

TERRACOTTA GUIDE FAÇADE 2021

Revealing the beauty of terracotta in every building

TERREAL is an innovative and responsible manufacturer with its roots in terracotta building materials. The Group has just under 3 300 employees across 12 countries.

TERREAL provides complete building envelope solutions across four major product areas: Roofing, Structure, Façade and Decoration.

Our mission? To work every day to develop local areas and promote sustainable, beautiful and functional housing that respects both people and the environment. Working with clay and letting it inspire us – to change the everyday into something unique.



626 M€
TURNOVER

(Pro forma for CREATON acquisition)



3 300
EMPLOYEES



33
INDUSTRIAL SITES

France, Italy, Spain, Portugal, USA



6
SALES OFFICES

Bahrain, China, Singapore, Thailand,
UK & USA

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Terreal, 4 expertises

We can respond fully to the building envelope needs of homebuilders.
Our range of products and services is divided into 4 major product areas :



ROOFING

www.terrealcouverture.com



STRUCTURE

www.terrealstructure.com



SOLAR

www.terrealcouverture.com

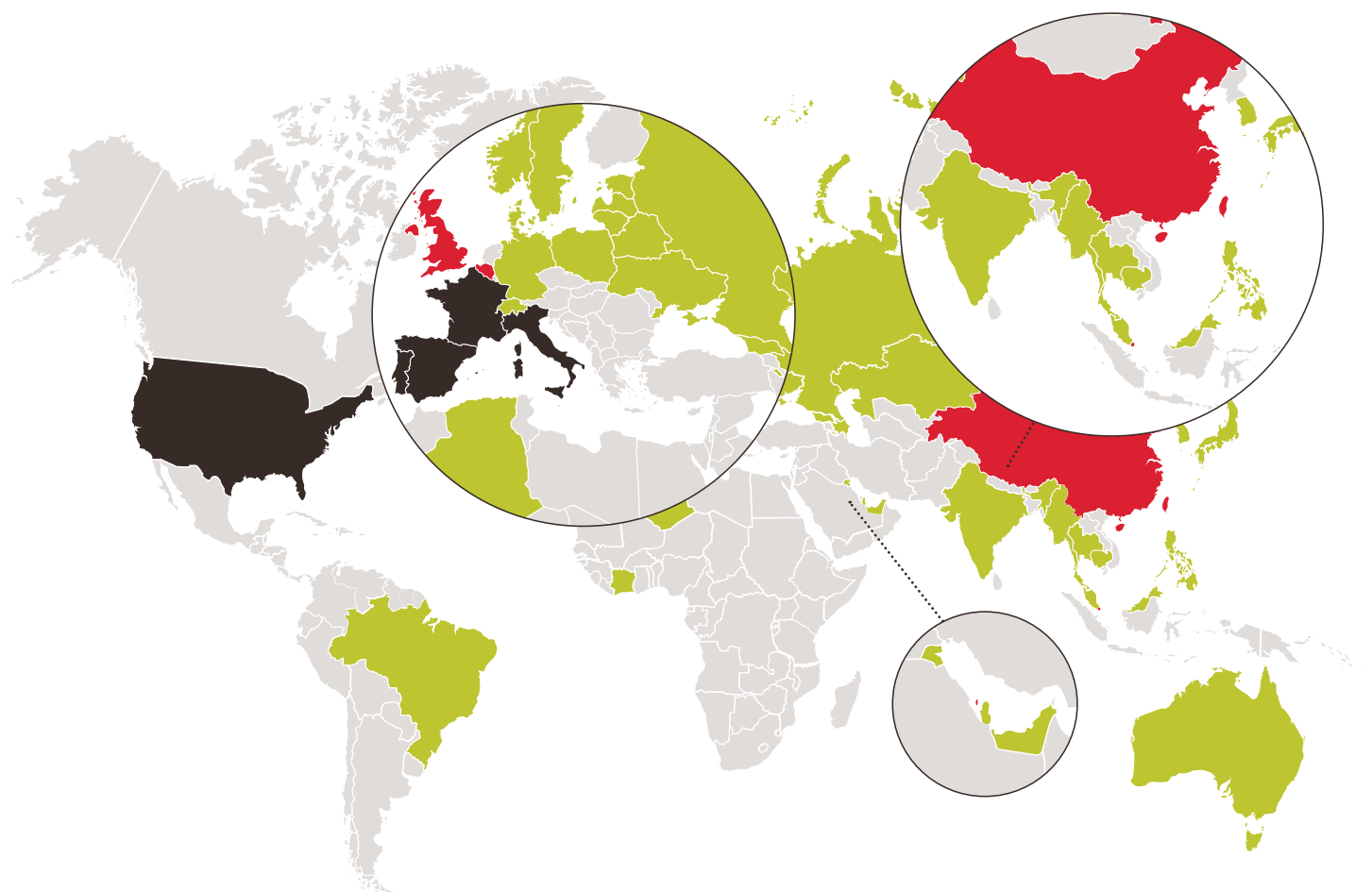


FAÇADE-DECORATION

www.terrealfacade.com

A global company

From China to the United States, TERREAL operates worldwide to seek out the best production sites and promote its products. A key player in construction materials, we have locations in every corner of the globe.



- Industrial presence
- Sales offices
- Partner-Distributors

RECOMMENDATIONS

Terracotta façade cleaning process

Generally, terracotta is self-cleaning but it may need cleaning at regular intervals depending on the local environmental conditions where the terracotta tiles are situated.

GENERAL RECOMMENDATIONS :

Before to start any cleaning process, it is highly recommended to perform a first test on a small facade non-visible or a less visible surface.

In case of using high pressure water jet:

It can be used with care in front of the joints in order to avoid any damage to the insulation panels of rainscreen facades or mortar layer of a brick wall.

In case of using detergent :

- ALWAYS follow the user instructions and recommendations given by the manufacturers of the detergents used.
- ALWAYS use personal protection equipment such as masks, glasses, gloves for any cleaning operation.

These recommendations are just indicative and we recommend you to approach a Specialist Company such as Guard industries, Evonik, Sika or others...

POSSIBLE SOURCES OF DISORDER

Environment impact

- Moisture can bring minerals to the terracotta surface and allow efflorescence to develop.
- Pollution can create an accumulation of dust and dirt on the surface of facades.

Live work site

- Storage and cutting can create dust and dirt on the products.
- Grease residues maybe present on fixing accessories. During the installation and handling of all the components on the system, it is possible to stain terracotta tiles.
- It is essential to store all products in a safe, secure place on a flat, level and stable surface to avoid potential staining on site.

Irregularities during installation of details

- The inadequate flashing detailing for drainage of rain water drainage can result in the development of unsightly staining from moss growth (greenish, blackish...). Recommended Advice: Metal flashing must be correctly installed to avoid such staining.
- Failure to respect the distance at the bottom of the façade will risk moisture development. As a consequence, moss growth and unsightly staining can appear so care with this detail is essential.

HOW TO CLEAN DUST AND DIRT?

- Cleaning with water (repeating more than once maybe necessary).

- Allow to dry after each application.
- If stains are persistent, try cleaning with a clean sponge and clean water before allowing to dry.
- The use of a high-pressure water jet is possible but with special care is essential in the vicinity of the tile joints in to avoid damage the insulation panels.

HOW TO CLEAN GREASE STAINS?

- Clean with water and neutral PH soap (several cleaning operations may be necessary).
- Rinse with clean water and allow to dry.
- If grease stains are persistent, use a powerful diluted detergent and follow detergent manufacturers recommendations.
- Rinse with clean water and allow to dry.
- Repeat this process if necessary.

Advised detergents add

- CERMINET (Desvres)
- ALGICIMENT (Algimouss)
- SIKA DECAP (Sika)

Information about Efflorescence

- Efflorescence is a natural phenomenon which results in white chalky deposits on the surface of a natural material.
- Efflorescence can be from different causes, the most frequent is due to the calcite present in the raw material. This calcite can appear on the surface of the terracotta at any given time and more often due to an area of excessive moisture.
- It disappears naturally during the lifetime cycle. The quality of product is not affected.
- In case of brick slips, mortar joint can generate efflorescence onto surface. It is recommended to clean facades after mortar laying, respecting product specifications.

HOW TO CLEAN CALCITE EFFLORESCENCE AND WHITISH COATING?

- Protect the metallic flashing (around the windows, angle) near to the cleaning area.
- Apply water onto the affected area.
- Clean product from the top to the bottom of the product with a sponge on the following blend: 1 part of hydrochloric acid (diluted at 30%-35% in volume) into 9 parts of clear water. (If it generates white foam when applied on terracotta, the efflorescence is confirmed as a calcite one.)
- Rinse thoroughly with water (low-pressure water jet). Do not wet the product non-treated with an acid.
- Allow to dry.
- Repeat this process if necessary.

HOW TO CLEAN MOSS? (greenish, blackish, ...)

- Clean with water (more than once may be necessary, a low pressure jet can be used)
- Let dry.
- Repeat this process if necessary.

Information about Moss

- The appearance of moss is due to poor treatment of singular points facilitating rain water onto the facade surface. The blend dust and water and constant moisture on to water paths on the façade surface allows the appearance of moss.
- To avoid the reappearance of mosses after cleaning, it is recommended as far as possible to modify the failing singular point.

HOW TO CLEAN GRAFFITI?

The cleaning method must to be chosen according to type of the graffiti product used, the type of finishes and the surfaces. Glazed finishes will be easier to clean than textured finishes or natural surfaces.

It is recommending to address your requirement directly to a professional cleaning service which can advise you the best method on a case by case basis (scrub, rubbing, cover method, etc.)

Anti-graffiti products may be considered as a preventive solution, especially at ground level. However, these kind of treatments may change the original appearance of the surface of the terracotta. It is strongly advised that if it is decided to pursue this type of solution, to test the product/s first on one of the pieces in a discreet location of the façade or if at time of installation on a spare tile to decide of a products effectiveness.





Rainscreen cladding range

Modern, authentic and environmentally friendly, the Terreal wall cladding product range continually invigorates its application techniques and aesthetics. It offers highly effective solutions that meet the latest thermal, seismic and environmental regulations. It is resistant to impact, wind and frost, and is certified by technical assessments issued by the CSTB organization and other engineering organizations around the World.

Durable, maintenance free, and economical, our products are made from clay, a natural raw material, and benefit from the expertise of a major corporation to constantly progress.

Piterak® Slim

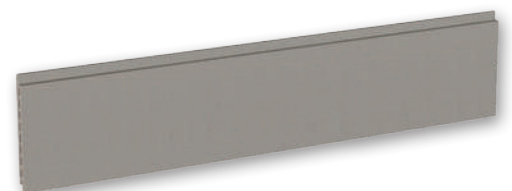
A rainscreen cladding sized to seduce



Piterak Slim is a 30mm thick, double-skin terracotta rainscreen cladding system with overlapping horizontal reveals. The system contains a large module terracotta panel available in a variety of standard sizes and a multitude of made-to-order sizes with a maximum height of 60 cm and maximum length of 180 cm. The system provides high wind resistance and the highest (Q4) impact resistance rating under French CSTB standards (an ICC Construction Product Evaluation Expert Alliance member).

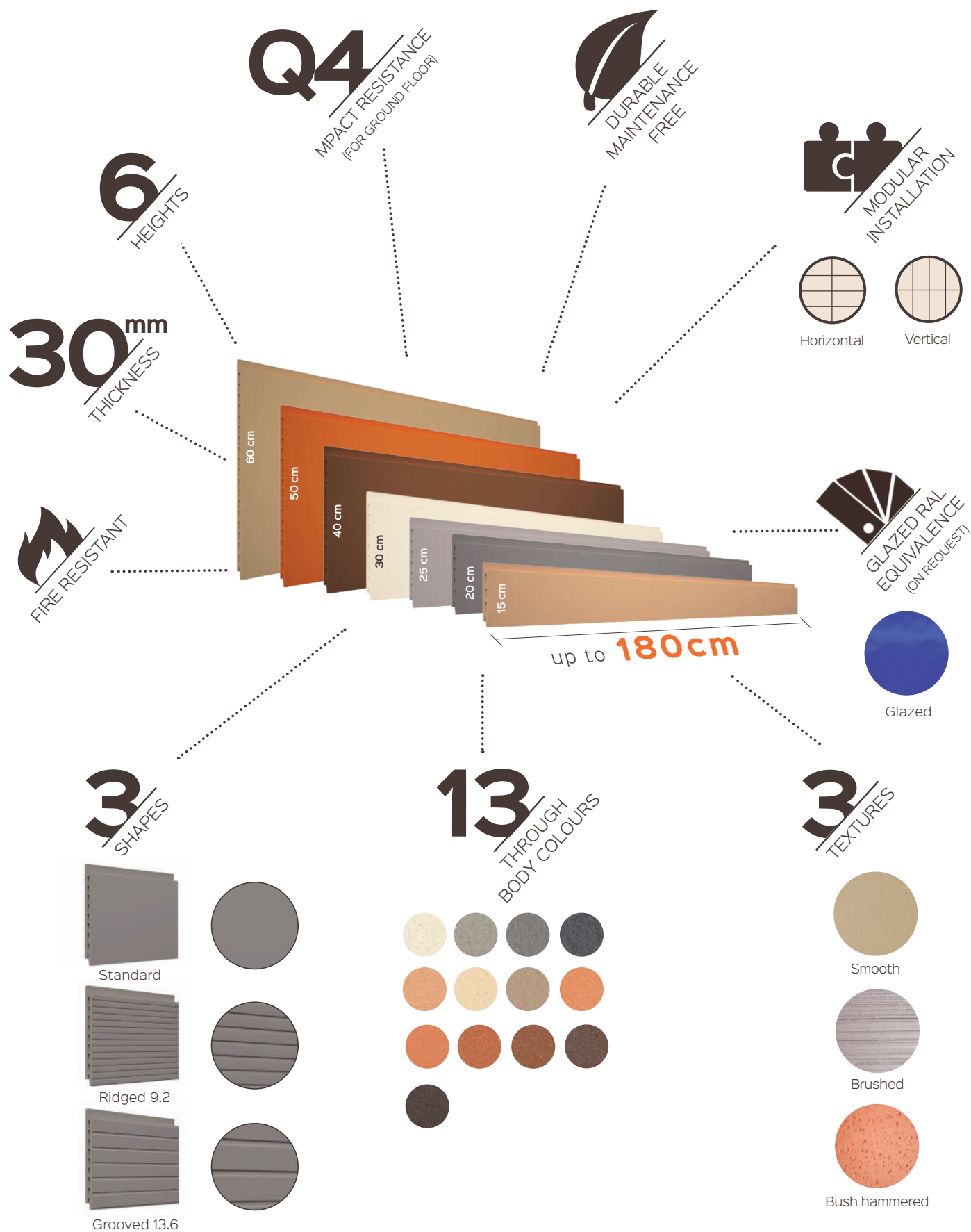
STRENGTHS

- Long length : up to 180 cm
- Heights from 15 to 60 cm
- Many customization possibilities : colour, finish, shape
- Choice of installation : horizontal, vertical
- High impact performance
- Maintenance free and durability
- Fire resistant



VERDE STUDENT RESIDENCE, NEWCASTLE, UK

Architect : Simpson Haugh and Partners



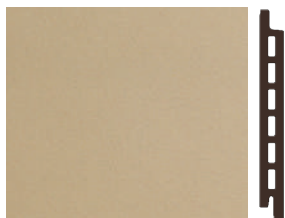
Standard range

STANDARD DIMENSIONS

REF. CATALOGUE	MODULE HEIGHT	MODULE LENGTH	THICKNESS	WEIGHT / M²
PS15C0	150mm	310 to 1810 mm	30 mm	~48,5 kg / m²
PS20C0	200 mm			
PS25C0	250 mm			
PS30C0	300 mm			
PS40C0	400 mm			
PS50C0	500 mm			
PS60C0	600 mm			

SHAPES

Standard



Ridged 9.2



Ridge dimension :
Height 9 mm
Depth 2 mm
Ridges each 25 mm

Grooved 13.6



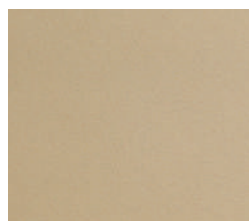
Grooves dimensions:
Height 13 mm
Depth 6 mm
Grooves each 50 mm

Custom shapes

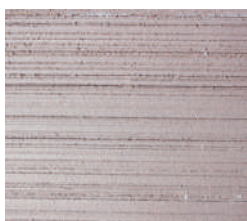


Development of custom shapes on request. Contact us for more information

TEXTURES



Smooth



Brushed



Bush hammered*

*Texture only available for Piterak® Slim up to 30 cm high

TERREAL can develop custom shapes and RAL equivace glazed colours.
Please contact us

THROUGH BODY COLOURS



GLAZED RANGE COLOURS



System characteristics

SYSTEM DESCRIPTION

Cladding process based on 30 mm thick double-wall terracotta products (~48,5 kg / m²) with a horizontal overlap, held using special clips, to a vertical steel framework secured to the main structure, with insulation fitted behind the framework.



CHARACTERISTICS

- Modulus of rupture > 15 MPa
- Water absorption 6 to 9%
- Frost resistance
- Fire classification A1: firing mass considered to be zero

Fixing system

The fastening clips are made of stainless steel 1.4301 according to standard EN 10088.

The vertical support profiles are made of aluminum EN AW 6060 according to EN 755-2.

Impact resistance:

Highest (Q4) impact resistance rating under French CSTB for standard finishes. Without CSTB test, ridged and grooved finishes are rated Q3.

INSTALLATION	HEIGHT MODULE	MAXIMAL LENGTH	CLASSIFICATION FOLLOWING FRENCH NORM 08-301/302	STEEL BALL 0,5 KG	STEEL BALL 1 KG	SOFT BALL 3 KG		SOFT BALL 50 KG	
				DO,5	D1	M3		M50	
				1 joule	3 joules	3 joules	20 joules	100 joules	130 joules
Standard	20 to 60 cm	≤ 180 cm	Q4	✓	✓	✓	✓	✓	✓
Reinforced (add 1 vertical profile + clip at mid-span)	15 cm	≥ 120 up to 180 cm	Q4	✓	✓	✓	✓	✓	✓
		< 120 cm	Q3	✓	✓	✓	✓	✓	✓
Standard	15 cm	≤ 150 cm	Q3	✓		✓	✓	✓	
		≤ 180 cm	Q2	✓		✓	✓		

PROPERTIES

Support type:

- Concrete wall
- Coated masonry

Certifications:

Product under technical assesment :

French CSTB 2.2 /13-1584 V1, BBA 06/4298 and CWCT 2021/111



Piterak® Slim 15 cm is not included in the certifications



Wind resistance :

		STANDARD INSTALLATION		REINFORCED INSTALLATION*	
		Module length (mm)			
		1530	Up to 1810	Up to 1810	
MODULE HEIGHT (MM)	150	1654 Pa	1654 Pa	-	
	200	1936 Pa	986 Pa	1947 Pa	
	250	2219 Pa			
	300	2359 Pa			
	400	1465 Pa	962 Pa	Not tested	
	500	962 Pa			
	600				

* Reinforced installation with 1 intermediate profile and 2 adding clips.

Fire resistance:

Non-combustible product: fire resistance class as A1



BIM objects available

www.bimobject.com/fr/terrealfacade

Horizontal fixing system properties

FIXING ACCESSORIES

Terreal provides :

- Clips for standard installation
- Vertical profiles



PITP01
Omega profile ridged
Piterak®
SAP 118027



PITP06
Omega profile
Piterak®
SAP 140961



PITP03
Angle profile ridged
Piterak®
SAP 118028



PITP04
Angle profile Piterak®
SAP 118020



PITP05
Y profile Piterak®
SAP 31298



PITP07
T profile Piterak®
SAP 152738



PSLA01
Standard clip
Piterak® Slim
SAP 124522



PITA02
Upper clip
Piterak® Slim
SAP 105531



PITA04
Clip for movement joints
Piterak® Slim
SAP 131948



PITA05
Under-sill clip
Piterak® Slim
SAP 132338

- Estimated quantity of fixing accessories for a standard implementation and without singular points.

Values given for information.

MODULE HEIGHT X LENGTH	PITERAK® SLIM	CLIP PSLA01	PROFILE
150 x 1000 mm	6,7 u / m ²	13,4 u / m ²	1 ml / m ²
200 x 1200 mm	4,2 u / m ²	8,4 u / m ²	0,83 ml / m ²
300 x 1300 mm	2,6 u / m ²	5,2 u / m ²	0,76 ml / m ²
400 x 1500 mm	1,7 u / m ²	3,4 u / m ²	0,66 ml / m ²
400 x 1800 mm	1,4 u / m ²	2,8 u / m ²	0,55 ml / m ²
600 x 1800 mm	0,9 u / m ²	1,8 u / m ²	0,55 ml / m ²

Here below the formulas to evaluate the indicative quantity per m² for an H x L frame in the running part without taking into account the singular points.
H and L are the height and length of the module and are expressed in m.

ESTIMATED CALCULATION OF QUANTITIES HEIGHT X LENGTH	
Piterak® Slim / m ² quantity	1 / (H x L)
Clip / m ² quantity	2 / (H x L)
Profile / m ² , quantity (ml)	1 / L
Profile / m ² quantity (u)	1 / (3 x L)

- Other supplies necessary for the implementation are not offered by Terreal (insulation, fixing screws, dowels or lag bolts, brackets, profile bay trim, lower part starting grid, profile angle, ...). They are the responsibility of the installation company.



For the final order, a precise layout must be carried out by the installation company in order to take into account all the singular points of the site.



ZOOM ON ...
Installation guide
video

www.youtube.com/user/terrealvideos



PRIOR RECOMMENDATIONS

The implementation of vertical profiles must respect the rules of the technical assessment : French CSTB 2.2 /13-1584 V1, BBA 06/4298 and CWCT 2021/111.

The layout is carried out beforehand by the company installation, to determine the positioning of vertical profiles as well as the dimensions of Piterak® Slim.

To define the vertical layout correctly it is necessary to consider a vertical space between 2 products of 10 mm (this space can be increased to 20 mm maximum).



Make sure to respect a space of 20 mm minimum between the insulation and the back of the terracotta product to allow a good ventilation of the air gap.

Check with local industry standards and local guidelines as requirements varies from Country to Country.

INSTALLATION

The vertical profiles are fixed to the walls by square brackets (or stirrups) fixed to the profiles by stainless steel drilling screws. So fixed this frame is called "bridle".

The profiles must be fixed so as to adjust the verticality and horizontality of the profiles between them.

The number and arrangement of the brackets (or stirrups) is determined by calculation, depending on the area of intended use, by the supplier of the brackets.

The implementation of Piterak® Slim is done from the bottom to the top, once the frame is aligned vertically and horizontally and that the insulation is put in place (when necessary).

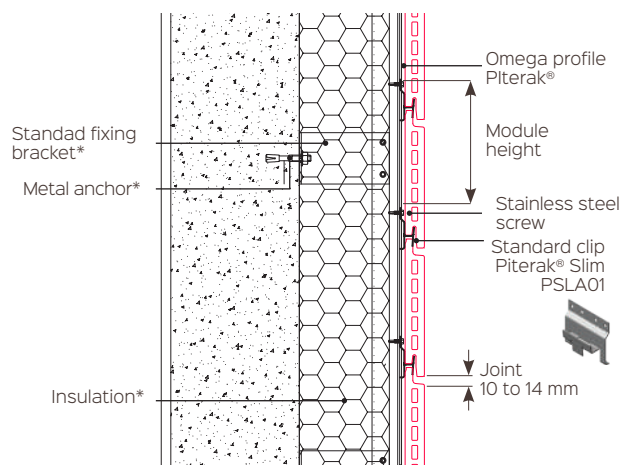
Standard clip (PSLA01) in the bottom part are fixed in 1st while aligning with the horizontality. The clips are fixed to the vertical profiles with stainless screws.

The Piterak® Slim is placed on these clips, then the standard clips are laid at the ends of the upper part of the product. A space between the clip and the top of the terracotta should be spared.

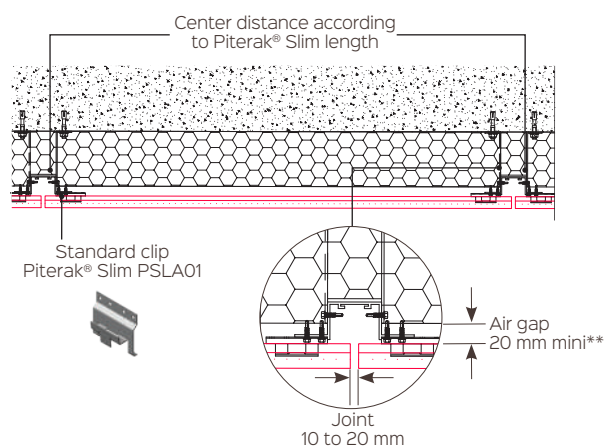
To facilitate the installation / fixing of the clips, a tracing can be carried out on profiles at each module height (example for Piterak® Slim 30: height of 30 cm module = marking on profile every 30 cm).

