

TEXTURED

SOFT

NATURE/
SATINY

METALLIC

WOOD

VOLUME

XXL

OMEGA/
LATTICES/
GRID

TECHNICAL DATA





 Front-Tek
EXTRUDED PORCELAIN

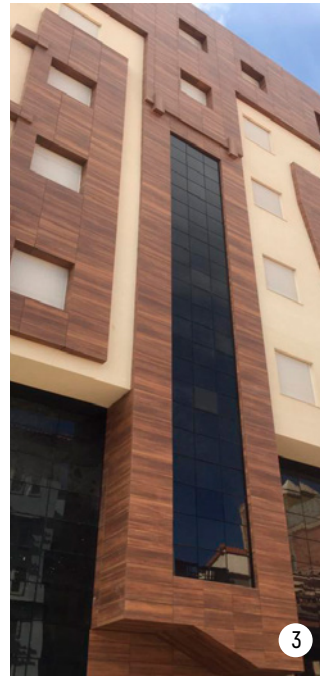


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PRODUCT DESCRIPTION





1. Pamplona-Spain.
Residential Building.
ST5006-Azabache.
2. Abu Dhabi-United Arab
Emirates. Trade Center.
Iceberg.
3. Oran-Algeria.
Residential Building.
W300.

The Greco Gres Internacional Group has developed an exclusive piece of extruded ceramics that has excellent technical qualities for the cladding of facades: extremely hard, light, highly resistant and long-lasting, with low water absorption and excellent performance against weather and environmental conditions.

This piece, which is marketed under the Frontek brand, is specially designed for anchoring to a metallic structure and ensuring quick and easy installation. A product that is remarkable for being extremely light –it weighs only 32 kg/m²– and long-lasting.

Its exclusive design is an assurance of the firmest attachment to the structure without the need for additional cutting or drilling that might weaken it.

El Grupo Greco Gres Internacional ha desarrollado una exclusiva pieza de cerámica extrusionada que cuenta con unas excelentes cualidades técnicas para el revestimiento de fachadas: gran dureza, ligereza, alta resistencia y durabilidad, baja absorción de agua y un excelente comportamiento ante los agentes climáticos y medio ambientales.

Esta pieza de estructura alveolar, que se comercializa con la marca Frontek, está especialmente diseñada para ser anclada sobre una estructura metálica y asegurar una rápida y sencilla instalación del sistema. Un producto que destaca por su gran ligereza -tan sólo pesa 32 Kg/m²- y durabilidad.

Su exclusivo diseño garantiza una fijación óptima a la estructura, sin necesidad de cortes o perforaciones adicionales que pudieran debilitar su resistencia.

FRONTEK ADVANTAGES



4. Cataluña-Spain.
Detached House.
ST110.
5. Barcelona-Sapin
Detached House.
Júpiter.

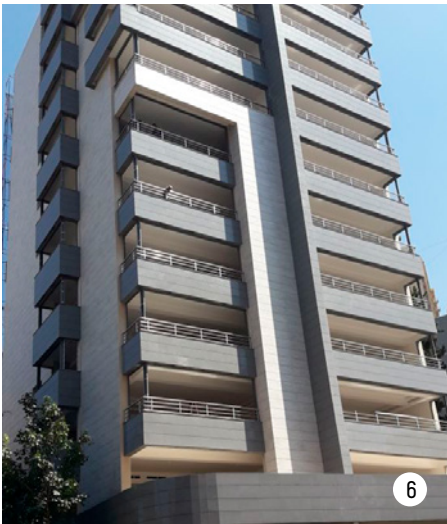
4



1. Frontek is an exclusive piece of extruded ceramic that has excellent technical qualities for cladding facades.
2. It is a piece with alveolar design and a longitudinal cleft in the upper and lower part of the piece that facilitates the assembly on a metal substructure allowing several ways to place the same piece guaranteeing an optimal fixation without the need for additional cuts or perforations that can weaken your resistance.
3. The alveolar design avoids the need to mesh the piece and strengthens it against impact loads. In turn, this exclusive design makes the piece lighter.
4. Thanks to its exclusive manufacturing process, the Frontek piece has many finishes in its different ranges: textured, natural, polished, metallic, wood and volume. Even being able to adapt to specific requirements of a project in question.
5. The Frontek piece offers an excellent dimensional finish, with optimum tolerance levels thanks to its production process, in which the piece is rectified on its 4 sides, thus achieving an unbeatable planimetry.
6. The minimum water absorption that the Frontek piece has avoid dirt from permeate it, making cleaning easier and minimizing maintenance operations.

1. Frontek es una pieza exclusiva de cerámica extrusionada que cuenta con unas excelentes calidades técnicas para el revestimiento de fachadas.
2. Se trata de una pieza con estructura alveolar y una hendidura longitudinal en la parte superior e inferior de la pieza que facilita el anclaje sobre una subestructura metálica permitiendo varias formas de colocar la misma pieza garantizando una fijación óptima sin necesidad de cortes o perforaciones adicionales que puedan debilitar su resistencia.
3. El diseño alveolar evita la necesidad de enmallado de la pieza y la fortalece frente a fuerzas de impacto. A su vez, este exclusivo diseño confiere a la pieza de mayor ligereza.
4. Gracias a su exclusivo proceso de fabricación, la pieza Frontek presenta infinidad de acabados en sus diferentes gamas: texturado, natural, pulido, metálico, madera y volumen. Incluso pudiéndose adaptar a requerimientos específicos de un proyecto en cuestión.
5. La pieza Frontek ofrece un acabado dimensional excelente, con unos niveles de tolerancia óptimos gracias a su proceso de producción, en el cual se rectifica la pieza en sus 4 lados consiguiendo con ello una planimetría inmejorable..
6. La mínima absorción de agua presentada por la pieza Frontek impide que la suciedad penetre en ella facilitando su limpieza y minimizando las operaciones de mantenimiento.

THERMAL INSULATION ADVANTAGES



- 6. Beirut-Lebanon. Residential Building. Iceberg-Azabache.
- 7. Tel Aviv-Israel. Arabic Restaurant. Jupiter.
- 8. South Korea. Yulgok Hospital. Iceberg-Canyon-W300.
- 9. Abu Dhabi-UAE. Al-Raha Beach. S106.



Energy efficiency

The insulating material applied on the exterior face of the wall and floors eliminates thermal bridges, preventing heat loss to the outside of the building in the coldest months of the year, as well as avoiding heat transfer from outside in summer. Estimated energy saving between 15% and 35% in both heating and cooling is achieved.

Also, when applying the insulation on the outside of the wall a greater thermal mass is provided to the building, achieving an increase of the thermal inertia with consequent energy savings.

The covering acts as a shield reflecting large amount of solar radiation therefore preventing the building to heat up.

Eficiencia energética

El material aislante que se instala en la cara exterior del muro y los forjados elimina los puentes térmicos de la fachada, evitando la pérdida del calor interior hacia el exterior del edificio en los meses más fríos del año, así como la captación de calor del exterior en verano. Se estima que se consigue un ahorro energético de entre un 15% y un 35%, tanto en calefacción como en equipos de aire acondicionado.

Además, al instalar el material aislante en la parte exterior del muro y los forjados aporta una mayor masa térmica al edificio, consiguiendo un incremento de la inercia térmica con el consiguiente ahorro energético.

El revestimiento actúa como pantalla reflejando gran cantidad de la radiación solar evitando que esta penetre en el edificio.

FUNCTIONAL AND CONSTRUCTION ADVANTAGES



10

- Easy and quick installation
- Great strength and durability.
- Lightness of the system on the wall.
- Excellent stability of the ceramic covering, without risk of cracking or detachment.



11

- Replacing individual tiles.
- Removing condensation on the inner wall face.
- Weather protection.
- Low maintenance.
Easy to clean.
- Aesthetic beauty.

12

- 10. Sevastopol-Russia.
Levanda Mall,
Azabache.
- 11. Madrid-Spain.
Los Artos Mall,
Urban.
- 12. Miranda-Australia.
Mirnada Dental Hospital,
Canyon.

VENTILATED FACADE SYSTEM



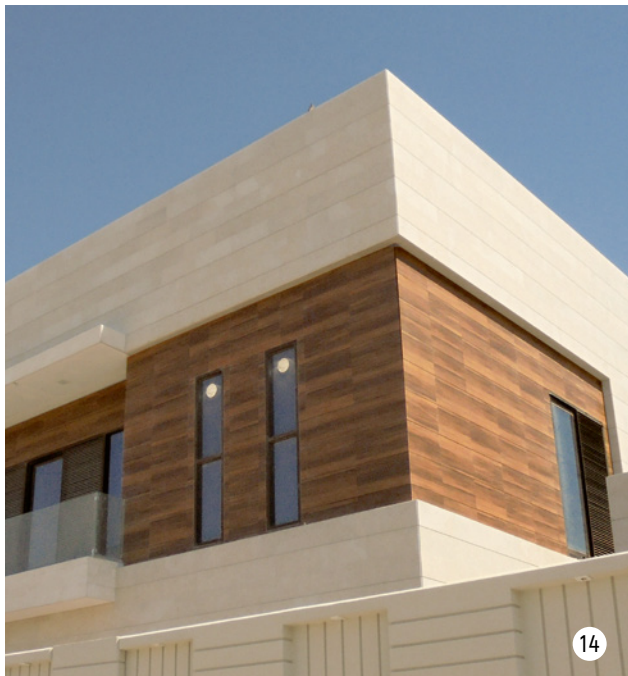
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The Frontek ventilated facade system is designed for the outside cladding of frontages through attachment to a metallic substructure by means of anchoring fixtures. This system does not affect the project's stability.

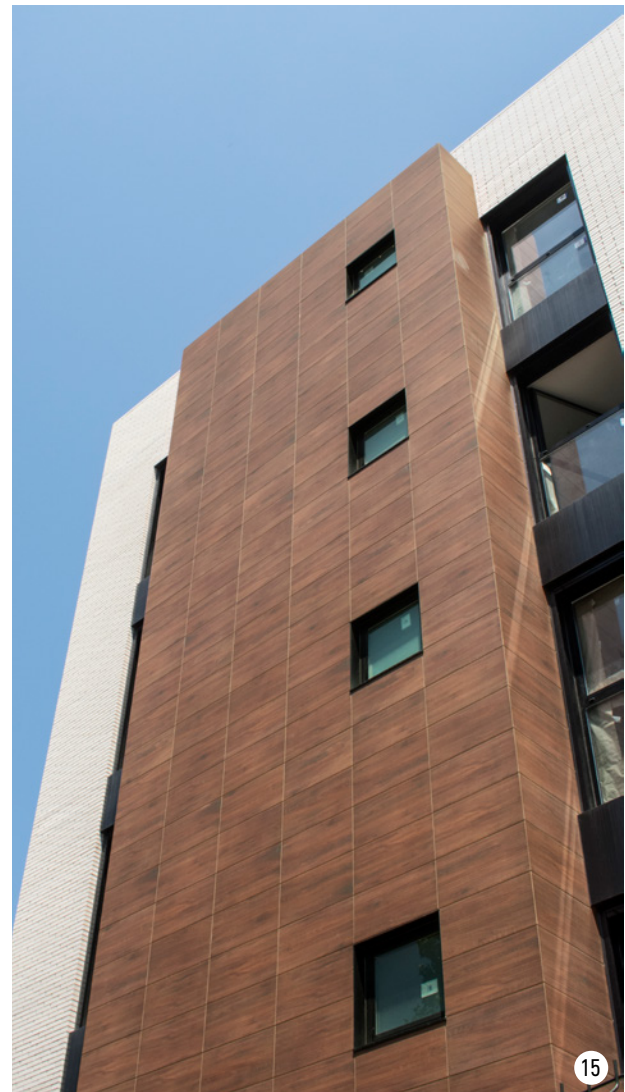
Modern mechanical attachment systems have totally revolutionised the fitting of ceramic onto frontages. For the support of the ceramic facing, Greco Gres presents two attachment systems that have been fully designed and developed at the Group's research centre. Both systems are very easy to install and the difference between them is that the attachment system may involve clamps, as in Greco Gres FVI Plus, or the use of horizontal guides, as in Greco Gres FVI Superplus.

El sistema de fachada ventilada Frontek está diseñado para el revestimiento exterior de fachada mediante fijación a una subestructura metálica por medio de anclajes. Este sistema no contribuye a la estabilidad del proyecto.

Los modernos sistemas mecánicos de fijación han revolucionado totalmente el concepto de colocación cerámica en fachadas. Para soportar el revestimiento cerámico, Greco Gres presenta dos sistemas de anclaje totalmente desarrollados y diseñados en el centro de investigación del Grupo. Ambos sistemas son muy sencillos de instalar y se diferencian en el mecanismo de agarre que puede ser por grapa, Greco Gres FVI Plus, o por guías horizontales, Greco Gres FVI Superplus.



- 13. Lloret de Mar-Spain. Detached House. Iceberg.
- 14. Abu Dhabi-United Arab Emirates. Compound Villas. Iceberg-W300.
- 15. Salou-Spain. Detached House. W304.



VENTILATED FACADE SYSTEM



FVI PLUS Attachment
with clamp



FVI SUPERPLUS Attachment
with horizontal guides



OMEGA
FVI PLUS Attachment with
clamp

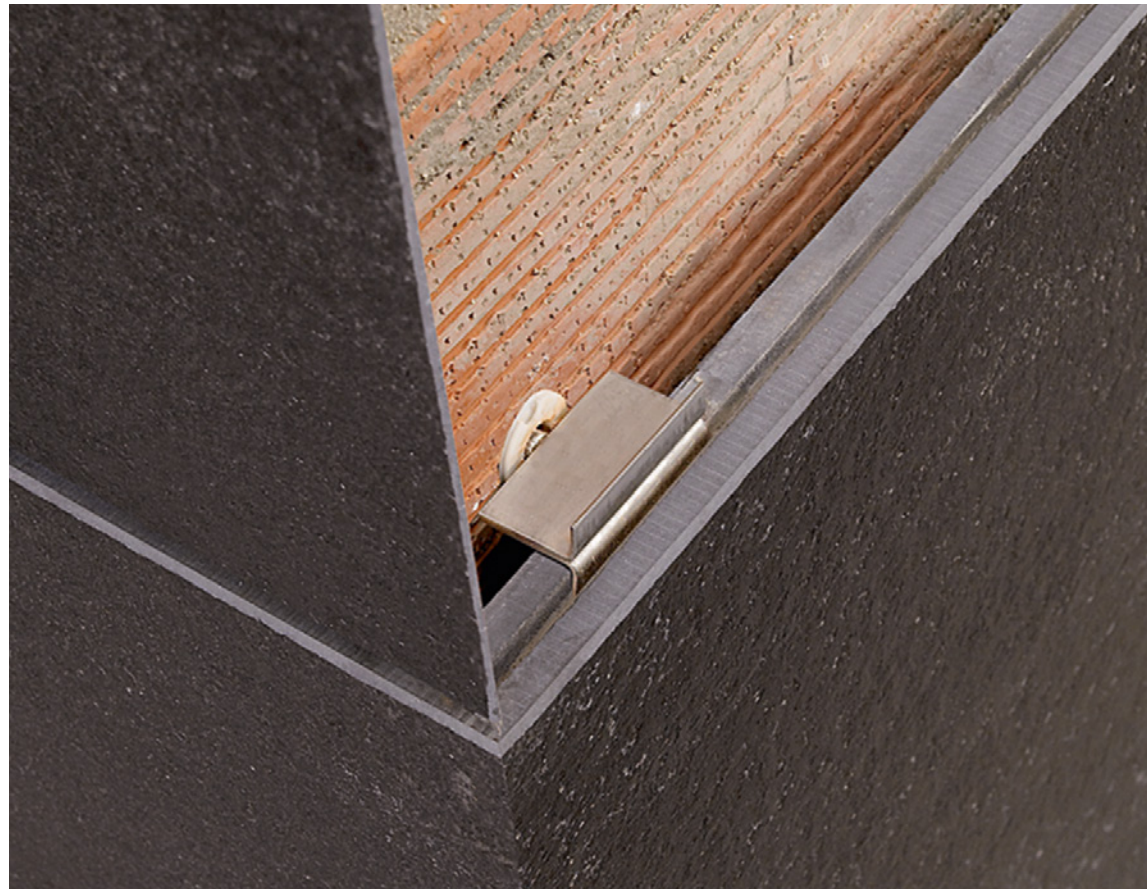


OMEGA
FVI SUPERPLUS Attachment with
horizontal guides



FACADES CLADDING

Facades
cladding
over brick



Facades
cladding
over concrete



FINISHES



Frontek capping

An innovative approach for those designs in which the uniformity of the materials is of the utmost importance.





Aluminium capping

A solution for modern designs in which the attractive combination of aluminium and glass, with large-sized Frontek ceramic pieces, is a guarantee of complete overall harmony.

