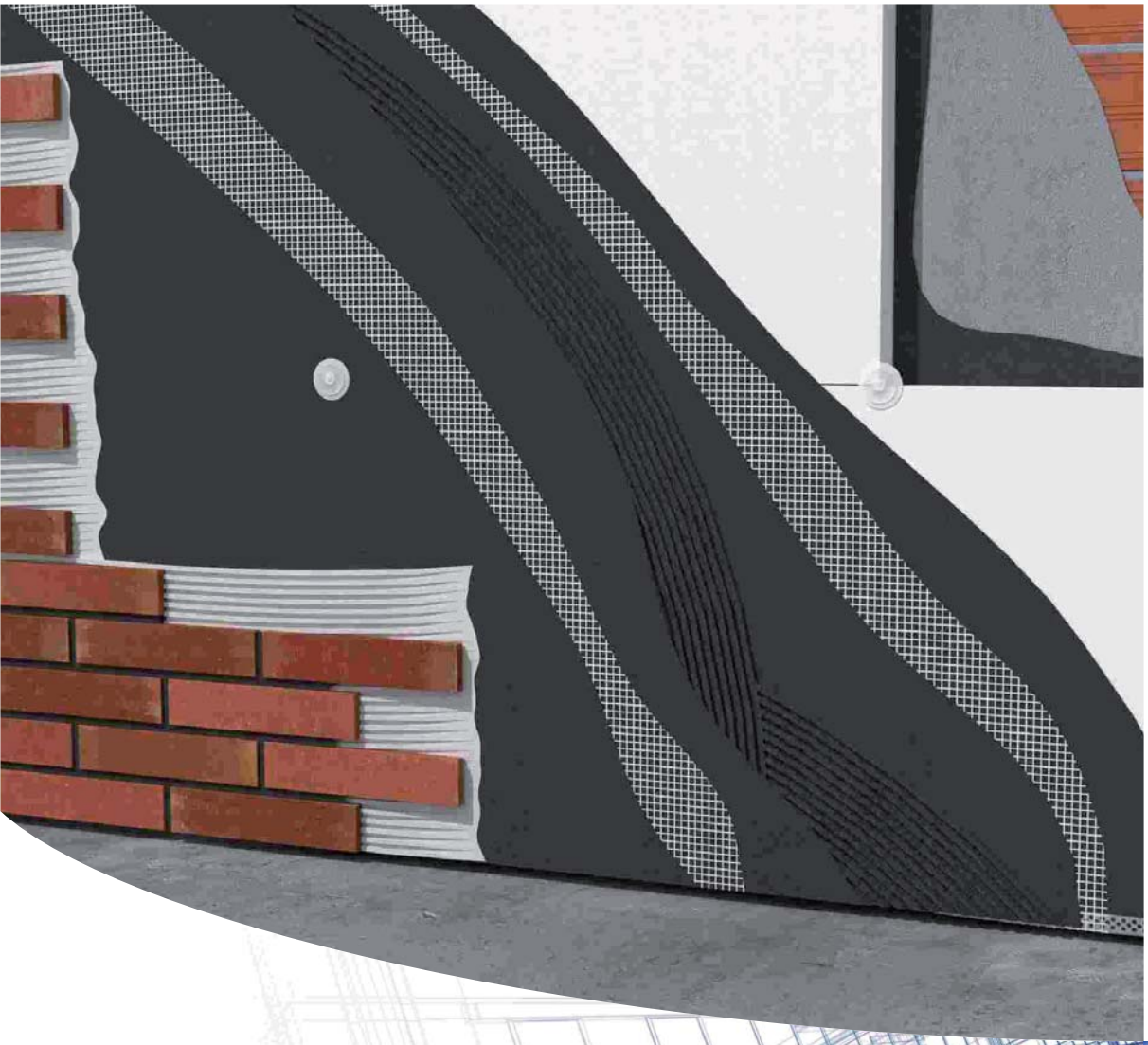
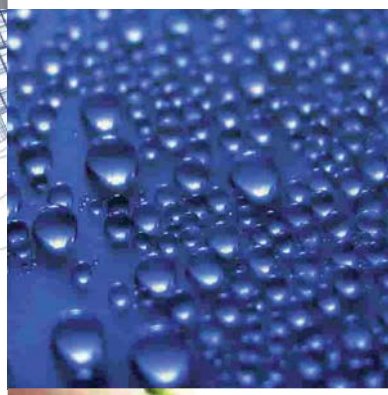