Thus assembled, the horizontal joint between 2 products will be about 12 mm.

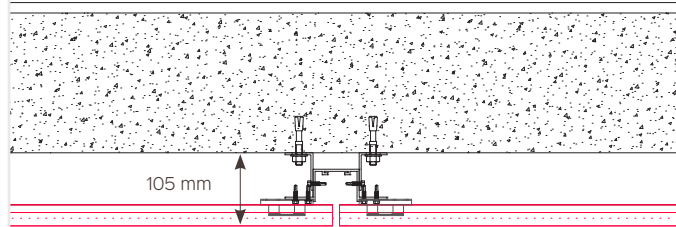
Standard installation details



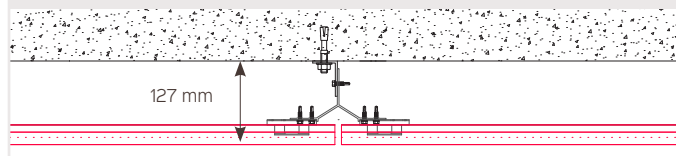
Rainscreen cladding Piterak® Slim Horizontal view details



Minimal thickness Omega profile



Minimal thickness Y profile



*Not provided by Terreal

Horizontal fitting guide



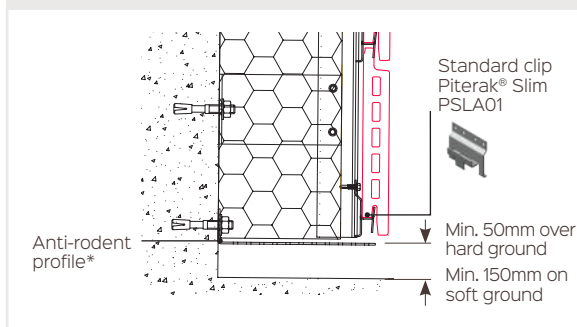
SINGULAR POINTS

Bottom details

In the lower part, it is necessary to respect a minimum height between the ground and the bottom of the starting Piterak® Slim element.

- Height is 50 mm on hard ground or 150 mm on soft ground for application on concrete wall or traditional coated masonry.
- Height of 200 mm whatever the type of floor for a wood frame wall installation.

Bottom detail

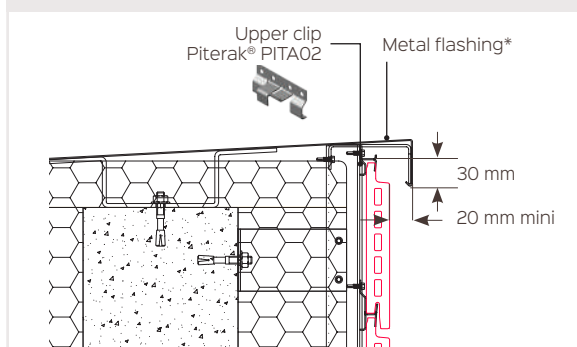


Top details

A metal capping must be placed in the upper part or parapet to limit the penetration of rainwater.

- The metal capping must have a fall in front of the terracotta of 30 mm and must overhang the Piterak® Slim by at least 20 mm.
- Thus dimensioned, this flap prevents rainwater from flowing directly onto the Piterak® Slim and allows good ventilation of the air gap. A regular flow of water promotes the appearance of foam on the products: this degrades the aesthetics of the facade and results in a need of regular cleaning operation.

Top detail



**Not provided by Terreal*

SINGULAR POINTS

Window sill

The sill is treated using a metal flashing which must have a fallout in front of the terracotta of 30mm and must protrude 20 mm from the Piterak® Slim.



Lintel

The lintel is treated with a metal flashing. The Piterak® Slim is used in the same way than for the starting part.

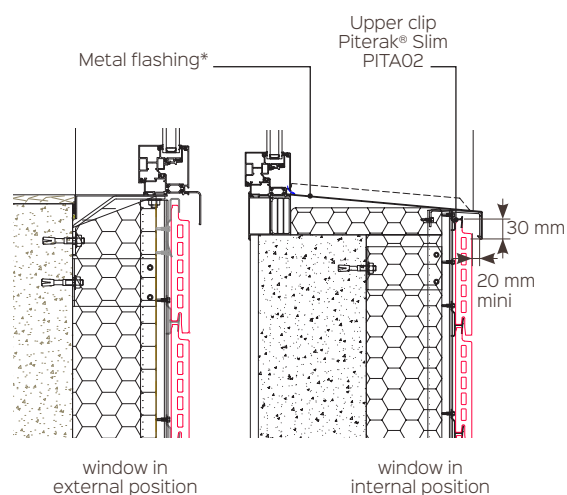
A space of 10 mm is required between the flashing and the bottom of the Piterak® Slim above the lintel

Jamb

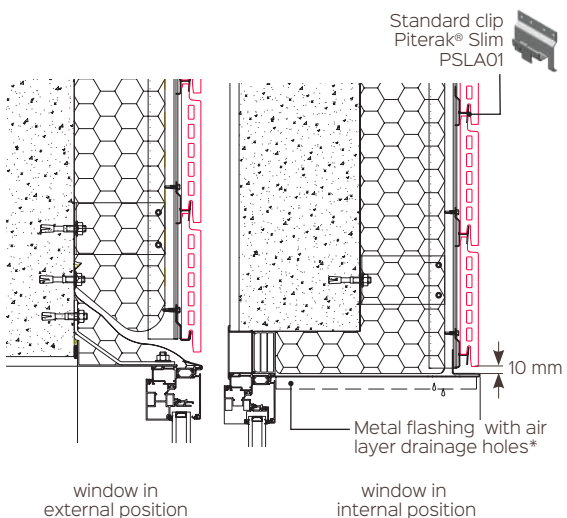
In jambs, returns are treated with metal profiles (angles, ..). A space of 10 to 20 mm is required between the profile and the ends of the Piterak® Slim.



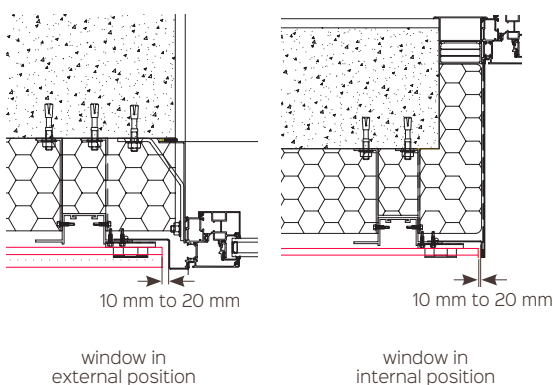
Window bottom details



Lintel details



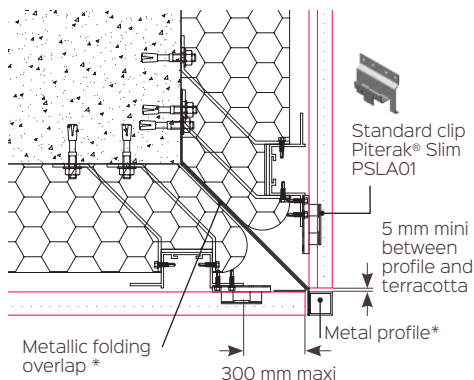
Jambs details



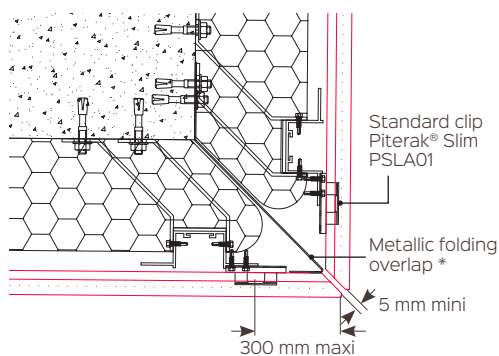
**Not provided by Terreal*

Horizontal fitting guide

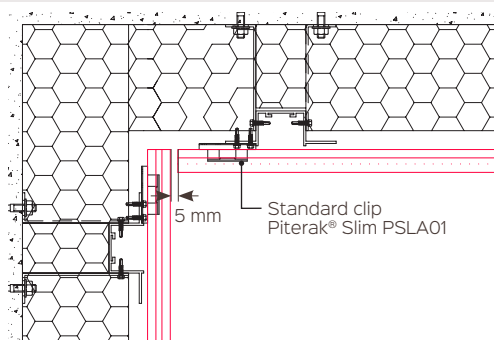
External angle with profile



External angle with miter cut



Internal angle



SINGULAR POINTS

External angle

With profile

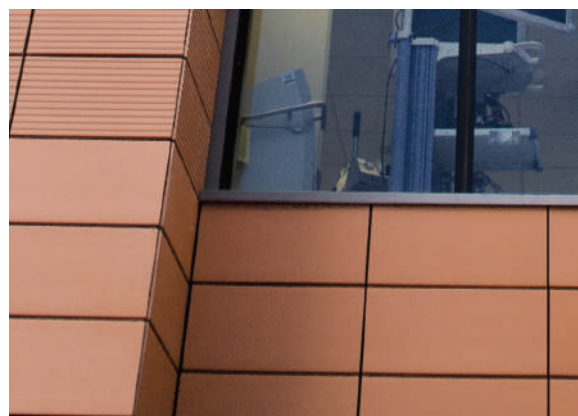
A metal profile (generally powder coated, not sold by Terreal) handles the angle. This profile can be either recessed or flush with the front face of the facade. In all cases a space of 5 mm is required between the profile and the ends of Piterak® Slim.

Without profile

Piterak® Slim are cut at one end on the edge of the product. The cutting angle is 45° and a 5 mm dish is kept (miter cut).

Internal Angle

Inside corners are treated with standard products. A space of 2 to 5 mm is required between Piterak® Slim.



**Not provided by Terreal*

SINGULAR POINTS

Frame splitting

The vertical profiles being mounted in a clamped manner (no sliding points) it is necessary to have a space between each profile. This allows to absorb aluminum expansions induced by thermal variations. This can be used with or without using a flashing metal.

Without flashing metal

Frame splitting can be done without flashing metal. In this case, a space should be left between 2 profiles at least 8 mm.

In no case should the Piterak® Slim be bridged on 2 consecutive vertical profiles.

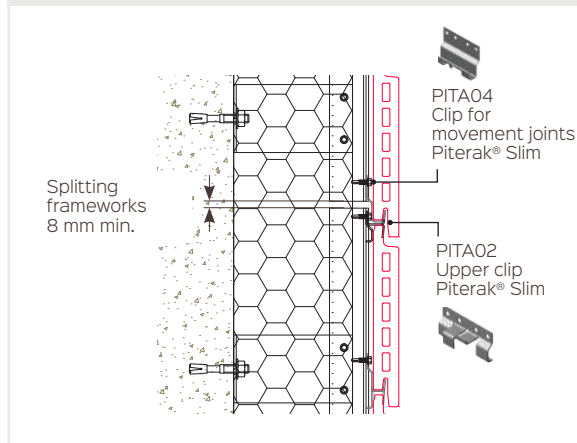


Never bridge a product on 2 consecutive profiles.

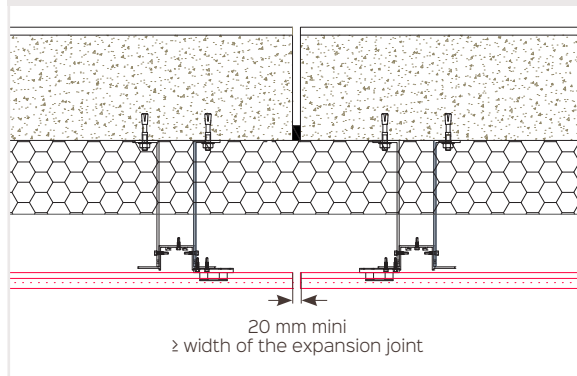
Expansion joint

The space to be kept between 2 adjacent Piterak® Slim, is at least the thickness of the expansion joint with a minimum of 20mm.

Frame splitting details



Expansion joint details



**Not provided by Terreal*

Soffit fitting guide

SYSTEM DESCRIPTION

Soffit fitting guide Cladding process based on 30 mm thick double-wall terracotta products (~48,5 kg / m²), Piterak® Slim can be fixed in a soffit detail secured using special clips, to a vertical steel framework secured to the main structure.



Soffit installation is permitted for the Piterak® Slim system on horizontal concrete walls (more than 3 m from the ground), with no playground nearby, respecting the following recommendations:

- Add an intermediate profile at mid-length as well than 2 additional clips
- The brackets are doubled
- The supporting framework of the soffit must be independent from the façade works.
- The installation of the elements on the soffit is done from the outside to the inside of the building.
- Installation inclined > 30 ° or on the soffit is limited to maximum terracotta size 400 x 1,500 mm.



Maximum size: 400 x 1500 mm
Intermediate framework + 2 additional clips per Piterak® Slim.

Installation permitted on +3m horizontal concrete walls inaccessible

PROPERTIES

Support type:

- Concrete wall

Certifications:

Product under technical assesment : n°2.2 / 13-1584 V1.



Wind resistance:

		MODULE LENGTH UP TO 1510 MM
MODULE HEIGHT (MM)	200	1467 Pa
	250	
	300	
	400	985 Pa



ZOOM ON ...

Installation guide
video

www.youtube.com/user/terrealvideos



INSTALLATION

Installation from the outside to the inside of the wall.
Install the PITA04 clip then position the products until it stops at the notch.

The following products are attached using clip PSLA01.

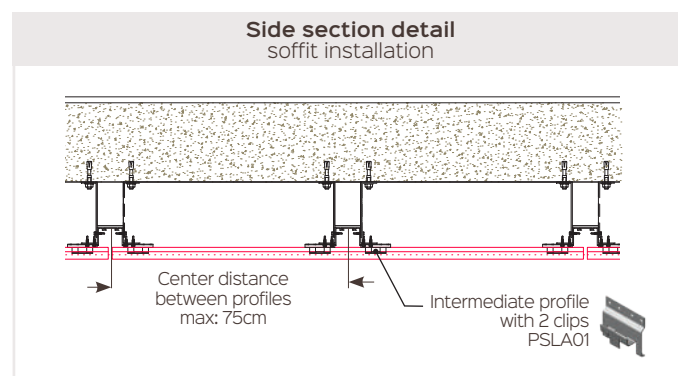
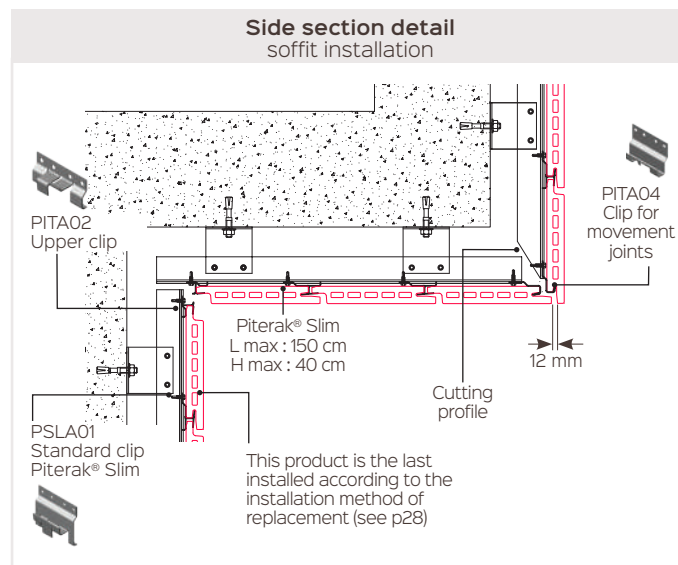
The last element is fixed with a PITA02 upper clip.

As a reminder, the clip of the profile at mid span are doubled.

To ensure continuity with the non-inclined facade or soffit, cut the bevel profiles and start the installation with PITA04 clip.

Wind permissible depressions are shown (see p21).

The 20 mm air gap should be kept behind each product.



Wood frame wall fitting guide

SYSTEM DESCRIPTION

Cladding process based on 30 mm thick double-wall terracotta products (~48,5 kg / m²), Piterak® Slim can be installed on wooden framework on a composite framework with profiles with center distance of 645 mm maximum located to the right of the timber frame wall uprights and respecting the following recommendations:

- Reserve a minimum 20 mm air space between the wall and siding. Check with local industry standards as minimum air gap above 20mm varies from Country to Country.
- Length of vertical aluminum profiles limited to 3m.
- The layout must take into account the center distance of the uprights of the timber frame wall.
- The vertical profiles must be fixed to the right of rafters.
- The support wall must comply with NF DTU 31.2.



Installation on wooden frame wall in accordance with NF DTU 31.2, is limited to: **Maximum height of 18 m** (+ point gable) in wind zones 1, 2 and 3 in situations a, b and c, maximum height 10 m (+ pinion point) in situation d.

Check with local industry standards and local guidelines as requirements varies from Country to Country.

PROPERTIES

Support type:

- Wood frame wall (according to NF DTU 31.2) up to 18 m with special provisions for openings from 9 m to 18 m.

Certifications:

Technical advice for horizontal installation n° 2.2/13-1584 V1.



Impact resistance:

Highest (Q4) impact resistance rating under French CSTB for standard finishes.

Without CSTB test, ridged and grooved finishes are rated Q3.

Wind resistance:

		STANDARD INSTALLATION		REINFORCED INSTALLATION*	
		Module length (mm)			
		1530	Up to 1810	Up to 1810	
MODULE HEIGHT (MM)	200	1936 Pa	986 Pa	1947 Pa	
	250	2219 Pa			
	300	2359 Pa			
	400	1465 Pa	962 Pa	Not tested	
	500	962 Pa			
	600				

* Reinforced installation with 1 intermediate profile and 2 adding clips.

INSTALLATION

A waterproofing membrane conforming to NF DTU 31.2 must be placed on the outside of the wall of the timber frame wall.

With the joints open, the rain screen will have a UV resistance of 5000 h according to standard NF EN 13589-2. In situations a, b and c, the bracing panels of the timber frame wall can be positioned on the inside or outside of the wall. In situation d, if the bracing panels of the wooden frame wall have been positioned on the inside of the wall, wood-based panels must be positioned on the outside of the wall.

The rain screen is cut every 6 m to evacuate surface runoff water. Under no circumstances should the rain screen be placed against the cladding product (air gap of 20 mm minimum).

The profiles are attached to the uprights of the timber frame wall using wood screws of minimum dimension Ø 7 x 50 mm.

PK pullout resistance characteristic is 598 daN for an anchoring of 50 mm in a wooden support.

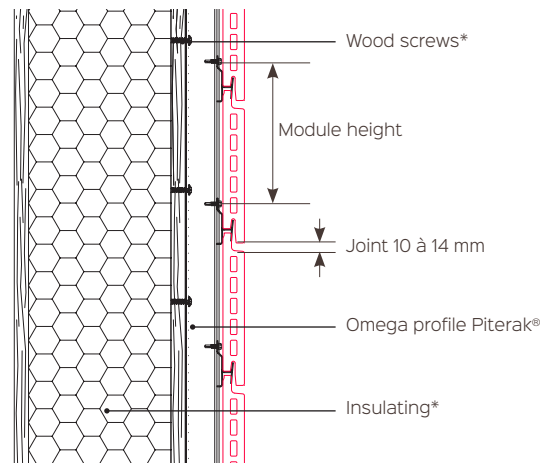
Each clip is fixed to the right of the omega profiles using 2 self-drilling screws 5.5 x 22 mm. Only the omega profiles are compatible with installation on a wooden frame wall. The frame is split on each floor. Bridging of junctions between successive uprights by shingles is excluded.

The figures illustrate the minimum installation arrangements on the timber frame wall. Situations a, b, c and d are defined in NF DTU 20.1.

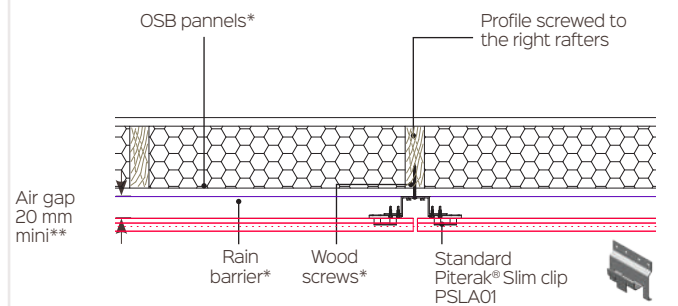


Check with local industry standards and local guidelines as requirements varies from Country to Country.

Wood frame installation details
Vertical view details



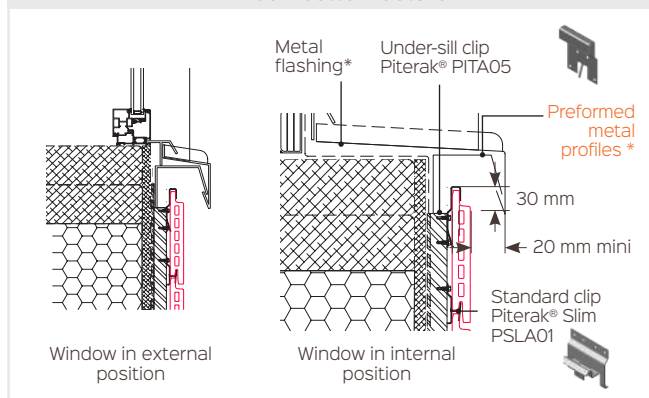
Wood frame installation details
Horizontal view details



**** Check with local industry standards as minimum air gap above 20mm varies from Country to Country**

Wood frame wall fitting guide

Wood frame installation Window bottom details



SINGULAR POINTS

Window bottom details

The sill is treated using a metal flashing which must have a fallout in front of the terracotta of 30 mm and must protrude 20 mm from the Piterak® Slim.

Lintel details

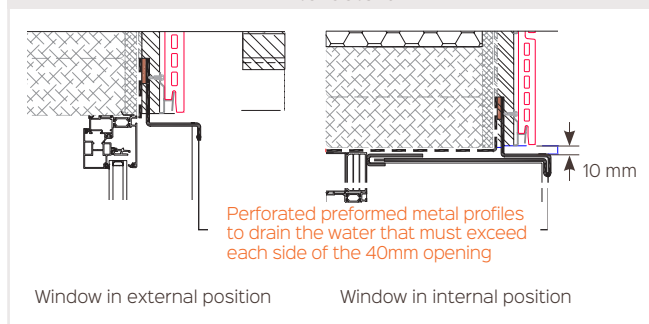
The lintel is treated with a metal flashing. The Piterak® Slim is used in the same way than for the starting part.

A space of 10 mm is required between the flashing and the bottom of the Piterak® Slim above the lintel

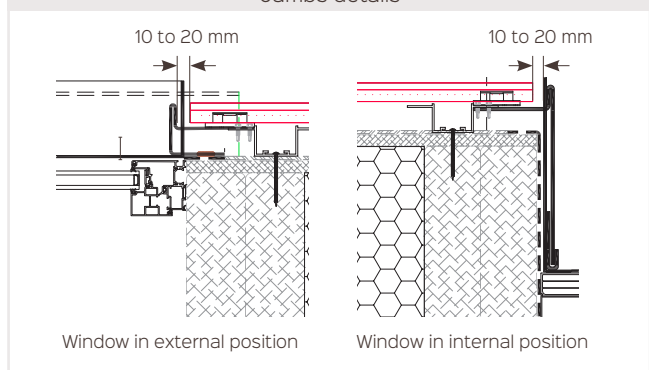
Jambs details

In jambs, returns are treated with metal profiles (angles, ...). A space of 10 to 20 mm is required between the profile and the ends of the Piterak® Slim.

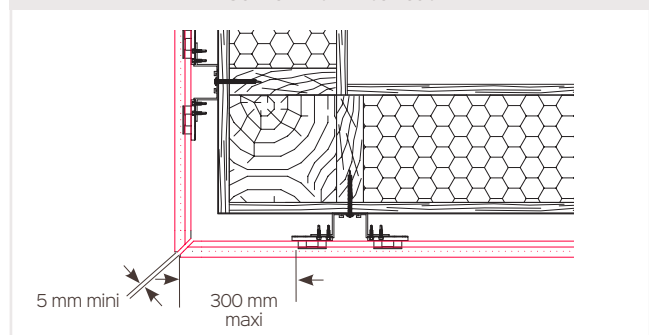
Wood frame installation Lintel details



Wood frame installation Jambs details



Wood frame installation Corner with miter cut



*Not provide by Terreal

! Specificity for building :

- from 10 to 18 m high (+ gable end) in situations a, b and c.
- from 6 to 10 m high (+ pinion point) in situation d.

