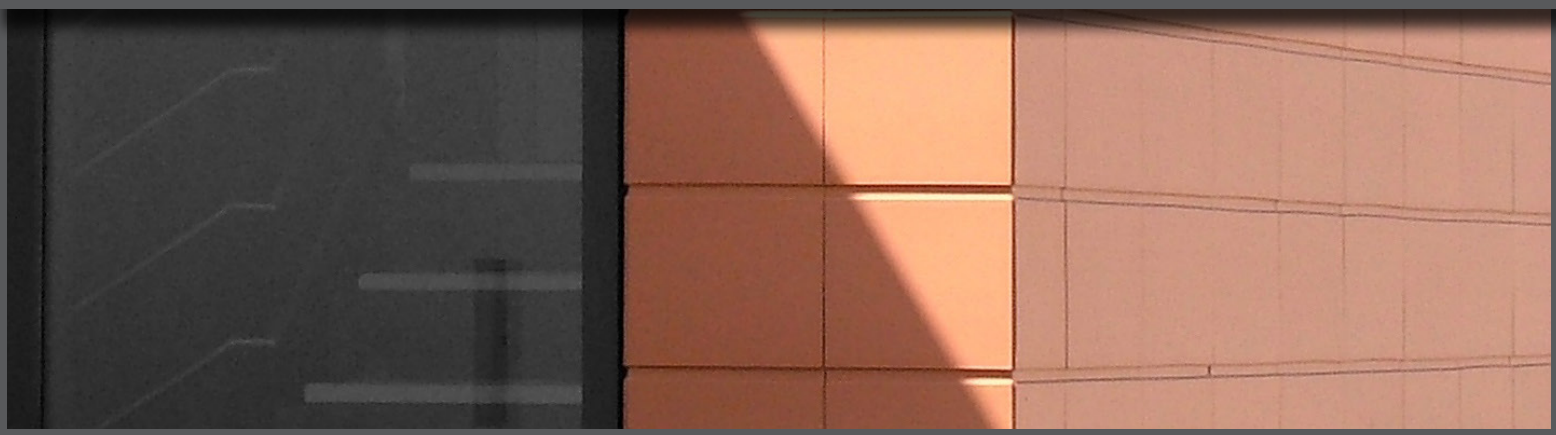
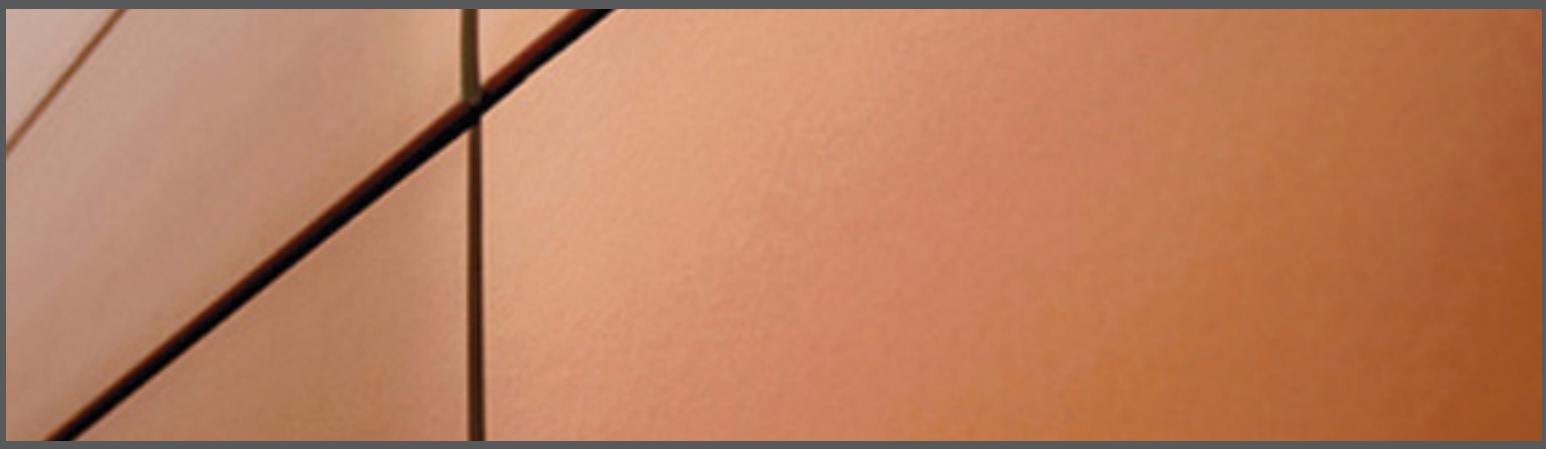
VENTILATED TERRACOTTA