Curtain wall capping

A design especially considered for the most avant-garde trends in today's architecture, where the simplicity of details highlights the purity of straight lines.



RESTORATION OF FACADES



- 16. Bilbao-Spain. House Block Restoration. Urban-Azabache.
- 17. Zarautz-Spain. Residential Building Restoration. Júpiter.
- 18. Vitoria-Spain. Apartment Building Restoration. Canyon.



19. Vigo-Spain. Housing Block Restoration. Iceberg-Azabache. 19b Before.

Using the ventilated facade System Frontek for remodeling facades offers interesting possibilities due to its excellent technical features and the growing role of large pieces, obtaining significant energy savings in restored buildings.

Double wall autoventilated ceramic pieces Frontek are especially recommended for restoring of facades because they protect the insulation from moisture. These solutions also ensure a greater soundproofing and the elimination of thermal bridges, reducing noise pollution between 10% and 20%.

The Frontek system endows stability to the structure and to the supporting wall, reducing the possibility of cracks, improving considerably the aesthetics of the facade due to its perfect finish. Its unique design ensures an optimal fixation to the structure without cuts or additional drilling that could weaken it.

La utilización del sistema de Fachada Ventilada Frontek para la remodelación de fachadas ofrece interesantes posibilidades por sus excelentes cualidades técnicas y el creciente protagonismo estético de las piezas de gran formato, consiguiendo un importante ahorro energético en los edificios rehabilitados.

Las piezas cerámicas de doble pared autoventilada Frontek están especialmente recomendadas para la rehabilitación de fachadas porque protegen el aislante de la humedad. Estas soluciones garantizan además un mayor aislamiento acústico y la eliminación de puentes térmicos, reduciendo la contaminación acústica entre un 10% y un 20%.

El sistema Frontek dota de estabilidad a la estructura y al muro soporte, reduciendo la posibilidad de riesgos de fisuras, mejorando considerablemente la estética de la fachada por su perfecto acabado final. Su exclusivo diseño garantiza una fijación óptima a la estructura sin necesidad de cortes o perforaciones adicionales que pudieran debilitar su resistencia.

PROJECTS WORLDWIDE



Since its foundation, Frontek has had a clear international vocation. While securing its presence throughout Spain, Frontek facades have crossed the borders of Europe, Asia, the Middle East, Africa and America, clothing all types of buildings, from large towers to emblematic hotels, hospitals and shopping centres in Spanish ceramic technology. Its wide range of finishes have been adapted to the peculiarities of the architecture of each country.

Desde su nacimiento, Frontek ha tenido una clara vocación internacional. Al tiempo que se afianzaba su presencia en todo el territorio español, las fachadas Frontek han cruzado las fronteras de Europa, Asia, Oriente Medio, África y América, vistiendo con cerámica tecnológica de diseño español todo tipo de edificios, desde grandes torres de viviendas a emblemáticos hoteles, hospitales y centros comerciales. Su amplia gama de acabados se adapta a las peculiaridades de la arquitectura de cada país.



20



21



22

23



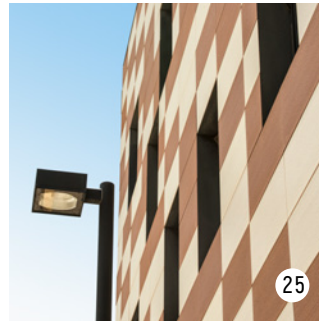
- 20. Oran-Algeria.
Conventions Centre
Mohamed Benahmed
and Le Meridien Hotel.
Sonora.
- 21. Moscow-Russia.
Spartak Stadium.
Iceberg.
- 22. Pohang-South Korea.
Se Myung Christ
Hospital. Canyon-
Londres.
- 23. Delhi-India.
Office Tower.
Iceberg-Azabache.



COLLECTIONS AND TRENDS



24. Tarragona-Spain.
Residential Building.
Iceberg-Azabache.



25. Igualada-Spain.
Industrial Building.
Iceberg-Canyon.

Frontek offers the widest range of pieces in different sizes and finishes to suit the latest trends in architecture.

The traditional catalog of textured and polished finishes is made up with unique recent collections in metallic finish and customized designs. Now new finishes in nature and wood, two of the most innovative ones, are added.

But our catalog does not end with these new finishes. We are on the catwalk of haute couture architecture and can provide exclusive designs that adapt to the most innovative needs and the most special environments: semiprecious stones, exclusively designed exotic woods, volcanic stones, etc...

Now you can let your imagination run riot. We have a design team that can help you to find a special finish. Our engineers will help you to design the finish you need to dress your facade.

Frontek ofrece la más amplia gama de piezas en diversos formatos y acabados que se adaptan a las últimas tendencias de la arquitectura.

El tradicional catálogo en acabados texturados y pulidos se completa con las exclusivas colecciones metálicas y los últimos diseños customizados, a los que ahora se suman los nuevos acabados en natural y en madera, dos de las tendencias más innovadoras para vestir la fachada del edificio.

Pero nuestro catálogo no se acaba con esta selección de piezas. Estamos en la pasarela de la alta costura de la arquitectura y podemos ofrecer exclusivos diseños que se adaptan a las necesidades más innovadoras y a los entornos más especiales: acabados en piedras semipreciosas, maderas exóticas de exclusivo diseño, piedras volcánicas, etc...

Ahora puede dejar volar su imaginación. Contamos con un equipo de diseño que puede ayudarle a encontrar un acabado especial con la garantía y calidad de la cerámica tecnológica de última generación. Nuestros profesionales le ayudarán a diseñar el acabado que desee para vestir su fachada.

TEXTURED



* Please enquire about the availability of other measurements. Pieces available up to 600x1800 mm / 23.62"x70.87" upon request.



ST108*

405 x 800 mm

15.95" x 31.5"



ST109*

405 x 800 mm

15.95" x 31.5"



ST110*

405 x 800 mm

15.95" x 31.5"



ST111*

405 x 800 mm

15.95" x 31.5"

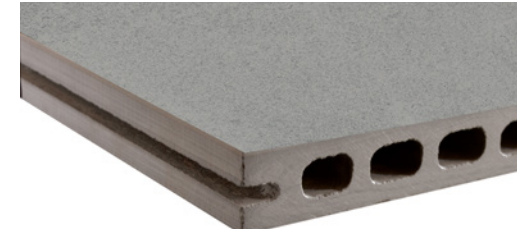
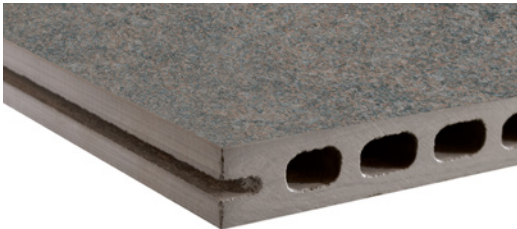
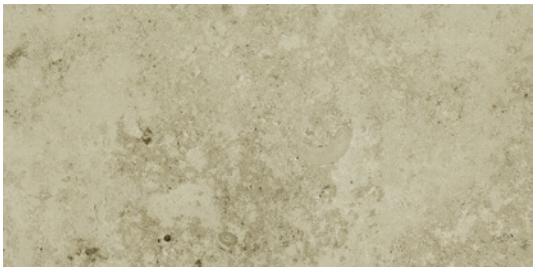


ST115*

405 x 800 mm

15.95" x 31.5"

TEXTURED



* Please enquire about the availability of other measurements. Pieces available up to 600x1800 mm / 23,62"x70,87" upon request.



ST123*

405 x 800 mm

15.95" x 31.5"



ST138*

405 x 800 mm

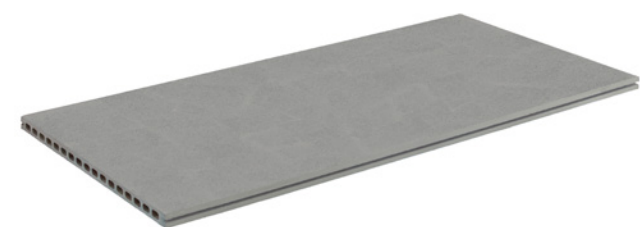
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ST182*

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15.95" x 31.5"



ST183*

405 x 800 mm

15.95" x 31.5"

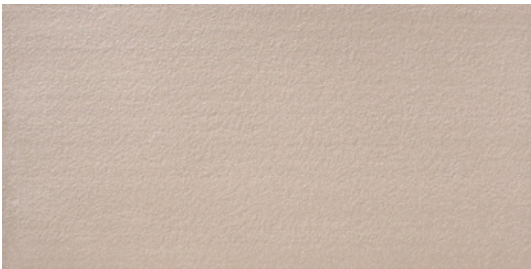
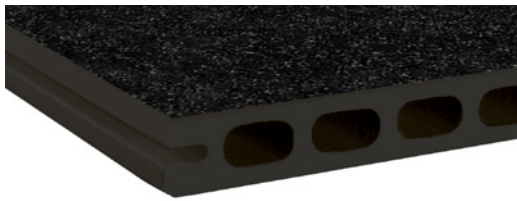
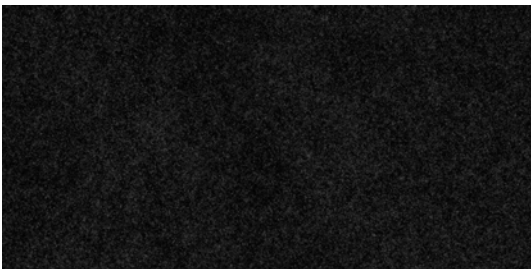


ST5001*

405 x 800 mm

15.95" x 31.5"

TEXTURED



* Please enquire about the availability of other measurements. Pieces available up to 600x1800 mm / 23,62"x70,87" upon request.



ST5006*

405 x 800 mm
15.95" x 31.5"



ST5009*

405 x 800 mm
15.95" x 31.5"



ICEBERG*

405 x 800 mm
15.95" x 31.5"



URBAN*

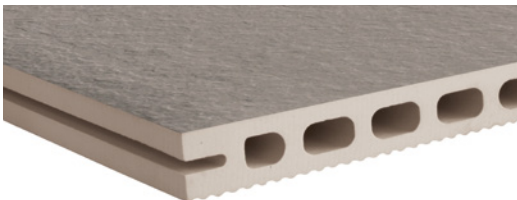
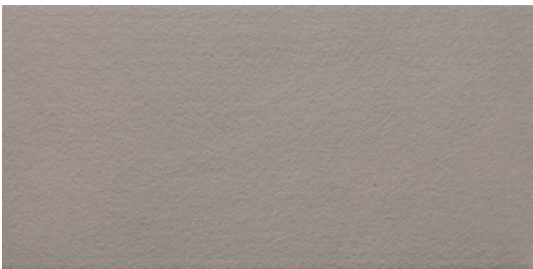
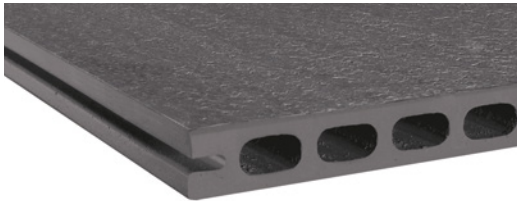
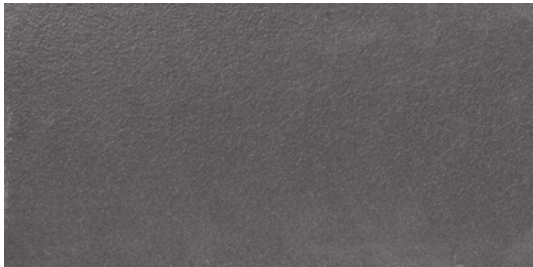
405 x 800 mm
15.95" x 31.5"



CANYON*

405 x 800 mm
15.95" x 31.5"

TEXTURED



* Please enquire about the availability of other measurements. Pieces available up to 600x1800 mm / 23,62"x70,87" upon request.



AZABACHE*

405 x 800 mm

15.95" x 31.5"



JÚPITER*

405 x 800 mm

15.95" x 31.5"



CERES*

405 x 800 mm

15.95" x 31.5"



LONDRES*

405 x 800 mm

15.95" x 31.5"

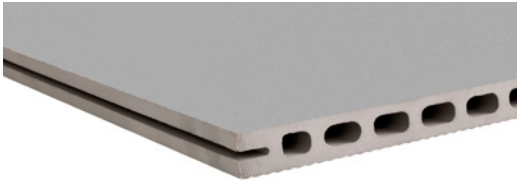
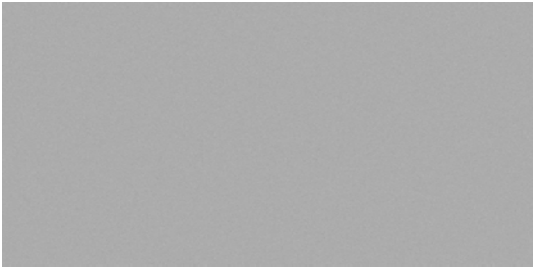
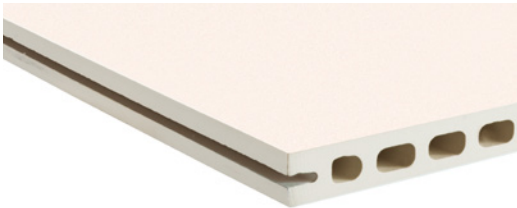
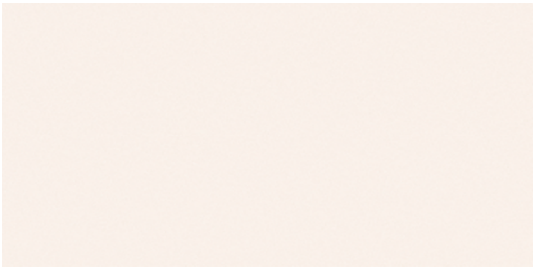
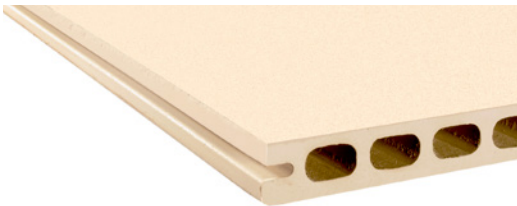
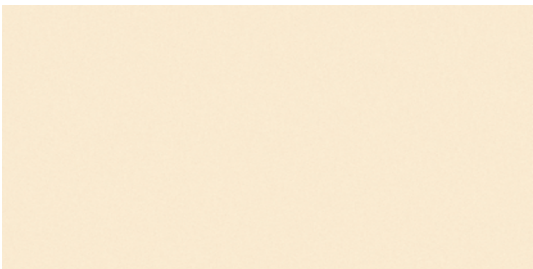
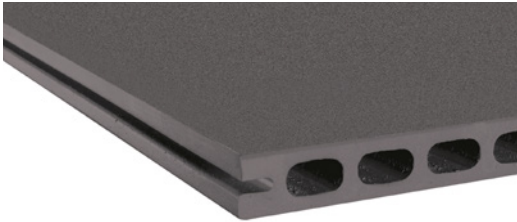
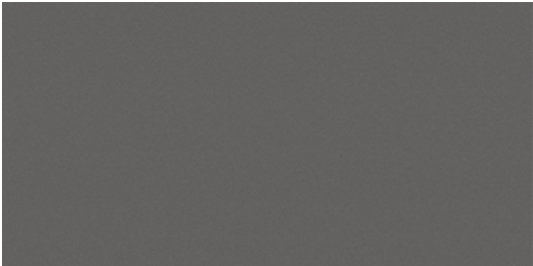


SONORA*

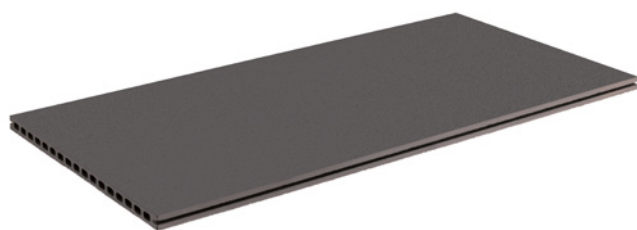
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15.95" x 31.5"

SOFT



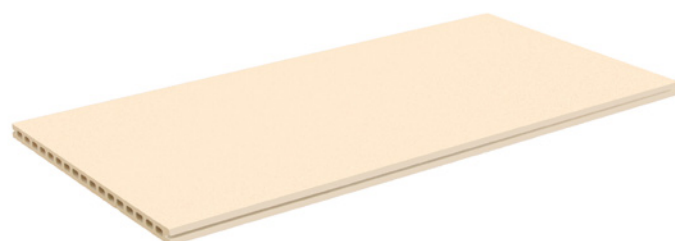
* Please enquire about the availability of other measurements. Pieces available up to 600x1800 mm / 23,62"x70,87" upon request.