Implementation with:

- Ear flaps in preformed metal profiles extended beyond the vertical plane of the facing
- Preformed metal lintel profiles extended 40 mm beyond the bay tables
- Preformed metal profiles on the boards berries.

Corners

Piterak® Slim are cut at one end on the edge of the product. The cutting angle is 45° and a 5 mm dish is kept (miter cut)

! Check with local industry standards and local guidelines as requirements varies from Country to Country.



Seismic zone installation

Piterak® Slim 20 to 60 x 180 cm can be used in seismic zones:

- Omega profile linked together
- Bracket Isolco C2 depth 50 to 240 mm

SEISMIC TEST	FREQUENCY (HZ)	NUMBER OF CYCLE	AMPLITUDE (MM)	ACCELERATION (M/S²)	PASSED
Parallelogram test	$0,2 \leq f \leq 1$ Hz	20	± 60 mm	-	✓
Test in the plane of the support	3	10	± 46,4 mm	16,5	✓
	4,3 Damped natural frequency	5	± 22,6 mm	16,5	✓
	15	10	± 1,9 mm	16,5	✓
Test perpendicular to the plane of the support	3	20	± 46,4 mm	16,5	✓
	15	20	± 1,9 mm	16,5	✓

No seismic test for 15, 20 and 60 cm height Products.

CONCRETE WALL

Profiles

Installation in seismic zone only with Omega profile and brackets (ISOLCO up to 240 mm)

Omega profiles are linked together by an aluminum profile fixed on the back of the omega profiles.

The vertical center distance of the L profile is 100 cm maximum.

Isolco brackets up to 240 mm maximum

The brackets are doubled (in opposition). The spacing vertical between the brackets is 100 cm maximum.

Load-bearing structures

The load-bearing structures are split every levels. Piterak® Slim must not be bridged between 2 levels.

Anchoring the brackets

On concrete wall (NF DTU 23.1), the anchoring of the brackets is made using A4 plugs type FM 753 CRACK Ø 12.

WOOD FRAME WALL

Profiles

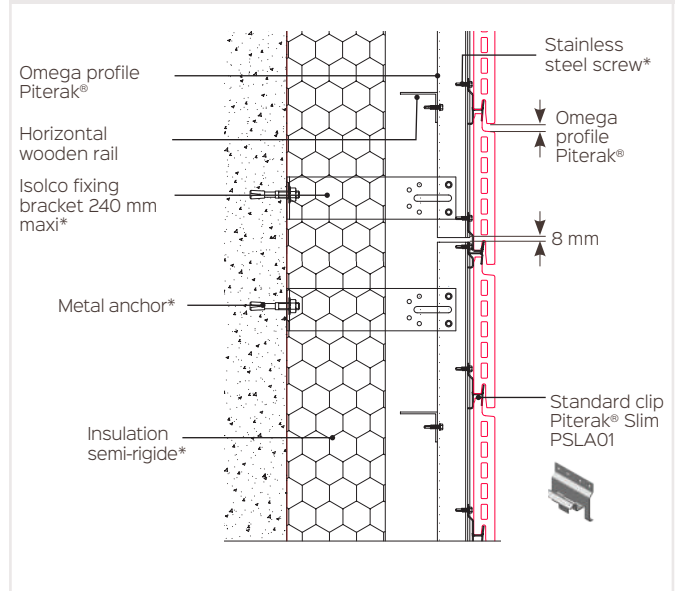
Installation in a seismic zone on a wooden frame wall with direct installation of the profiles on the rafters of the wood frame wall.

The omega profiles are directly fixed to the right of the rafters with lag bolts type TH 13 ZN.

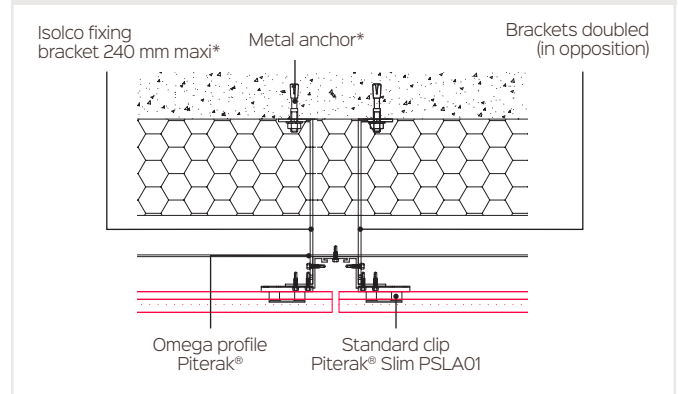
Load-bearing structures

The load-bearing structures are divided at all levels. Piterak® Slim must not be bridged between 2 levels.

Seismic zone installation
Current section detail vertical section



Seismic zone installation
Current section detail horizontal section



Concrete wall installation:

- Installation in seismic zone with omega profile only
- Bracket up to 240 mm max.
- Max vertical center distance. L profiles: 100cm
- Double brackets (in opposition)
- Load-bearing frame split at each level

Wood frame wall installation:

- Installation in seismic zone with omega profile only
- Load-bearing frame split at each level

*Not provided by Terreal



Seismic zone installation

SINGULAR POINTS

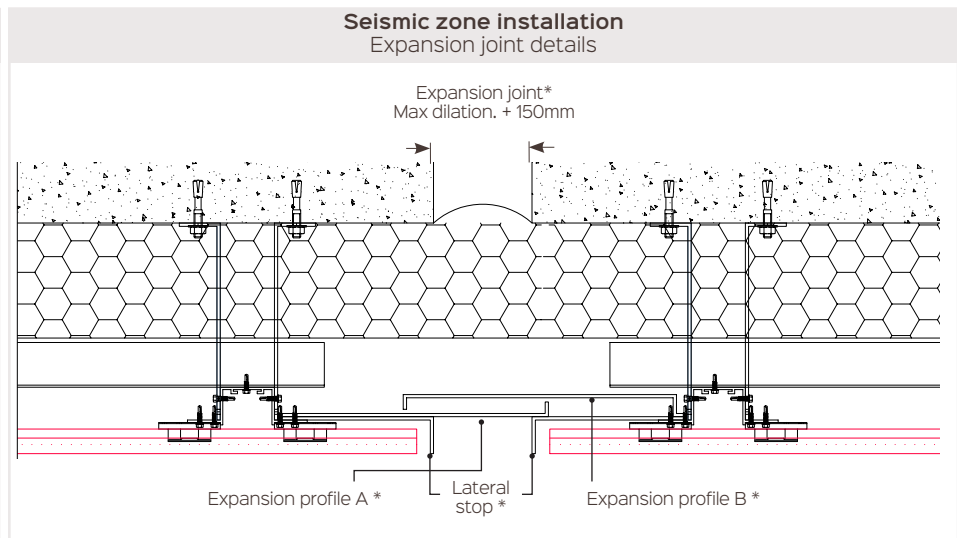
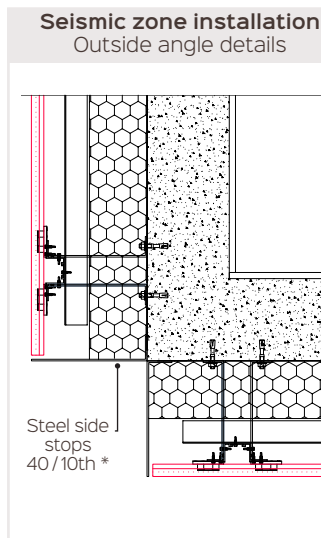
Corners

At each corner exiting the 40/10th steel side stops must be positioned.

Installation of mitered angles in seismic installation is not referred to in the technical opinion.

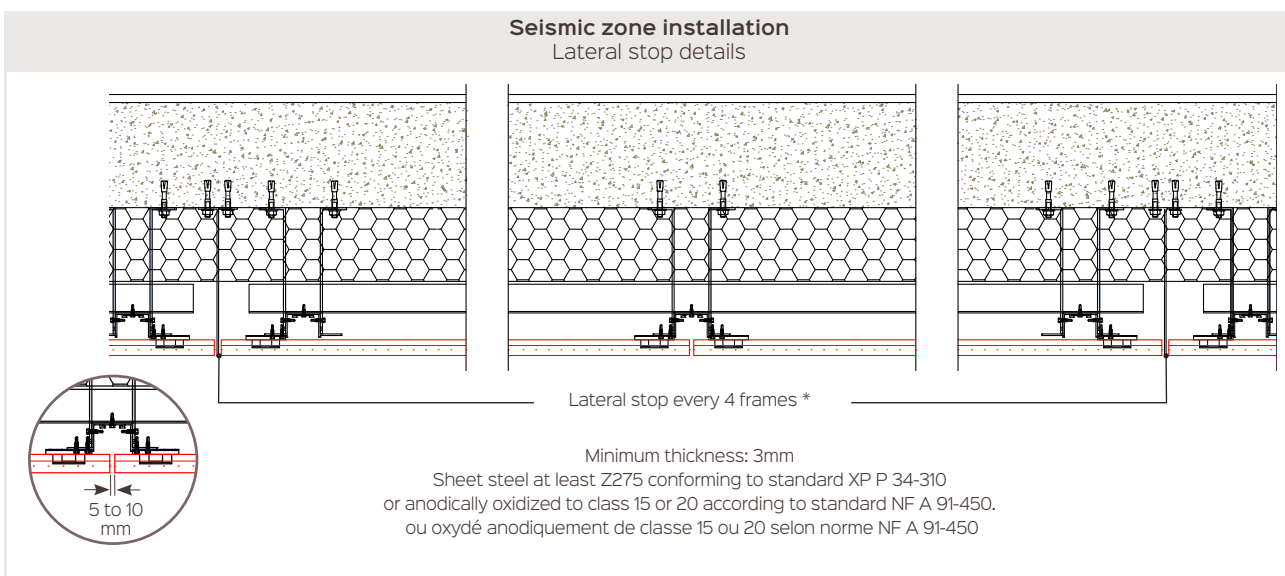
Expansion joint

In front of the expansion joints, bridging of the joint with terracotta is excluded and a folded profile device must be implemented so that it protects the insulation while absorbing the differential movements due to the expansion joints.



Lateral stop

A lateral stop must be implemented every 4 frames (4x180 cm or 7.3 m maximum) using metal profiles fixed to the vertical profiles. Example: 4 x 180 cm or 7.2 m maximum.

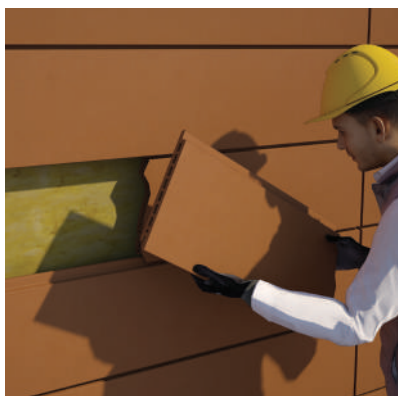


*Not provided by Terreal

Replacement Guide



Broken product.



Remove the broken product.



Locate the positioning of the 2 visible common clips.



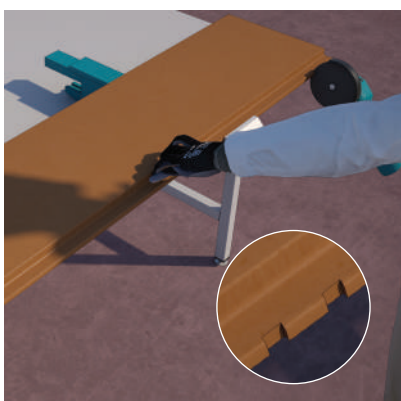
Remove the 1st clip.



Remove the 2^d clip.

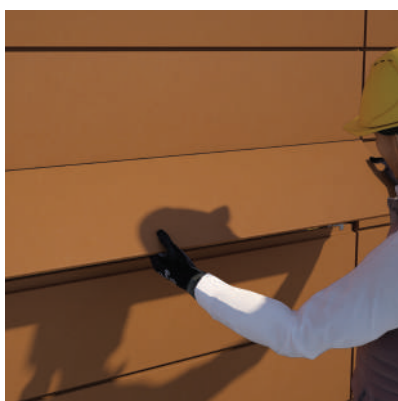


Install the high clip PITA02.

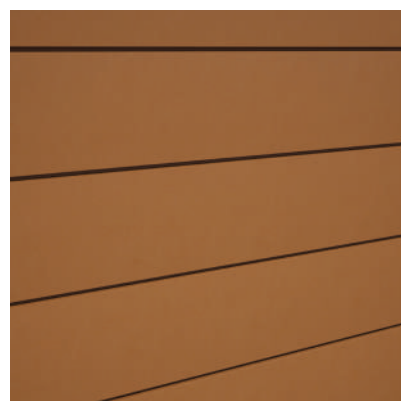


Trace the cutting area on the upper part of the replacement product. The cutting of the product in the upper part is necessary in order to be able to fit the cut area in the upper clip.

Cut out each side of the Piterak® Slim.



Put the replacement product in place by first inserting the upper part, pushing towards the wall then exerting downward pressure to position it at the bottom of the clips.



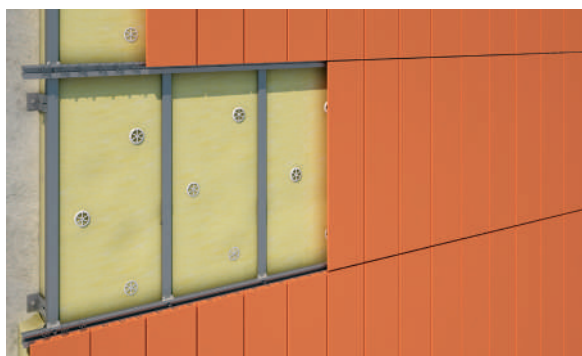
The product is replaced.

V-clip® vertical installation system

SYSTEM DESCRIPTION

Cladding process based on 30 mm thick double-wall terracotta products (~48,5 kg / m²), the Piterak® Slim can be installed vertically using the specific V-clip® system (Façade Label).

V-clip® system is a fastening system consisting of a high-performance steel wire clip that snaps onto a horizontal rail. It allows vertical fixing even on curved surfaces.



PROPERTIES

Supporting walls

- NF DTU 23.1 concrete wall (flat and curved wall)
- NF DTU 20.1 coated traditional masonry
- NF DTU 31.2 wood frame wall (9m max.)

Certifications

Technical advice for vertical installation n° 2/13-1542 * V2



Impact resistance:

Highest (Q4) impact resistance rating under French CSTB for 30 cm module in standard finish.

Without CSTB test, ridged and grooved finishes are rated Q3.

Seismic installation

In seismic configurations:

- vertical profiles must be tubes
- the brackets are replaced by stirrups
- the seismic plastic shim is systematically used
- the support wall is made of sheet concrete
- the product will be maximum 600 x 1500 mm

(Results obtained following additional tests at French CSTB)

FIXING ACCESSORIES

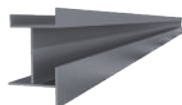
Accessories sold by Terreal:



VCA01
V-clip® TS11
SAP132182



VCV05
SAP153814



VCP01
Support rail for joints
8 mm
(seismic pose)
SAP 132184



VCC01
against corrosion spacer
SAP 132183



VCP03
Support rail for joints
8 mm
SAP 147016



VCC02
Seismic shim or spacing
SAP 132185



VCE01
Splint for expansion
joint
SAP 132187



VCP04
High inertia support rail
for joints 8mm
SAP 153815



• SAP 152359 VCV02
wood screws cleat 30 mm

• SAP 152360 VCV03
wood screws cleat 50 mm

• SAP 152371 VCV04
wood screws cleat 70 mm

• SAP 153814 VCV05
self-drilling screw for
Aluminum rail mount
VCP04

• SAP 154014 VCV06
self-drilling screw for
Aluminum rail mount
VCP01/VCP03

The other supplies necessary for vertical installation are not offered by Terreal: dowels, brackets, L-shaped profile or tube, insulation, bay cladding profile, splitting flap air blade, They are the responsibility of the fitting company.

V-clip® vertical installation system



DESIGN RULES OF AVIS TECHNIQUE (CSTB)

Determining the calculation of the number of V-clip® required by Piterak® Slim depends on the format of the terracotta product as well as the desired wind resistance.

At least 2 V-clip® / edge is needed, or 4 V-clip® per product.

It will therefore be checked first if 2 V-clip® are enough to support the product in the lower part from the following formula :

$$N = (b \times L \times 48,5) / 8$$

with b = module width and L = length of the Piterak® Slim expressed in m (48.5 being the surface mass of Piterak® Slim).

- If $N < 2$ then 2 V-clip® in the lower part and 2 V-clip® in upper part are required so 4 V-clip® / Piterak® Slim
- If $N > 2$ then consider rounding up to obtain the number of V-clip® at the bottom and $2 \times N$ for the total of V-clip® by Piterak® Slim

For example if the calculation gives $N = 2.4$: we must consider $N = 3$ V-clip® in the lower part. So $2 \times 3 = 6$ V-clip® by Piterak® Slim.

WIND RESISTANCE

Depending on the number of V-clips® calculated for the weight gain of the Piterak® Slim, it should be checked whether this is sufficient to satisfy the desired wind resistance value.

The admissible wind pressure according to the number N of V-clip® / Rive is given by the formula below :

$$P = Ra / (0,5 \times K \times L \times b / (N - 1))$$

P: admissible pressure in Pa under normal wind (according to NV65 rules modified).

Ra: admissible resistance to the right of the hooks $Ra = 80$ N (8 daN).

L: length in m of the terracotta element.

b: width in m of the terracotta element.

N: the number of V-Clip® per bank.

K: coefficient given below :

N (V-clip® / edge)	2	3	4	5	6 and more
K	0,5	1,25	1,1	1,14	1,13

Examples

Piterak® Slim 200 x 1520 mm

$$b = 0,2 \text{ m} ; L = 1,52 \text{ m}$$

$$N = (0,2 \times 1,52 \times 48,5) / 8 = 1,84$$

$$N = 2 \text{ V-clip® in the lower part}$$

$$(4 \text{ V-clip® per Piterak® Slim } 20 \times 152 \text{ cm})$$

$$K = 0,5$$

$$P = 80 / (0,5 \times 0,5 \times 0,2 \times 152 / (2 - 1)) = 1052 \text{ Pa}$$

Other examples

L X b	V-CLIP® TS 11 QUANTITY	ELIGIBLE DEPRESSION
200 x 1520 mm	2 / rive	1050 Pa
250 x 1300 mm	2 / rive	980 Pa
300 x 1000 mm	2 / rive	1066 Pa

Special cases

Table giving the maximum lengths with 2 V-clip® in the lower part and 2 V-clip® in the upper part of Piterak® Slim

b	2 V-CLIP® / EDGE (4 / PRODUCT)		NUMBER OF V-CLIP®	360 CM RAIL
	L max	Vent max		
0,2 m	1,65 m	969 Pa	12,1 / m²	0,17 cm / m²
0,25 m	1,32 m	969 Pa	12,1 / m²	0,21 cm / m²
0,3 m	1,1 m	969 Pa	12,1 / m²	0,25 cm / m²
0,4 m	0,83 m	969 Pa	12 / m²	0,33 cm / m²
0,5 m	0,66 m	969 Pa	12,1 / m²	0,42 cm / m²
0,6 m	0,55 m	969 Pa	12,1 / m²	0,51 cm / m²

Table giving the maximum number of V-clip® at the bottom for the maximum possible length, ie 1800 mm.

(Results obtained following additional tests at Frensh CSTB)

b	NB. MAX V-CLIP®	L MAX	WIND MIN. WITH NB. MAX. V-CLIP® / PRODUCT	V-CLIP® / M²	360 CM RAIL
0,2 m	3 / edge	1,8 m	711 Pa	11,1 m	0,15 m²
0,25 m	3 / edge	1,8 m	569 Pa	8,9 m	0,15 m²
0,3 m	4 / edge	1,8 m	808 Pa	7,4 m	0,15 m²
0,4 m	6 / edge	1,8 m	983 Pa	5,6 m	0,15 m²
0,5 m	7 / edge	1,8 m	944 Pa	4,4 m	0,15 m²
0,6 m	8 / edge	1,8 m	918 Pa	3,7 m	0,15 m²



At least 4 V-clip® per terracotta product (2 at the top and 2 at the bottom).

Check that each clip in the lower part of the product does not take up more than 8 kg of load each.



DESIGN RULES OF BBA

Design Rule for number of V clip per product according to the standard BS EN 1991-1-4:2005 and its UK National Annex. The quantity of V-clip is determined in order to satisfy this ratio below:

Minimum of 4 V-clip per product (2 per side)

$$\frac{F_h}{R_h} + \frac{F_v}{R_v} \leq 1$$

F_h = Wind design load value in Newton

R_h = Vclip horizontal resistance value **(80 Newton)** x number of V-clip in unit

F_v = Dead load value in Newton (weight of the product)

R_v = Vclip vertical resistance value **(80 Newton)** x number of bottom V-clip in unit

Design resistances of the V-clip® fasteners

V-CLIP® FASTENER TYPE	MINIMUM SKIN THICKNESS OF PINCHING PANEL (MM)	DESIGN RESISTANCE (N)	
		HORIZONTAL LOAD*	VERTICAL LOAD**
		WITH GROOVED / HOLLOW CORE TERRACOTTA OR NATURAL STONE PANEL	
N°9	8,5	80	80
N°11	9,9		
N°13	12,3		

* Use of the above resistances produces a partial safety factor on clip strength of 4.

** Use of the above resistances produces a partial safety factor on clip strength of 5. The vertical load of the tile is carried by the clips on the bottom edge of each tile.

Example 1

Piterak® Slim 300 x 1000 mm

Weight 48,5kg/m²
Wind design load : 900 Pa

NB. V-CLIP® PER PRODUCT	4	6	8
F_h (N)	270	270	270
R_h (N)	320	480	640
F_v (N)	145,5	145,5	145,5
R_v (N)	160	240	320
$F_h/R_h + F_v/R_v$	1,75	1,17	0,88

In this case, we need to use 8 V-clip per product

Example 2

Piterak® Slim 600 x 1000 mm

Weight 48,5kg/m²
Wind design load : 1100 Pa

NB. V-CLIP® PER PRODUCT	4	6	8	10	12	14	16
F_h (N)	660	660	660	660	660	660	660
R_h (N)	320	480	640	800	960	1120	1280
F_v (N)	291	291	291	291	291	291	291
R_v (N)	160	240	320	400	480	560	640
$F_h/R_h + F_v/R_v$	3,88	2,59	1,94	1,55	1,29	1,11	0,97

In this case, we need to use 16 V-clip per product

V-clip® vertical installation system

PRIOR RECOMMENDATIONS

The implementation of vertical profiles must comply with the rules of the technical assessment : French CSTB n° 2 / 13-1542 * V2

The layout is carried out beforehand by the company, in order to determine the positioning of the vertical profiles as well as the dimensions of the Piterak® Slim.

To define the horizontal layout correctly it is advisable to maintain a vertical space of 10 mm between 2 products.

IMPLEMENTATION

The vertical profiles are fixed to the walls by means of angle brackets (or stirrups) fixed to the profile by self-drilling stainless steel screws. Thus fixed this framework is said to be "restrained".

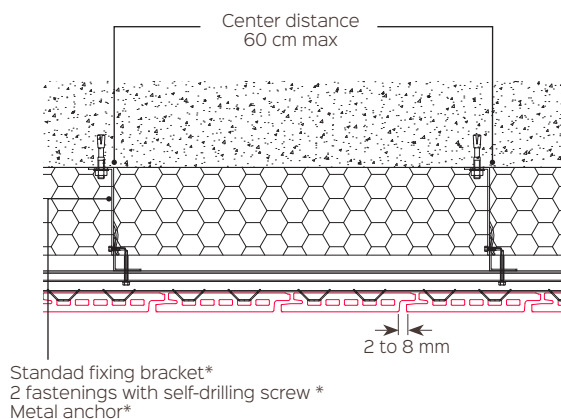
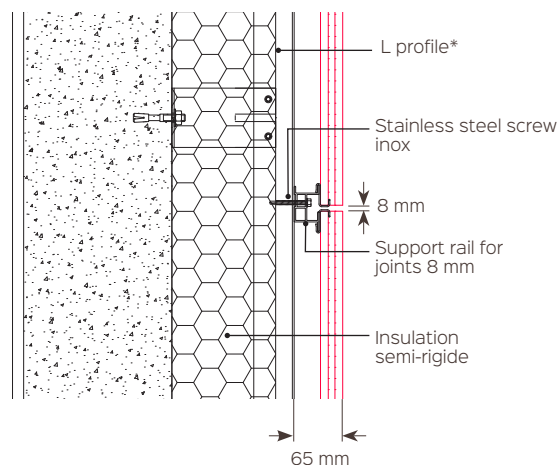
The maximum distance between the vertical frames is 60 cm.