FACE SOLADRILHO

FACE is an overall solution of ventilated facades in extruded ceramics with a 25 mm width and numerous standard sizes. Most architects prefer ventilated facades as their coating solution because it has numerous benefits and its easy application allows a quick and effective renewal of a building's façade.

FACE can be applied in both new constructions and rehabilitations. It was designed for all facades such as private homes, offices, shopping centers, hospitals, industrial buildings and so forth that require a viable coating.

The use of ventilated façade has had a significant increase in contemporary architecture due to its technical characteristics and overall appearance. Ventilated façade is built applying a coating separate from the building's structure creating an air chamber between the framework and the building. The framework must be applied in strategic points in order to allow its ventilation. Fig.1

The air chamber improves the facades performance by preventing humidity and condensation, increasing the building's durability. A "chimney effect" is created by the differences in variations of air density inside and outside the air chamber, allowing a natural air flow through its opening. The air chamber reduces environmental thermal effects and thus facilitates significant energy savings in the air conditioning of the building Fig. 2):

In the winter, the air chamber does not isolate on its own given that it is ventilated, but the existence of thermal insulation slows down thermal transmission of the cladding reducing heat loss. The ventilation of the chamber also carries condensed moisture out, moisture which would reduce the effectiveness of this insulation.

In the summer, the ventilated façade absorbs and reflects all solar radiations and heat is retained in the air chamber. Continuous ventilation is generated because restored heat rises and escapes through the top part of the chamber, allowing cooler air brought in from the lower part to take its place. This natural process maintains the interior of the building much cooler throughout the summer.

Moreover, FACE has an air chamber where a continuous air flow is naturally generated, a process that is impossible with traditional facades. FACE has an open joint ventilating system; with this type of system the air flow within the open air chamber is more consistent and beneficial than a closed joint system, even under the effects of wind pressure and during the air's heating and cooling process. Fig. 3

VENTILATED FACADE

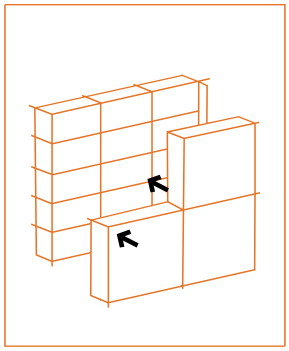


FIG. 1

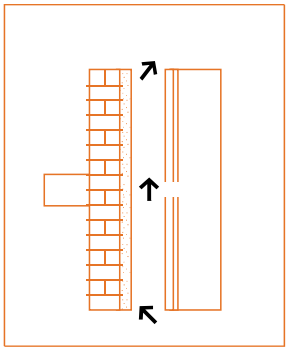


FIG. 2

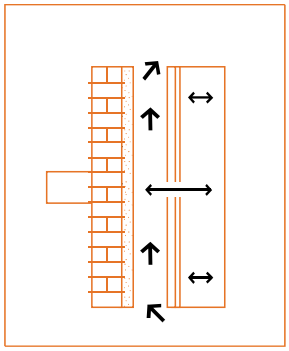


FIG. 3

VENTILATED FACADE SOLUTION

FACE is the overall solution for ventilated facades in extruded ceramics, its aluminum sub-structure and stainless steel clips offer the following advantages:

- Flexibility
- Modular
- Fast set-up
- Low maintenance cost
- Easy assemble and disassemble
- Lower construction costs (since supporting wall does not require plaster nor paint)

FIXING SYSTEM

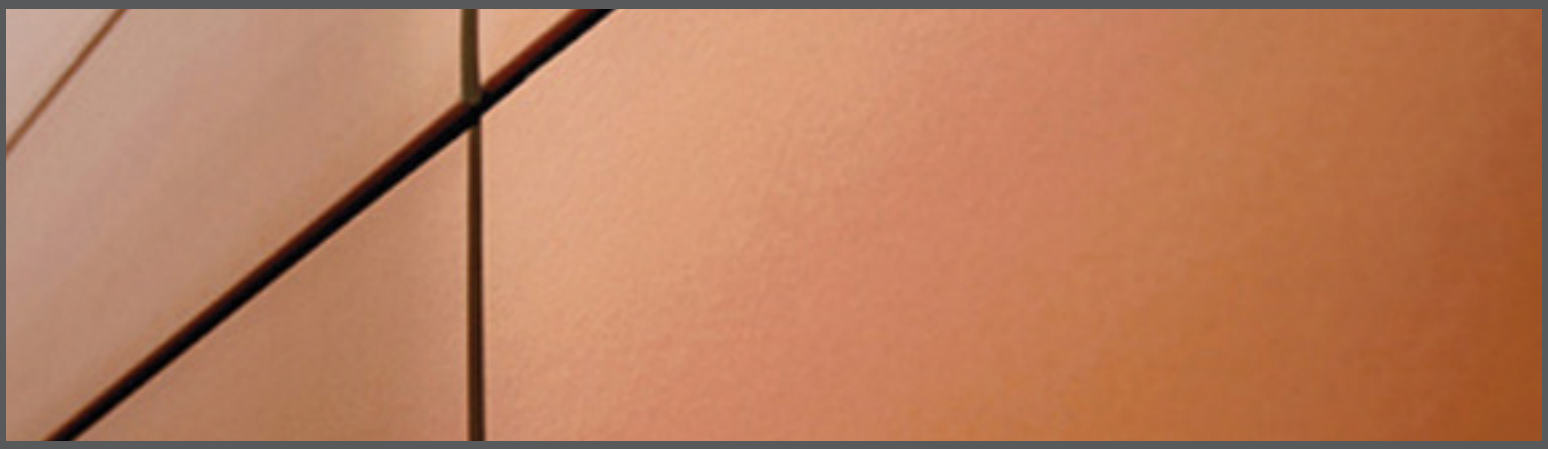
An open joint system can be applied do FACE due to its ceramic tile format, this system provides a greater ventilation and is resistant to any strong rain phenomenon's. The interior neoprene foam located between the aluminum structure and the ceramic tile assures FACE's permeability. This fixing system also has anti-vibration function.

The aluminum FACE structure allows:

- Less light reflection on the metallic structure (effectively eliminating the glow that usually is seen between tiles).
- Keeps rain on the outer side wall of the tile without passing to the interior coating.

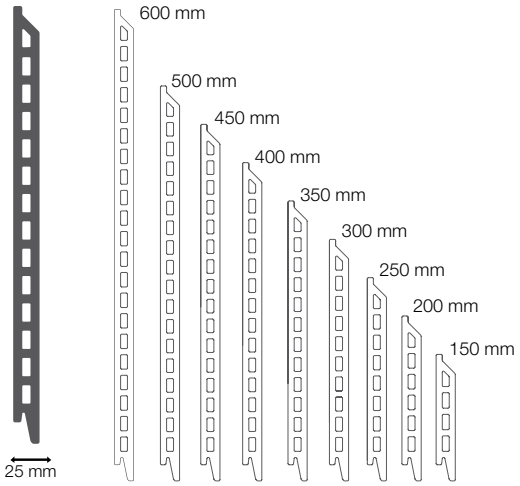
The ceramic tiles are fixed by a stainless steel clip. The aluminum profile of the fixing system is resistant to heavy loads; it was designed and tested to support weights superior to the ceramic tiles used. The fixing system was also carefully designed to assure the profiles thermal expansion, preventing any type of corrosion problem due to environmental phenomenon and galvanization.