Traditerm® Ceramic System

EXTERNAL THERMAL INSULATION
CERAMIC FINISH

DIT 605/14



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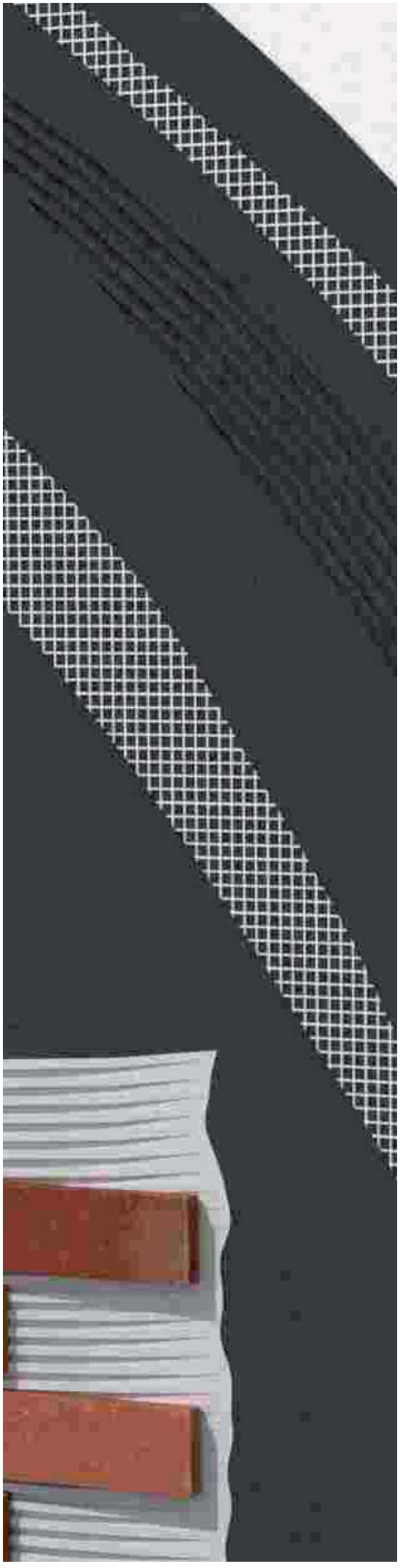


contents

Traditerm® Ceramic System

grupopuma

Traditerm®Ceramic Introduction

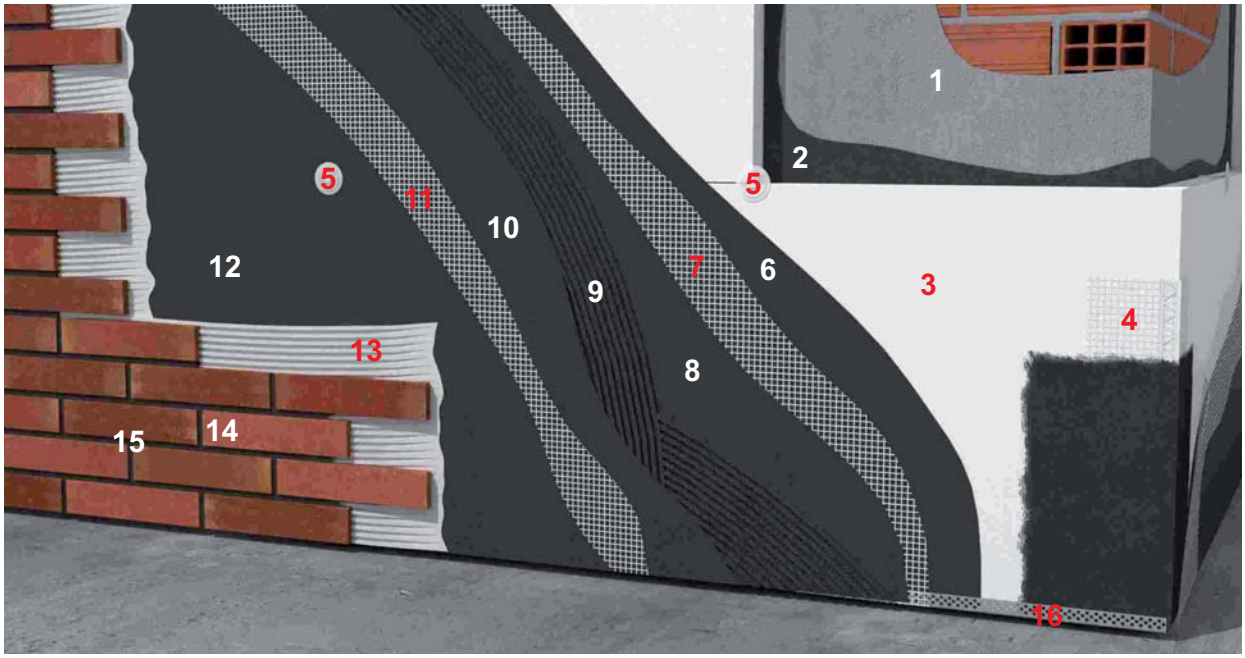
Grupo Puma, in its search for new construction solutions to help reduce the energy consumption of buildings and increase energy efficiency, has developed the **Traditerm®Ceramic** System.

The **Traditerm®Ceramic** System is an external thermal insulation system (EIFS/ETICS) with a decorative ceramic finish. The **Traditerm®Ceramic** System, is an alternative solution to habitual **Morcemcril®** synthetic mineral finishes.