Attach the horizontal rail to the vertical frame using self-drilling screws. Insert the splint for expansion joint in the rail before fixing the next rail.

Attach the splint to the vertical profile. Place the V-clips® in the lower and upper holes of the product (number of clips according to product format).

Present the fitted Piterak® Slim product and clip the V-clip® low to the rail.

Standard installation details



ZOOM ON ...

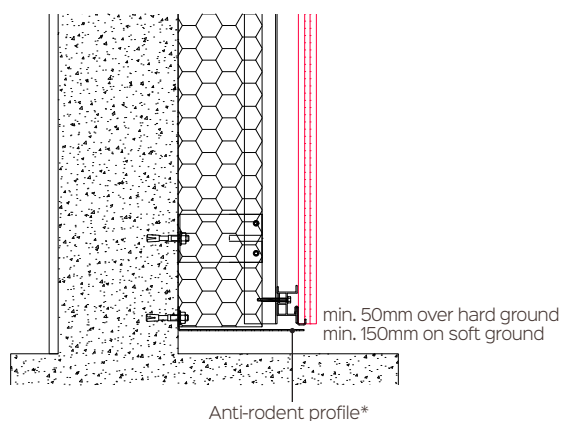
Installation
guide video

www.youtube.com/user/terrealvideos

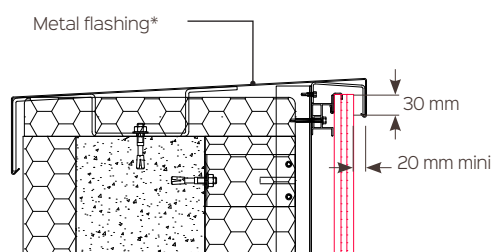


*Not provided by Terreal

Bottom detail



Top detail



SINGULAR POINTS

Bottom details

In the lower part, it is necessary to respect a minimum height between the ground and the bottom of the starting Piterak® Slim element.

- Height is 50 mm on hard ground or 150 mm on soft ground for application on concrete wall or traditional coated masonry.
- Height of 200 mm whatever the type of floor for a wood frame wall installation.

Top details

A metal capping must be placed in the upper part or parapet to limit the penetration of rainwater.

- The metal capping must have a fall in front of the terracotta of 30 mm and must overhang the Piterak® Slim by at least 20 mm.
- Thus dimensioned, this capping prevents rainwater from flowing directly onto the Piterak® Slim and allows good ventilation of the air gap. A regular flow of water promotes the appearance of foam on the products: this degrades the aesthetics of the facade and results in a need of regular cleaning operation.



V-clip® vertical installation system

SINGULAR POINTS

External angles

2 options are possible for managing external angles :

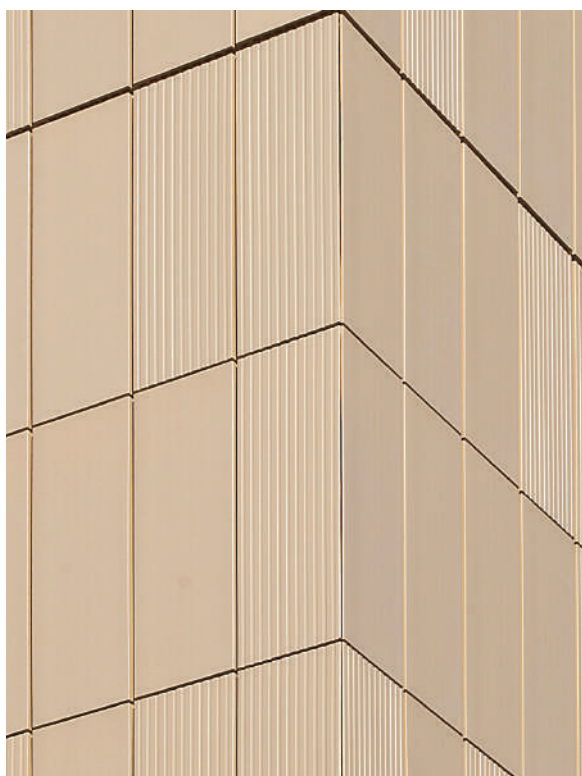
Option 1 : The angles are treated with standard products. A joint of at least 5 mm must be kept between the ends of the products.

Option 2 : the cover of one of the products is cut. A joint of at least 5 mm must be kept between the ends of the products.

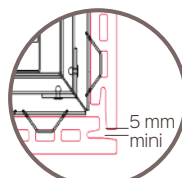
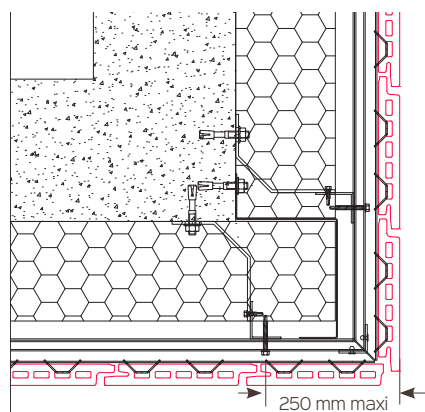
The overhang of the horizontal rail is 250 mm maximum.

Internal angle

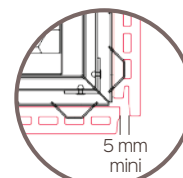
The Internal corner are treated with standard products. A space of 6mm is required between the ends of the Piterak® Slim.



External angles details

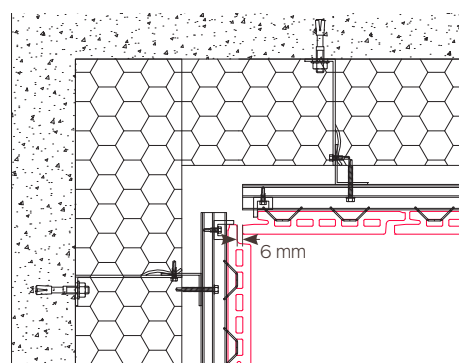


option 1

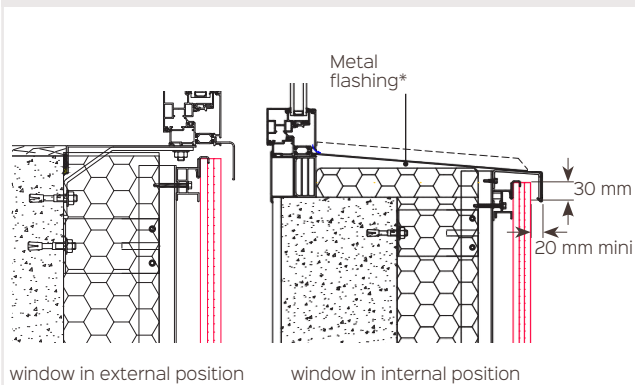


option 2

Internal angle details



Window sill detail



SINGULAR POINTS

Window sill

The sill is treated using a metal flashing which must have a fallout in front of the terracotta of 30 mm and must protrude 20 mm from the Piterak® Slim.

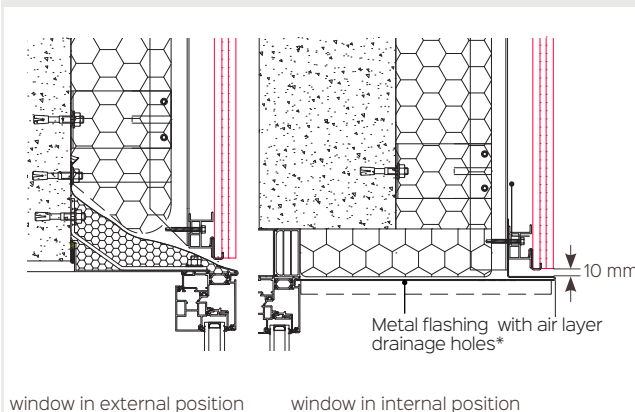
Lintel

The lintel is treated with a metal flashing. The Piterak® Slim is used in the same way than for the starting part. A space of 10 mm is required between the flashing and the bottom of the Piterak® Slim above the lintel

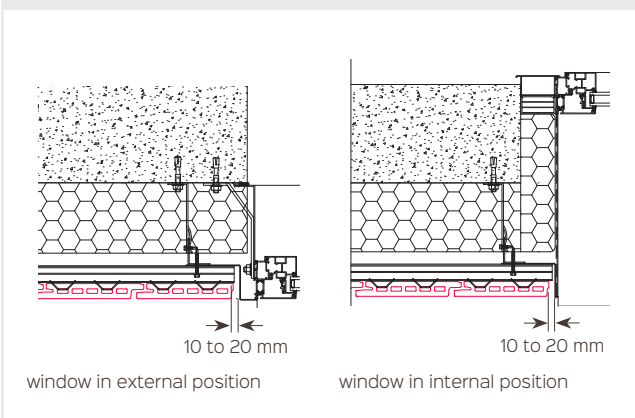
Jamb

In jambs, returns are treated with metal profiles (angles, ..) A space of 10 to 20 mm is required between the profile and the ends of the Piterak® Slim.

Lintel details



Jambs details

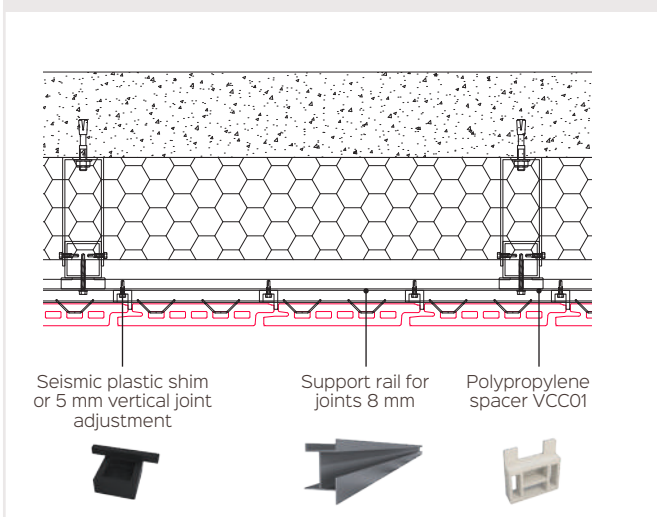


V-clip® vertical installation system

SEISMIC ZONE INSTALLATION

SEISMIC TEST	FREQUENCY (HZ)	NUMBER OF CYCLE	AMPLITUDE (MM)	ACCELERATION (M/S²)	PASSED
Parallelogramm test	$0,2 \leq f \leq 1$ Hz	20	± 60 mm	-	✓
Test in the plane of the support	3	10	$\pm 46,4$ mm	16,5	✓
	7,8 Damped natural frequency	5	$\pm 6,9$ mm	16,5	✓
	15	10	$\pm 1,9$ mm	16,5	✓
Test perpendicular to the plane of the support	3	20	$\pm 26,4$ mm	9,3	✓
	15	20	$\pm 1,6$ mm	9,3	✓

Seismic zone installation details



Piterak® Slim 20 up to 60 x 150 cm can be used in seismic zones WITH V6clip system:

- Steel bracket depth up to 260 mm thickness 3 mm

For a construction in a seismic zone, it is necessary to use the support rail VCP01 as well as the polypropylene spacers VCC01.

The vertical profiles are fixed to the walls by means of angle brackets (or stirrups) fixed to the profile by self-drilling stainless steel screws. Thus fixed this framework is said to be "restrained".

The maximum distance between the vertical frames is 60 cm.

The 1st step is the preparation of the support rails (VCP01).

- Polypropylene spacers must be placed at the rear of the rail, spaced apart according to the center distance of the profiles (the spacers must be aligned with the profiles once the rail is fixed).
- Simultaneously drill the support rail and the polypropylene spacers (to avoid the deposit of chips between the main frame and the shim).

Then fix the horizontal rail (VCP01) to the vertical frame using self-drilling screws (VCV01). Insert the splint (VCE01) in the rail before fixing the next rail. Attach the fishplate to the vertical profile.

Place the V-clips® in the lower and upper holes of the product (number of clips depending on the format of the product). Present the fitted Piterak® Slim product and clip the low V-clips® to the rail.

Insert the seismic block (VCC02) in the bottom horizontal rail and fix it with a self-drilling screw then present the second product. Repeat the operation.

*Not provided by Terreal

Replacement Guide

Vertical installation with V-clip®



Broken product.



Remove the broken product.



Install the V-clip® on the lower part of the replacement terracotta product. Place the terracotta product by clipping the V-clips® on the bottom rail.



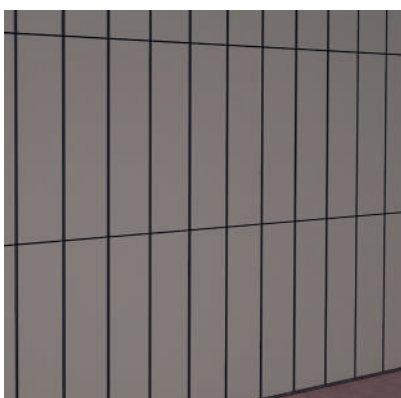
Install the waiting V-clips® on the upper rail, where the cells will be positioned. Make a rocking movement to advance the terracotta product towards the high clips.



Using a flat screwdriver or similar object (with plastic protection **i.e such as electrical tape wrapped onto the flat blade** so as not to chip the terracotta), lift each clip one by one to put them on hold on the full edge of the product. Then press on the product to permanently engage the V-clips® in the cells.

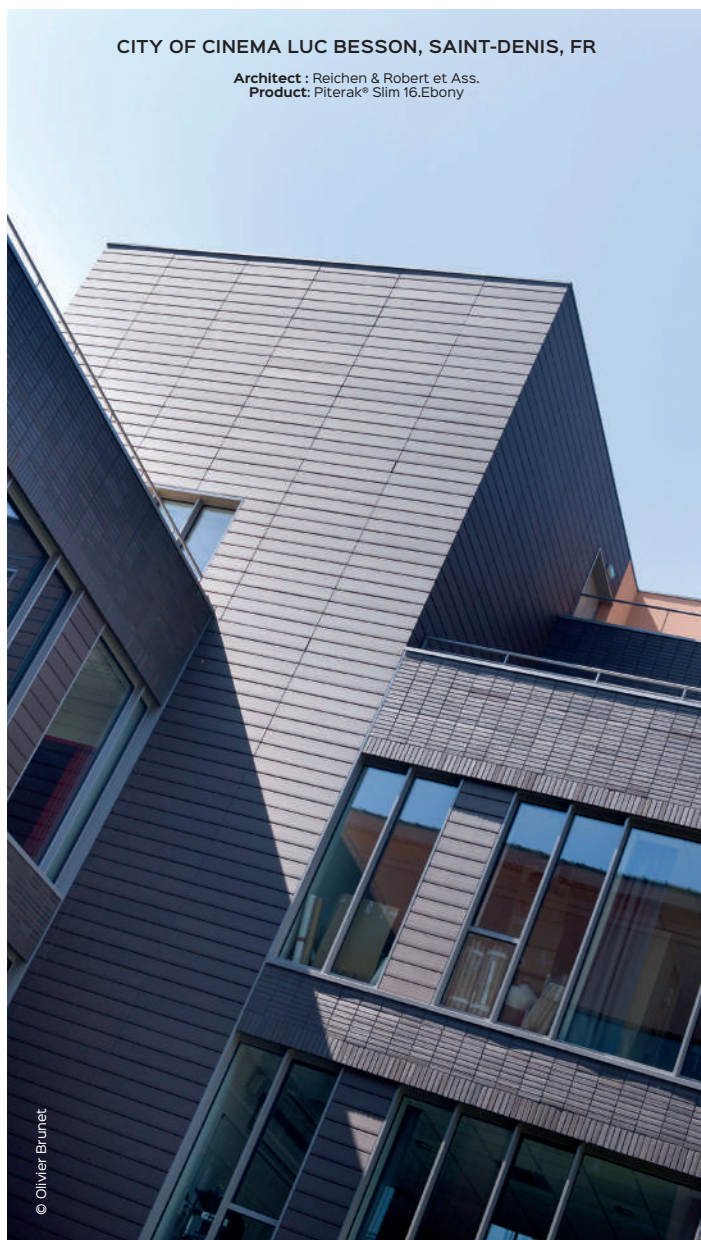


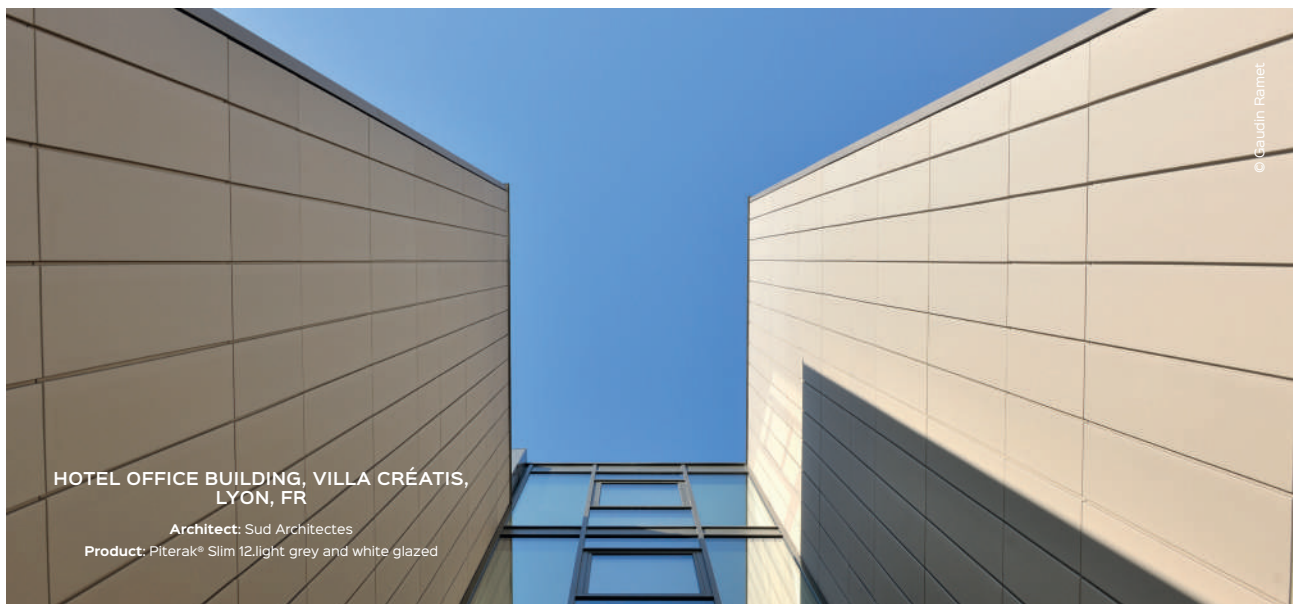
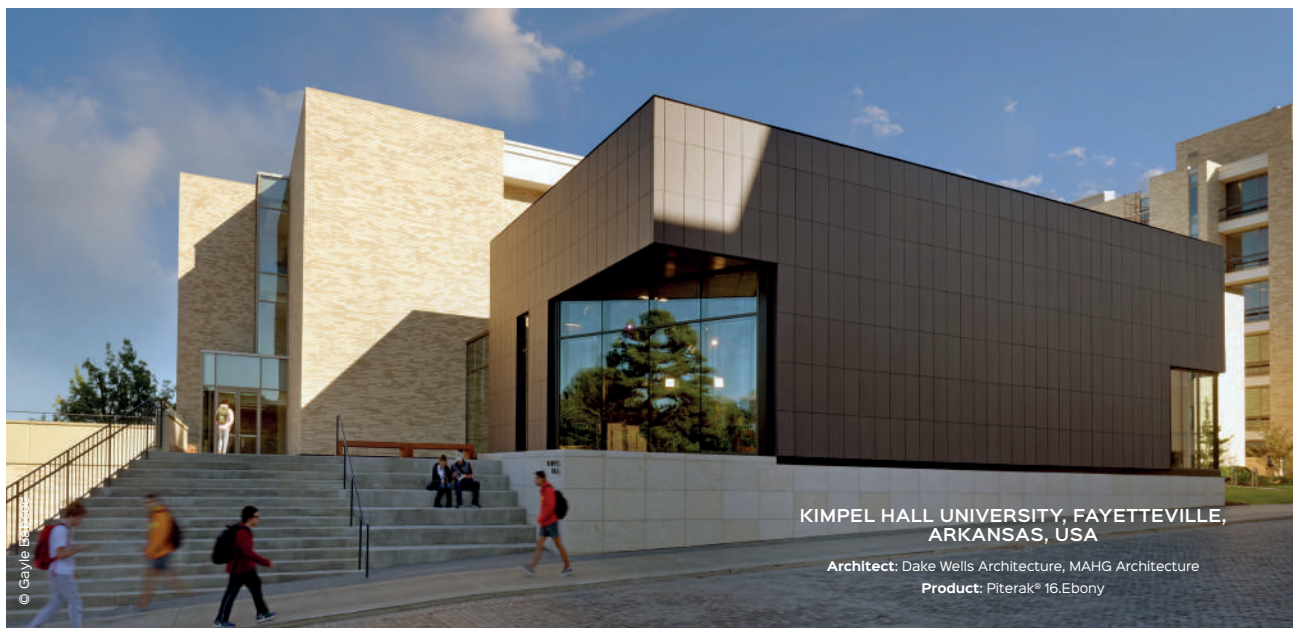
Check the alignment of the installed product and the stability.



The product is replaced.







RÉSIDENCE LES JARDINS DE BABYLONE

Architect: Atelier Inextenso

Product: Piterak® Slim 06.Sand, 07.Siena, 01.Red



© Joseph Froc

MONCRIEF ONCOLOGY INSTITUTE, FORT WORTH, USA

Architect: HKS, Inc

Product: Piterak® Slim 03.champagne with soft glazed



© Terreal

RESIDENCE, LA LOUBIÈRE, TOULON, FR

Architect: Architecture Studio

Product: Piterak® Slim 01-Red



© Christophe Mely

Piterak® XS

Cost effective, lightweight terracotta cladding

Piterak® XS is an economical 18mm thick, double-skin terracotta rainscreen cladding system with overlapping horizontal reveals. The product is a thin, lightweight, and strong medium module terracotta panel available in a variety of standard sizes and a multitude of made-to-order sizes with a maximum height of 40 cm and maximum length of 150 cm. Through reinforced structure system, the Piterak® XS system maintains a high wind and impact resistance rating. It is a terracotta cladding system that provides structural versatility and superior aesthetics in an economically superior rainscreen solution.