This fixing system allows the placement of drains, electric wires, telecommunication cables, water, gas, etc, without creating specific openings on the wall.



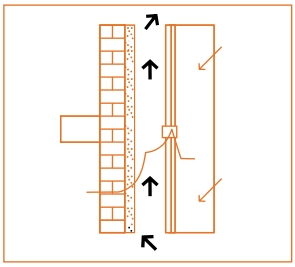
FORMAT TILE SIZE

FACE has standard format sizes with a 25 mm width: 150, 200, 250, 300, 350, 400, 450, 500 and 600 mm in height and is available with the following lengths: 400, 500, 600, 800, 900, 1000, 1200 and 1500 mm. FACE can be produced in non standard formats, following a previous case study of the project.



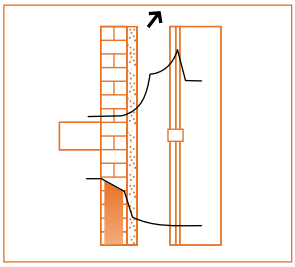
FEATURES & ADVANTAGES OF VENTILATED FACADE

FACE is fabricated from natural clays making it possible to combine different natural colors with different types of materials. FACE is combined with its mechanical properties and its esthetic component.



THERMAL INSULATION

Ventilated facade has an effective thermal insulation. The constant and effective ventilation inside the air chamber maintains the building's interior at room temperature, making the ventilated façade work as a natural thermal protector.

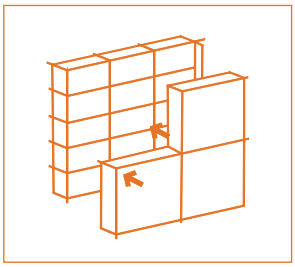


THERMAL INERTIA

Ventilated facade offers and additional benefit, which is thermal inertia. Thermal inertia is the coatings capacity to generate and restore heat, ideal for both cold and hot climates. It maintains the interior of the building at a stable room temperature, increasing comfort and coziness.

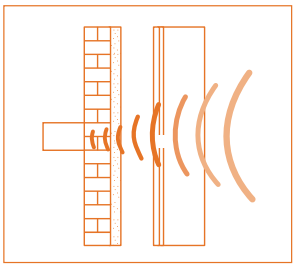
ENERGY SAVINGS

It is estimated that with ventilated façade there is a reduction in thermal consumption, resulting in a 25% energy saving in comparison to traditional façade. The air chamber increases environmental thermal effects and thus facilitates significant energy savings in the air conditioning of the building. This characteristic also increases the buildings durability.



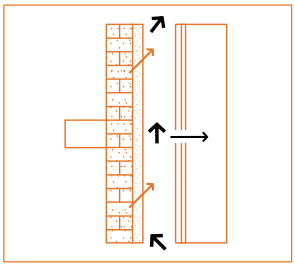
ACOUSTIC INSULATION

Ventilated façade helps reduce the transmission of sounds granting an acoustic insulation without greater costs. With ventilated façade a barrier is created which increases the absorption of acoustic properties by 6dB, corresponding to a 50% noise decrease inside the building.



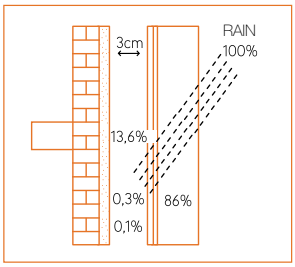
NATURAL VENTILATION

With ventilated walls unobstructed air flow movement is possible within the air chamber allowing natural ventilation and consequently the elimination of moisture due to condensation and capillary effects.