The **Traditerm®Ceramic** System holds technical certification and is guaranteed by technical approval document Nº. 605/14 granted by the Eduardo Torroja Institute for Construction Science.

Introduction

Traditerm®Ceramic Components



1.- Mortar rendering
2.- Traditerm® Mortar (for fixing the insulation panels)
3.- Traditerm® EPS Panel
4.- Traditerm® Perfil Ángulo PVC con malla (PVC Angle Profile with Mesh)
5.- Traditerm® Taco de Anclaje plus NTK (Fixing Anchor plus NTK)
6.- Traditerm® Mortar (for covering the insulation panels)
7.- Traditerm® Mesh (first Traditerm® mesh used in the system)
8.- Traditerm® Mortar (for covering the Traditerm® mesh)
9.- Traditerm® Mortar (hardened layer with grooves)
10.- Traditerm® Mortar (layer to fill and cover grooves)
11.- Traditerm® Mesh (second Traditerm® mesh used in the system)
12.- Traditerm® Mortar (for covering the mesh)
13.- Traditerm® Ceramic Adhesive
14.- Ceramic Tile
15.- Morcemcolor® Plus (ceramic tile grout)
16.- Traditerm® Starter profile

Components

Products

Products

Traditerm® Mortar
Mortar especially formulated for fixing and covering the Traditerm®Panel EPS insulation panels.
- High-bonding capacity.
- Waterproof.
- Permeable to water vapour.
- Easy to apply.
- Reaction to fire: A1 -Does not ignite. (UNE-EN 13501-1).
- Water absorption: W2.
- Water vapour permeability: - Performance (Adhesive + Covering): Approx. 12-13 kg/m^2

Traditerm Adhesive®Ceramic
Mortar designed for fixing ceramic to the Traditerm® External Insulation System (EIFS/ETICS).
- Two-component.
- Highly deformable.
- Non-slip.
- Extended open time.

Morcemcolor® Plus Flexible (CG2 A W)
Mortar for sealing joints on ceramic facings.
- Low water absorption. AQUASTOP effect.
- Anti-algae and anti-mould. BIOACTIVE Technology.
- Deformable.
- Range of colours.

Traditerm®EPS Panel
Expanded Polystyrene Panel used as insulation panel in the Traditerm®System.
- Thermal insulation.
- Format: 1000 x 500 mm.
- Thickness: 20, 40, 50, 60, 80, 100, 120 mm.
- Stabilised.
- Thermal conductivity, 0,035-0,038 W/mK.
- Reaction to fire: E - Self-extinguishing (UNE-EN 13501-1).

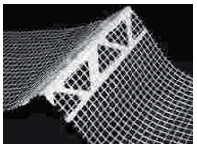
Traditerm®Mesh
Fibreglass mesh with anti-alkaline treatment for reinforcing the mortar layer Traditerm® for covering the insulation panel. Provides the system with surface strength and avoids the risk of cracking.
- Total weight of the mesh: 160 g/m^2 (±10%).
- Roll format: Width 1 m x Length 50 m.

Traditerm®Starter Profile
Aluminium base connection profile, especially designed for starting and protecting of the lower part of the Traditerm®System.
- Does not rust.
- Range of thicknesses, according to thickness of insulation panel used.
- Format: 2.5 m/unit.

Traditerm® Starter Profile Installation Kit
Complete kit for installing the Traditerm Starter Profile.
This kit consists of:
- 75 Bolts 6x60 mm.
- 10 Starter Profile connectors.
- 50x3mm Starter Profile spacers.

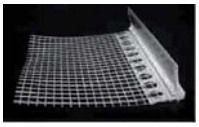
Products

Traditerm® PVC Angle Profile with Mesh
PVC profile fitted with mesh with anti-alkaline treatment,
designed for reinforcing corners on the façade and openings.
- Does not rust.
- Format: 2.5 m/unit.



Traditerm® Expansion Joint Profile
PVC profile with fibreglass mesh and flexible band,
designed for forming expansion joints.
- Does not rust.
- Format: 2.5 m/unit.

Traditerm® Window Finishing Profile
Connecting profile between the different systems and carpentry elements
on the façade.
- PVC profile fitted with mesh with anti-alkaline treatment.
- Format: 2.4 m/unit.



Traditerm® Anchor Plus NTK fixings
Anchor fixings for Traditerm® insulation panels.
The main characteristics are:
- Composition: The sleeve is in polyethylene and the pin is in polyamide.
- Impact anchor.
- Provides additional fixing to the insulation panel.
- Holds European Technical Approval (ETA-07/0026).

Pumalastic®MS
Filler based on MS Polymers, designed for sealing the
joints of the Traditerm® System with other elements on the façade.
- Colour: White, Grey, Terracotta, Black and Beige.
- Format: 290 ml/tube.

Characteristics of the Traditerm®Ceramic System

- The **Traditerm®Ceramic** System, holds technical approval document (DIT) Nº. 605/14 granted by the Eduardo Torroja Institute for Construction Science.