SN2001*

405 x 800 mm

15.95" x 31.5"



SN2002*

405 x 800 mm

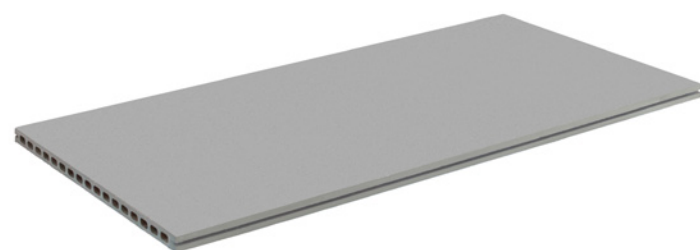
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SN2003*

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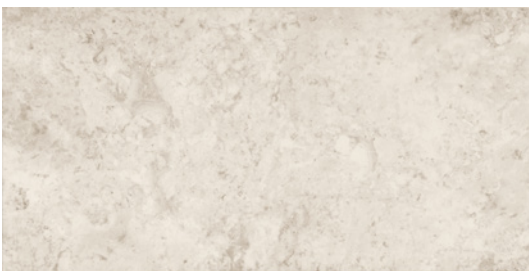


SN2004*

405 x 800 mm

15.95" x 31.5"

NATURAL



* Please enquire about the availability of other measurements. Pieces available up to 600x1800 mm / 23,62"x70,87" upon request.



S100*

405 x 800 mm

15.95" x 31.5"



S101*

405 x 800 mm

15.95" x 31.5"



S102*

405 x 800 mm

15.95" x 31.5"



S103*

405 x 800 mm

15.95" x 31.5"

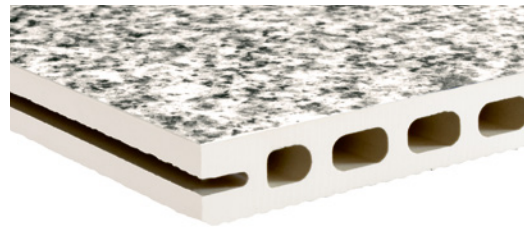
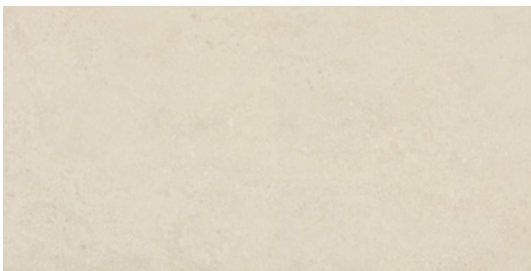


S104*

405 x 800 mm

15.95" x 31.5"

NATURAL



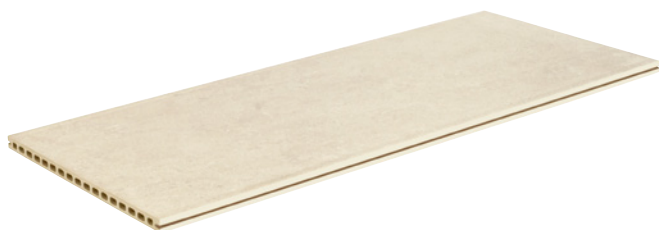
* Please enquire about the availability of other measurements. Pieces available up to 600x1800 mm / 23,62"x70,87" upon request.



S105*

405 x 800 mm

15.95" x 31.5"



S106*

405 x 800 mm

15.95" x 31.5"



S107*

405 x 800 mm

15.95" x 31.5"



S113*

405 x 800 mm

15.95" x 31.5"

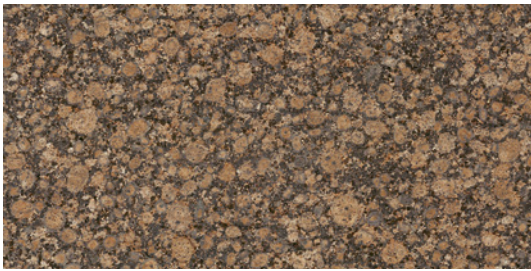


S117*

405 x 800 mm

15.95" x 31.5"

NATURAL



* Please enquire about the availability of other measurements. Pieces available up to 600x1800 mm / 23,62"x70,87" upon request.



S118*

405 x 800 mm
15.95" x 31.5"



S119*

405 x 800 mm
15.95" x 31.5"



S120*

405 x 800 mm
15.95" x 31.5"



S121*

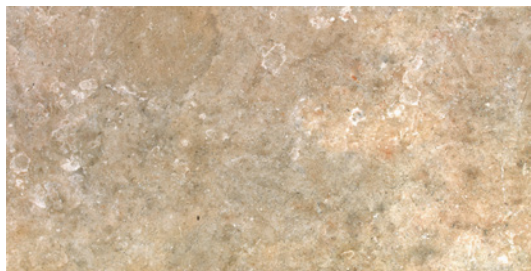
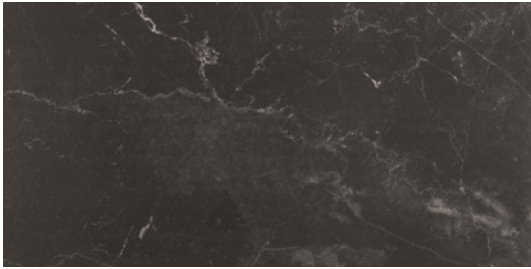
405 x 800 mm
15.95" x 31.5"



S122*

405 x 800 mm
15.95" x 31.5"

NATURAL



* Please enquire about the availability of other measurements. Pieces available up to 600x1800 mm / 23,62"x70,87" upon request.



S124*

405 x 800 mm

15.95" x 31.5"



S125*

405 x 800 mm

15.95" x 31.5"



S126*

405 x 800 mm

15.95" x 31.5"



S127*

405 x 800 mm

15.95" x 31.5"

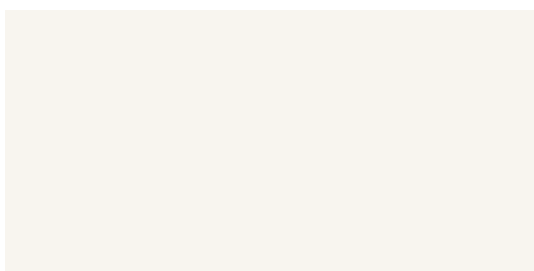
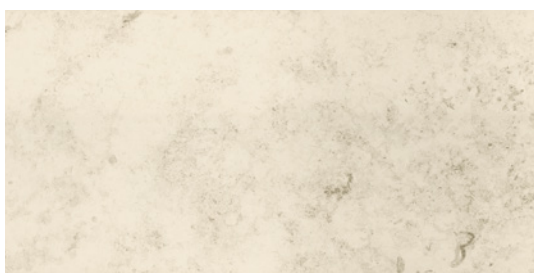


S128*

405 x 800 mm

15.95" x 31.5"

NATURAL



* Please enquire about the availability of other measurements. Pieces available up to 600x1800 mm / 23,62'x70,87" upon request.



S129*

405 x 800 mm
15.95" x 31.5"



S130*

405 x 800 mm
15.95" x 31.5"



S132*

405 x 800 mm
15.95" x 31.5"



S139*

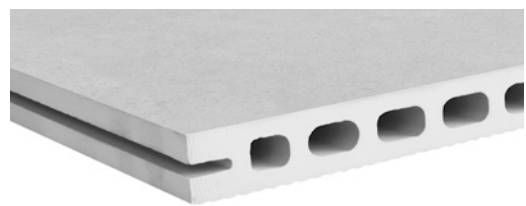
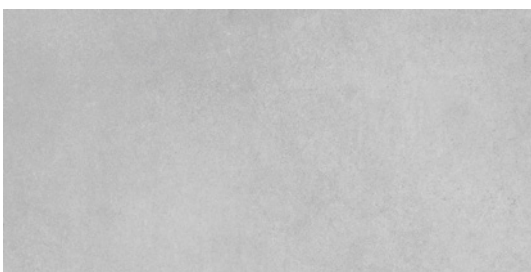
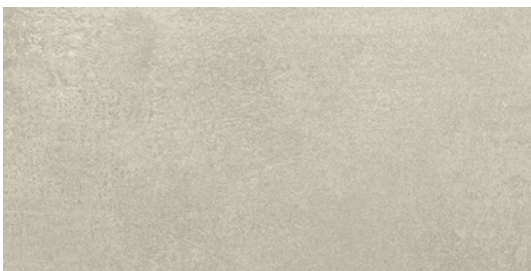
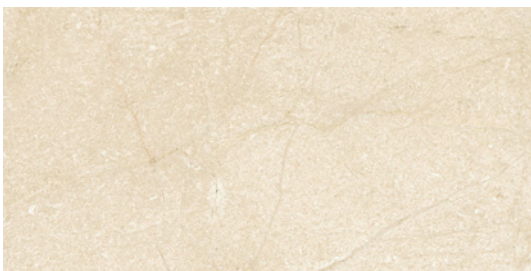
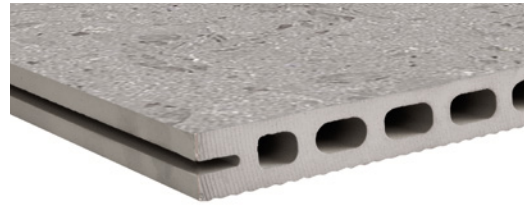
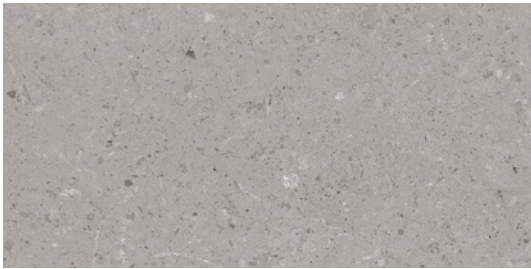
405 x 800 mm
15.95" x 31.5"



S140*

405 x 800 mm
15.95" x 31.5"

NATURAL



* Please enquire about the availability of other measurements. Pieces available up to 600x1800 mm / 23,62"x70,87" upon request.



S141*

405 x 800 mm

15.95" x 31.5"



S142*

405 x 800 mm

15.95" x 31.5"



S143*

405 x 800 mm

15.95" x 31.5"



S144*

405 x 800 mm

15.95" x 31.5"



S146*

405 x 800 mm

15.95" x 31.5"

NATURAL



* Please enquire about the availability of other measurements. Pieces available up to 600x1800 mm / 23,62"x70,87" upon request.



S151*

405 x 800 mm

15.95" x 31.5"



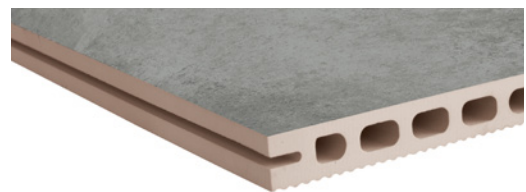
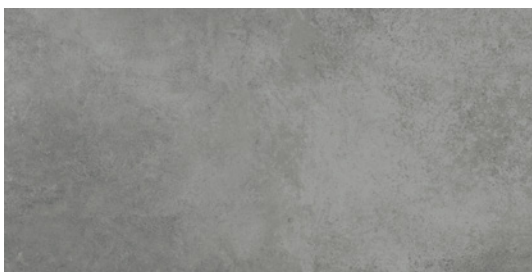
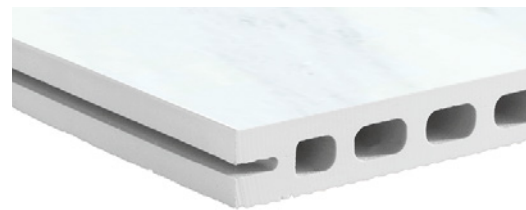
S152*

405 x 800 mm

15.95" x 31.5"



NATURAL



* Please enquire about the availability of other measurements. Pieces available up to 600x1800 mm / 23,62"x70,87" upon request.



S156*

405 x 800 mm

15.95" x 31.5"



S157*

405 x 800 mm

15.95" x 31.5"



S160*

405 x 800 mm

15.95" x 31.5"

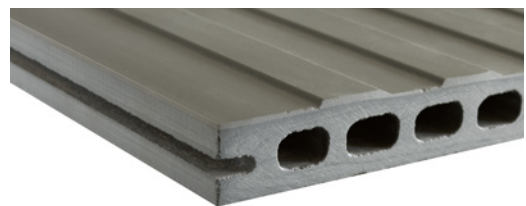
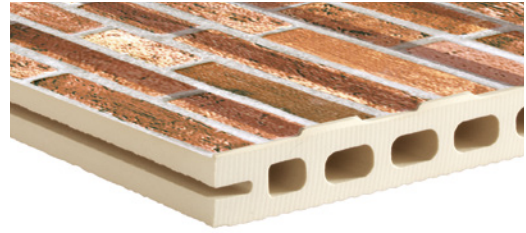
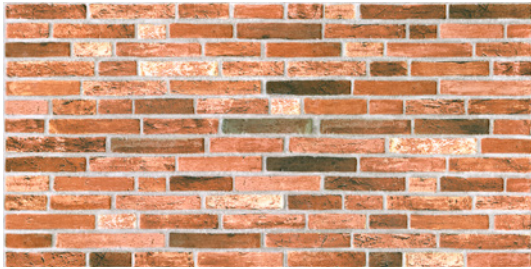


S161*

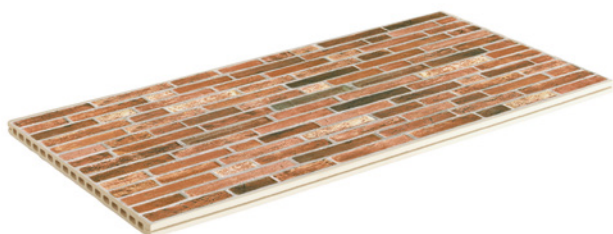
405 x 800 mm

15.95" x 31.5"

NATURAL



* Please enquire about the availability of other measurements. Pieces available up to 600x1800 mm / 23,62"x70,87" upon request.



SV112*

405 x 800 mm

15.95" x 31.5"



SV114*

405 x 800 mm

15.95" x 31.5"



SV153*

405 x 800 mm

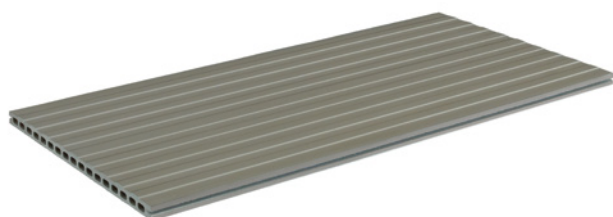
15.95" x 31.5"



SV6001*

405 x 800 mm

15.95" x 31.5"

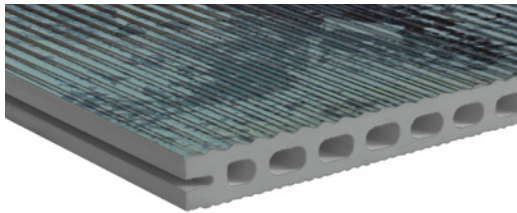
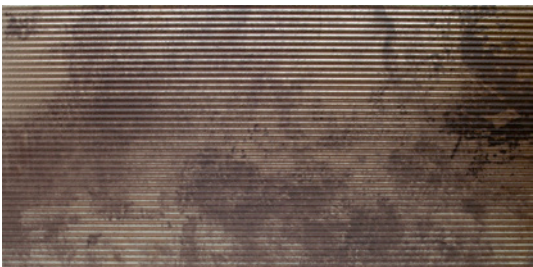
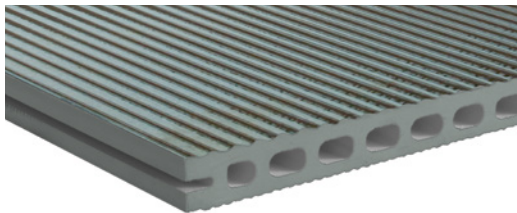
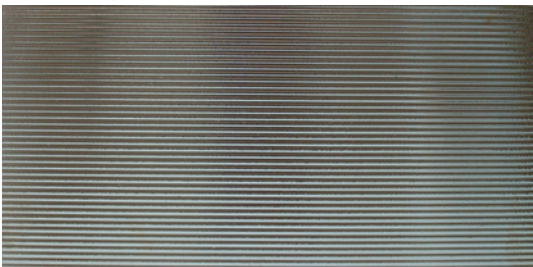
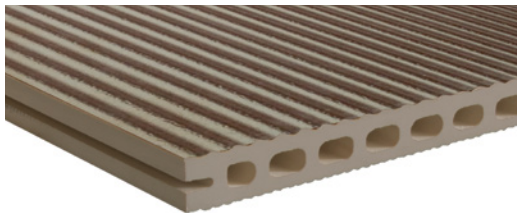
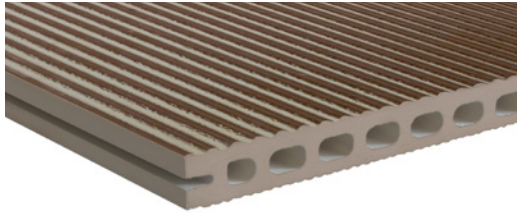
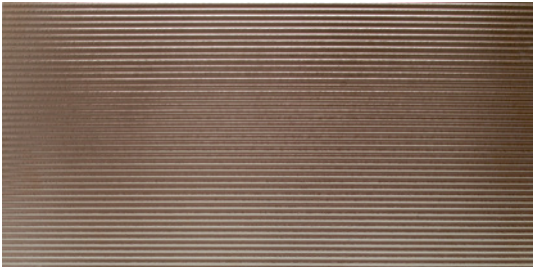


URANO*

405 x 800 mm

15.95" x 31.5"

METALLIC



* Please enquire about the availability of other measurements. Pieces available up to 600x1800 mm / 23,62"x70,87" upon request.