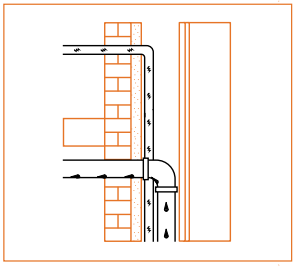
RAIN PROTECTION

The ventilated façade creates a barrier for the building and in result increases its durability. It protects the building from the principal causes of exterior deterioration which are acid rains and other weather agents (rain, snow and ice). Any drop of water that goes through the tile is drained in the air chamber by gravity and all excessive moisture is evacuated by convection through the rising air that circulates in the chamber. This rain protection is naturally possible which eventually results in low maintenance costs.



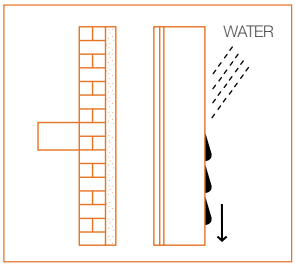
ADDITION

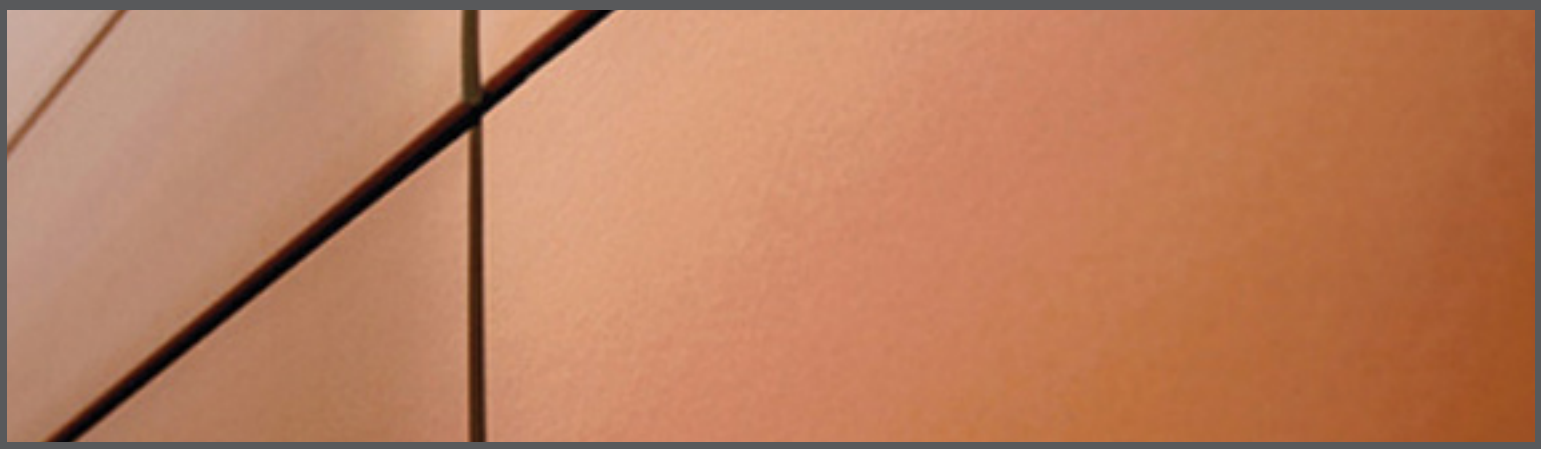
With ventilated façade it is possible to add technical installations and other accessories (drains, electrical wires, telecommunication cables, water, gas, etc) without creating specific openings on the wall.