- The **Traditerm®Ceramic** System, for EIFS/ETICS systems, is an alternative to habitual continuous mineral finishes.

- The ceramic finish in the **Traditerm®Ceramic** System provides this solution with a high mechanical strength, high impact strength and is easy to maintain.

- Solution for fixing ceramic skirting to façades treated with a thermal insulation system (EIFS/ETICS).

- The **Traditerm®Ceramic** System, is designed to provide the facing with high thermal strength, generating excellent conditions of comfort and hygiene. This high thermal performance tries to maintain the temperature of the interior walls as high as possible, lowering the risk of condensation and the appearance of mould inside the building.

- The thermal insulation provided by this system to a building's façade contributes towards the lowering of the energy consumption necessary for heating, and therefore saves energy.

- The installation of the **Traditerm®Ceramic** System, will not affect the use of the building given that it is an externally applied system, and therefore does not affect the building's interior useful space. This is why it is the ideal solution for thermal renovation of existing buildings and is suitable as a solution for improving the energy classification in existing buildings.

Applying the Traditerm®Ceramic System

General installation conditions

- The **Traditerm®Ceramic** System must be installed in temperatures between 5ºC and 35ºC.

- In the event of rain, installation should only be carried out if protective elements are used in working area.

- Take particular care to protect the upper part of the façade from water leaking through the substrate and insulation panel, during and after installation.

- Do not apply the system to horizontal or sloped surfaces with an angle lower than 45º.

- The ceramic tiles used must be:
· Suitable for applying to façades.
· Maximum tile format no larger than 300x300 mm.
· Maximum tile thickness no greater than 10 mm.
· Maximum tile weight no heavier than 22 kg/m^2.
· Do not use dark coloured ceramic facings. Check with the Grupo Puma Technical Department.

- The **Traditerm®Ceramic** System application should be carried out up to a maximum height of 30 m. For heights above this, check with the Grupo Puma Technical Department.

Substrates

The durability of an external insulation system (EIFS/ETICS), is directly related to the preparation of the substrate to be used.

The habitual substrates for a EIFS/ETICS system are:

- On new works. Fabricated ceramic brickwork, fabricated thermal blocks, fabricated concrete blocks and concrete.

- For refurbishments. Painted cement render, mono-coat facing, brick-faced work.

Generally, substrates must be dry, resistant and clean of any dust, remains of paint, grease and descaling agents.

It is essential to prepare the substrate correctly in order to guarantee the system's durability.

The following chart outlines the determined treatments to consider according to the condition of the substrate:

CONDITION OF SUBSTRATE	TREATMENT
Slopes > 10 mm	Level the substrate with mortar that has strength that is compatible with the facing.
Remains of grease and descaling agents	Cleaning with detergent.
Pulverulent or disaggregated materials	Clean and apply FIJAMOR primer.
Presence of efflorescence	Brush and clean.
Presence of mould, algae or lichens	Wash with bleach and then brush.
Paint	Remove with chemical or mechanical stripper (high pressure sand blaster).
Lack of mortar in face brickwork perpends	Fill the perpend again with mortar such as MORCEM BLOQUE.
Smooth	Generate porosity mechanically.
Degraded concrete	Repair the damages parts with repair mortars (MORCEMREST EF 50, MORCEMREST EF 35 and MORCEMREST RF 15).
Degraded reinforced concrete and oxidised reinforcement	Repair the damaged parts with repair mortars (MORCEMREST EF 50, MORCEMREST EF 35 and MORCEMREST RF 15) and in the event of there being an rusted reinforcement, repair and passivate with IMPLAREST products .
Mortar coming unstuck from the cladding	Remove damaged facings and replace with facings with compatible strengths.
Humidity	Eliminate the cause of the humidity and leave to dry.

Applying the Traditerm®Ceramic System

Traditerm®Ceramic Starting System

The **Traditerm®Ceramic** System, starts at the base of the façade to be treated by installing the starter profile and then by fixing installation panels.

In the event of the **Traditerm®** System, starting on the ground floor, prior to installation it is necessary to waterproof the substrate from zero level to a height of 50 cm in order to avoid damp penetrating through from the exterior. This waterproofing treatment should be carried out with the product Morcem Dry F.

Once the waterproofing process has been done at the base area, the system's starter profiles are fixed into position. For this a levelling line is tracked, to which the profile is bolted on. The minimum distance between the profile and the floor should be 15 cm.

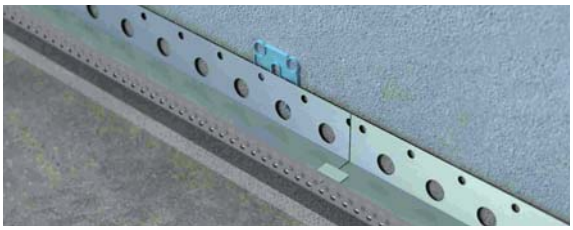
The installation of the base profile to the façade is carried out with the **Starter Profile Installation KIT** supplied by Grupo Puma.