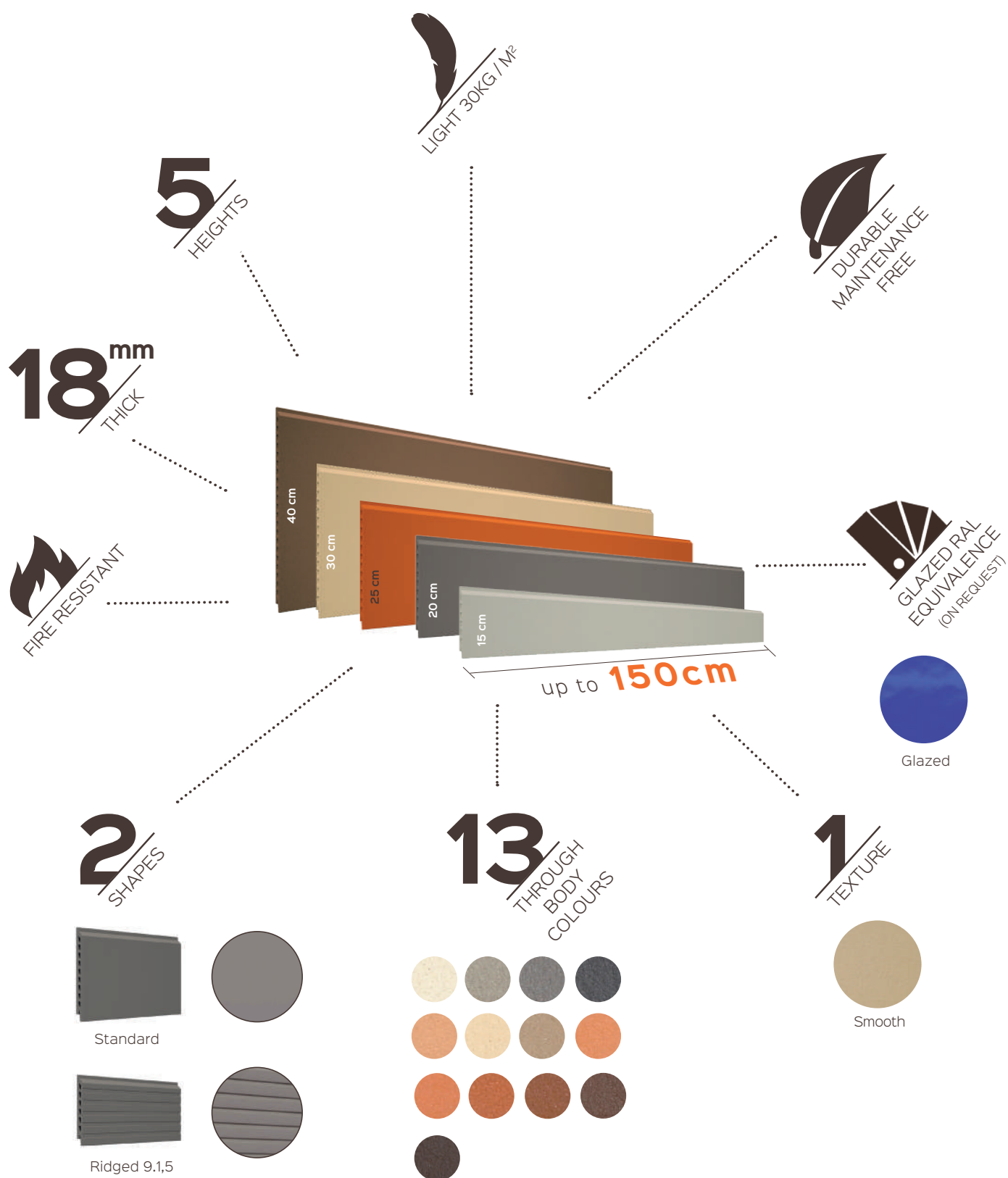
STRENGTHS

- 18 mm thick
- Lightweight mineral cladding (around 30kg/m²)
- Unparalleled durability of terracotta
- Simple and fast installation using clips
- Large choice of colours
- Length up to 150 cm
- Heights from 15 to 40 cm
- **Maintenance free and durability**
- **Fire resistant**



MUSEUM OF ARTS, HISTORY
AND SCIENCE, EVANSVILLE, USA

Architect : VPS Architecture and Ratlo Architects



Standard range

STANDARD DIMENSIONS

REF. CATALOGUE	MODULE HEIGHT	MODULE LENGTH	THICKNESS	WEIGHT / M²
PX15C0	150 mm	310 to 1510 mm	18 mm	~30 kg / m²
PX20C0	200 mm			
PX25C0	250 mm			
PX30C0	300 mm			
PX40C0	400 mm			

SHAPES

Standard



Ridged 9,1,5



Ridge dimension :
Height 9 mm
Depth 1,5 mm
Ridges each 25 mm

TEXTURES



Smooth

TERREAL can develop custom shapes and RAL equivace glazed colours.
Please contact us

THROUGH BODY COLOURS



GLAZED RANGE COLOURS



System characteristics

SYSTEM DESCRIPTION

Cladding process based on 18mm thick double-wall terracotta products (~30kg / m²) with a horizontal overlap, held using special clips, to a vertical steel framework secured to the main structure, with insulation fitted behind the framework.



CHARACTERISTICS

- Modulus of rupture > 15 MPa
- Water absorption 6 to 9%
- Frost resistance
- Fire classification A1: firing mass considered to be zero

Fixing system

The fastening clips are made of stainless steel 1.4301 according to standard EN 10088.

The vertical support profiles are made of aluminum EN AW 6060 according to EN 755-2.

Impact resistance:

Q3 impact resistance rating under French CSTB.

INSTALLATION	HEIGHT MODULE	MAXIMAL LENGTH	CLASSIFICATION FOLLOWING FRENCH NORM 08-301/302	STEEL BALL 0,5 KG	STEEL BALL 1 KG	SOFT BALL 3 KG		SOFT BALL 50 KG	
				D0,5	D1	M3		M50	
				1 joule	3 joules	3 joules	20 joules	100 joules	130 joules
Reinforced (add 1 vertical profile + clip at mid-span)	20 to 40 cm	≤ 150 cm	Q3	✓		✓	✓	✓	
Standard	20 to 40 cm	≤ 150 cm	Q2	✓		✓	✓		
Standard	20 cm	≥ 150 cm	Q1	✓		✓			
Reinforced (add 2 vertical profile + clip)	15 cm	≤ 150 cm	Q1	✓		✓			

PROPERTIES

Support type:

- Concrete wall
- Coated masonry

Certifications:

Product under technical assessment :

French CSTB 2.2 / 18-1793_V1.



Wind resistance :

The wind resistance of the Piterak® XS process is between 614 Pa and 2542 Pa (depending on format and mounting configuration).

		STANDARD INSTALLATION			REINFORCED INSTALLATION**
		L 600 mm	L 1200 mm	L 1500 mm	L 1500 mm
MODULE HEIGHT (MM)	150	820 Pa			1928 Pa
	200	820 Pa			1928 Pa
	250	2542 Pa	1840 Pa	1840 Pa	1928 Pa
	300	2542 Pa	1270 Pa ***	614 Pa	1508 Pa***
	400	614 Pa			970 Pa

L: Length

** : Installation with intermediate profile and 2 staples

*** : Values obtained following additional CSTB tests

Fire resistance:

Non-combustible product: fire resistance class as A1



BIM objects available

www.bimobject.com/fr/terrealfacade

Horizontal fixing system properties

FIXING ACCESSORIES

Terreal provides :

- Clips for standard installation
- Vertical profiles



PITP01
Omega profile ridged
Piterak®
SAP 118027



PITP06
Omega profile Piterak®
SAP 140961



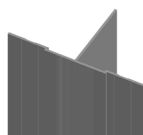
PITP03
Angle profile ridged
Piterak®
SAP 118028



PITP04
Angle profile
Piterak®
SAP 118020



PITP05
Y profile Piterak®
SAP 131298



PITP07
T profile Piterak®
SAP 152738



PXS01
Standard clip
Piterak® XS
SAP 148197



PXS01
Bottom clip
Piterak® XS
SAP 130402



PXS02
Clip for movement joints
Piterak® XS
SAP 148942



PXS03
Under sill clip
Piterak® XS
SAP 154011

Estimated quantity of fixing accessories for a standard implementation and without singular points.

Values given for information.

MODULE HEIGHT X LENGTH	PITERAK® XS / m²	CLIP PXS01	PROFILE / m²
150 x 1200 mm	5,6 u / m²	11,2 u / m²	0,83 ml / m²
200 x 1200 mm	4,2 u / m²	8,4 u / m²	0,83 ml / m²
300 x 1300 mm	2,6 u / m²	5,2 u / m²	0,76 ml / m²
400 x 1500 mm	1,7 u / m²	3,4 u / m²	0,66 ml / m²

Here below the formulas to evaluate the indicative quantity per m² for an H x L frame in the running part without taking into account the singular points.

H and L are the height and length of the module and are expressed in m.

ESTIMATED CALCULATION OF QUANTITIES HEIGHT X LENGTH	
Piterak® XS / m² quantity	1 / (H x L)
Clip / m² quantity	2 / (H x L)
Clip / m² quantity	1 / L
Profile / m², quantity (ml)	1 / (3 x L)



For the final order, a precise layout must be carried out by the installation company in order to take into account all the singular points of the site.

Other supplies necessary for the implementation are not offered by Terreal (insulation, fixing screws, dowels or lag bolts, brackets, profile bay trim, lower part starting grid, profile angle, ...). They are the responsibility of the installation company.



ZOOM ON ...
Installation
guide video

www.youtube.com/user/terrealvideos



PRIOR RECOMMENDATIONS

The implementation of vertical profiles must respect the rules of the technical assessment : French CSTB 2.2 / 18-1793_V1.

The layout is carried out beforehand by the company installation, to determine the positioning of vertical profiles as well as the dimensions of Piterak® XS.

To define the vertical layout correctly it is necessary to consider a vertical space between 2 products of 10 mm (this space can be increased to 20 mm maximum).

IMPLEMENTATION

The vertical profiles are fixed to the walls by square brackets (or stirrups) fixed to the profiles by stainless steel drilling screws. So fixed this frame is called "bridle".

The profiles must be fixed so as to adjust the verticality and horizontality of the profiles between them.

The number and arrangement of the brackets (or stirrups) is determined by calculation, depending on the area of intended use, by the supplier of the brackets.

The implementation of Piterak® XS is done from the bottom to the top, once the frame is aligned vertically and horizontally and that the insulation is put in place (when necessary).

First, the bottom clips are fixed in the lower part (PXS01), aligning with the horizontality.

The clips are fixed to the vertical profiles with stainless steel screws.

The Piterak® XS is placed on the bottom clip then the standard clips (PXS01) are positioned in the upper part of the Piterak® XS and at its ends.

A space between the clip and the top of the terracotta should be spared.

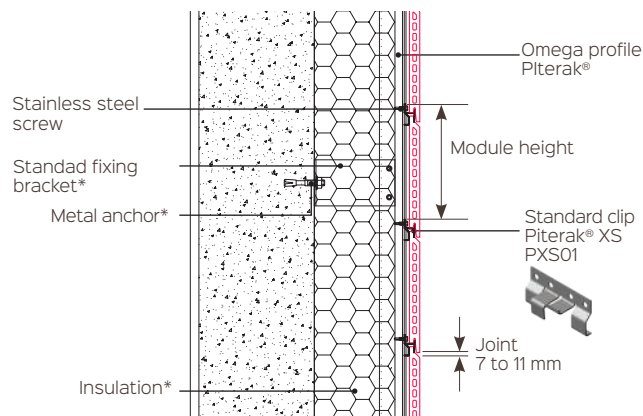
To facilitate the installation / fixing of the clips, a tracing can be carried out on profiles at each module height (example for Piterak® XS 30 : height of 30 cm module = marking on profile every 30 cm).

Thus assembled, the horizontal joint between 2 products will be about 7 to 11 mm.



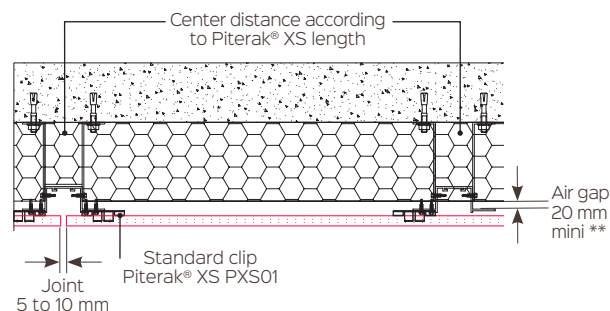
**** Check with local industry standards and local guidelines as requirements varies from Country to Country.**

Standard installation details

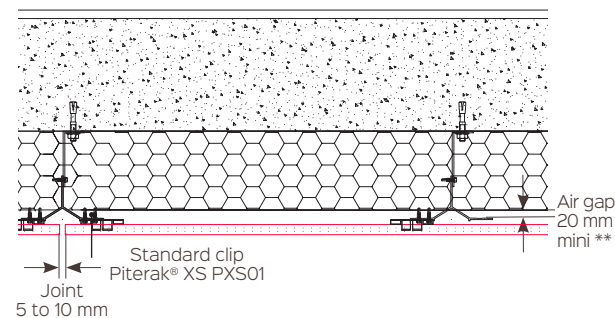


Horizontal view details

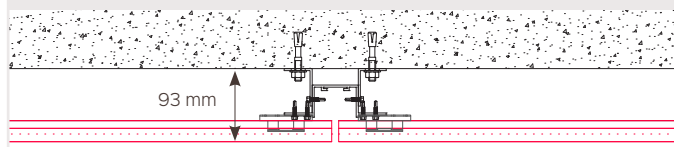
With Omega profile



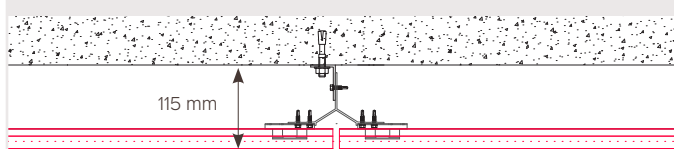
With Y profile



Minimal thickness Omega profile



Minimal thickness Y profile



*Not provided by Terreal

Horizontal fitting guide



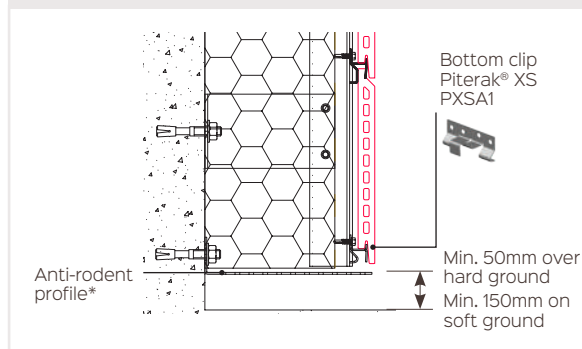
SINGULAR POINTS

Bottom details

In the lower part, it is necessary to respect a minimum height between the ground and the bottom of the starting Piterak® XS element.

- Height is 50 mm on hard ground or 150 mm on soft ground for application on concrete wall or traditional coated masonry.
- Height of 200 mm whatever the type of floor for a wood frame wall installation.

Bottom detail

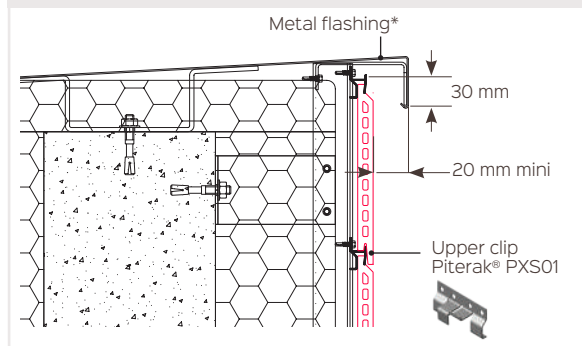


Top details

A metal capping must be placed in the upper part or parapet to limit the penetration of rainwater.

- The metal capping must have a fall in front of the terracotta of 30 mm and must overhang the Piterak® XS by at least 20 mm.
- Thus dimensioned, this capping prevents rainwater from flowing directly onto the Piterak® XS and allows good ventilation of the air gap. A regular flow of water promotes the appearance of foam on the products : this degrades the aesthetics of the facade and results in a need of regular cleaning operation.

Top detail



SINGULAR POINTS

Window sill

The sill is treated using a metal flashing which must have a fallout in front of the terracotta of 30 mm and must protrude 20 mm from the Piterak® XS.

Lintel

The lintel is treated with a metal flashing. The Piterak® XS is used in the same way than for the starting part.

A space of 10 mm is required between the flashing and the bottom of the Piterak® XS above the lintel.

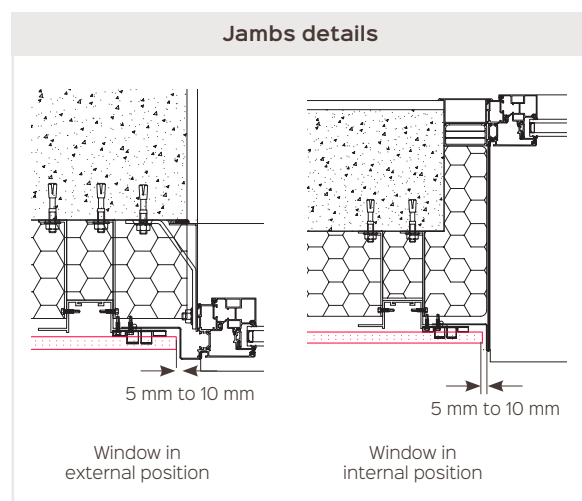
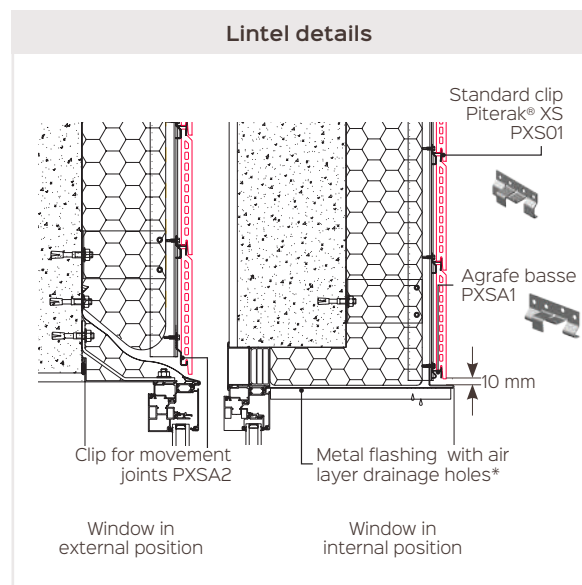
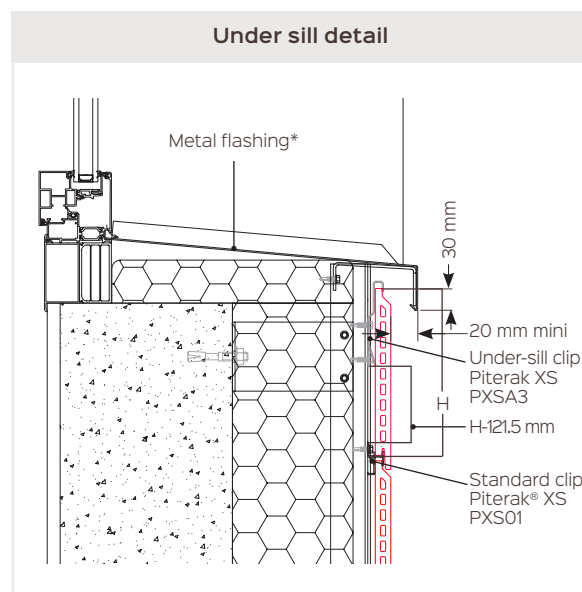
- 15 / 10th thick metal flap installed with a slight inclination to reject humidity to the outside.
- Ideally, this flap is perforated to ensure good ventilation of the air space.

Jamb

In jambs, returns are treated with metal profiles (angles, ..) A space of 10 to 20 mm is required between the profile and the ends of the Piterak® XS.

Under sill

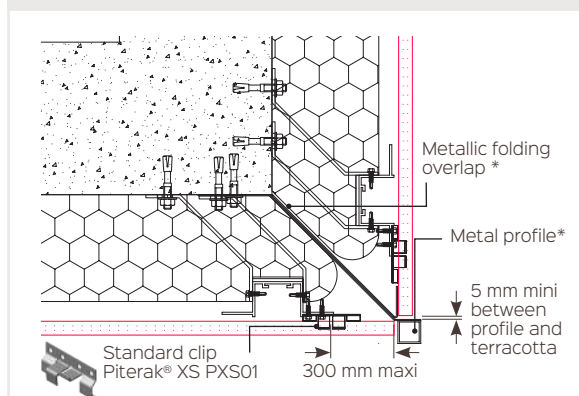
The product positioned under a support is fixed at the top by means of a specific clip: the Piterak® XS clip under support "PXSA3". This clip is installed beforehand to the installation of the product.



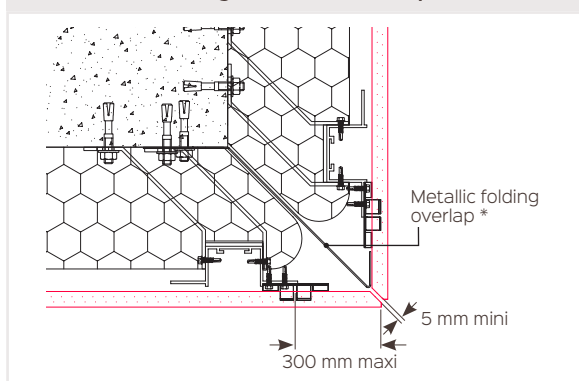
*Not provided by Terreal

Horizontal fitting guide

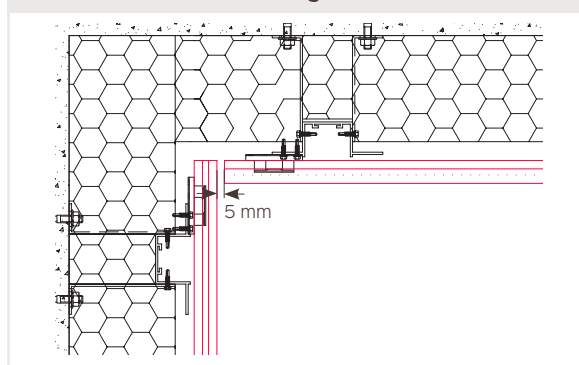
External angle with profile



External angle with miter cut product



Internal angle detail



SINGULAR POINTS

External angle

With profile :

A metal profile (generally lacquered, not sold by Terreal) handles the angle. This profile can be either recessed or flush with the outside nude facades. In all cases a space of 5 mm is required between the profile and the ends of Piterak® XS.

Without profile :

Piterak® XS are cut at one end on the edge of the product. The cutting angle is 45 ° and a 5 mm dish is kept (miter cut).

Internal angle

Internal angles are treated with standard products. A space of 2 to 5 mm is required between Piterak® XS.



SINGULAR POINTS

Frame splitting

The vertical profiles being mounted in a clamped manner (no sliding points) it is necessary to have a space between each profile. This allows to absorb aluminum expansions induced by thermal variations.

This can be done using a flashing metal or no.

Without flashing metal :

Frame splitting can be done without flashing metal. In this case, a space should be left between 2 profiles at least 8 mm.

In no case should the Piterak® XS be bridged on 2 consecutive vertical profiles.

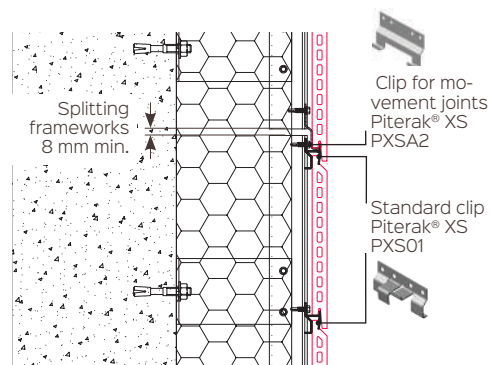


Never bridge a product on 2 consecutive profiles.

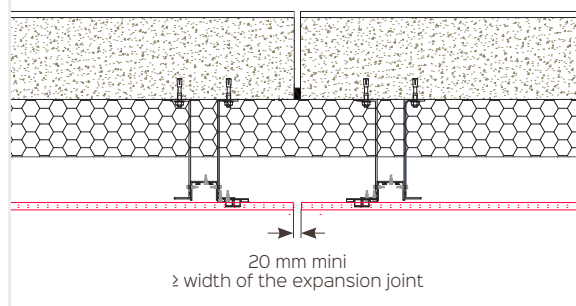
Expansion joint

The space to be kept between 2 adjacent Piterak® XS, is at least the thickness of the expansion joint with a minimum of 20mm.

Frame splitting details



Expansion joint details



Wood frame wall fitting guide

SYSTEM DESCRIPTION

Cladding process based on 18 mm thick double-wall terracotta products (~30 kg / m²), Piterak® XS can be installed on wooden framework on a composite framework with profiles with center distance of 645 mm maximum located to the right of the timber frame wall uprights and respecting the following recommendations:

- Reserve a minimum 20 mm air space between the wall and siding. Check with local industry standards as minimum air gap above 20mm varies from Country to Country.
- Length of vertical aluminum profiles limited to 3m.
- The layout must take into account the center distance of the uprights of the timber frame wall.
- The vertical profiles must be fixed to the right of rafters.
- The support wall must comply with NF DTU 31.2.



Installation on wooden frame wall in accordance with NF DTU 31.2, is limited to:

Maximum height of 10 m (+ point gable) in wind zones 1, 2 and 3 in situations a, b and c, maximum height 10 m (+ pinion point) in situation d.

Check with local industry standards and local guidelines as requirements varies from Country to Country.

PROPERTIES

Support type :

- Wood frame wall (according to NF DTU 31.2) up to 10 m (see 2.2 / 18-1793_V1).

Certifications

Technical advice for horizontal installation n° 2.2/18-1793_V1.



Impact resistance :

Q3 impact resistance rating under French CSTB.

Ridged finish : Q2 with 2 intermediate profiles.

Wind resistance :

MODULE HEIGHT (MM)	STANDARD INSTALLATION			REINFORCED INSTALLATION**
	L 600 mm	L 1200 mm	L 1500 mm	L 1500 mm
	150	820 Pa		1928 Pa
	200	820 Pa		1928 Pa
	250	2542 Pa	1840 Pa	1928 Pa
	300	2542 Pa	1270 Pa***	614 Pa
	400		614 Pa	1508 Pa***
				970 Pa

L: Length

** : Installation with intermediate profile and 2 staples

*** : Values obtained following additional CSTB tests

*Not provided by Terreal

INSTALLATION

A rain barrier conforming to NF DTU 31.2 must be placed on the outside of the wall of the timber frame wall.