MT7001*

405 x 800 mm

15.95" x 31.5"



MT7002*

405 x 800 mm

15.95" x 31.5"



MT7003*

405 x 800 mm

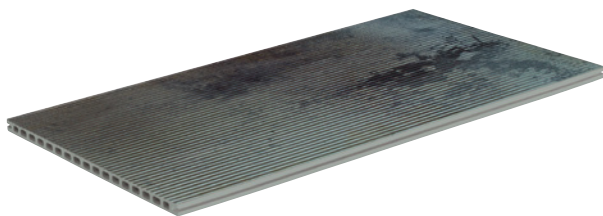
15.95" x 31.5"



MT7004*

405 x 800 mm

15.95" x 31.5"

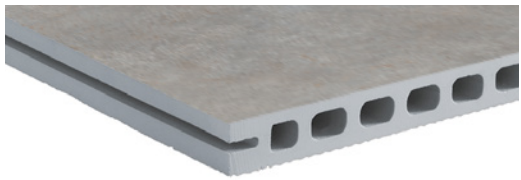
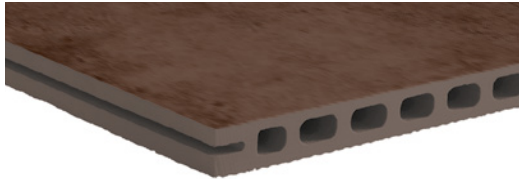


MT7005*

405 x 800 mm

15.95" x 31.5"

METALLIC



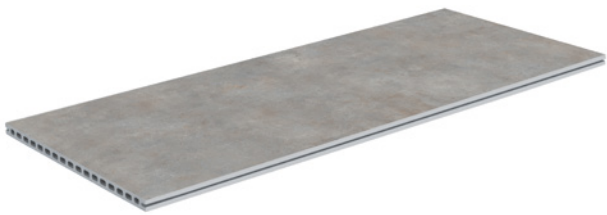
* Please enquire about the availability of other measurements. Pieces available up to 600x1800 mm / 23,62"x70,87" upon request.



M6001*

405 x 800 mm

15.95" x 31.5"



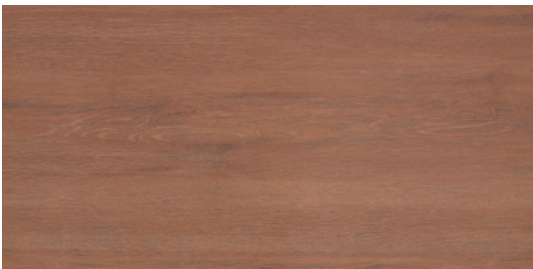
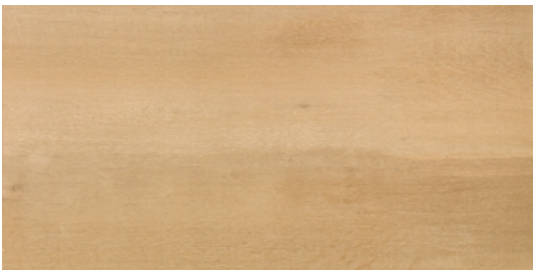
M6002*

405 x 800 mm

15.95" x 31.5"



WOOD



* Please enquire about the availability of other measurements. Pieces available up to 600x1800 mm / 23,62"x70,87" upon request.



W300*

405 x 800 mm

15.95" x 31.5"



W303*

405 x 800 mm

15.95" x 31.5"



W304*

405 x 800 mm

15.95" x 31.5"



W306*

405 x 800 mm

15.95" x 31.5"

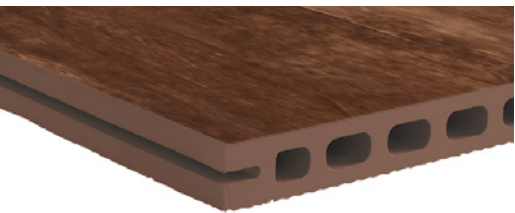
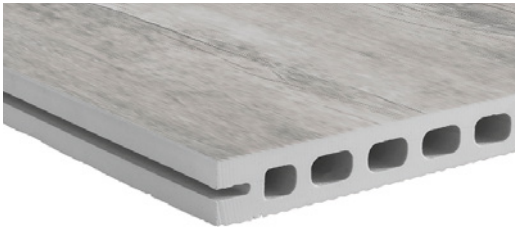


W307*

405 x 800 mm

15.95" x 31.5"

WOOD



* Please enquire about the availability of other measurements. Pieces available up to 600x1800 mm / 23,62"x70,87" upon request.



W309*

405 x 800 mm
15.95" x 31.5"



W310*

405 x 800 mm
15.95" x 31.5"



W311*

405 x 800 mm
15.95" x 31.5"



W312*

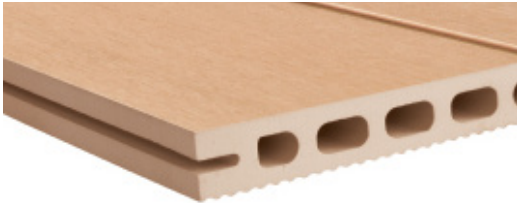
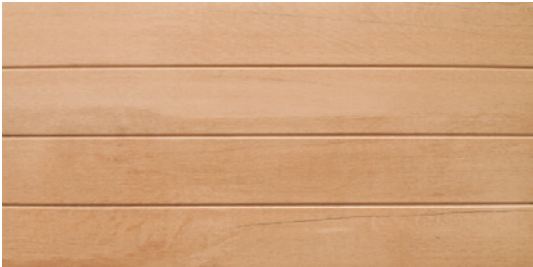
405 x 800 mm
15.95" x 31.5"



W313*

405 x 800 mm
15.95" x 31.5"

WOOD



* Please enquire about the availability of other measurements. Pieces available up to 600x1800 mm / 23,62"x70,87" upon request.



WT302*

405 x 800 mm
15.95" x 31.5"



WV301*

405 x 800 mm
15.95" x 31.5"

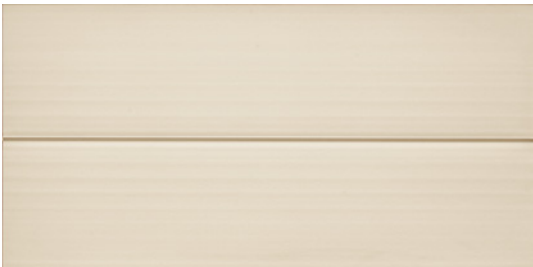
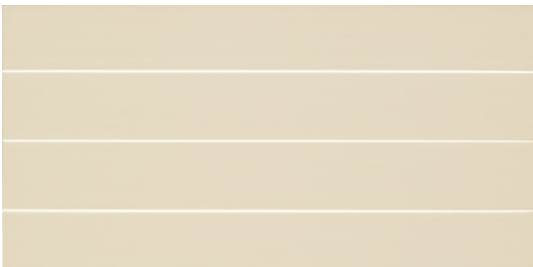
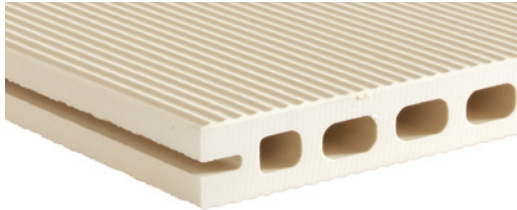
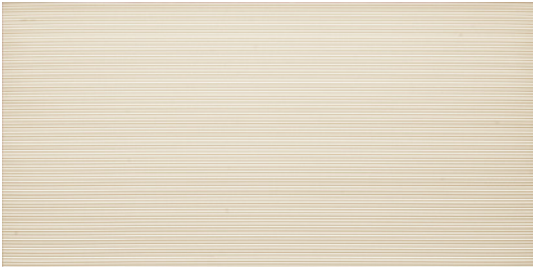


WV308*

405 x 800 mm
15.95" x 31.5"



VOLUME



* Please enquire about the availability of other measurements. Pieces available up to 600x1800 mm / 23,62'x70,87' upon request.



V1001**

405 x 800 mm
15.95" x 31.5"



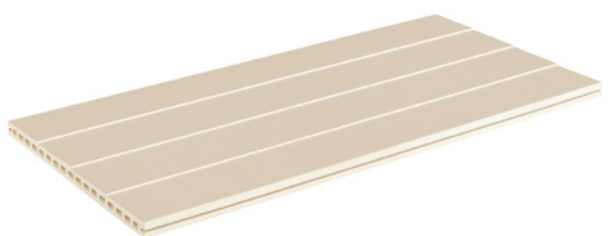
V1002**

405 x 800 mm
15.95" x 31.5"



V1003**

405 x 800 mm
15.95" x 31.5"



V1004**

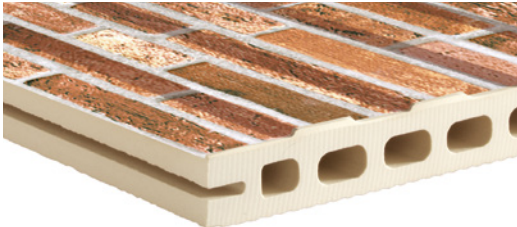
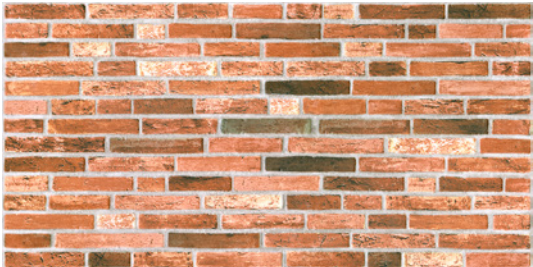
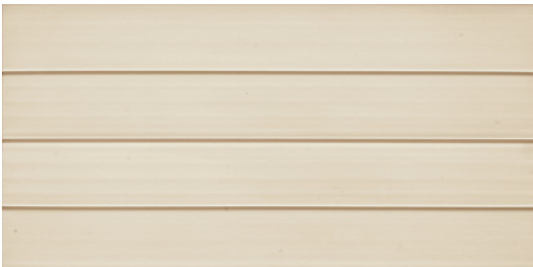
405 x 800 mm
15.95" x 31.5"



V1005**

405 x 800 mm
15.95" x 31.5"

VOLUME



* Please enquire about the availability of other measurements. Pieces available up to 600x1800 mm / 23,62"x70,87" upon request.



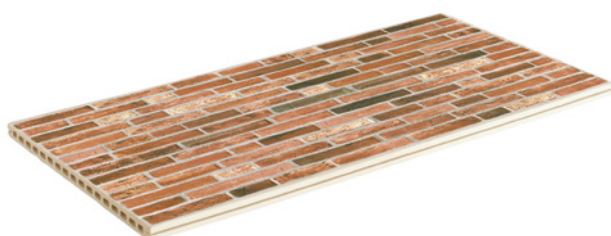
V1006**

405 x 800 mm
15.95" x 31.5"



V1007**

405 x 800 mm
15.95" x 31.5"



SV112*

405 x 800 mm
15.95" x 31.5"



SV153*

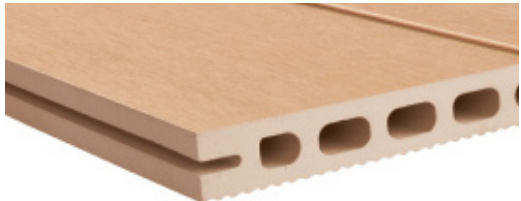
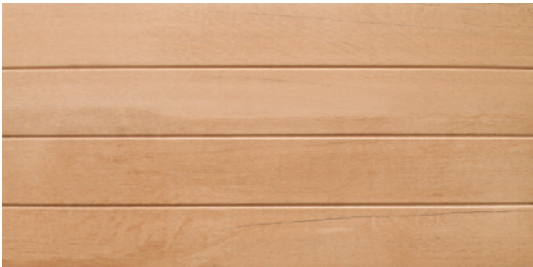
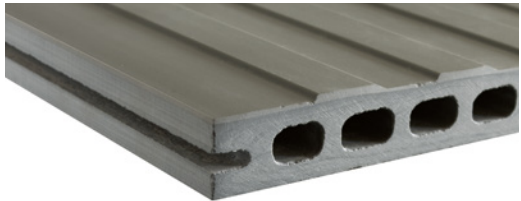
405 x 800 mm
15.95" x 31.5"



SV114*

405 x 800 mm
15.95" x 31.5"

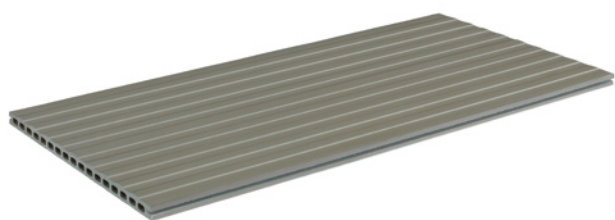
VOLUME



* Please enquire about the availability of other measurements. Pieces available up to 600x1800 mm / 23,62'x70,87' upon request.



SV6001*
40.5 x 80 cm



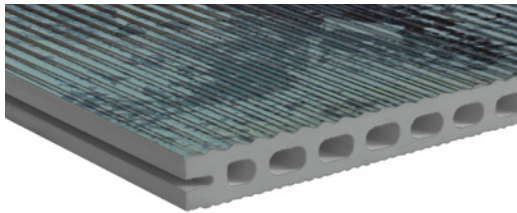
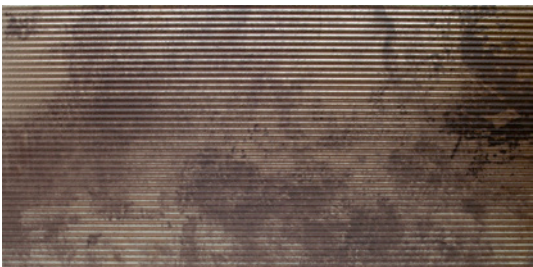
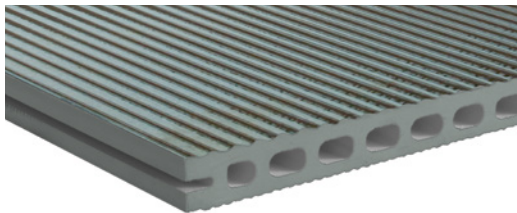
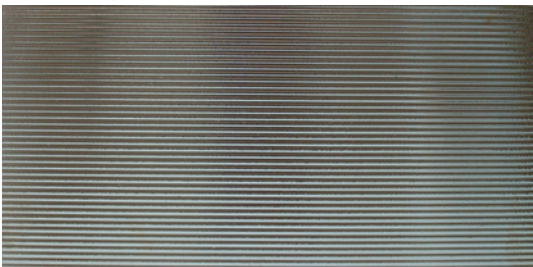
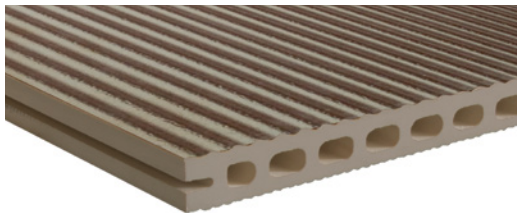
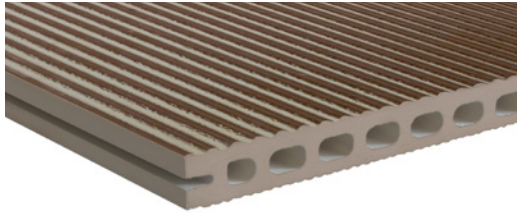
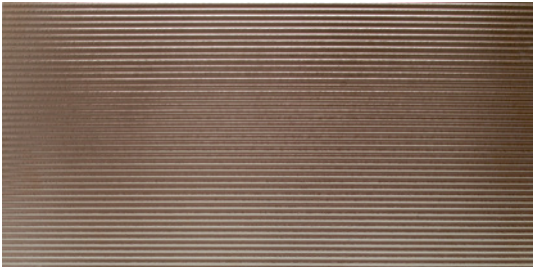
URANO*
40.5 x 80 cm



WV301*
40.5 x 80 cm



WV308*
40.5 x 80 cm



* Please enquire about the availability of other measurements. Pieces available up to 600x1800 mm / 23,62'x70,87' upon request.