It is important to bear in mind:

· **The bolts** used to fix the starter base profile to the substrate are fixed with a gap of 30 cm. The first bolt must be fixed at a distance lower than 5 cm from the edge of the profile.

· **The spacers of the starter base profile** are fixed behind this profile, in case the surface they are sitting on is uneven. The profile is levelled with a spacer.

· **The starter profile connectors** are fixed with a gap between the starter profile and the next one. There must always be a gap between profiles of between 1 and 2 mm.



Fixing insulation panels with Traditerm® Mortar

The Traditerm® mortar is mixed with water until a uniform consistency has been obtained. Once the adhesive mortar is mixed, it is applied directly to the panel using a notched trowel.

Notched Trowel Method

The mortar is spread over the surface of the insulation panel, and then combed with a notched trowel (No. 10).

Once the product has been combed, a border of approx 2 cm is removed around the edge of the panel, so that when it is pressed against the substrate, no mortar protrudes from the edges, generating thermal bridges between the plates.

Applying the Traditerm®Ceramic System

Fixing the insulation panels

Once the Traditerm® mortar has been applied to the insulation panel, it is fixed to the façade, pressing to ensure good adherence to the substrate.

Check that the adhesive does not protrude from the edges of the panel and verify the flatness of the panels to be fixed. The insulation panels in the first row are inserted to the starter profile that has already been installed.

The distribution of the panels on the façade is done in such a way that the joints between panels on different rows are interlocked with a minimum gap of 25 cm.

Wrong

Right

The formation of corners in the façade is made by intercrossing the panels, in accordance with the following picture:

Wrong

Right

With regard to the formation of openings in the façade for doors and windows, etc, take care not to align the joints of the insulation panels with the corners of the openings. This will avoid future cracking.

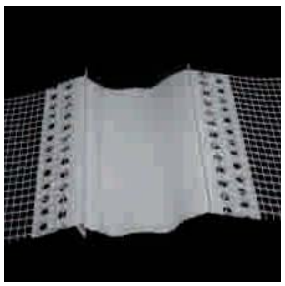
Applying the Traditerm®Ceramic System

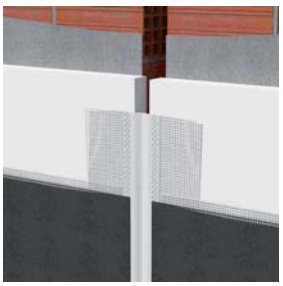
Often with refurbishments, door and window frames have a smaller width than the thickness of the insulation being fixed to the façade.

In these situations, and as long as approved by the site management, thermal bridging in the door frames and lintels can be resolved by using insulation panels with a smaller thickness than those fixed to the façade.

In the case of there being expansion joints on the substrate, these must be respected and never covered with insulation panels.

Expansion joints can be resolved by using a **Traditerm® expansion joint profile,** the installation of this profile is explained further on.



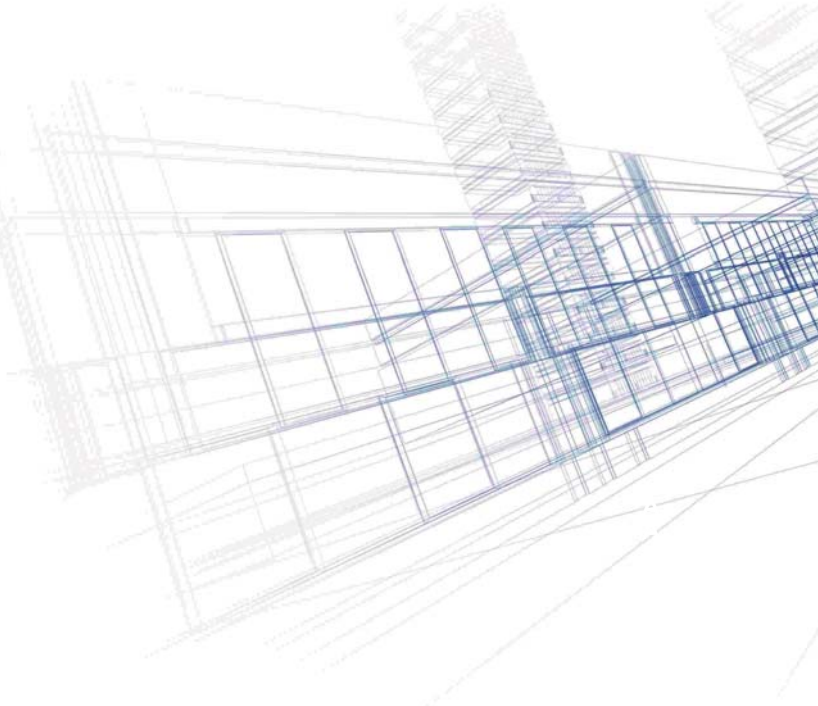


When joints between panels above 2 mm are generated, these must be filled with strips of the insulation material. In the joints between the system and other elements on the façade, there must be a joint of approximately 5 mm. Next the joint is sealed by applying a joint base and **Pumalastic® MS.**

Applying a joint base and **Pumalastic® MS.**

Sanding the insulation panels

After a minimum of 24 hours after fixing the insulation panels with the Traditerm® mortar, any unevenness between the panels are sanded smooth.