With the joints open, the rain screen will have a UV resistance of 5000 h according to standard NF EN 13589-2. In situations a, b and c, the bracing panels of the timber frame wall can be positioned on the inside or outside of the wall. In situation d, if the bracing panels of the wooden frame wall have been positioned on the inside of the wall, wood-based panels must be positioned on the outside of the wall.

The rain screen is cut every 6 m to evacuate surface runoff water. Under no circumstances should the rain screen be placed against the cladding product (air gap of 20 mm minimum).

The profiles are attached to the uprights of the timber frame wall using wood screws of minimum dimension Ø 7 x 50 mm.

The characteristic PK pullout resistance is 598 daN for an anchoring of 50 mm in a wooden support.

Each clip is fixed to the right of the omega profiles using 2 self-drilling screws 5.5 x 22 mm. Only the omega profiles are compatible with installation on a wooden frame wall. The frame is split on each floor. Bridging of junctions between successive uprights by shingles is excluded.

The figures illustrate the minimum installation arrangements on the timber frame wall. Situations a, b, c and d are defined in NF DTU 20.1.

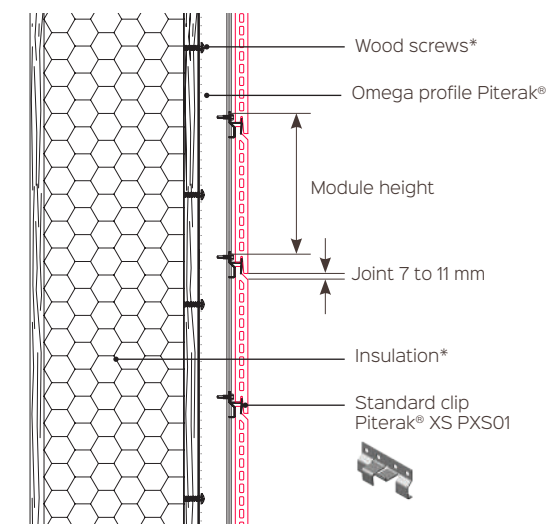
Corners

Piterak® XS are cut at one end on the edge of the product. The cutting angle is 45° and a 5 mm dish is kept (miter cut)



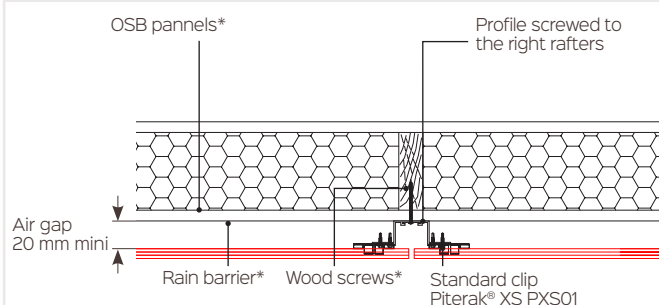
Check with local industry standards and local guidelines as requirements varies from Country to Country.

Wood frame installation details



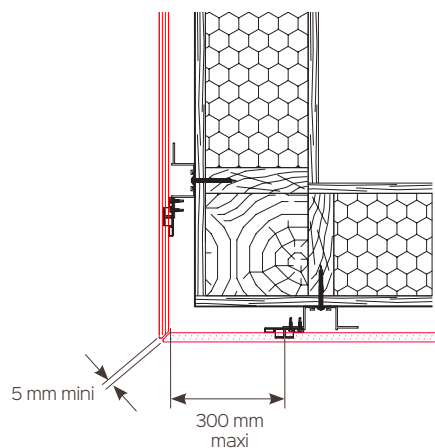
Wood frame installation details

Horizontal view details



Wood frame installation

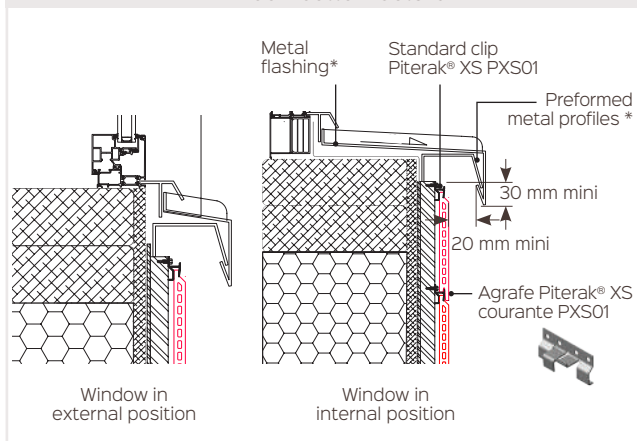
Corner with miter cut



**Not provided by Terreal*

Wood frame wall fitting guide

Wood frame installation Window bottom details



SINGULAR POINTS

Window bottom details

The sill is treated using a metal flashing which must have a fallout in front of the terracotta of 30 mm and must protrude 20 mm from the Piterak® XS.

Lintel details

The lintel is treated with a metal flashing. The Piterak® Slim is used in the same way than for the starting part.

A space of 10 mm is required between the flashing and the bottom of the Piterak® XS above the lintel.

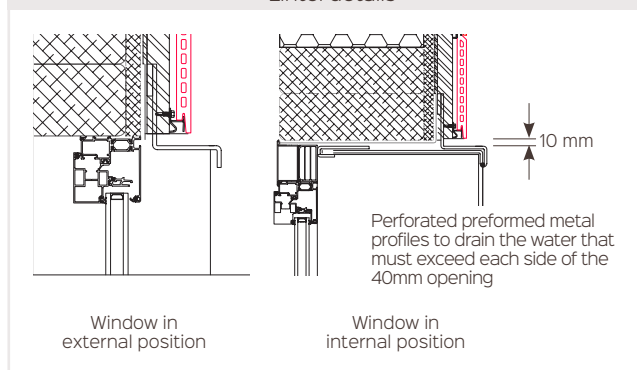
Jambs details

In jambs, returns are treated with metal profiles (angles, ..) A space of 10 to 20 mm is required between the profile and the ends of the Piterak® XS.

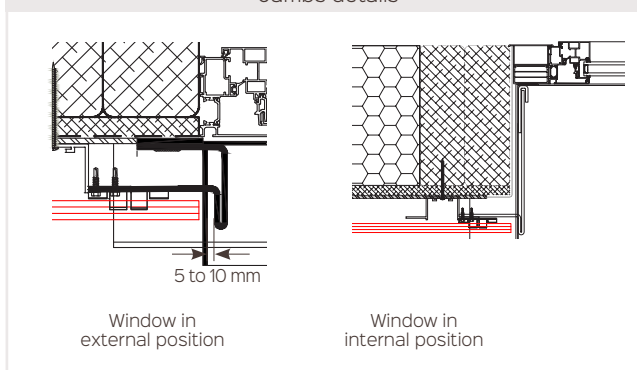


Check with local industry standards and local guidelines as requirements varies from Country to Country.

Wood frame installation Lintel details



Wood frame installation Jambs details



*Not provided by Terreal



Seismic zone installation

Piterak® XS 20 to 40 x 150 cm can be used in seismic zones :

- Omega profile linked each other
- Bracket Isolco C2 depthness 50 to 240 mm

SEISMIC TEST	FREQUENCY (Hz)	NUMBER OF CYCLE	AMPLITUDE (mm)	ACCELERATION (m/s²)	PASSED
Parallelogramm test	$0,2 \leq f \leq 1$ Hz	20	± 60 mm	-	✓
Test in the plane of the support	3	10	$\pm 46,4$ mm	16,5	✓
	5,99 Damped natural frequency	5	$\pm 11,6$ mm	16,5	✓
Test perpendicular to the plane of the support	15	10	$\pm 1,9$ mm	16,5	✓
	3	20	$\pm 26,2$ mm	9,3	✓
	15	20	$\pm 1,6$ mm	9,3	✓

CONCRETE WALL

Profiles

Installation in seismic zone only with Omega profile and brackets (ISOLCO up to 240 mm)

Omega profiles are joined to each other by an aluminum profile fixed on the back of the omega profiles.

The vertical center distance of the L profile is 100 cm maximum.

Isolco brackets up to 240 mm maximum

The brackets are doubled (in opposition). The spacing vertical between the brackets is 100 cm maximum.

Load-bearing structures

The load-bearing structures are split every levels. Piterak® XS must not be bridged between 2 levels.

Anchoring the brackets

On concrete wall (NF DTU 23.1), the anchoring of the brackets is made using A4 plugs type FM 753 CRACK Ø 12

WOOD FRAME WALL

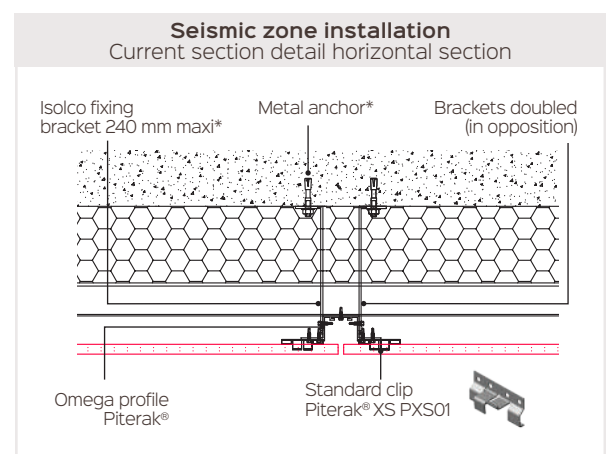
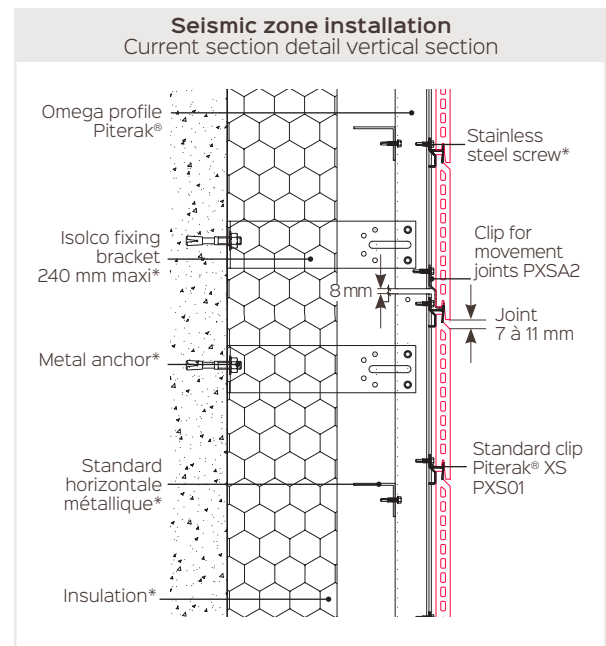
Profiles

Installation in a seismic zone on a wooden frame wall with direct installation of the profiles on the rafters of the wood frame wall.

The omega profiles are directly fixed to the right of the rafters with lag bolts type TH 13 ZN.

Load-bearing structures

The load-bearing structures are divided at all levels. Piterak® XS must not be bridged between 2 levels.



Concrete wall installation :

- Installation in seismic zone with omega profile only
- Bracket up to 240 mm max.
- Max vertical center distance, L profiles: 100cm
- Double brackets (in opposition)
- Load-bearing frame split at each level

Wood frame wall installation :

- Installation in seismic zone with omega profile only
- Load-bearing frame split at each level

**Not provided by Terreal*



Seismic zone installation

SINGULAR POINTS

Corners

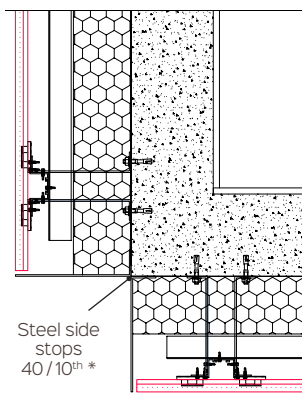
At each corner exiting the 40/10th steel side stops must be positioned.

Installation of mitered angles in seismic installation is not referred to in the technical opinion.

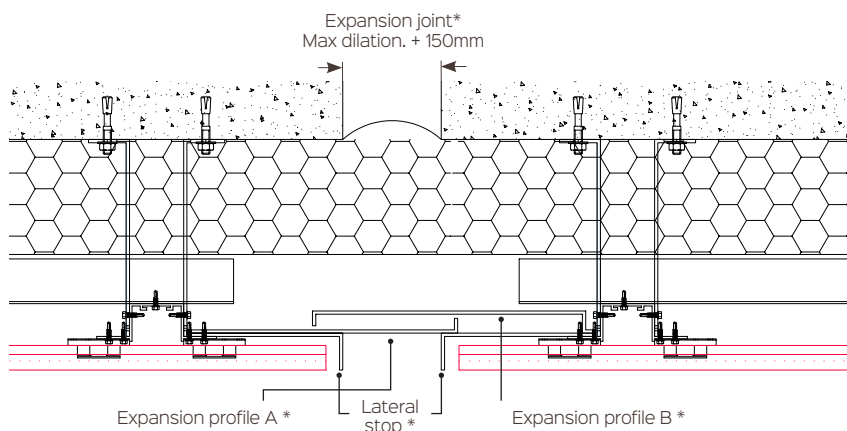
Expansion joint

In front of the expansion joints, bridging of the joint with terracotta is excluded and a folded profile device must be implemented so that it protects the insulation while absorbing the differential movements due to the expansion joints.

Seismic zone installation
Outside angle details



Seismic zone installation
Expansion joint details

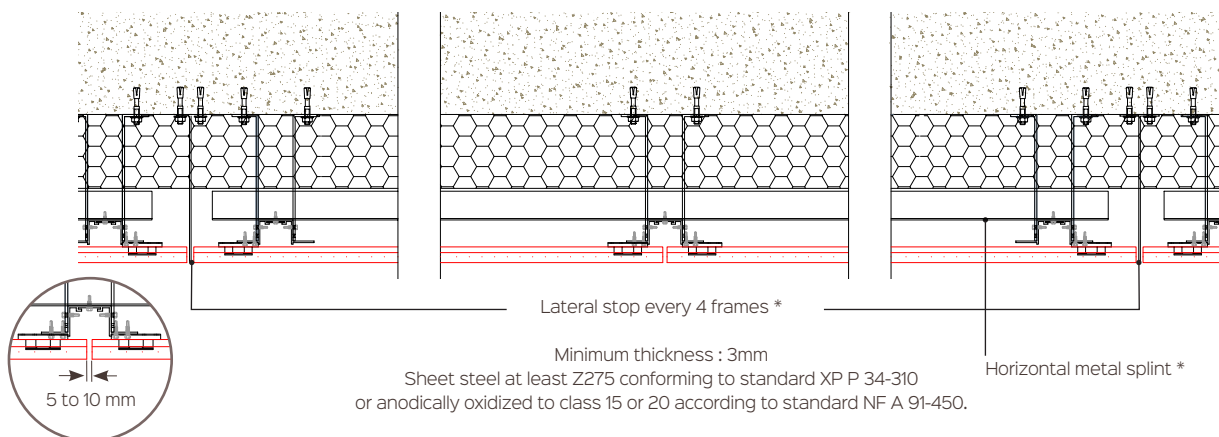


Lateral stop

A lateral stop must be implemented every 4 frames (4x180 cm or 7.3 m maximum) using metal profiles fixed to the vertical profiles.

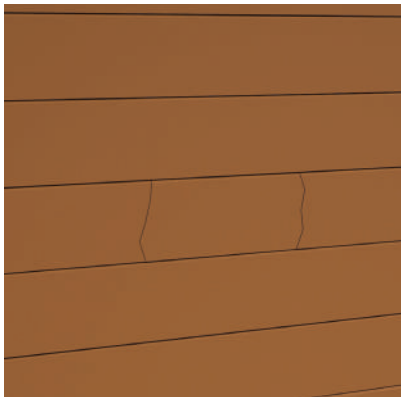
Example: 4 x 180 cm or 7.2 m maximum.

Seismic zone installation
Lateral stop details



*Not provided by Terreal

Replacement Guide



Broken product.



Remove the broken product.



Locate the positioning of the 2 visible standard clips.

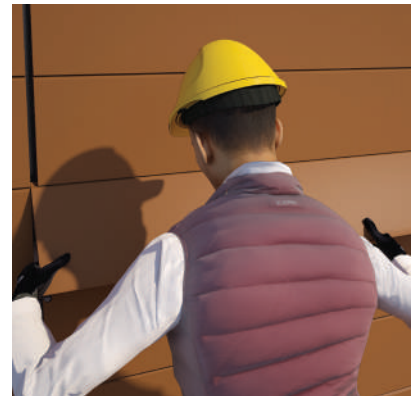


Trace the cutting area on the replacement product. The cutting of the product in the upper part is necessary in order to be able to fit the cut area in the upper clip

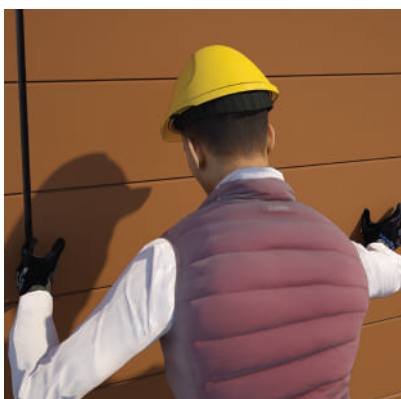
Cut out each side of the Piterak® XS.



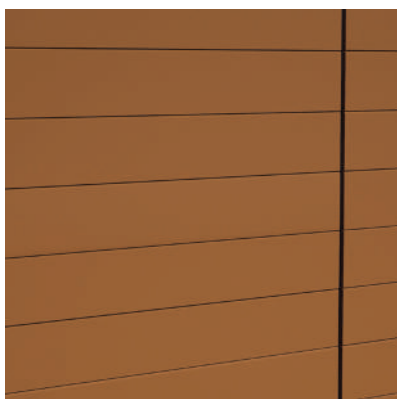
Put dots of glue on the clips (use polyurethane glue type SIKAFLEX 11 FC).



Put the replacement product in place by first inserting the upper part, pushing towards the wall then exerting downward pressure to position it at the bottom of the clips.



Position the product on the clips.



The product is replaced.



© Terreal

**EVANSVILLE MUSEUM OF ARTS, HISTORY
& SCIENCE, EVANSVILLE, USA**

Architect: VPS Architecture and Ratio Architects
Product: Piterak® XS white glazed





© Terreal

GIRLS INC. - KATHERINE FLETCHER CENTER,
OMAHA, USA

Architect: The Architectural Offices in Omaha
Product: Piterak® XS white, grey, red, blue glazed





Sunscreen range

To answer the many requirements of building envelopes and specifically the expectations regarding sun protection, TERREAL offers a wide range of terracotta baguettes that can be used to build sunscreens, wall claddings or visual screens.

As an integral part of the façade, sunscreens provide thermal comfort, let natural light in, and help reduce blinding effects without blocking visual contact with outside. They truly bring façades to life and allow the designers to play with shadows, while combining thermal comfort, control of sunlight input and optimization of natural daylight.

Sunscreen range

Architectural terracotta baguettes

TERREAL offers a range of sunscreen rich in formats and lengths. It revolves around 4 shapes products: the Autan® line in square shape, the Zonda® in rectangular shape, the Harmattan® in ovoid shape, the Shamal® in the shape of an airplane wing.

Terracotta sunshades enhance the aesthetics of facades and go perfectly with the other products in the Terreal range. Multifunctional, they are used in cladding, sunscreen, pergolas, screening, ventilation grilles, etc.

STRENGTHS

- Effective solar protection
- Unrivalled durability of terracotta
- Simple and fast installation thanks to the Terreal system
- Pre-assembled at factory option available
- Customization possibilities: colour, shapes



MUSEU A CASA, SAO PAULO, BRÉSIL

Architect : Rocco Vidal Perkins + Will

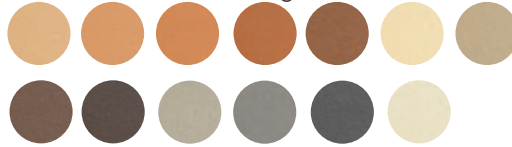


LONG LENTH SUNSCREEN

2
TEXTURES



13
THROUGH
BODY
COLOURS



Autan® XL



Zonda® XL 10



Shamal® XL 15



Harmatan® XL



Zonda® XL 15



Shamal® XL 20

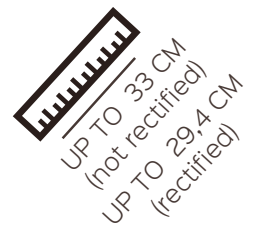


SHORT LENTH SUNSCREEN

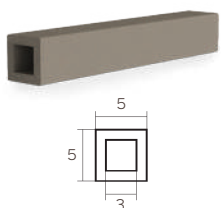
3
TEXTURES



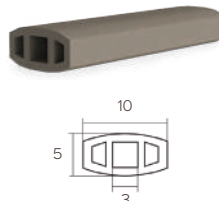
9
THROUGH
BODY
COLOURS



Autan®



Harmattan®



Standard range

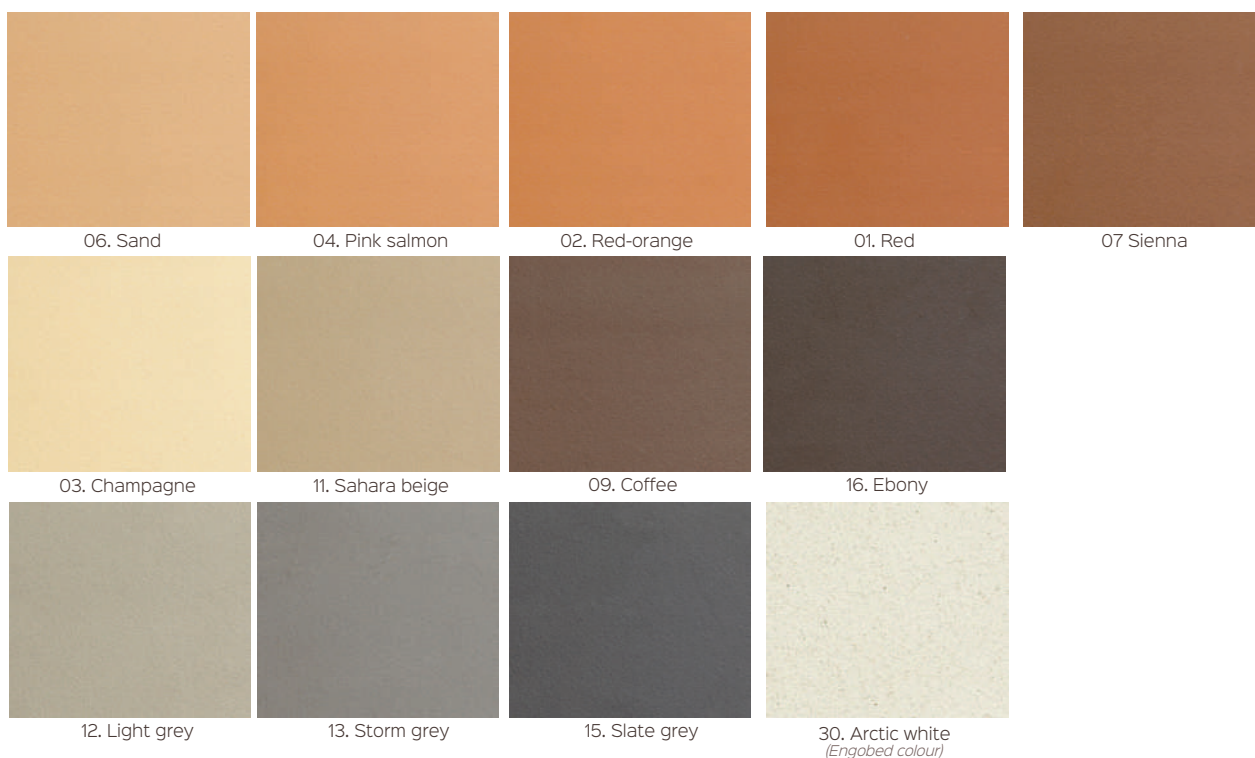
STANDARD DIMENSIONS

PRODUCT	REF. CATALOGUE	SECTION DIMENSION	LENGTH	NUMBER OF CAVITY	CAVITY SECTION	WEIGHT/ML
AUTAN® XL	AX05CO	50 x 50 mm	310 to 1 510 mm	1	30 x 30 mm	3,3 kg / ml
HARMATTAN® XL	HA10ET	100 x 50 mm	310 to 1 510 mm	1	30 x 30 mm	6,2 kg / ml
ZONDA® XL 10	ZX10ET	100 x 50 mm	310 to 1 510 mm	1	30 x 30 mm	6,5 kg / ml
ZONDA® XL 15	ZX15ET	150 x 50 mm	310 to 1 510 mm	2	30 x 30 mm	9,8 kg / ml
SHAMAL® XL 15	SH15CO	150 x 51 mm	310 to 1 510 mm	1	30 x 30 mm	7,2 kg / ml
SHAMAL® XL 20	SH20CO	200 x 51 mm	310 to 1 510 mm	2	30 x 30 mm	10,5 kg / ml
AUTAN®	AU05NR / RE	50 x 50 mm	330 mm not rectified / 294 mm rectified	1	30 x 30 mm	3,3 kg / ml
HARMATTAN®	HA10NR / RE	100 x 50 mm	330 mm not rectified / 294 mm rectified	1	30 x 30 mm	6,2 kg / ml



THROUGH BODY COLOURS RANGE

Autan® XL, Zonda® XL, ShamaL® XL & Harmattan® XL



THROUGH BODY COLOURS RANGE Autan® & Harmattan®





GLAZED RANGE COLOURS



Yellow



Lichen



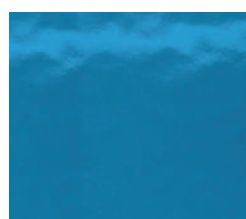
Orange



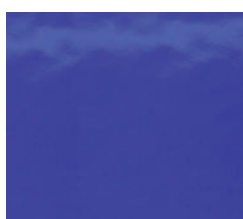
Red



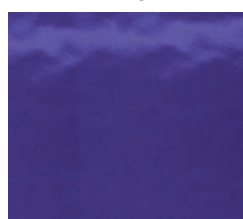
Mars red



Petrol blue



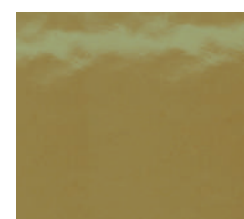
Cobalt blue



Egyptian violet



Calamine pink



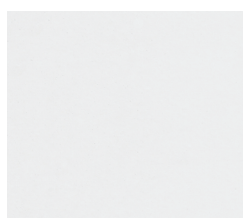
Shadow earth



Green



Verdigris



Matt white



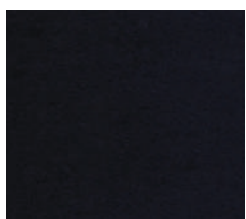
Glossy white



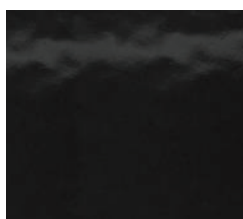
Matt light grey



Glossy light grey



Matt black



Glossy black



Colours not available in Autan® and Harmattan®



Marine black



Steel

Custom glazed colour

Terreal can develop on request RAL equivalent glazed colours in matt or glossy appearance.