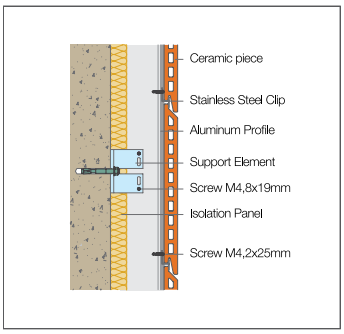
MAINTENANCE

On the opposite of traditional face ventilated reduces maintenance costs, due to the fact that no paint or plaster renovations are needed (a second wall and plaster are not needed). A simple wash of the ceramic tiles is enough to maintain the tiles clean and functional.

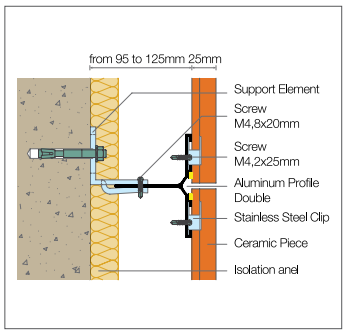




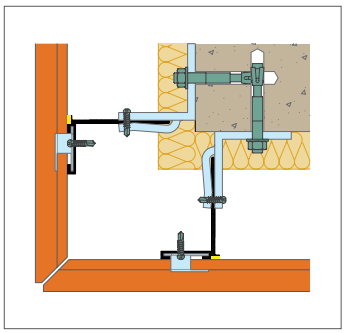
CONSTRUCTIVE DETAILS



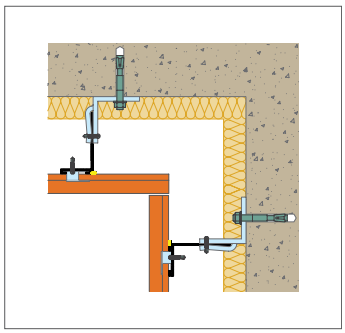
Side View



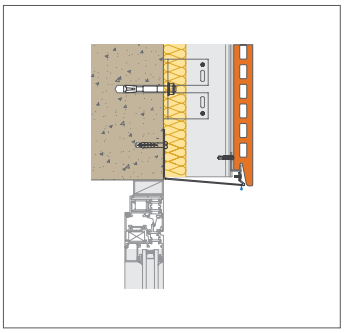
Top View



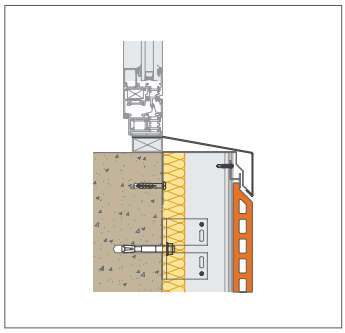
Exterior Corner



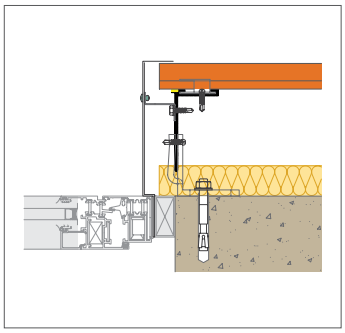
Interior Corner



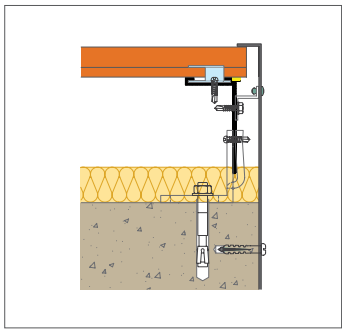
Inferior Finish of Window



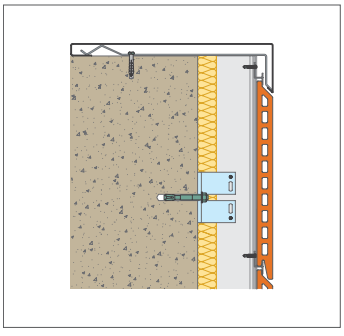
Top Finish of Window



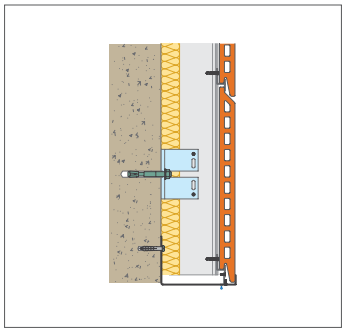
Side Finish of Window



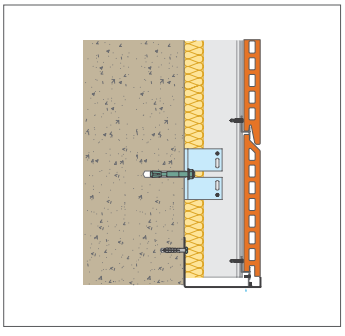
Side Finish



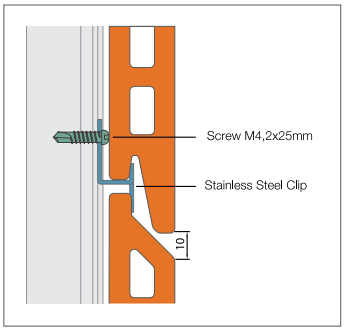
Superior Finish



Interior Finish



Irregular Finish



Fixing

COLORS

Standard Colors


vermelha 01


salmão 04


areia 05


ocre 06

Non Standard Colors*


champanhe 03


sevilha 07

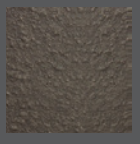

chocolate 08


moca 09


chino 11


cinza claro 12


cinza médio 13


cinza escuro 14


antracite 15

*Depending on each project FACE can be produced with non standard colors or different finishes such as, glossy or textured.