Applying the Traditerm®Ceramic System

Mechanical fixing of insulation panels with Fixing Anchors

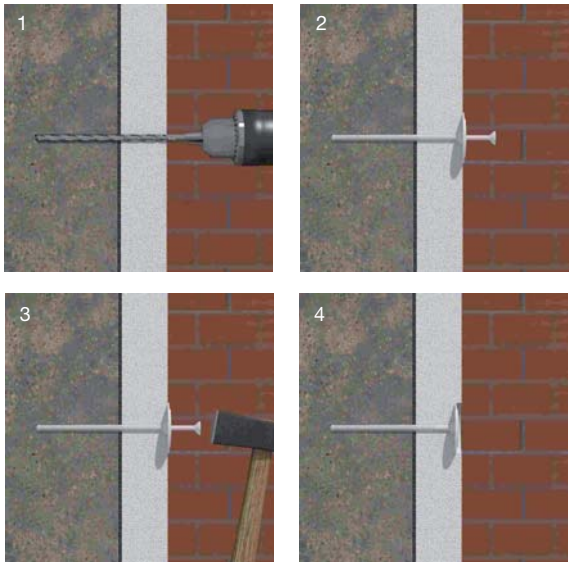
Once the panels have been sanded, the bonding between the insulation panels is complemented with fixing anchors.

The importance of the use of fixing anchors in a EIFS/ETICS system is to avoid, together with the Traditerm® adhesive mortar, the appearance of cracks in the façade caused by hygrothermal stress and the subsequent buckling this causes in the panels. Another important factor about using fixing anchors is to prevent a failure in the substructure (above all with refurbishments), i.e., to fix the system directly to the original substrate and not depend solely on the existing covering.

The fixing anchors that should be used with the **Traditerm®Ceramic** System, are Traditerm® Fixing Anchor Plus NTK. The length of fixing anchors is chosen according to the thickness of the insulation panel used:

TYPE	REFERENCE	INSULATION THICKNESS (mm)	FIXINGS/m²	EIFS
Traditerm® Plus NTK	90	40	8	ETA-07/0026
	110	60-50		
	130	80-70		
	150	100-90		
	170	120-110		
	190	140-130		
	210	160-150		

For installation:

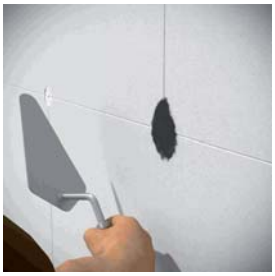


24 hours after fixing the insulation panels to the façade with Traditerm® adhesive, make a hole in the substrate with a drill, passing through the insulation panel.

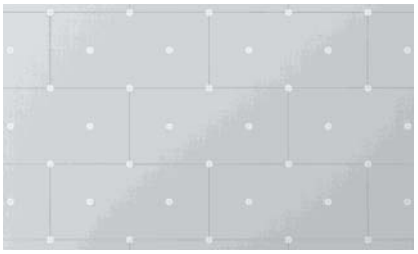
The diameter of the drill bit must correspond with the diameter of the fixing anchor. Use the drill in rotary mode to make the hole, except when the substrate is concrete or solid brick, in this case use it in hammer mode.

Position the fixing anchor in the hole until it is supported over the insulation panel. Tap the fixing with a hammer so that it penetrates the surface of the panel by 1-2 mm.

Next, the depression in the surface of the insulation panel is levelled with Traditerm® mortar.



According to the number of fixing anchors indicated, the distribution made with the **Traditerm®Ceramic** System is the following:



8 fixings/m²

Applying the Traditerm®Ceramic System

Installation of the Reinforcement Profiles

The corners of the façade, as well as the edges of the existing openings, must be protected and reinforced with reinforcement profiles. The most common types of reinforcement profiles are:

Traditerm® PVC Angle Profile with Mesh

This type of profile acts a support to the existing hollows in the façade. The way to install them is:

- Apply a layer of Traditerm® mortar to the two surfaces forming the corner, incorporating the profile and the mesh, and comb with a notched trowel.

- Next position the profile over the mortar and press gently.

- Level the profile with a leveller.

- With the Traditerm® mortar that protrudes from the base when the profile is pressed, cover the mesh and profile. The mesh already covered must be showing the squares of the mesh.

- Always leave a gap of between 1 and 2 mm between profiles.

