	Impact Resistance ⁿ⁾	Х	Х			EN ISO 10545-5
B.14	Reaction to Fire®	Х		X	X	WT
B.15	Tactility ^{p)}	х	X			CEN TS 15209)
C)	CHEMICAL PROPERTIES	INTERIOR	EXTERIOR	INTERIOR	EXTERIOR	REFERENCE
C.1 a	Resistance to Staining -Glazed Tiles ^q)	Х	Х	Х	X	EN ISO 10545-14
C.1 b	Resistance to Staining -Unglazed Tiles ^q)	X	Х	Х	X	EN ISO 10545-14
C.2 a	Resistance to Acids and Alkalis of Low Concentration')	Х	Х	Х	х	EN ISO 10545-13
C.2 b	Resistance to Acids and Alkalis of High Concentration')	X	Х	Х	X	EN ISO 10545-13
C.2 c	Resistance to Household Cleaning Agents and Swimming Pool Chemicals')	х	х	X	Х	EN ISO 10545-13
C.3 a	Release of Cadmium -Glazed Tilest ^t)	х	х	х	Х	EN ISO 10545-15
C.3 b	Release of Lead -Glazed Tilest ^t)	х	х	x	Х	EN ISO 10545-15
C.3 c	Release of Other Dangerous Substances ^s)	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 _b)							
Shaping	Group E _b ≤ 3%	Group II _。 3% < E _ь ≤ 6%	Group II _b 6% < E _b ≤ 10%	Group III E _b > 10%				
Method A	Group Al $E_b \le 0.5\%$ (see Annex L)	Group All _{a-1} °) (see Annex B)	Group All _{b-1} °) (see Annex D)	Group AllI (see Annex F)				
Extruded	Group Al _b $0.5\% < E \le 3\%$ (see Annex A)	Group All _{o-2} ^{o)} (see Annex C)	Group All _{b-2} ^{a)} (see Annex E)	Group BIII _b (see Annex K)				
Method B	Group BI E _b ≤ 0.5% (see Annex G)	Group Bll _a (see Annex)	Group BII _b (see Annex J)					
Dry-pressed	Group BI_b 0.5% < $E_b \le 3\%$ (see Annex H)							

a) Groups All and All, 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.

d	For walls only.
е	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.
I	See N.2.3.
m	See N.2.6.
n	See N.2.1.
0	For ceramic tiles intended to be used for internal floorings and for internal and external walls only.
р	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 2005/31/CE.

NOTE 1 Characteristics given in this table in "plain" text are relevant to all intended uses, while those in "italics"

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

are additionally relevant for the specific intended use(s) only.

characteristics (not for CE marketing).

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.

ANNEX G EN 14411

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

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_g ($E_b \le 0.5\%$)

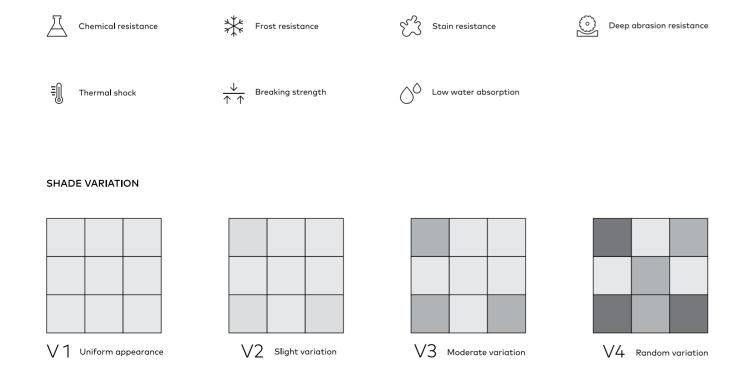
	Require				
CHARACTERISTICS	7 cm< N <15 cm	N ≥ 1	5 cm	Test Method	
	(mm)	(mm) %			
A) DIMENSIONS AND SURFACE QUALITY					
A.1 LENGTH AND WIDTH					
The Work Size Sall be Chosen as Follows for :					
a) Modular Tiles :	In order to allow a ne	ominal joint width of b	petween 2 and 5mm	-	
b) Non -modular Tiles :	So that the differer size is not more tha	nce between the work in 2% (max 0.5mm)	size and normal	-	
The Permissible Deviation of the Average Size for the Each Tile (2 or 4Sides) 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 (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 _b				-	
The Maximum Permissible Deviation from Rectangularity, Related to the Corresponding Work Size	+0.75 mm	±0.5%	+2 mm	EN ISO 10545-2	

	Require						
CHARACTERISTICS	7 cm< N <15 cm	15 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 _b ≤ 0.5 Individual maximun	E _b ≤ 0.5 Individual maximum 0.6%					
B.2 BREAKING STRENGTH, FOR:							
a) Thickness ≥ 7.5mm	Not less than 13001	N		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 ^d	Minimum 35N /mm Individual minimum			EN ISO 10545-4			
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 ^e	Abrasion class and	EN ISO 10545-7					
B.5 COEFFICIENT OF LINEAR THERMAL EXPANSION							
- From Ambient Temperature to 100 °C	Declared value ^f			EN ISO 10545-8			
B.6 THERMAL SHOCK RESISTANCE	Pass according to E	N ISO 10545-19		EN ISO 10545-9			
B.7 CRAZING RESISTANCE: Glazed Tiles ^h	Pass according to E	Pass according to EN ISO 10545-19					
B.8 FROST RESISTANCE	Pass according to E	EN ISO 10545-12					
B.9 SLIPPERINESS	Declared value (s) ^g	PrCEN /TS 16165:2011 ⁱ					
B.10 BOND STRENGHT / ADHESION, FOR:	1						
a) Cementitious Adhesives ^k	Declared value (s)			EN 12004:2007,4.			

	Requirer			
CHARACTERISTICS	7 cm< N <15 cm N ≥ 15 cm			Test Method
	(mm)	%	(mm)	
b) Dispersion Adhesives ^k	Declared value (s)	EN 12004:2007,4.2		
a) Glazed Tiles	ΔΕ<0.75	EN ISO 10545-16		
b) Unglazed Tiles	ΔΕ <1.0			EN ISO 10545-16
B.13 IMPACT RESISTANCE, as:				
- Coefficient of Restitution (COR)	Declared value ^f			EN ISO 10545-5
B.14 REACTION TO FIRE	(Class A1 or A1 _{FL}) ^m			-
B.15 TACTILITY ⁿ	Declared surface de	scription ^g		CEN /TS 15209 ⁱ
C) CHEMICAL PROPERTIES				
C.1 RESISTANCE TO STAINING, FOR:				
a) Glazed Tiles	Minimum calss 3			EN ISO 10545-14
b) Unglazed Tiles	Declared value ^f	EN ISO 10545-14		
C.2 RESISTANCE TO CHEMICAL				
a) Resistance to Low Concentration of Acids and Alkalis	Declared value ^f			EN ISO 10545-13
b) Resistance to High Concentration of Acids and Alkalis	Declared value ^f			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 ^g			EN ISO 10545-15
b) Lead (in mg /dm²)	Declared value ⁹	EN ISO 10545-15		
c) Other Dangerous Substances°	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.
- 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 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



Cleaning Products

TYPES OF DETERGENT Where the sale is permitted	SOLVENT (bleach, tur trichloroeth	Γ S rpentine, aceta nylene, nitro th	one, iinner)	ACIDS (muriatic a phosphoric	cid ,hydrochlo acid)	ric acid,		E -BASED D	ETERGENTS ergents)
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				•	•	•			
Теа		•	•						
Wall paint	•	•	•	•	•	•			

For information and advice, please contact PMA directly.