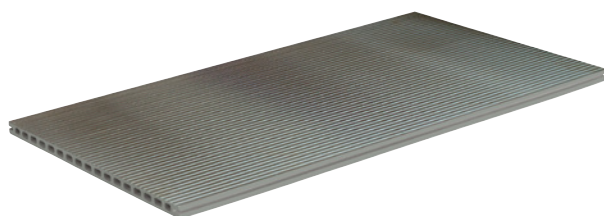
MT7001*

40.5 x 80 cm



MT7002*

40.5 x 80 cm



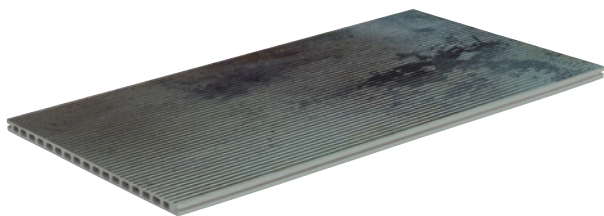
MT7003

40.5 x 80 cm



MT7004*

40.5 x 80 cm



MT7005*

40.5 x 80 cm



COLOUR COLOR



C08004*

405 x 800 mm

15.95" x 31.5"



*Possibility of manufacturing in different colors on demand. Consult.



XXL

XXL

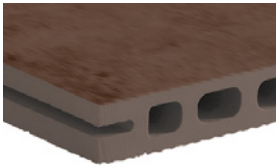
XXL



M6001*

1000 x 3000 mm

39.37" x 118.11"



* Please enquire about the availability of other measurements and models. Pieces available up to 1000x3000 mm / 39,37"x118,11" upon

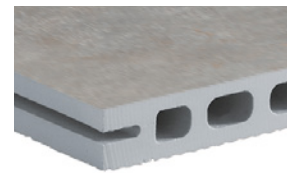
* Please enquire about the availability of other measurements and models. Pieces available up to 1000x3000 mm / 39,37"x118,11" upon



M6002*

1000 x 3000 mm

39.37" x 118.11"



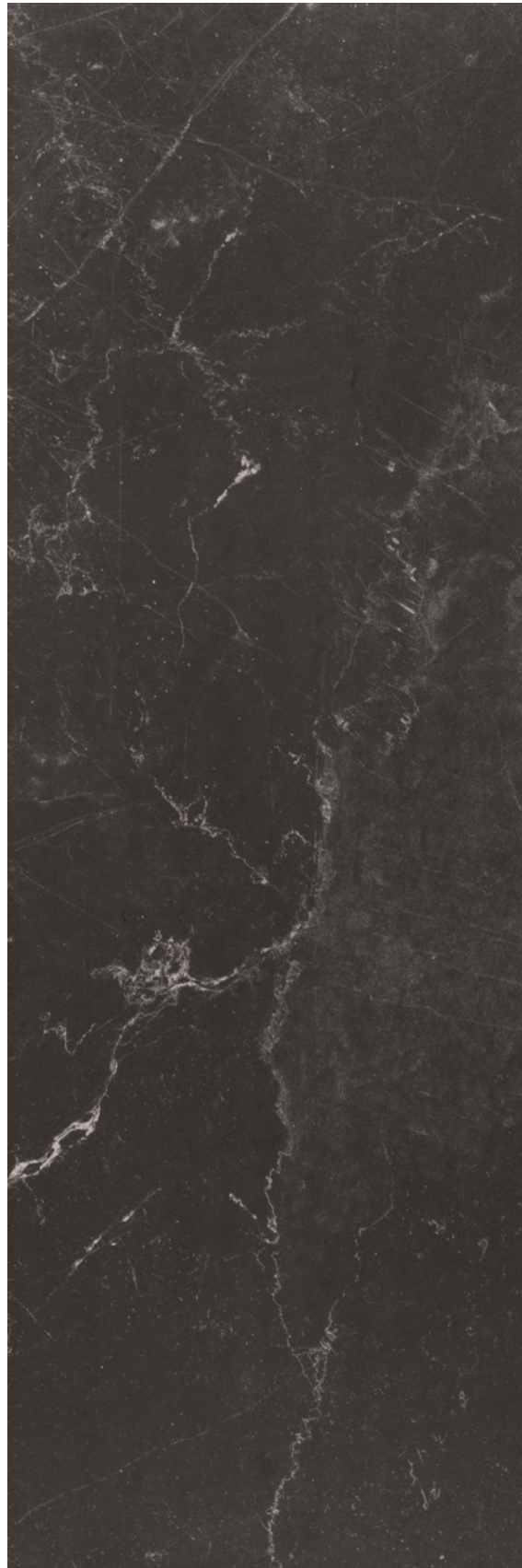
XXL



S124*

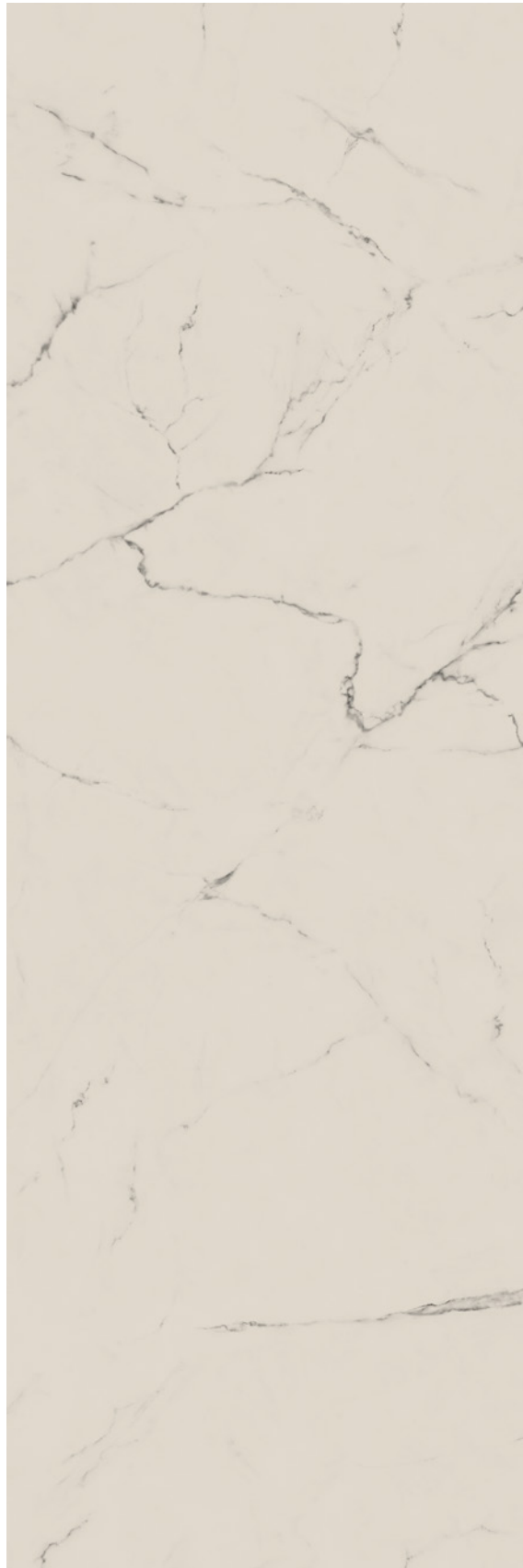
1000 x 3000 mm

39.37" x 118.11"



* Please enquire about the availability of other measurements and models. Pieces available up to 1000x3000 mm / 39,37"x118,11" upon

* Please enquire about the availability of other measurements and models. Pieces available up to 1000x3000 mm / 39,37"x118,11" upon



S125*

1000 x 3000 mm

39.37" x 118.11"



XXL



S143*

1000 x 3000 mm
39.37" x 118.11"



* Please enquire about the availability of other measurements and models. Pieces available up to 1000x3000 mm / 39,37"x118,11" upon

* Please enquire about the availability of other measurements and models. Pieces available up to 1000x3000 mm / 39,37"x118,11" upon



S144*

1000 x 3000 mm

39.37" x 118.11"



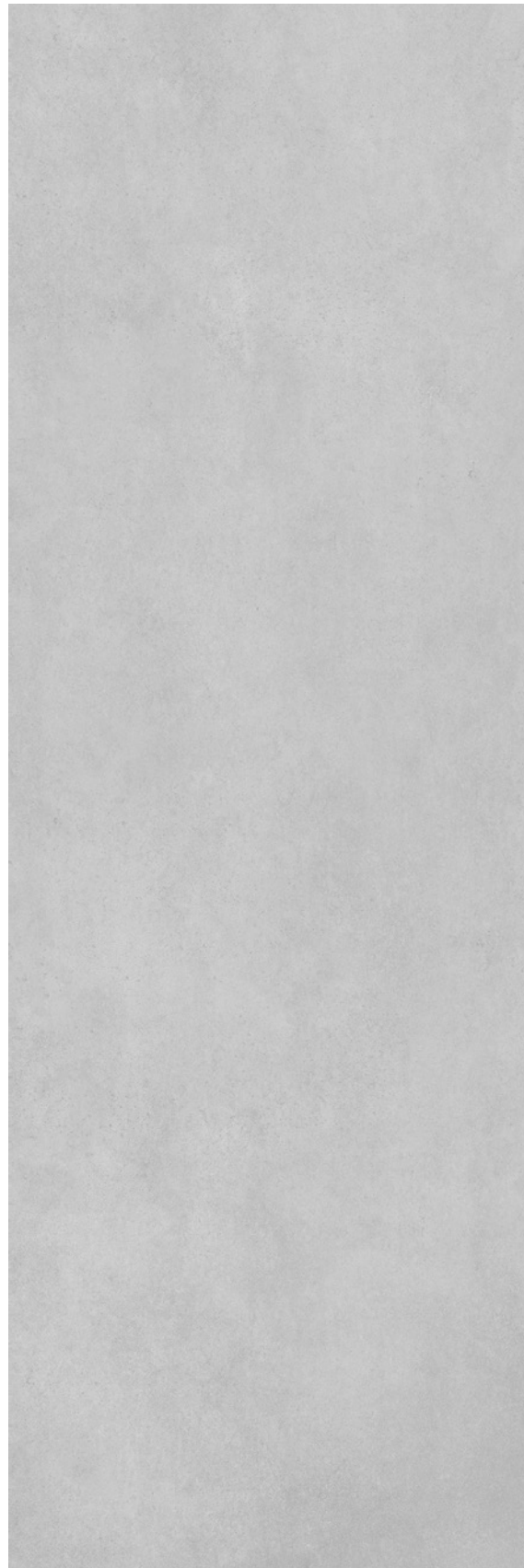
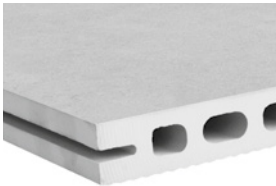
XXL



S146*

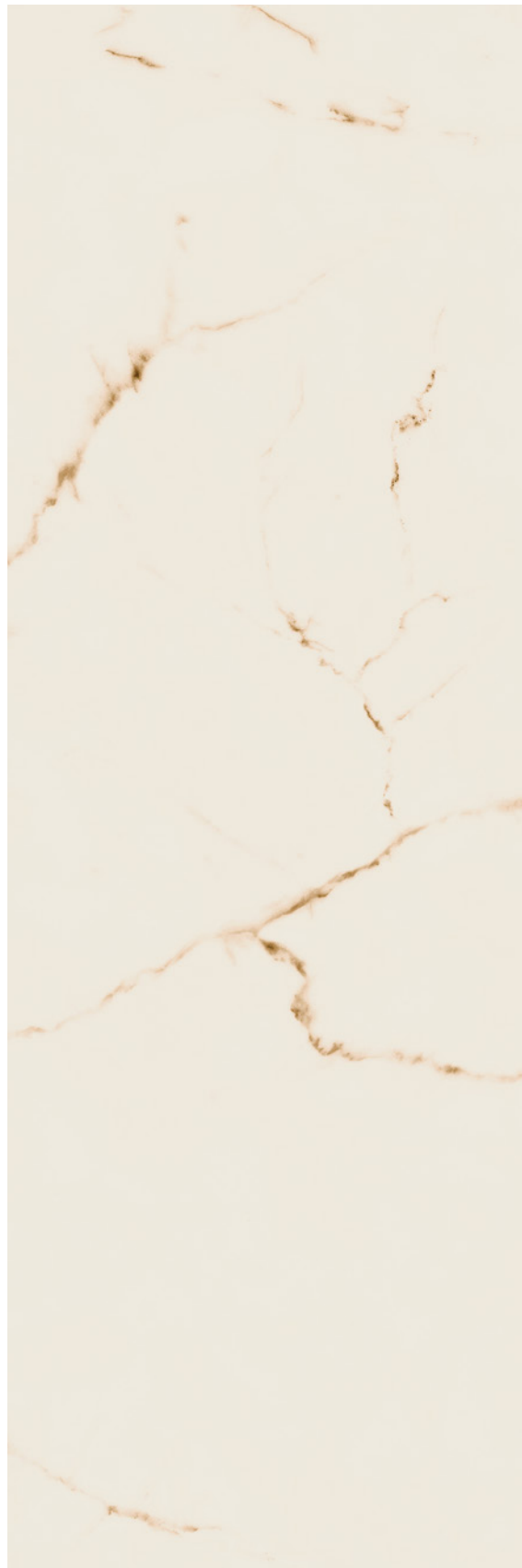
1000 x 3000 mm

39.37" x 118.11"



* Please enquire about the availability of other measurements and models. Pieces available up to 1000x3000 mm / 39,37"x118,11" upon

* Please enquire about the availability of other measurements and models. Pieces available up to 1000x3000 mm / 39,37"x118,11" upon



S156*

1000 x 3000 mm

39.37" x 118.11"



XXL



S157*

1000 x 3000 mm
39.37" x 118.11"



* Please enquire about the availability of other measurements and models. Pieces available up to 1000x3000 mm / 39,37"x118,11" upon

* Please enquire about the availability of other measurements and models. Pieces available up to 1000x3000 mm / 39,37"x118,11" upon



W307*

1000 x 3000 mm

39.37" x 118.11"



XXL



W309*

1000 x 3000 mm
39.37" x 118.11"



* Please enquire about the availability of other measurements and models. Pieces available up to 1000x3000 mm / 39,37"x118,11" upon

* Please enquire about the availability of other measurements and models. Pieces available up to 1000x3000 mm / 39,37"x118,11" upon



W313*

1000 x 3000 mm

39.37" x 118.11"



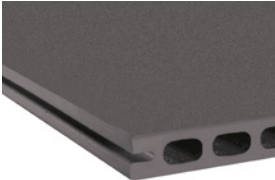
XXL



SN2001*

800 x 1600 mm
31.49" x 62.99"

* Please enquire about the availability of other measurements and models.
Pieces available up to 1000x3000 mm / 39,37"x118,11" upon request.

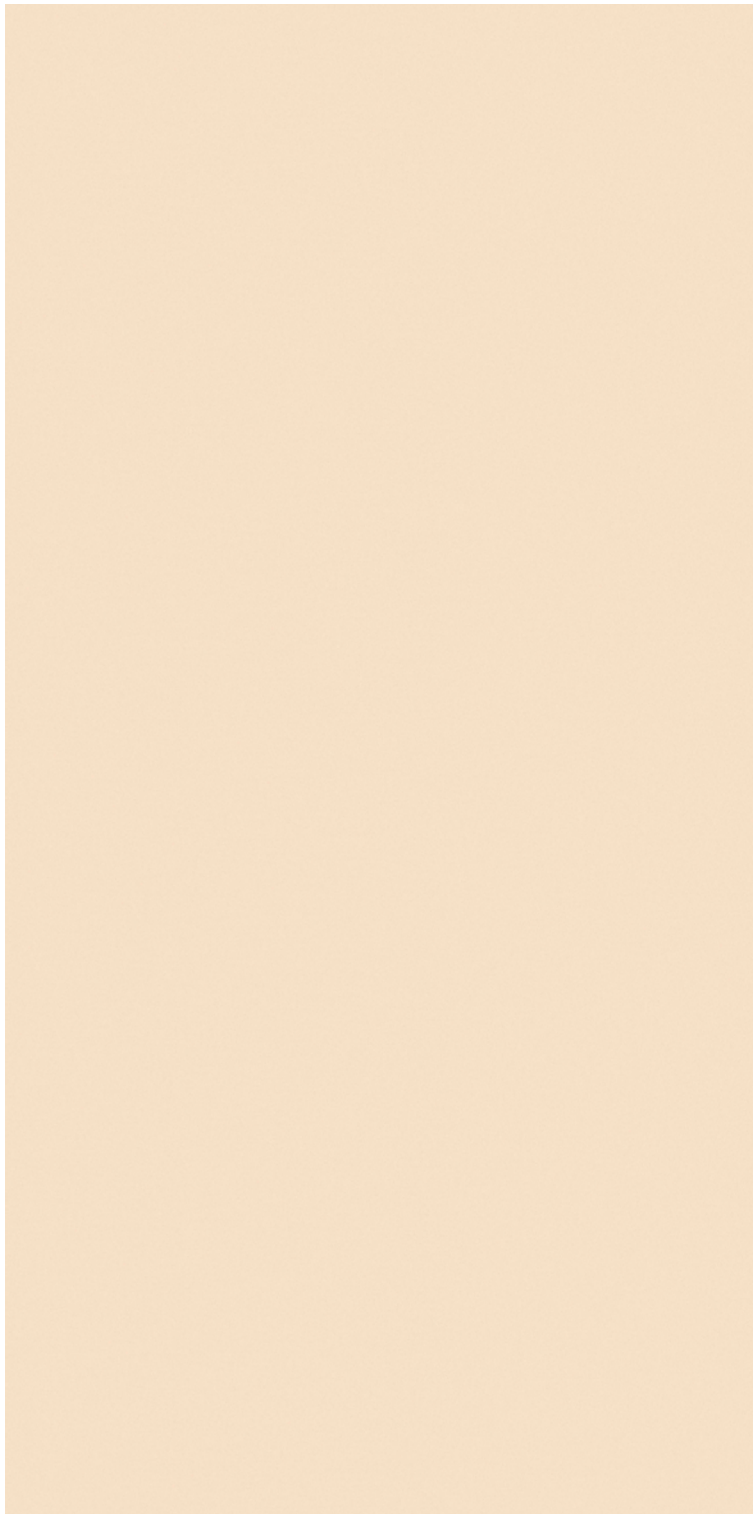
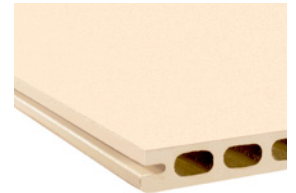


* Please enquire about the availability of other measurements and models.
Pieces available up to 1000x3000 mm / 39,37"x118,11" upon request.