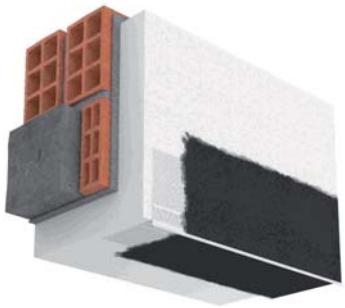
- The joint between profiles should never coincide with the joints between insulation panels.

Traditerm® Circular Angle Profile Roll.

This type of profile is used in the event of a hollow with an angle other than 90°. The method of installation is identical to that of the Traditerm® PVC Profile Angle with mesh.

Traditerm® PVC Gutter Profile with mesh.

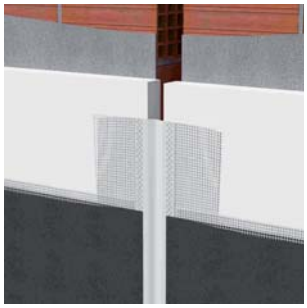
Used for forming gutters on windows, eaves and cantilevers, to avoid rainwater run off from the façade. The method of installation is identical to that of the Traditerm® PVC Profile Angle with mesh.



Traditerm® Expansion Joint Profile.

Existing expansion joints on the façade must be respected and never covered with the **Traditerm®Ceramic** *System.*

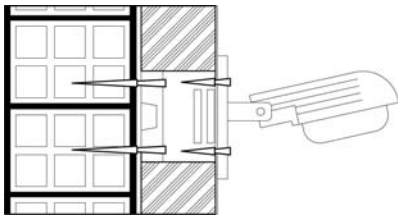
Use the Traditerm® Expansion Joint Profile for this purpose. The method of installation is identical to that of the Traditerm® PVC Profile Angle with Mesh, only that now we will have a double hollow.The band containing the profile is inserted into the expansion joint.

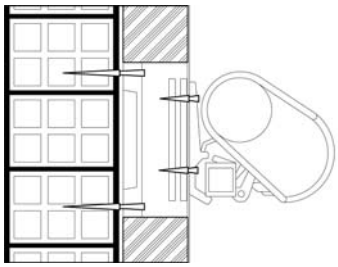


Applying the Traditerm®Ceramic System

Fixing elements to the façade

For fixing washing lines, awnings and lamps to the exterior, on the **Traditerm®Ceramic** *System,* the Traditerm® Support 300 Fixings are used.

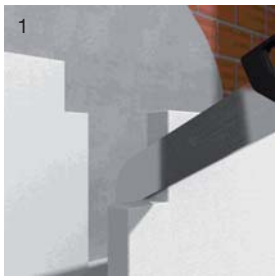


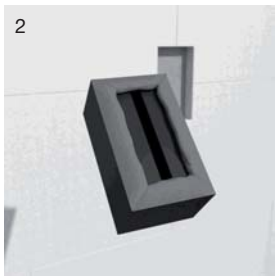


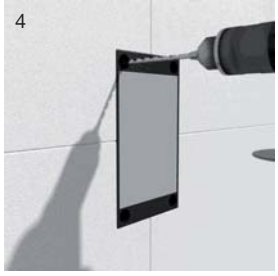
This element has:

- Highest tensile strength of 300 kg.
- 238x138 mm format on thicknesses of 60, 80 and 100 mm.
- Prevents thermal bridging – high density polyurethane body.

For installation:

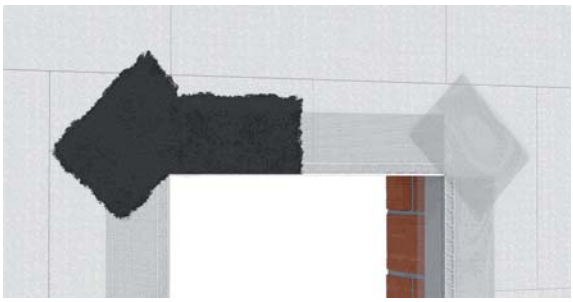






Reinforcement with Traditerm® Mesh on corner points of façade openings (windows, doors,...)

Cut mesh strips of 20x40 cm and fix them with Traditerm® mortar at all corner points of the hollow. Even though the mesh is covered by the mortar, the mesh squares must be showing through.

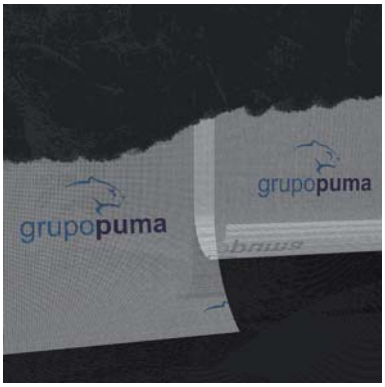


Applying the Traditerm®Ceramic System

Reinforcement of insulation panels

Once the reinforcement has been installed, the surface of the insulation panel is covered with a layer of Traditerm® mortar and combed with a notched trowel (No. 6).

The Traditerm® mesh should be completely embedded into this layer, so that there is a 10 cm overlap with adjacent meshes.