IMPORTANT NOTE: FACE tiles are produced with natural clays and through an extrusion process, which can create slight differences in shades; sizes and textures between tiles; lots and tile accessories.
When applying tiles, alternate tiles and tile boxes (from the same lot) in order to obtain a homogeneous surface without shade differences.

TECHNICAL FEATURES

CARACTERÍSTICAS TÉCNICAS DA PEÇA CERÂMICA	NORMAS	VALORES DA NORMA	FACE
COMPRIMENTO E ALTURA	NP EN ISO 10545-2	+/- 2,0% (Max +/- 4mm)	+/- 3,0mm
ESPESSURA	NP EN ISO 10545-2	+/- 10,0%	+/- 1,5mm
RECTILINEARIDADE DOS LADOS	NP EN ISO 10545-2	+/- 1,0%	+/- 0,5%
ORTOGONALIDADE	NP EN ISO 10545-2	+/- 1,0%	+/- 1,0%
PLANARIDADE DA SUPERFÍCIE	NP EN ISO 10545-2	+/- 1,5%	+/- 0,5%
ABSORÇÃO DE ÁGUA	NP EN ISO 10545-3	3% < E ≤ 6%	3,9%
RESISTÊNCIA À FLEXÃO	NP EN ISO 10545-4	Min. 13 N/mm²	> 30 N/mm²

CARACTERÍSTICAS TÉCNICAS DA PEÇA CERÂMICA	NORMAS	VALORES DA NORMA	FACE
RESISTÊNCIA À ABRASÃO	NP EN ISO 10545-6	Máx. 541 mm³	-
COEFICIENTE DE DILATAÇÃO TÉRMICA LINEAR	NP EN ISO 10545-8	< 10 x 10^{-6} °C^{-1}	54,48 x 10^{-7} °C^{-1}
RESISTÊNCIA AO CHOQUE TÉRMICO	NP EN ISO 10545-9	Resistente	Resistente
RESISTÊNCIA AO GELO	NP EN ISO 10545-12	Resistente	Resistente
RESISTÊNCIA QUÍMICA	NP EN ISO 10545-13	Min. UB	UA, UHA
RESISTÊNCIA ÀS MANCHAS	NP EN ISO 10545-14	Min. Classe 3	-
PEQUENAS VARIAÇÕES DE COR	NP EN ISO 10545-16	Não definido	-

FACE

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