SN2002*

800 x 1600 mm

31.49" x 62.99"



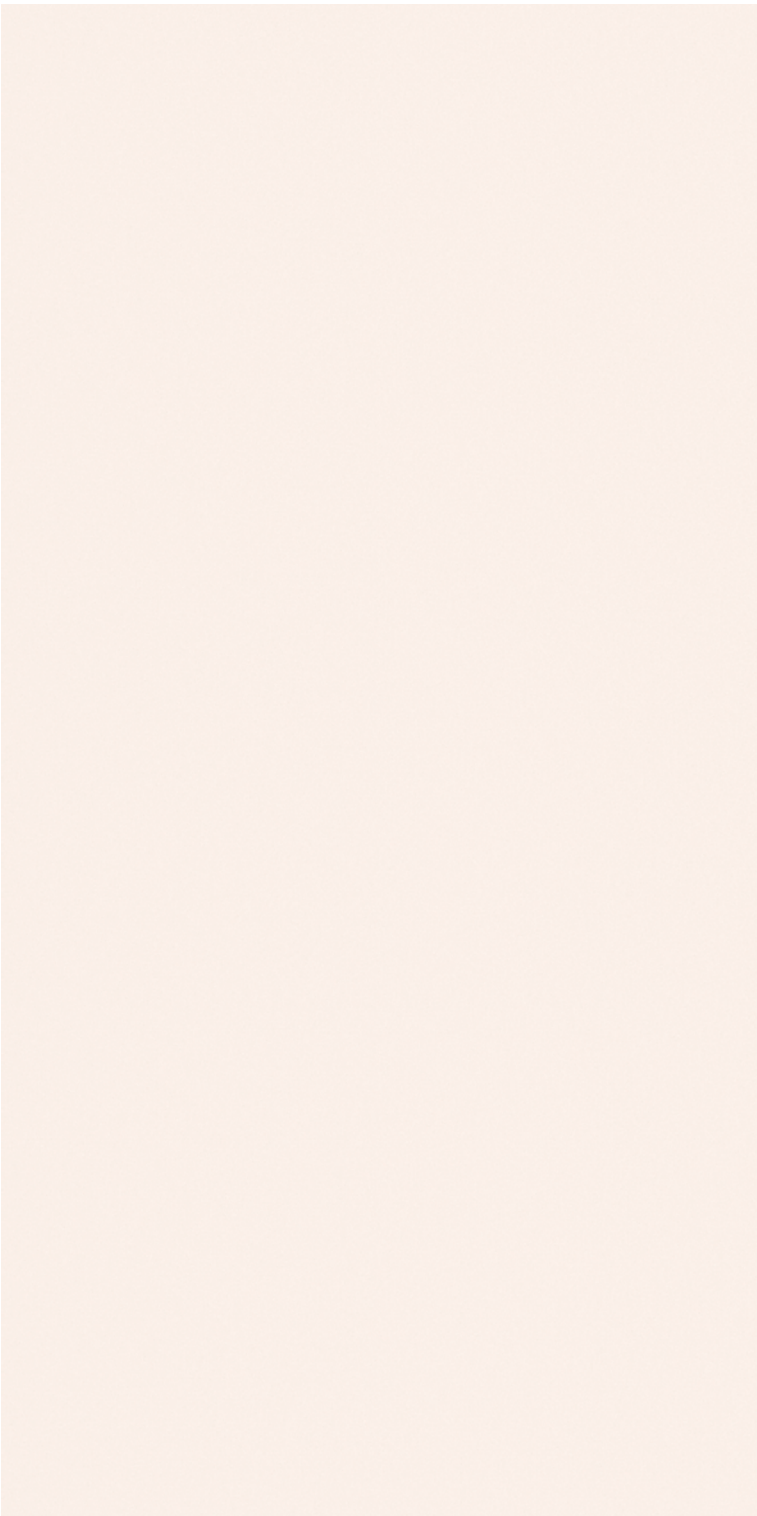
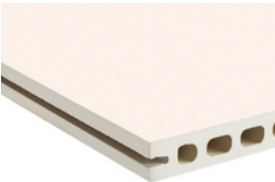
XXL



SN2003*

800 x 1600 mm
31.49" x 62.99"

* Please enquire about the availability of other measurements and models.
Pieces available up to 1000x3000 mm / 39,37"x118,11" upon request.

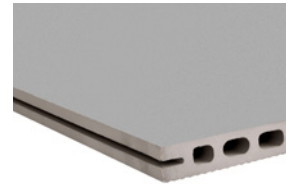


* Please enquire about the availability of other measurements and models.
Pieces available up to 1000x3000 mm / 39,37"x118,11" upon request.

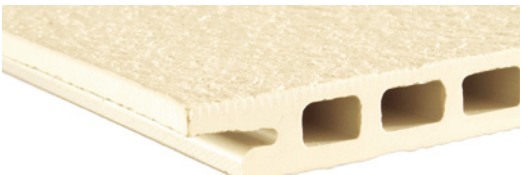
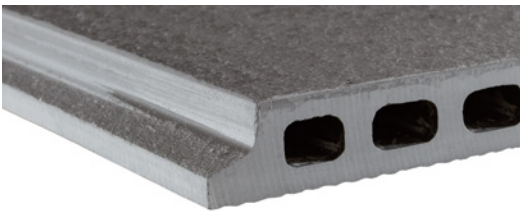
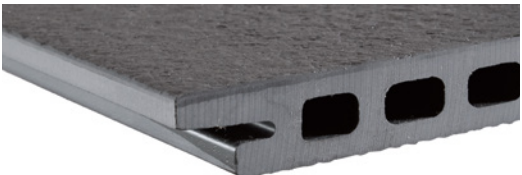
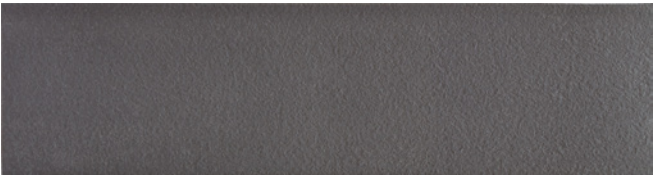
SN2004*

800 x 1600 mm

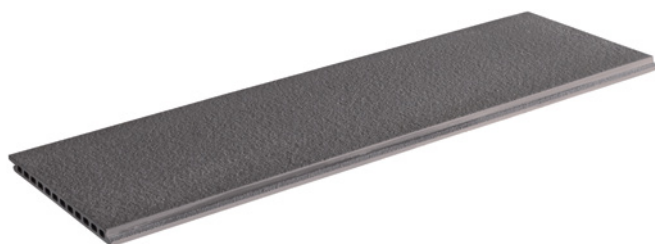
31.49" x 62.99"



OMEGA



* Please enquire about the availability of other measurements. Pieces available up to 600x1800 mm / 23,62"x70,87" upon request.



AZABACHE Omega

307 x 1000 mm

12.09" x 39.37"



CANYON Omega

307 x 1000 mm

12.09" x 39.37"



ICEBERG Omega

307 x 1000 mm

12.09" x 39.37"

LATTICES COLLECTION



Frontek expands its range with the launch of ALFA Lamas, an exclusive piece for lattices, compatible with any system of the ventilated facade Frontek and the traditional facade cladding system.

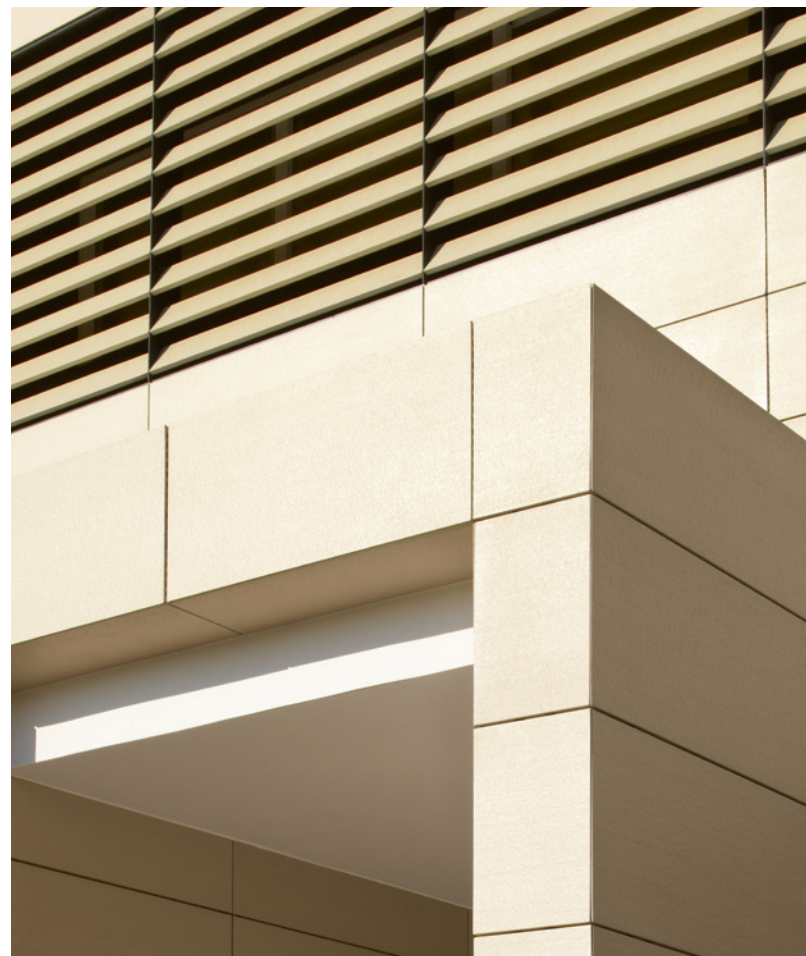
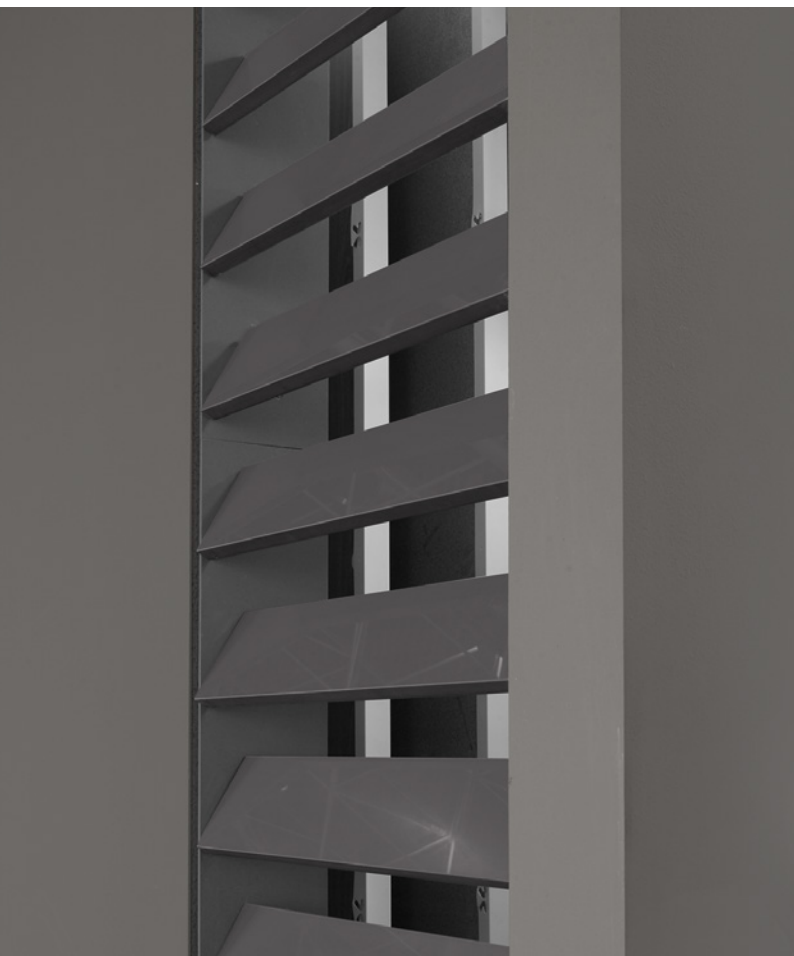
An exquisite piece in Venice slat style available in different sizes and any finish of the collection.

The new collection for lattices Frontek offers a solution for improving the energy efficiency of the facade, enhancing natural ventilation. A hightech product that can be placed in fixed and mobile systems.

Frontek amplía su gama de soluciones con el lanzamiento de ALFA Lamas, una exclusiva pieza para la realización de celosías, compatible con cualquiera de los sistemas de fachada ventilada Frontek y con el tradicional sistema de aplacado de fachadas.

Una pieza de exquisito diseño en forma de lama veneciana disponible en diversas medidas y en cualquiera de los acabados de la colección.

La nueva colección para celosías Frontek ofrece una solución para mejorar la eficiencia energética de la fachada, favoreciendo la ventilación natural. Un producto de alta tecnología que se puede colocar en sistemas fijos y móviles.