The mesh is covered with the Traditerm® mortar but the squares should still be visible.

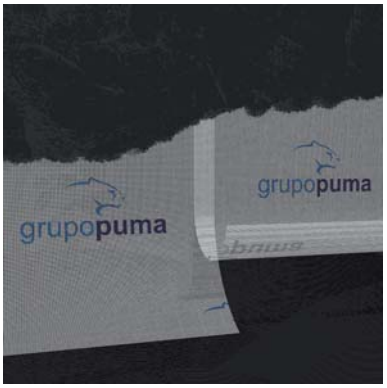
When this layer has achieved sufficient surface strength, apply a new layer of Traditerm® mortar, and comb with a notched trowel (No. 6). The ridges of the Traditerm® mortar are left to dry for a minimum of 24 hours.

After at least 24 hours and with the grooves hardened, a new layer of Traditerm® mortar is applied to fill the grooves.

Applying the Traditerm®Ceramic System

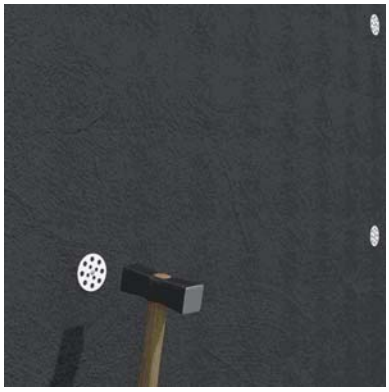
This layer of Traditerm® mortar fill must have sufficient thickness so that it can be combed with a notched trowel (No. 6) afterwards.

Once combed a second layer of Traditerm® mesh is applied and must be embedded and covered with the mortar. Overlap with adjacent meshes by 10 cm.

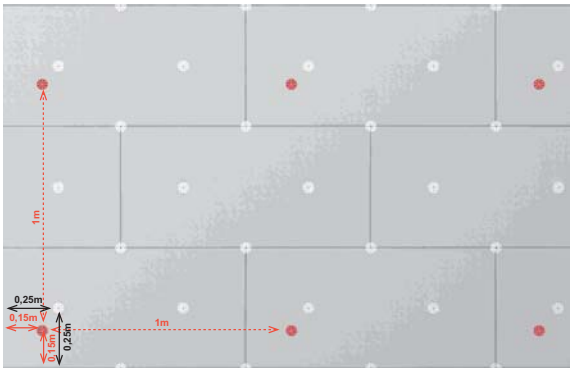


Once the last layer has hardened (it is not advisable to leave it to dry more than 24-48 hours otherwise the material will become over-dried and cause possible cracking when fixing), both meshes are fixed with Traditerm® Fixing Anchors plus NTK.

The fixings must be inserted approximately 1 mm inside the last layer of Traditerm®.



The first fixing is installed to either side of the façade, deviating 15 cm from the edges of the system. The subsequent fixings are installed 1 m apart with respect to the previous fixing. See the fixings distribution plan.

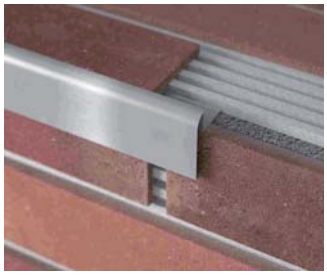


Finally, the Traditerm® Anchor Fixing plus NTK, should be covered with a layer of Traditerm® mortar to level the surface.

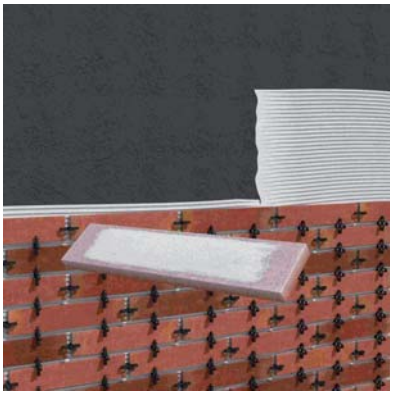
Applying the Traditerm®Ceramic System

Fixing the ceramic facing

A minimum of 48 hours should be left before installing ceramic facings. Before applying ceramic, install the usual corner profiles or ceramic finishing to all the corners and openings on the façade with Traditerm®Ceramic adhesive.



The ceramic tiles are bonded with Traditerm®Ceramic adhesive with the double bonding technique (by applying adhesive to the substrate and to the ceramic tile).



With anchors, leave a joint of at least 4 mm between the ceramic tiles.

Carry out partitioning joints every 3 vertical metres sealed with Pumalastic®MS elastic filler.

Wait at least 24 hours after installing the ceramic with Traditerm®Ceramic adhesive, fill the joints with Morcemcolor®Plus flexible mortar.

Examples

Traditerm®Ceramic System

- Energy saving
- Energy rehabilitation
- Approved
- Amortisable
- Alternative finish
- High mechanical strength.
- Easy to maintain.
- Solution for skirting boards.
- Recommended Installation Network.

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