Cantilever fixing system

All products of the range except Shamal® XL

PROPERTIES

Certifications :

Product under technical assessment for horizontal and vertical installation :
French CSTB n°2.1/20-1807_V1



Impact resistance :

SUPPORT PROFILE SPACE TO SPACE	1200 MM		1500 MM		1800 MM	
TERRACOTTA PRODUCTS PER KIT	1 product	2 products	1 product	2 products	1 product	2 products
AUTAN® XL	Q1	Q2	-	Q2	-	Q2
HARMATAN® XL	Q2	Q2	-	Q2	-	Q2
ZONDA® XL 10	Q3	Q2	-	Q2	-	Q2
ZONDA® XL 15	Q3	Q2	Q2	Q2	-	Q2
ZONDA® XL 10	Q2	Q2	-	Q2	-	Q2
ZONDA® XL 15 (incline 30°)	Q3	Q3	-	Q3	-	Q3
SUPPORT PROFILE SPACE TO SPACE	< 610 MM			< 1800MM		
TERRACOTTA PRODUCTS PER KIT	2 products			> 2 products		
AUTAN®	Q2			Q1		
HARMATTAN®	Q2			-		

Wind resistance :

SUPPORT PROFILE SPACE TO SPACE	< 1200 MM	< 1800MM
ALL SUNSCREEN RANGE	3347 Pa	2667 Pa

Fire resistance:

Non-combustible product: fire resistance class as A1

Seismic performance :

Seismic zones	Buildings importance class			
	I	II	III	IV
1	Without specific installation			
2				
3	With specific installation ✓			
4				
	Not compatible ✗			



BIM objects available
www.bimobject.com/fr/terrealfacade

FIXING SYSTEM

The layout is carried out beforehand by the installation company to determine the positioning of the profiles and the dimensions of the sunscreen kits.

Terracotta sunscreen products are strung on 1 or 2 27x27 mm aluminium tubes and are separated by an interface in EDPM, flexible material catching up with tolerances and the expansion of the terracotta.

The stabilization device to be placed on the aluminium tubes comes by a spring effect stabilize the sunshades around the tube.

Fixing plates arranged at the 2 ends connect this kit to the vertical profiles. The aluminium tubes are assembled at their ends to the plates by screws. The plates are then fixed by self-drilling screws with vertical profiles.

An optional profile cover is provided in the upper part for finishing. The vertical installation is done exactly according to the same process with a simple 90° rotation.

For the sunscreen Autan®, Autan® XL, Zonda® XL, Harmattan® et Harmattan® XL, the installation is offset. For the Shamal® XL range the sunshades are installed between the profiles.

FIXING ACCESSORIES



Profile cover
BSLC01
SAP 133171



Standard profile
Raw :
BSLP11 (SAP 135306)
Anodized :
BSLP10 (SAP 132681)



Stabilizing device - BSLR
SAP 132682 (88 cm)
SAP 132683 (108 cm)
SAP 132691 (128 cm)
SAP 132692 (148 cm)
SAP 132693 (168 cm)



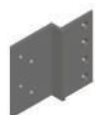
Aluminium tube 27 x 27 mm
BSLT
SAP 132678 (178,4 cm)
SAP 132679 (148,4 cm)
SAP 132680 (118,4 cm)
SAP 134082 (98,4 cm)



Self-drilling stainless
steel fixing screw
BSLF02
SAP 132699



Autan® XL Autan® plates
Raw : BSLA01 (SAP 134208)
Anodized : BSLA03 (SAP 132696)



Platine Zonda XL 15
large face view
Raw (SAP 146520)
Anodized (SAP 146519)



Harmattan® and
Zonda® XL 10 plates
Raw : BSLA07 (SAP 135616)
Anodized : BSLA08 (SAP 135628)



Zonda® XL 15 plates
Raw : BSLA02 (SAP 134209)
Anodized : BSLA04 (SAP 132697)



Stainless steel
assembly screws
BSLF01
SAP 132698



EPDM interface
Autan® & Shamal® XL 15
BSLI01
SAP 132694



EPDM interface
Zonda® XL 10
& Harmattan®
BSLI03
SAP 135615







EPDM interface
Zonda® XL 15
BSLI02
SAP 132695



90° Inox bracket
(out Shamal® XL)
BSLE01
SAP 137993

Detail of fixing kit composition

	SUNSCREEN PRODUCT	STANDARD MODULE DIMENSION (MM)	Sunscreen terracotta		Aluminium tube 27 x 27 mm		Stabilizing device		Fixing plates	EPDM interface	Fixing screw	Stainless steel assembly screws
			Qty.	Length mm	Qty.	Long. mm	Qty.	Length mm	Qty.	Qty.	Qty.	Qty.
	Autan® & Harmattan (rectified)	1200 mm	4	294 mm	1	1184 mm	1	1080 mm	2	5	4	4
		1500 mm	5	294 mm		1484 mm		1280 mm		6		
		1800 mm	6	294 mm		1784 mm		1680 mm		7		
	Autan® XL	1000 mm	1	980 mm	1	984 mm	1	880 mm	2	2	4	4
		1200 mm	1	1180 mm		1184 mm		1080 mm		2		
		1500 mm	1	1480 mm		1484 mm		1280 mm		2		
		1800 mm	2	889 mm		1784 mm		1680 mm		3		
	Zonda® XL 10 & Harmattan® XL	1000 mm	1	980 mm	1	984 mm	1	880 mm	2	2	6	4
		1200 mm	1	1180 mm		1184 mm		1080 mm		2		
		1500 mm	1	1480 mm		1484 mm		1280 mm		2		
		1800 mm	2	889 mm		1784 mm		1680 mm		3		
	Zonda® XL 15	1000 mm	1	980 mm	2	984 mm	2	880 mm	2	2	8	8
		1200 mm	1	1180 mm		1184 mm		1080 mm		2		
		1500 mm	1	1480 mm		1484 mm		1280 mm		2		
		1800 mm	2	889 mm		1784 mm		1680 mm		3		

Cantilever fixing system

All products of the range except Shamal® XL

FIXING SYSTEM

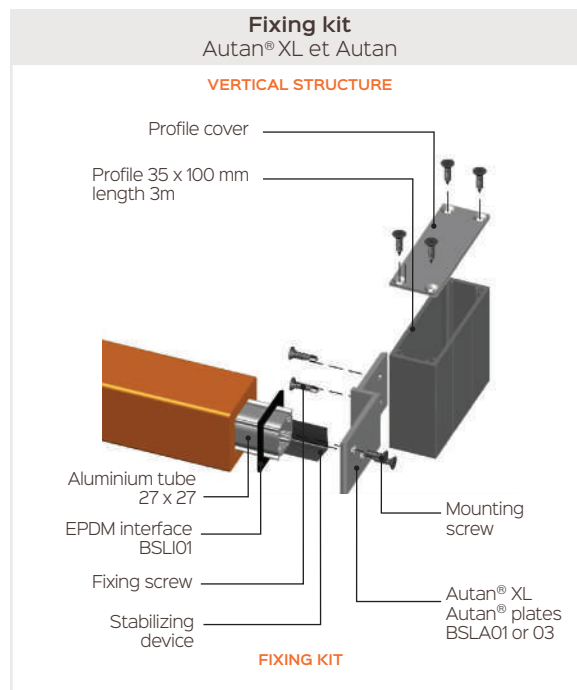
Terracotta sunscreen products are threaded onto the aluminum tube of 27x27 mm and are separated by a 2mm EPDM interface, a flexible material making up for tolerances and the dilation of the terracotta.

The stabilization device has to be placed on the aluminum tube and in the cavity of the terracotta product comes by a spring effect stabilize the sunshades around the tube and thus limit the parasitic movements.

The aluminum tubes are assembled at their ends by screws. These plates are then fixed by self-drilling screws to the vertical profile. The sunscreen bars are installed in remote poses and go past the profiles.

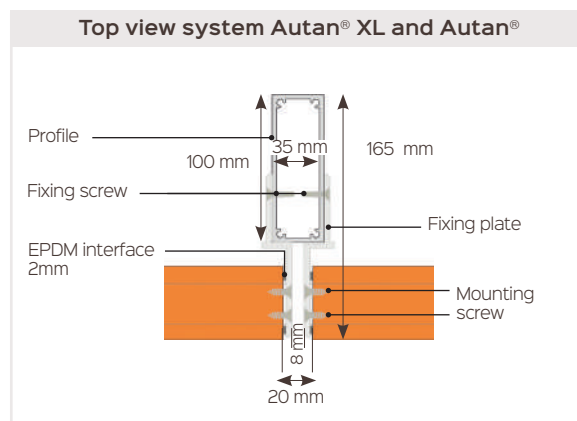
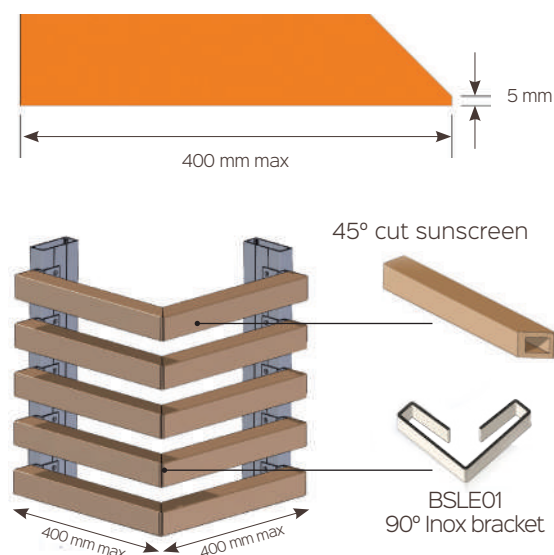
An optional profile cover is provided at the top and the bottom to ensure the finish.

Vertical installation is done exactly in the same way with a simple 90° rotation.



CORNER DETAILS

- 45° angle cut at factory is available
- Not available for Shamal® XL range



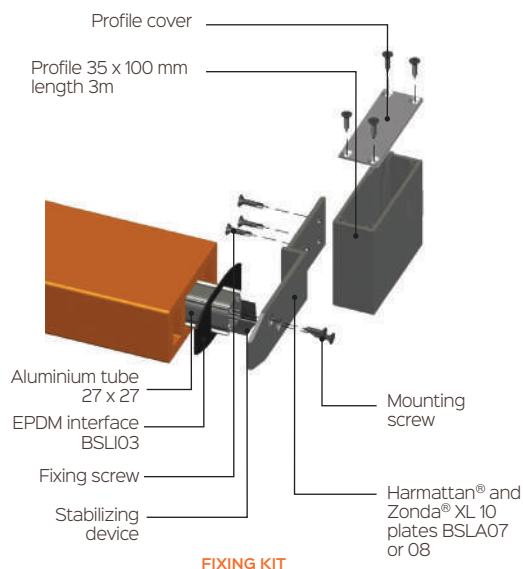
ZOOM ON ...
installation guide
video

www.youtube.com/user/terrealvideos



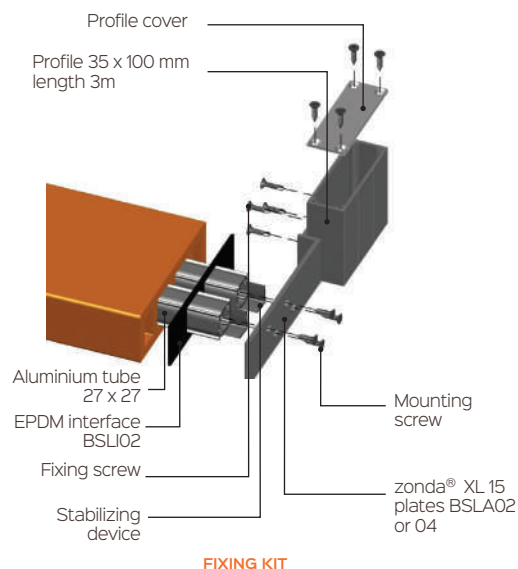
Fixing kit Zonda® XL 10 and Harmattan®

VERTICAL STRUCTURE

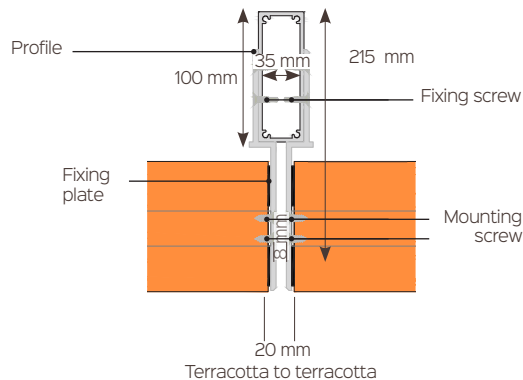


Fixing kit Zonda® XL 15

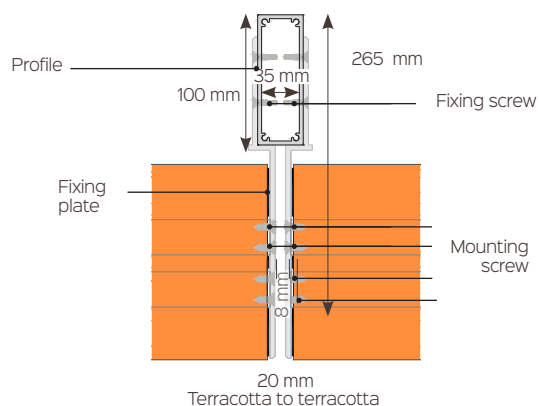
VERTICAL STRUCTURE



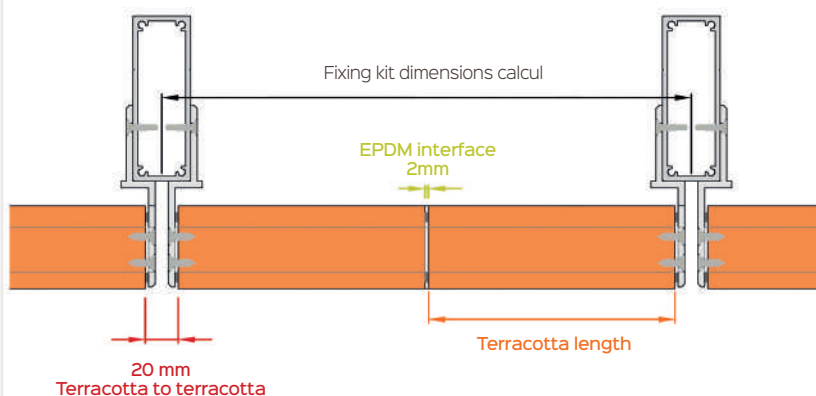
Top view system gamme Zonda® XL 10 and Harmattan®



Top view system Zonda® XL 15 and Harmattan®



Cantilever installation - kit dimensions calcul



$$\text{Length of a terracotta product (mm)} = \frac{\text{Profile center distance (mm)} - 20 - 2 \times (N-1)}{N}$$

N = number of terracotta sunscreen on the kit

$$\begin{aligned} \text{Tube length} &= \text{profile center distance} - 15 \text{ mm} \\ \text{Length of assembled kit} &= \text{profile center distance} - 8 \text{ mm} \end{aligned}$$

Embedded profiles system

All products of the range

PROPERTIES

Product under technical assessment for horizontal and vertical installation :
n°2.1/20-1807_V1



Impact resistance :

(Zonda® XL 15 and Shamal® 10 et 20)*

SUPPORT PROFILE SPACE TO SPACE	1200 MM		1500 MM		1800 MM	
TERRACOTTA PRODUCTS PER KIT	1 product	2 products	1 product	2 products	1 product	2 products
ZONDA® XL 15	Q2	Q2	Q2	Q2	Q2	Q2
SHAMAL® XL 15	Q2	Q2	-	Q2	-	Q2
SHAMAL® XL 20	Q3	Q3	-	Q3	-	Q3

Wind resistance :

(Zonda® XL 15 et Shamal® 10 et 20)*

SUPPORT PROFILE SPACE TO SPACE	<1200 MM	< 1800MM
ZONDA® XL 15		
SHAMAL® XL 15	3347 Pa	2667 Pa
SHAMAL® XL 20		

Fire resistance :

Non-combustible product: fire resistance class as A1

Seismic performance :

Zones de sismicité	Classes de catégories d'importance des bâtiments			
	I	II	III	IV
1	Sans disposition particulière			
2				
3	Avec des dispositions particulières ✓			
4				Pose non compatible X

*Produits Autan®, Harmattan®, Autan® XL, Zonda® XL 10 et Harmattan® XL non testés

FIXING SYSTEM

Terracotta sunscreen products are threaded onto the aluminum tube of 27x27 mm and are separated by a 2mm EPDM interface, a flexible material making up for tolerances and the dilation of the terracotta.

The stabilization device has to be placed on the aluminum tube and in the cavity of the terracotta product comes by a spring effect stabilize the sunshades around the tube and thus limit the parasitic movements.

The aluminum tubes are assembled at their ends by screws. These plates are then fixed by self-drilling screws to the vertical profile. The sunscreen bars are installed in remote poses and go past the profiles.

An optional profile cover is provided at the top and the bottom to ensure the finish.

Vertical installation is done exactly in the same way with a simple 90 ° rotation.

FIXING ACCESSORIES



Profile cover
BSLC01
SAP 133171



Standard profile
Raw :
BSLP11 (SAP 135306)
Anodized :
BSLP10 (SAP 132681)



Stabilizing device - BSLR
SAP 132682 (88 cm)
SAP 132683 (108 cm)
SAP 132691 (128 cm)
SAP 132692 (148 cm)
SAP 132693 (168 cm)



Aluminium tube 27 x 27 mm
BSLT
SAP 144554 (95,7 cm)
SAP 144555 (115,7 cm)
SAP 144556 (145,7 cm)
SAP 144558 (175,7 cm)



Self-drilling stainless
steel fixing screw
BSLF02
SAP 132699



Simple tube plate
Embedded profile
Raw :
BSLA14 SAP 153990
Anodized :
BSLA15 SAP 153989



Double tube plate
Embedded profile
Raw :
BSLA12 SAP 142941
Anodized :
BSLA13 SAP 142942



EPDM interface
Range Autan® and
Shamal® XL 15
BSLJ01
SAP 132694



EPDM interface
Shamal® XL 20
BSLI
SAP 142940



Stainless steel
assembly screws
BSLF01
SAP 132698

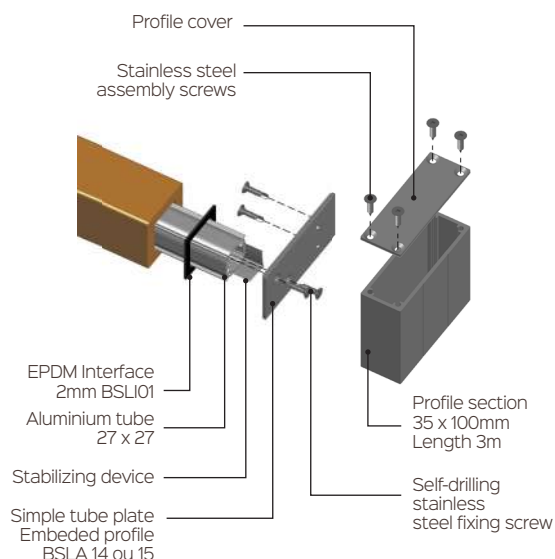
Detail of fixing kit composition

SUNSCREEN PRODUCT	REFERENCE	STANDARD MODULE DIMENSION (mm)	Sunscreen terracotta		Aluminium tube 27 x 27 mm		Stabilizing device		Fixing plates	EPDM interface	Fixing screw	Stainless steel assembly screws
			Qty.	Length mm	Qty.	Length mm	Qty.	Length mm				
	AXK100EP	1000 mm	1	980 mm	1	984 mm	1	880 mm	2	2	4	4
	AXK100EP	1200 mm	1	1180 mm		1184 mm		1080 mm				
	AXK100EP	1500 mm	1	1480 mm		1484 mm		1280 mm				
	AXK100EP	1800 mm	2	889 mm		1784 mm		1680 mm				
	HAK100EP	1000 mm	1	980 mm	1	984 mm	1	880 mm	2	2	6	4
	HAK120EP	1200 mm	1	1180 mm		1184 mm		1080 mm				
	HAK150EP	1500 mm	1	1480 mm		1484 mm		1280 mm				
	HAK180EP	1800 mm	2	889 mm		1784 mm		1680 mm				
	ZKX100EP	1000 mm	1	980 mm	2	984 mm	2	880 mm	2	2	8	8
	ZKX120EP	1200 mm	1	1180 mm		1184 mm		1080 mm				
	ZKX150EP	1500 mm	1	1480 mm		1484 mm		1280 mm				
	ZKX180EP	1800 mm	2	889 mm		1784 mm		1680 mm				
	SLK100EP	1000 mm	1	953 mm	1	957 mm	1	880 mm	2	2	6	6
	SLK120EP	1200 mm	1	1153 mm		1157 mm		1080 mm				
	SLK150EP	1500 mm	1	1453 mm		1457 mm		1280 mm				
	SLK180EP	1800 mm	2	875 mm		1757 mm		1680 mm				
	SXK100EP	1000 mm	1	953 mm	2	957 mm	2	880 mm	2	2	6	6
	SXK120EP	1200 mm	1	1153 mm		1157 mm		1080 mm				
	SXK150EP	1500 mm	1	1453 mm		1457 mm		1280 mm				
	SXK180EP	1800 mm	2	875 mm		1757 mm		1680 mm				