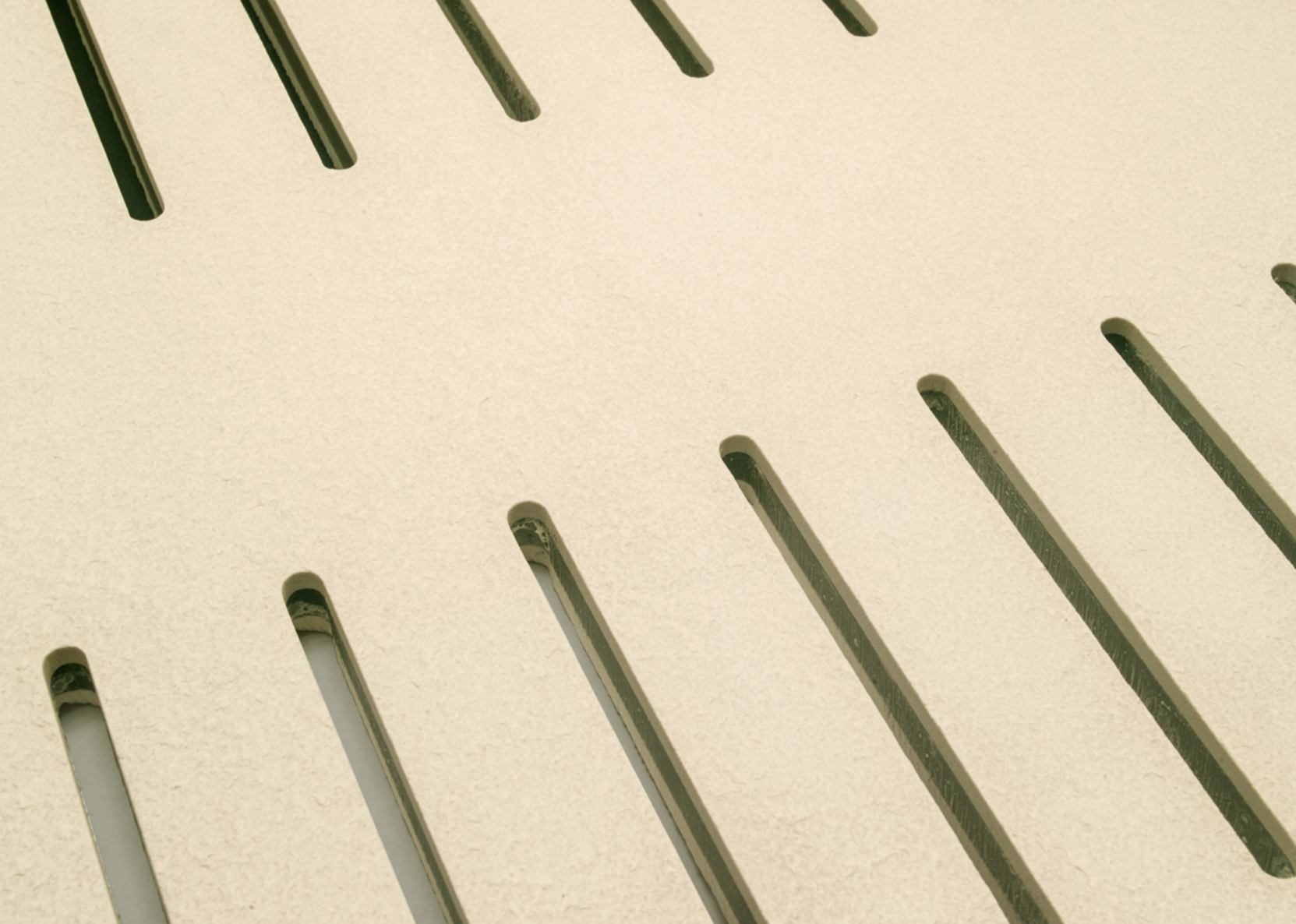
ALFA Lamas

115 x 800 mm
4.53" x 31.5"



ALFA Lamas

200 x 1000 mm
7.87" x 39.37"

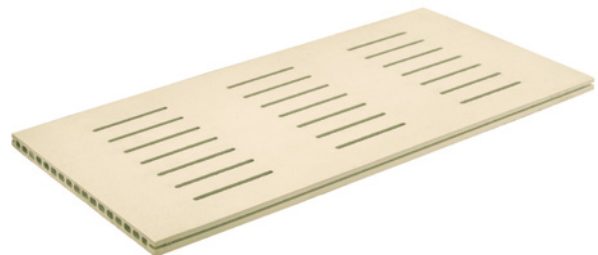
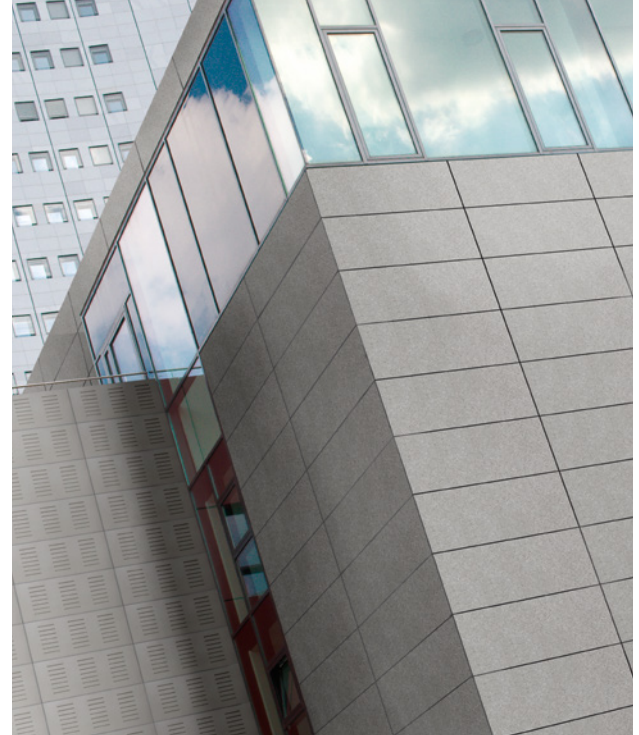


We present a new piece of grid that it is added to the wide range of solutions offered by Frontek for the coating of last generation façades.

A new piece of extruded ceramics specially designed for solutions in spaces where it is necessary to hide and protect, also allowing the circulation of air.

Presentamos una nueva pieza de rejilla que se suma a la extensa gama de soluciones que ofrece Frontek para el revestimiento de fachadas de última generación.

Una nueva pieza de cerámica por extrusión especialmente diseñada para soluciones en espacios donde sea necesario ocultar y proteger, permitiendo también la circulación de aire.



* Check out other measures and designs. Available in frontek's full range.

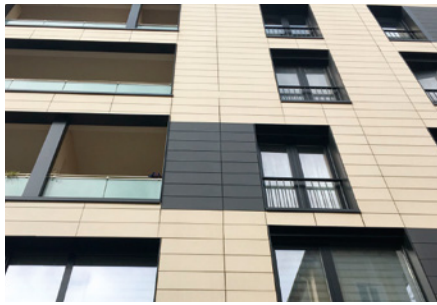
REJILLA Grid

405 x 800 mm

15.95" x 31.5"

QUALITY CONTROL

Front-Tek
EXTRUDED PORCELAIN



VENATTO DESING S.L. has a plant production control system based on the specifications of European Regulation No.305/2011. In accordance with its guidelines, compliance is upheld with the specific procedures for registers and controls undertaken involving the following:

Raw materials:

- Control of raw materials
- Control of extrusion
- Control of milling
- Control of drying and firing

End product:

- Inspection and testing of panels

All inspection and testing controls are regularly included in registers as per the Plant Production Control Manual (CPF). End product controls are conducted as per Standard UNE EN 14411.

The reliability of our Frontek system is backed up by the Technical Approval Document (DIT) awarded by the "Eduardo Torroja" Institute to certify the favourable results obtained in its laboratories, and also by the good results presented by the Frontek ventilated façade in the various projects in which it has been installed.

VENATTO DESING S.L. dispone de un sistema de control de producción en fábrica basado en las especificaciones del Reglamento Europeo nº 305/2011. Conforme a sus directrices se cumplen los procedimientos específicos de registros y controles llevados a cabo sobre:

Materias primas:

- Control de materias primas
- Control de extrusión
- Control de molienda
- Control de secado y cocción

Producto acabado:

- Inspección y ensayo sobre placas

Todos los controles de inspección y ensayo son periódicamente recogidos en registros según determina el Manual del Control de Producción en Fábrica (CPF). Los controles de producto acabado se realizan según determina la norma UNE EN 14411.

La fiabilidad del sistema Frontek está avalada por los buenos resultados obtenidos en múltiples proyectos donde se ha instalado con total eficacia. Greco Gres Internacional está en posesión del Documento de Idoneidad Técnica (D.I.T.), que concede el Instituto "Eduardo Torroja" a cada uno de los sistemas.



COMMITTED TO QUALITY AND SUSTAINABLE DEVELOPMENT

Frontek holds the most prestigious certificates that certify the quality of our production processes and endorse our commitment to sustainability.

Our commitment is not based solely on compliance with current regulations. We have a commitment to society, focussed on creating a product that helps protect the environment, makes a rational use of energy and ensures people's safety.

We care about people and this is why we look after the environment and develop products that improve the comfort and safety of the workers who make these products, the employees who build the buildings and also the people who will live in these homes.

We want to leave behind a better world for future generations. We invest our resources into the ongoing improvement of our production processes and into research for the development of new products. We listen to our customers and pioneer new systems that help us improve the quality endorsed by the most discerning international certificates.

We take our customers' trust very seriously. We spare no efforts on accrediting the quality and safety of our products.

COMPROMISO CON LA CALIDAD Y EL DESARROLLO SOSTENIBLE

Frontek cuenta con los más prestigiosos certificados que acreditan la calidad de nuestros procesos productivos y avalan nuestro compromiso con la sostenibilidad.

Nuestro compromiso no solo se fundamenta en el respeto de la normativa vigente. Afrontamos un compromiso con la sociedad, basado en la realización de un producto que contribuya a proteger el medio ambiente, haciendo un uso racional de la energía y garantizando la seguridad de las personas.

Nos preocupamos de las personas y por eso cuidamos el medio ambiente y desarrollamos productos que mejoren el confort y la seguridad de los trabajadores que fabrican nuestros productos, los empleados que construyen los edificios y también de las personas que van a habitar esos edificios.

Queremos dejar un mundo mejor a las futuras generaciones. Invertimos nuestros recursos en una mejora continua de nuestros procesos productivos y en la investigación para el desarrollo de nuevos productos. Escuchando a nuestros clientes y liderando nuevos sistemas que nos ayuden a mejorar la calidad que viene avalada por los más exigentes certificados internacionales.

Nos tomamos muy en serio la confianza que nuestros clientes han depositado en nuestros productos. No escatimamos esfuerzos para acreditar la calidad y seguridad de nuestros productos.

ICC ES
EVALUATION SERVICE

ICC-ES Evaluation Report **ESR-4274**
Issued May 2020
This report is subject to renewal May 2021.

www.icc-es.org | (800) 423-6587 | (562) 699-0543 A Subsidiary of the International Code Council®

DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION
Section: 07 42 00—Wall Panels
Section: 07 42 63—Fabricated Wall Panel Assemblies
Section: 07 44 23—Ceramic Tile Faced Panels

REPORT HOLDER:
GRUPO GRECO GRES INTERNACIONAL, S.L.

EVALUATION SUBJECT:
FRONTEK PLUS AND FRONTEK OMEGA PLUS WALL FAÇADE SYSTEMS

1.0 EVALUATION SCOPE
Compliance with the following codes:
 ■ 2018 and 2015 International Building Code® (IBC)
 ■ 2018 and 2015 International Residential Code® (IRC)
 For evaluation for compliance with codes adopted by Los Angeles Department of Building and Safety (LADBS), see [ESR-4274 LABC and LARC Supplement](#)

Property evaluated:
 ■ Wind resistance
 ■ Types I, II, III and IV construction
 ■ Surface burning characteristics
 ■ Weather Resistance
 ■ Interior finish

2.0 USES
Frontek Plus and Frontek Omega Plus ventilated wall façade systems are intended for use as nonload-bearing exterior wall façades on nonfire-resistant-rated buildings of any type of construction. The system may be used as a nonload-bearing exterior wall covering on nonfire-resistance-rated buildings of Type I, II, III and IV construction when installed in accordance with Section 4.4. The system is also intended for use in interior applications as part of a Class A interior wall finish.

wall façade system are left open. The panels are available in multiple colors and texture designs. See Figure 1.

3.2 Material:
The Frontek Plus ceramic pieces have a nominal thickness of 0.77-inch (19.5 mm), have widths up to 23.62 inches (600 mm) and lengths up to 70.87 inches (1800 mm). The Frontek Omega Plus ceramic pieces have a nominal thickness of 0.79-inch (20 mm), have a width of 12.09 inches (307 mm) and lengths up to 39.37 inches (1000 mm). Ceramic pieces have an approximate unit weight of 6.75 lbs/sf (33 kg/m²).

3.3 Aluminum Substructure:
Clamps in accordance with Section 3.5 shall be attached to an aluminum substructure. The aluminum substructure must consist of 6063-T5 aluminum alloy T-shape members. The shapes must be supported by aluminum brackets connected to the supporting structure.

3.4 Surface-burning Characteristics:
Frontek Plus and Frontek Omega Panels, when tested in accordance with ASTM E84, have a flame-spread index of 25 or less and a smoke-developed index of 450 or less.

3.5 Stainless Steel Clamps:
The Frontek Plus and Frontek Omega Plus ceramic pieces are attached to the aluminum substructure using stainless steel clamps. The clamps are fastened to the substructure using two No. 8 stainless steel self-drilling screws. The clamps come in two configurations; starting clamp used at the top and bottom courses and double clamp used at intermediate courses of ceramic pieces. The clamps are inserted into the cleft of the tile (ceramic pieces). See Figure 2.

4.0 DESIGN AND INSTALLATION
4.1 General:
Frontek Plus and Frontek Omega Plus wall façade systems must be installed over wall assemblies capable of supporting the imposed loads, including, but not limited to, transverse wind loads. The substructure must be securely fastened to the supporting wall with corrosion-resistant fasteners that are compatible with the wall assembly substrate.




BUREAU VERITAS
Certification

Certificación
Certification

Concedida a / Awarded to

GRECO GRES INTERNACIONAL SL

AVDA CASTILLA LA MANCHA, 1
45240 ALAMEDA DE LA SAGRA
SPAIN

Bureau Veritas Certification certifica que el Sistema de Gestión ha sido auditado y encontrado conforme con los requisitos de la norma:
Bureau Veritas Certification certifies that the Management System has been audited and found to be in accordance with the requirements of the standard:

NORMA / STANDARD
ISO 9001:2015
El Sistema de Gestión se aplica a:
Scope of certification:

DISTRIBUCIÓN DE PAVIMENTOS, ADOQUINES, LADRILLOS CARA VISTA, GRES EXTRUSIONADO, PORCELÁNICO EXTRUSIONADO Y SUS PIEZAS ESPECIALES, TODOS ELLOS ENSAYADOS SEGÚN NORMATIVA VIGENTE.

DISTRIBUTION OF KLINKER PAVERS, KLINKER FACED BRICKS, EXTRUDED STONWARE, EXTRUDED PORCELAIN, AND ITS SPECIAL PIECES, ALL OF THEM TESTED ACCORDING TO THE CURRENT NORMATIVE.

Número del Certificado / Certificate Number: **ES087588-1**
Directores de Certificación / Certification Manager: 

Aprobación original / Original approval date: 21/11/2000
Certificado en vigor / Certificate valid from: 06/03/2018
Efectivos datos / Effective data: 16/02/2019
Caducidad del certificado / Certificate expiration date: 16/02/2019

Este certificado está sujeto a las normas y condiciones generales y particulares de los servicios de certificación. This certificate is valid, subject to the general and specific terms and conditions of certification services.

Unidad de Certificación / Certification Body: Bureau Veritas Santa S.L.
C/Valdehino, Pinaro 22-24, Edificio Gabillo, Pol. Ind. La Grapa, 20180 Alcañete - Madrid, Spain



CSIC INSTITUTO DE CIENCIAS DE LA CONSTRUCCIÓN EDUARDO TORROJA

Member of **ETA** www.eta.eu

Designated according to Article 29 of Regulation (EU) No 305/2011

European Technical Assessment **ETA 15/0262 of 23/11/2015**
English translation prepared by IETcc. Original version in Spanish language

General Part	
Technical Assessment Body issuing the ETA and designated according to Article 29 of the Regulation (EU) No 305/2011:	Instituto de Ciencias de la Construcción Eduardo Torroja (IETcc)
Trade name of the construction product	FRONTEK SUPERPLUS and FRONTEK OMEGA SUPERPLUS
Product family to which the construction product belongs	Kits for external wall claddings
Manufacturer	GRECO GRES INTERNACIONAL, S.L. Avda. Castilla La Mancha, 1. 45240 ALAMEDA DE LA SAGRA (Toledo) España website: www.grecogres.com
Manufacturing plant(s)	GRECO GRES INTERNACIONAL, S.L. Avda. Castilla La Mancha, 1. 45240 ALAMEDA DE LA SAGRA (Toledo) España
This European Technical Assessment contains	21 pages including 4 Annexes which form an integral part of this assessment. Annex D contains confidential information and is not included in the ETA when it is publicly available
This European Technical Assessment is issued in accordance with regulation (EU) No 305/2011, on the basis of	Guideline for European Technical Approval (ETAG) nº 034 ed. April 2012, part 1 and 2 used as European Assessment Document (EAD)

CSIC INSTITUTO DE CIENCIAS DE LA CONSTRUCCIÓN EDUARDO TORROJA

DOCUMENTO DE IDONEIDAD TÉCNICA: Nº 528p/17

Área genérica / Uso previsto: **SISTEMA DE REVESTIMIENTO DE FACHADAS VENTILADAS CON PLACAS CERÁMICAS**

Nombre comercial: **FRONTEK SUPERPLUS FRONTEK OMEGA SUPERPLUS**

Beneficiario: **GRECO GRES INTERNACIONAL, S.L.**

Sede Social y lugar de fabricación: Avda. Castilla La Mancha, 1
45240 ALAMEDA DE LA SAGRA (Toledo)
Tlf. (+34) 925 50 05 39
Fax: (+34) 925 50 02 70
E-mail: informacion@grecogres.com
<http://www.grecogres.com>

Validez. Desde: 15 de marzo de 2017
Hasta: 15 de marzo de 2022
(Condicionado a seguimiento anual)

Este Documento consta de 24 páginas

Publicación emitida por el Instituto de Ciencias de la Construcción Eduardo Torroja. Prohibida su reproducción sin autorización.

UEAtc MIEMBRO DE:
UNION EUROPEA PARA LA EVALUACIÓN DE LA IDONEIDAD TÉCNICA
UNION EUROPEENNE POUR L'AGREMENT TECHNIQUE DANS LA CONSTRUCTION
EUROPEAN UNION OF AGREEMENT
EUROPÄISCHE UNION FÜR DAS AGREMENT IN BAUWESEN

CERTIFICATES



**THOMAS BELL-WRIGHT
INTERNATIONAL CONSULTANTS**

In accordance with UKAS accreditation to ISO 17065
Certification is hereby granted

to

Greco Gres Internacional S.L.
Avenida Castilla La Mancha 1,
45240 Alameda De La Sagra, Toledo, Spain

for

"Frontek"
Porcelain Ceramic Extruded Tile
(Classified according to BS EN 13501-1:2007+A1:2009)

which, subject to limitations described on the following pages and continued listing on www.tbwcert.com, complies with Product Certification Scheme SD03 Exterior Wall Assemblies, Cladding, Curtain Walls, Building Materials, Products and Assemblies

In witness whereof this Certificate is issued this 19th day of August 2018




 Thomas F. Bell-Wright
Certification Director


 Nick Purcell
Certification Manager

Certificate Number: TBW0300358
 Issued: August 19, 2018 Expiration: August 18, 2021
 Initial registration: August 19, 2018 File Name: R0316 Greco Gres RTF Save Date: 19/08/18 9:21 AM

This certificate and schedules are held in force by regular Factory Inspections by Thomas Bell-Wright International Consultants (TBWIC). Refer to www.tbwcert.com or contact TBWIC Fire Compliance Division to validate the current status of Certification. This certificate remains the property of THOMAS BELL-WRIGHT INTERNATIONAL CONSULTANTS, PO BOX 26335, DUBLIN, IRELAND.
 Tel: +91 4 821 5777, Email: certification@bell-wright.com. Web: www.bell-wright.com. F19 Scheme Certificate Issue 5, Dec 2016
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United Arab Emirates
Ministry of Interior
Civil Defense G.H.Q.
Fire intentional Lab & House
Of Expertise & Training Center
Approval Committee



دولة الإمارات العربية المتحدة
وزارة الداخلية
القوة العامة للتدقيق المدني
لجنة اعتماد المختبرات العالمية
وبيوت الخبرة ومعاهد التدريب

Date: 04/03/2019

CERTIFICATE OF COMPLIANCE

This certificate of compliance validates the following

TEST REPORT NUMBER <small>"Assessment Reports" are not acceptable</small>	17/14890-1532 Parte 1 17/14890-1532 Parte 2	CERTIFICATE NUMBER	UAE- 1473
DATE OF ISSUE	09/10/2017	DATE OF ISSUE	04/03/2019
DATE OF EXPIRY	---	DATE OF EXPIRY	10/01/2020

Manufacturer details

NAME OF FACTORY/ MANUFACTURER	GRUPO GRECO GRES INTERNACIONAL S.L.	NAME OF THE BRAND	VENATTO
FACTORY ADDRESS / REGION <small>(STREET /TOWN / CITY / COUNTRY)</small>	Avda. Castilla - La Mancha, 1 45240 Alameda de la Sagra, (Toledo) SPAIN	MODEL / NO	FRONTEK VENTILATED FAÇADE SYSTEM
WEBSITE	www.grecogres.com	LOGO ON THE PRODUCT	
TEL	+34 925 50 00 54	EMAIL	luis_d@grecogres.com

1 لجنة اعتماد المختبرات العالمية وبيوت الخبرة ومعاهد التدريب

LGAI Technological Center, S.A.
Campus UAB - Florida de la Font del Cerre s/n
E- 08193 Bellaterra (Barcelona)
T +34 93 567 20 00
F +34 93 567 20 01
www.applus.com



FIRE SAFETY CERTIFICATION

PRODUCT APPROVAL

No. **APF-1333**

LGAI Technological Center, S.A. member of Applus+ group certifies:

Product range	"FRONTEK VENTILATED FAÇADE SYSTEM"
Company	GRECO GRES INTERNACIONAL S.L. Avda. Castilla - La Mancha, 1 45240 Alameda de la Sagra, (Toledo) SPAIN
Manufactured	GRECO GRES INTERNACIONAL S.L. Avda. Castilla - La Mancha, 1 45240 Alameda de la Sagra, (Toledo) SPAIN
Standard Reference	UNE-EN-ISO 1182:2011: "Fire reaction tests for construction products. Non-combustibility test". UNE-EN-ISO 1716:2011: "Fire-reaction Tests of construction materials. Determination of combustion heat."



This certificate was first issued on January 10th 2018 and will remain valid as long as the test methods and/or factory production control requirements in the certification scheme, used to assess the performance of the declared characteristics, do not change, and the product, and the manufacturing conditions in the plant are not modified significantly.

Valid until December 20th 2018

Bellaterra, January 10th 2018


 LGAI Technological Center, S.A.
Xavier Ruiz Peña
 Product Conformity B. U., Managing Director



You can find this certificate into our website at: <https://enps.applus.com/microsites/microsites/FECFP/login>

LGAI TECHNOLOGICAL CENTER, S.A. OF-A-3803492

LGAI Technological Center, S.A.
Campus UAB s/n
Aparador de Cornes 18
E - 08193 Bellaterra (Barcelona)
Phone: +34 93 567 20 00
F +34 93 567 20 01
www.applus.com




Bellaterra : On November 3, 2017
 Report number : 14/9117 - 1705
 Petitioner's reference : **GRECO GRES INTERNACIONAL S.L.**
 NIF: B45428406
 Avda. Castilla - La Mancha, 1
 45240-Alameda de la Sagra (TOLEDO)

TEST REPORT

Register number: 14/1705

MATERIAL RECEIVED:

On September 23, 2017, have been received in Applus a sample of UNGLAZED CERAMIC TILES, extruded, of dimensions 800 x 405 x 19.5 mm., cream color and with the following reference according to the petitioner:

FRONTEK 405 x 800 x 19,5 mm.
 Model: Artico 1A - C5 / Group: UNE-EN 14411- A1

TESTS REQUESTED:

- Determination of dimensions and surface quality. UNE-EN ISO 10545-2:1998 and UNE-EN ISO 10545-2:1998 Erratum. (*)
- Determination of water absorption, apparent porosity, apparent relative density and bulk density. UNE-EN ISO 10545-3:1997.
- Determination of modulus of rupture and breaking strength. UNE-EN ISO 10545-4:2012.
- Determination of chemical resistance. UNE-EN ISO 10545-13:1998.
- Determination of resistance to thermal shock. UNE-EN ISO 10545-9:2013.
- Determination of impact resistance by measurement of coefficient of restitution. UNE-EN ISO 10545-5:1998. (*)
- Determination of resistance to deep abrasion. UNE-EN ISO 10545-6:2012.
- Determination of linear thermal expansion. UNE-EN ISO 10545-8:1997 and UNE-EN ISO 10545-8:1997 Erratum 2008
- Determination of frost resistance. UNE-EN ISO 10545-12:1997.
- Determination of moisture expansion. UNE-EN ISO 10545-10:1997.
- Determination of initial adherence pursuant to Section 8.2. (UNE-EN 1348:2008) *
- Determination of dry apparent density and dry absolute density. UNE EN 772-13:2001. (*)

(*) Test not included in the scope of the ENAC Certification.

DATE AT WHICH THE TESTS WERE CONDUCTED: from 29/09/2017 to 30/10/2017.

RESULTS: See attached pages.

Firmado digitalmente por
Xavier Ruiz Peña

Responsible for Construction Mat.
LGAI Technological Center S. A.

Firmado digitalmente por
Miguel María Peña Marín

Chief Technician
LGAI Technological Center S. A.

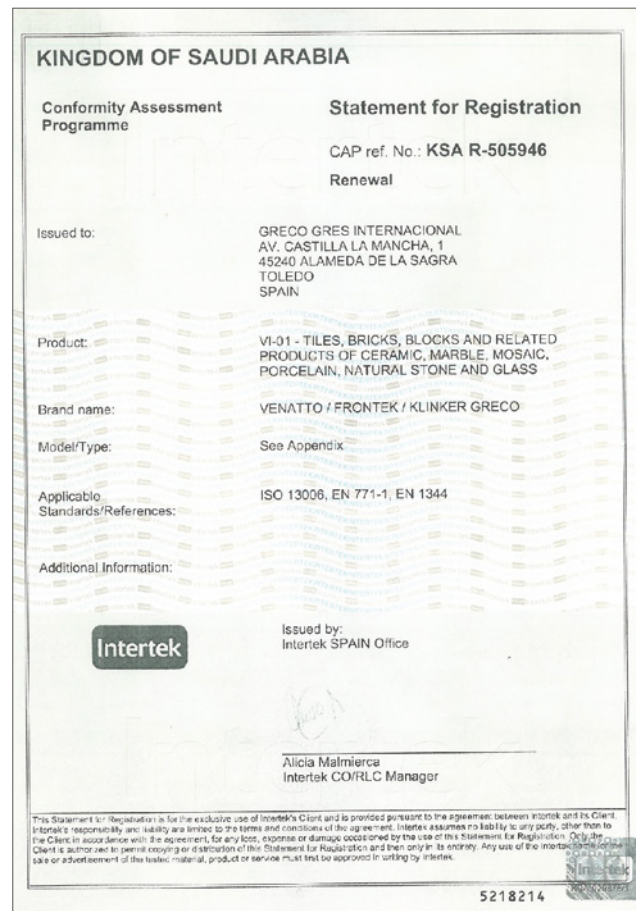
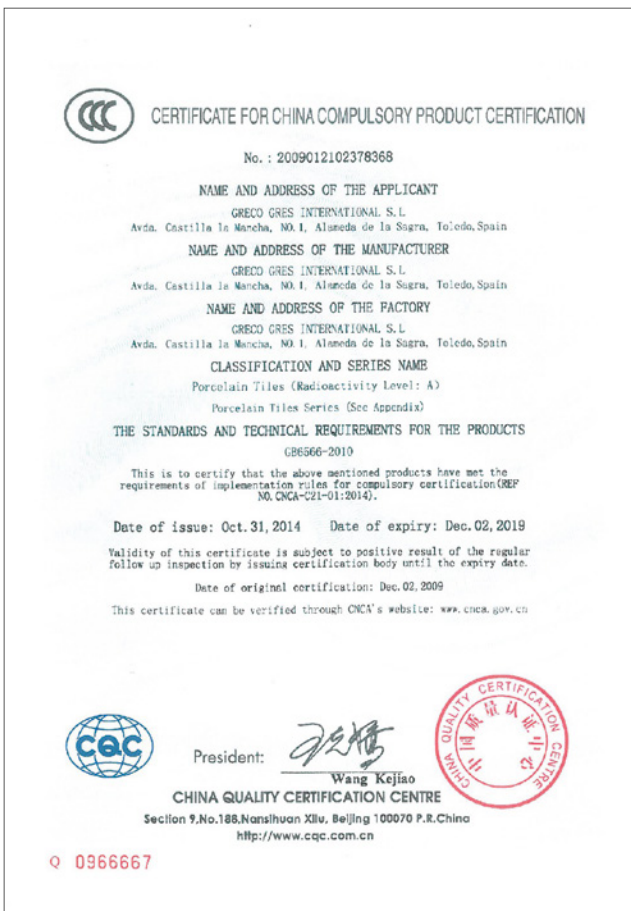
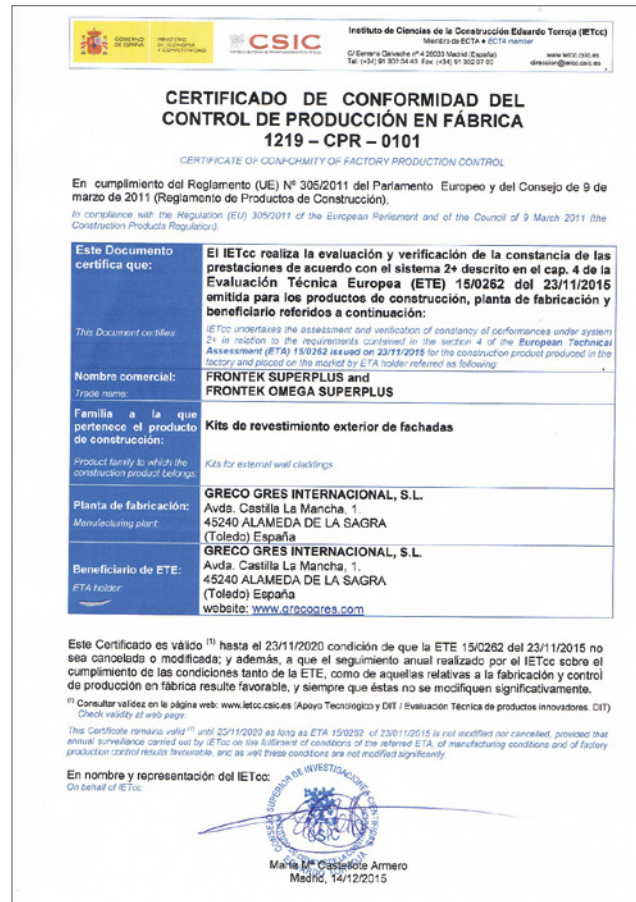
The results specified in the present document are valid exclusively to the material indicated on site by performer from Applus, and subject to accordance with the instructions shown. The specified measurement uncertainty has been expressed as the typical measurement uncertainty multiplied by a coverage factor k=2 which, for a normal distribution, corresponds to a probability of approximately 95%.

Accreditation granted by ENAC (ENAC Technological Center, S.A. Registered by ENAC in 2010, 2011, 2013 and 2016)
 Source: <http://www.enac.es> or <http://www.enac.es/registro>

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 The present document is a translation of the report N° 14/9117-1705 in case of dispute, the valid is the spanish version

Page 1 - This document consists of 11 pages of which 0 are annexes.

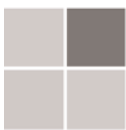
LGAI Technological Center, S.A. Inscrita en el registro Mercantil de Barcelona, Tomo 35.863, Fila 1, Hoja Nº B-264.247 Inscrición 1ª CF. / A43207492



TECHNICAL DATA



NOTE: This technical information corresponds to the standard models and formats. For metallic and special pieces ask for information to the Quality Department.



Colour variety



Deep abrasion resistance

UNE-EN 10545-6

<175 mm³



Hygienic: resistance to chemical etching

UNE-EN 10545-13

Resiste
resist



Resistance against thermal shocks

UNE-EN 10545-9

Resiste
resist



Frost resistance

UNE-EN 10545-12

Resiste
resist



Restitution coefficient

Coficiente de restitución

UNE-EN 10545-5

>0,6



Lineal thermal expansion coefficient

UNE-EN 10545-8

$\leq 9 \times 10^{-6} / ^\circ\text{C}$



Resistance to staining

UNE-EN 10545-14

3-5



Surface scratch hardness (mohs scale)

UNE-EN 67.101

5-7



Water absorption

UNE-EN 10545-3

$\leq 0,5\%$

TECHNICAL DATA <i>CARACTERÍSTICAS TÉCNICAS</i>		Reference standard <i>Norma de referencia</i>
Manufacturing process	<i>Extruded ceramic tile made of single firing process</i> <i>Pieza cerámica extrusionada fabricada en proceso de monococción</i>	UNE EN 14411 ISO 13006

Physical data	UNE EN 14411 ISO Standard 13006	OBTAINED VALUES	TESTING STANDARD
Water Absorption	$E \leq 0,5\%$	$\leq 0,5\%$	UNE-EN ISO 10545 <i>Part 3</i>
Breaking strength (N)	≥ 3000 N	≥ 6000 N	UNE-EN ISO 10545 <i>Part 4</i>
Impact Resistance	$\geq 0,55$	$\geq 0,65$	UNE-EN ISO 10545 <i>Part 5</i>
Resistance to deep abrasión	275 mm ³	≤ 175 mm ³	UNE-EN ISO 10545 <i>Part 6</i>
Resistance to surface abrasion	PEI 0 - 5	PIE 3 - 5	UNE-EN ISO 10545 <i>Part 7</i>
Lineal thermic dilatation	$< 9 \times 10^{-6} / ^\circ\text{C}$	$< 9 \times 10^{-6} / ^\circ\text{C}$	UNE-EN ISO 10545 <i>Part 8</i>
Thermal shock resistance	Resist	Resist	UNE-EN ISO 10545 <i>Part 9</i>
Expansion for dampness	<i>Not required</i>	$\leq 0,1$ mm/m	UNE-EN ISO 10545 <i>Part 10</i>
Frost resistance	Resist	Resist	UNE-EN ISO 10545 <i>Part 12</i>
Resistance to chemicals	<i>Minimum class B</i>	Clase A	UNE-EN ISO 10545 <i>Part 13</i>
Stain resistance	<i>Class 1 to 5</i>	Clase 3 - 5	UNE-EN ISO 10545 <i>Part 14</i>
Reaction to fire	Not required	Clase AI	Testing is not required



WHERE ELEGANCE MEETS PERFORMANCE

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