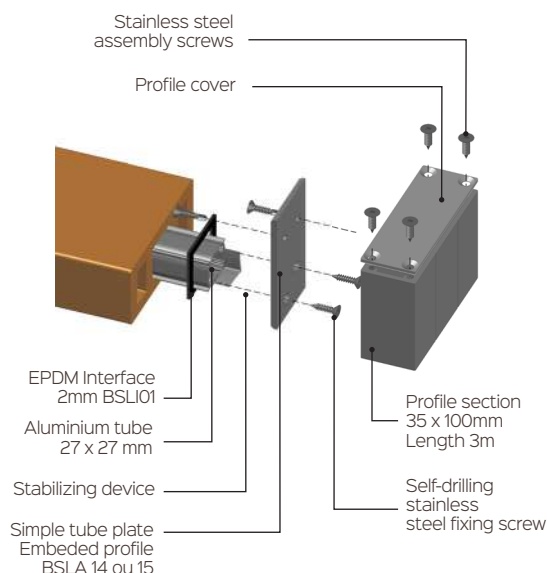
Embedded profiles system

All products of the range

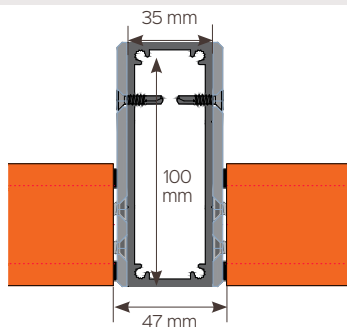
Fixing kit
Autan® XL and Autan



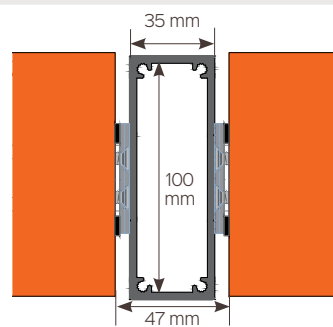
Fixing kit
Zonda® XL 10, Harmattan® and Harmattan® XL



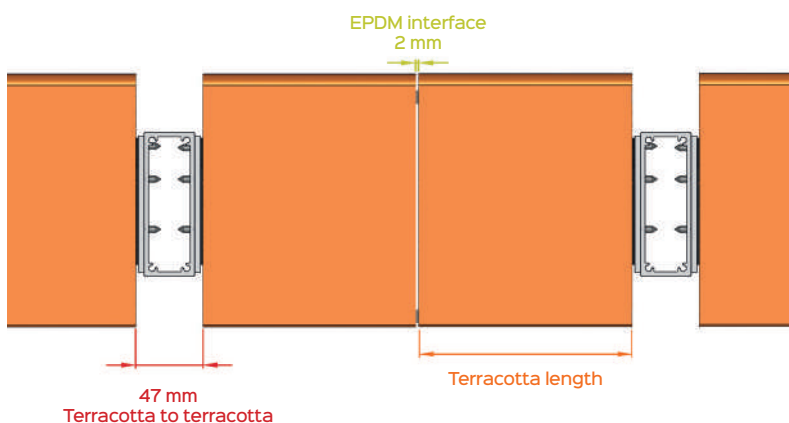
Top view
Autan® XL and Autan



Top view
Zonda® XL 10, Harmattan® and Harmattan® XL



Embedded installation - kit dimensions calcul



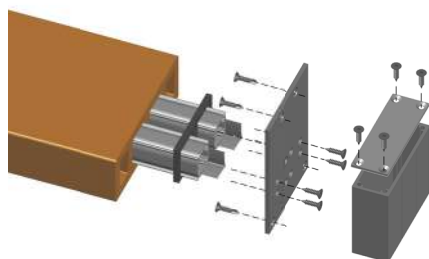
$$\text{Length of a terracotta product (mm)} = \frac{\text{Profile center distance (mm)} - 47 - 2 \times (N-1)}{N}$$

N = number of terracotta sunscreen on the kit

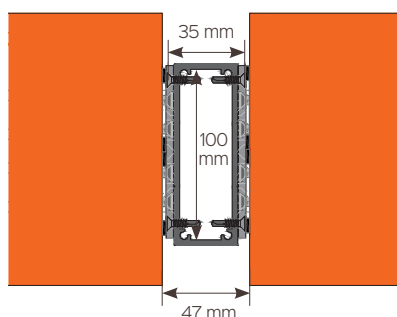
$$\text{Tube length} = \text{profile center distance} - 43 \text{ mm}$$

$$\text{Length of assembled kit} = \text{profile center distance} - 35 \text{ mm}$$

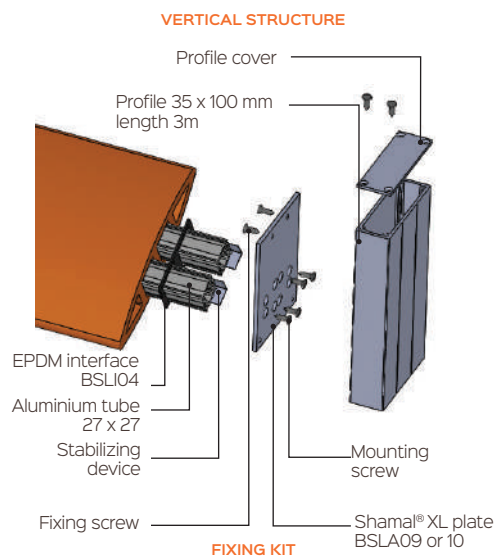
Fixing kit
Zonda® XL 15



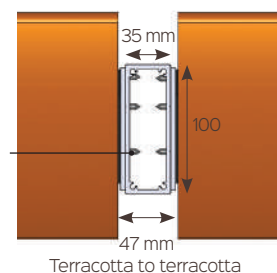
Top view
Zonda® XL 15



Fixing kit Shamal® XL range



Top view Embedded profiles system

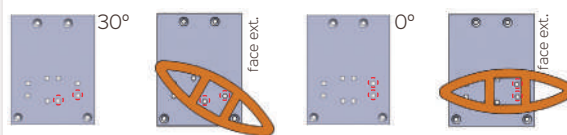


Tilting installation

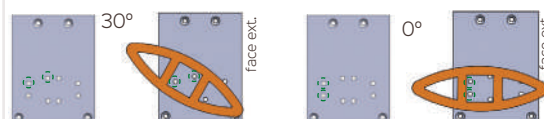
The plate for the Shamal® XL 15 kit is the same as the Shamal® XL 20 kit. It allows the installation with 0 ° or 30 ° inclination.

Shamal® XL 15 can either overflowing the profile or flush with the profile in both inclination cases.

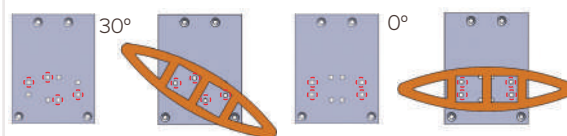
Shamal® XL 15 overflowing fit



Shamal® XL 15 flush fit 30°



Shamal® XL 20



















Position of tube assembly screws

Sunscreen system properties

PERCENTAGE OF OCCULTATION

Horizontal installation of the sunscreen.

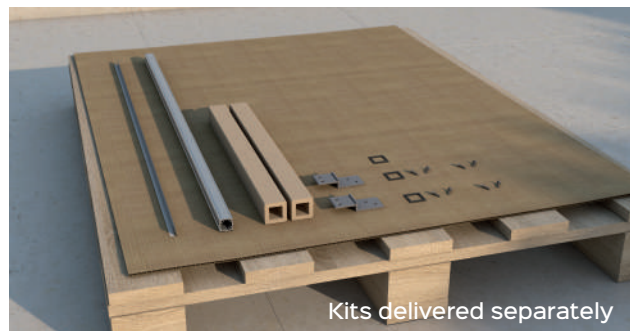
Shaded area as % of opening area (excluding lintel and transom masks).

			Blade	Blade spacing					
Shading height			100 mm	150 mm	200 mm	250 mm	300 mm	500 mm	
Autan® range	Sun at 0°		50%	33%	25%	20%	17%	10%	
	Sun at 45°		97%	65%	49%	39%	32%	19%	
Harmattan®	Sun at 0°		41%	27%	21%	16%	14%	8%	
	Sun at 45°		100%	77%	58%	46%	38%	23%	
Zonda® XL 10	Sun at 0°		50%	-	25%	-	17%	10%	
	Sun at 45°		100%	-	74%	-	49%	29%	
Zonda® XL 15	Sun at 0°		50%	-	25%	-	17%	10%	
	Sun at 45°		100%	-	99%	-	66%	39%	
Shamal® XL 15	Sun at 0° Pose at 0°		46%	-	23%	-	15%	9%	
	Sun at 45° Pose at 0°		100%	-	75%	-	50%	30%	
	Sun at 0° Pose at 30°		64%	-	32%	-	21%	13%	
	Sun at 45° Pose at 30°		100%	-	98%	-	65%	39%	
Shamal® XL 20	Sun at 0° Pose at 0°		46%	-	23%	-	15%	9%	
	Sun at 45° Pose at 0°		100%	-	100%	-	70%	42%	
	Sun at 0° Pose at 30°		100%	-	55%	-	36%	22%	
	Sun at 45° Pose at 30°		100%	-	100%	-	92%	55%	

KIT DELIVERY

Kits delivered separately

As standard, kit elements are delivered separately from terracotta. The assembly of the bars is therefore done on site.



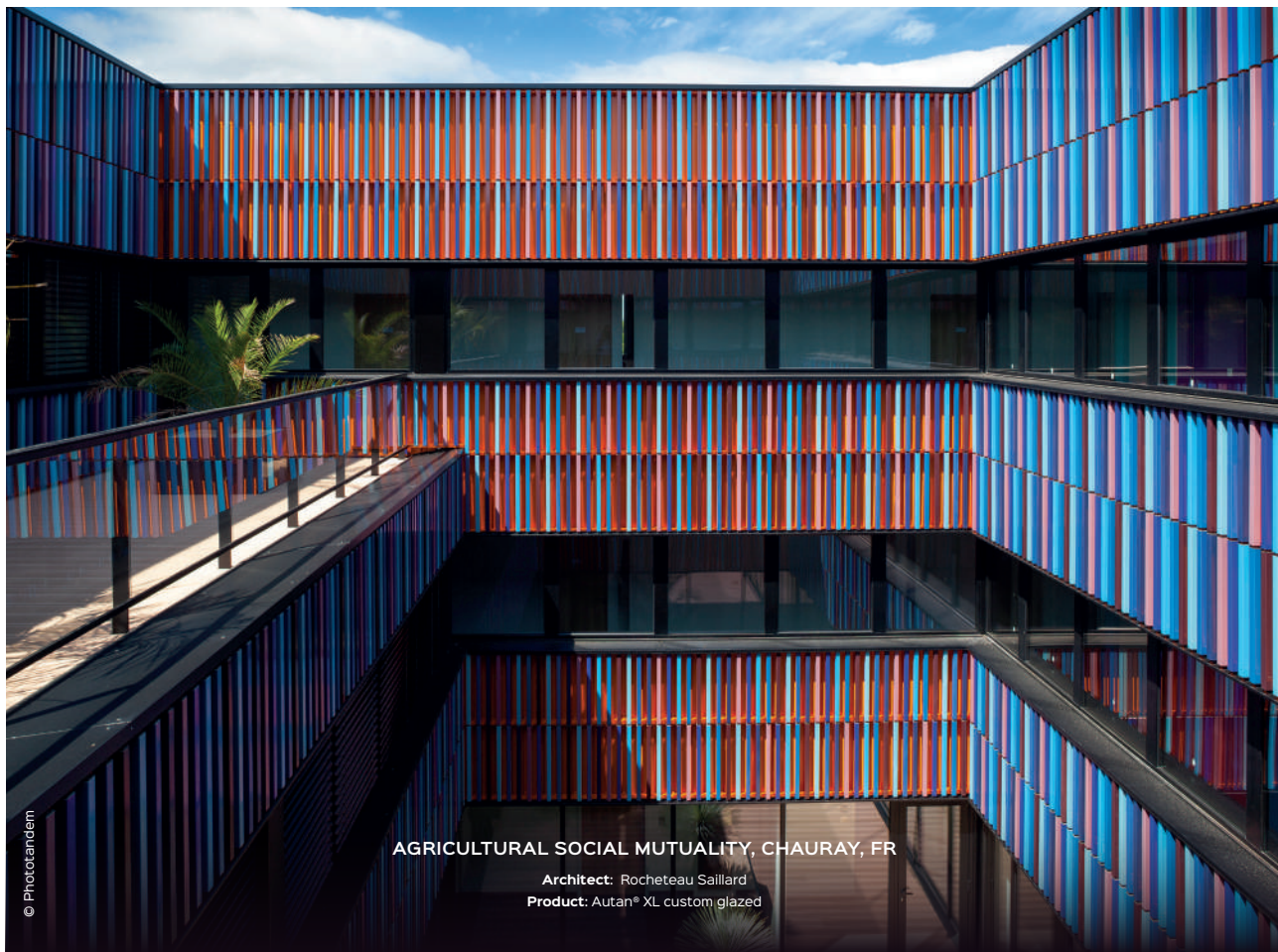
Pre-assembled at the factory

In order to optimize the installation time, Terreal proposes a service to assembly the kits on the terracotta products at the factory. Thus, the installation on site is simplified and consist to fix pre-assembled kits to vertical profiles, previously fixed to the support wall.



Bim objects available

www.bimobject.com/fr/terrealfacade





A CASA MUSEUM, SAO PAULO, BRASIL

Architect : RoccoVidal Perkins + Will
Product : Autan® XL 03.Champagne

© Daniel Ducci



**INTERNATIONAL HOUSE OF STAY ZAC BÉDIER,
PARIS, FR**

Architect : Atelier Frédéric Rolland et associés
Product : Autan® XL chocolate brown

© Olivier Brunet







Facing range

Bricks, mulots, brickslips

To beautify your walls, Terreal offers a complete range of clay brick in a wide range of colours, sizes and aspects. Aesthetic and easy to install, these terracotta facade products allow you the most creative achievements.

Classic brick

Authentic terracotta beauty



Terreal's classic brick line offers a wide range of sizes and colours for a variety of architectures. From the most traditional to the most modern aesthetics, the variety of colours and shades offers a wide range of potential to dress up all the projects with elegance.

STRENGTHS

- Wide variety of formats (up to 40 cm)
- Choice of traditional and contemporary colours
- Available in smooth or sanded finish
- Durable and maintenance free
- Resistant to external aggressions (impact, wind, frost)





3
SKINS



Standard



Sanded



Flamed



Brick slips & angle brick slips



Solid & perforated brick



Solid & perforated mulot

DIMENSIONS L X H X TH.	REF.CATALOGUE	WEIGHT / U	QUANTITY (10 MM JOINTS)	
Brick slips				
220 x 50 x 10 mm	PL21	0,22 kg	72 / m²	-
220 x 50 x 14 mm	PL01	0,3 kg	72 / m²	-
220 x 65 x 14 mm	PL03	0,4 kg	58 / m²	-
280 x 50 x 14 mm	PL02	0,4 kg	57 / m²	-
330 x 50 x 14 mm	PL05	0,45 kg	49 / m²	-
Angle brick slips				
220 x 105 x 50 x 15 mm	PL12	0,4 kg	-	17 / ml
220 x 105 x 65 x 15 mm	PL14	0,5 kg	-	13 / ml
280 x 140 x 50 x 15 mm	PL13	0,5 kg	-	17 / ml
Solid brick				
220 x 105 x 50 mm	B01	2,4 kg	72 / m²	-
280 x 105 x 50 mm	B05	3,15 kg	57 / m²	-
Perforated brick				
220 x 105 x 50 mm	BP01	1,5 kg	72 / m²	-
280 x 105 x 50 mm	BP05	2 kg	57 / m²	-
400 x 105 x 50 mm	BP07	2,7 kg	41 / m²	-
Solid mulot				
220 x 50 x 50 mm	M16	1,1 kg	72 / m²	-
Perforated mulot				
220 x 50 x 50 mm	M01	0,75 kg	72 / m²	-
280 x 50 x 50 mm	M02	1,1 kg	57 / m²	-

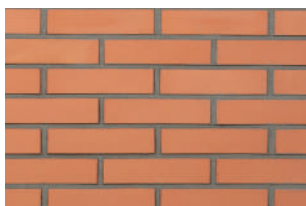


Classic colours

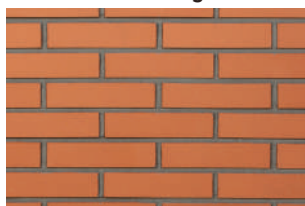
Red



Pink



Red-orange



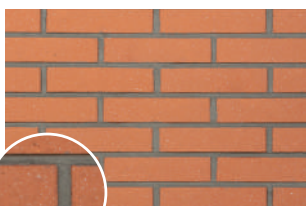
Violine



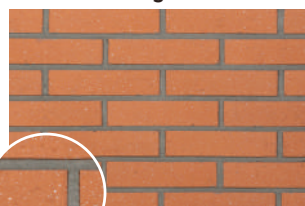
Red sanded



Pink sanded



Red-orange sanded



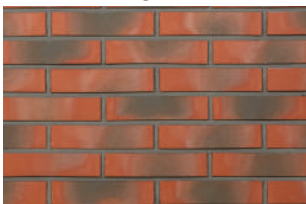
Violine sanded



Jasmin



Magnolia



Brown



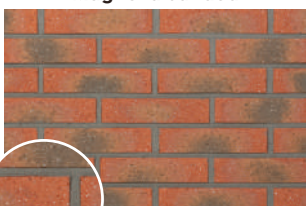
Ebony



Jasmin sanded



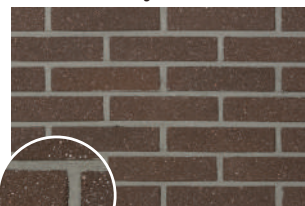
Magnolia sanded



Brown sanded



Ebony sanded



Beige



Stone colour



Champagne



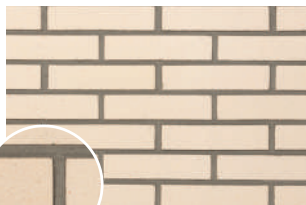
Pearl grey



Beige sanded



Stone colour sanded



Champagne sanded



Pearl grey sanded



Snow white RQ



Black engobed



Mat biscuit (engobed)



COLOURS	DIMENSIONS AVAILABLE (MM)															
	BRICK SLIPS				ANGLE BRICK SLIPS				SOLID BRICK		PERFORATED BRICK		SOLID MULOT		PERFORATED MULOT	
	220 X 50 X 14		280 X 50 X 14		220 X 105 X 50 X 15		280 X 140 X 50 X 15		220 X 105 X 50		220 X 105 X 50		220 X 50 X 50		220 X 50 X 50	
Skin	Smooth	Sanded	Smooth	Sanded	Smooth	Sanded	Smooth	Sanded	Smooth	Sanded	Smooth	Sanded	Smooth	Sanded	Smooth	Sanded
Red	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✗	✓	✗	✓	✗
Red-orange	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗
Pink	✓	✗	✓	✓	✓	✗	✓	✓	✓	✗	✓	✗	✗	✗	✗	✗
Violine	✓	✗	✗	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
Brown	✓	✗	✗	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
Ebony	✓	✗	✗	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
Beige	✓	✗	✗	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
Pearl Grey	✓	✓	✗	✗	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
Stone colour	✓	✗	✗	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
Champagne	✓	✗	✗	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
Jasmin	✓	✗	✗	✗	✓	✗	✗	✗	✓	✗	✓	✗	✗	✗	✗	✗
Magnolia	✓	✗	✗	✗	✓	✗	✗	✗	✓	✗	✓	✗	✗	✗	✗	✗
Snow white	✓	-	✗	-	✓	-	✗	-	✗	-	✗	-	✗	-	✗	-
Black engobed	✓	-	✗	-	✓	-	✗	-	✗	-	✗	-	✗	-	✗	-
Mat biscuit	✓	-	✗	-	✓	-	✗	-	✓	-	✗	-	✗	-	✗	-

✓ : Product in stock ✗ : Product not stored

Glazed colours

Colours, sparkles and creativity



With a layer of coloured enamel glaze gently applied and bonded to the terracotta during the firing process, the glazed range is exuberant and offers a unique accompaniment for a variety of different architectural designs. Glossy or Matt finish, glazed bricks are a source of inspiration and offer to the Architects a possibility of rich and perennial expression to animate the facades and the rhythm of our environment.

STRENGTHS

- An infinite choice of matte or shiny shades
- Durable and maintenance free
- Resistant to external aggressions (shocks, wind, frost)
- Fire resistant
- Wide variety of formats





DIMENSIONS L X H X TH.	REF.CATALOGUE	WEIGHT / U	QUANTITY (10 MM JOINTS)	
Brick slips				
220 x 50 x 14 mm	PL01	0,3 kg	72 / m²	-
220 x 65 x 14 mm	PL03	0,4 kg	58 / m²	-
280 x 50 x 14 mm	PL02	0,4 kg	57 / m²	-
330 x 50 x 14 mm	PL05	0,45 kg	49 / m²	-
Corner brick slips				
220 x 105 x 50 x 15 mm	PL12	0,4 kg	-	17 / ml
220 x 105 x 65 x 15 mm	PL14	0,5 kg	-	13 / ml
Solid brick				
220 x 105 x 50 mm	B01	2,48 kg	72 / m²	-
Perforated brick				
220 x 105 x 50 mm	BP01	1,5 kg	72 / m²	-

18
COLOURS



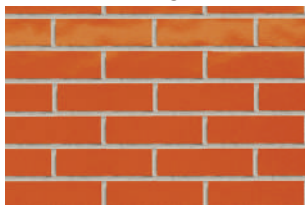
March Red



Red



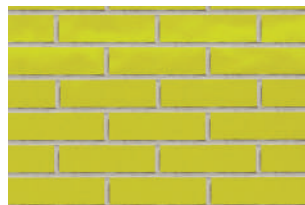
Orange



Yellow



Lichen



Shadow land



Verdigris



Petrole blue



Cobalt blue



Violet



Calamine pink



Green



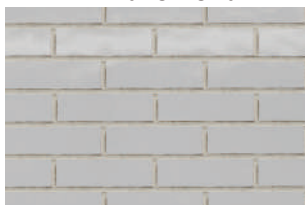
Glossy white



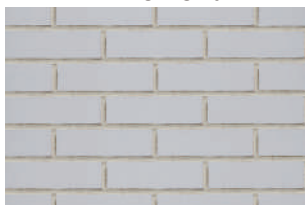
Mat white



Glossy light grey



Mat light grey



Glossy black



Mat black



Hand-moulded brick

Raw beauty clay bricks



With its hand-moulded range, Terreal offers a wide choice of shades for creative architectures. This ancestral building material reinvents itself to meet the challenges of today. By the variety of its colours or the width of its formats, such as the MAAX very long solution, the hand-moulded bricks opens new fields to the architectural creation.

STRENGTHS

- Raw material with irregular epidermis
- Exists in very great length 49 cm (MAAX brick)
- Durable and maintenance-free
- Resistant to external aggressions (shock, wind, frost)





Brick slips & corner brick slips



Solid brick

MAAX brick
Long length brick 49cm

DIMENSIONS L X H X TH.	REF. CATALOGUE	WEIGHT / U	QUANTITY (12 MM JOINTS)	
Brick slips				
280 x 50 x 20 mm	PL23	0,6 kg	57 / m² (joints 10 mm)	-
Corner brick slips				
280 x 50 x 20 mm	PL33	1 kg	-	17 / ml (joints 10 mm)
Solid brick				
280 x 140 x 50 mm	BM04	2,7 kg	57 / m² (joints 10 mm)	-
490 X 40 X 115 mm	BM02	3,6 kg	40 / m² (joints 10 mm)	-

Terrae/Classico/Vivo/Dogi range

Terrae chiaro SM



Terrae Giallo paglierino SM



Terrae rosato



Terrae rosato chiaro SM



Terrae rosso SM



Terrae rosso forte SM



Dogi Antico SM



Classico rouge SM



Classico ivoire SM



Vivo pearl grey SM



Vivo taupe grey SM



Available formats (mm)



Brick slips

250 x 55 x 25



Corner brick slips

250 x 120 x 55 x 25



Solid brick

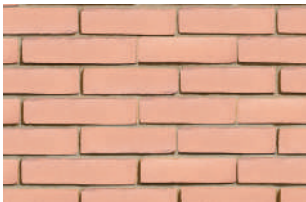
250 x 120 x 55

Occitania range

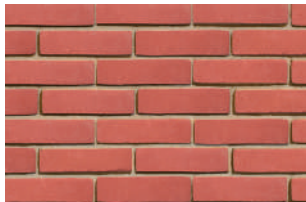
Orange Occitan



Rose Occitan



Rouge Occitan



Available formats (mm)



Brick slips

280 x 140 x 50 x 20



Corner brick slips

280 x 140 x 50 x 20



Solid brick

280 x 140 x 50 x 20

MAAX range

STANDARD COLOUR (sand on surface)

M.1.104



M.1.402



M.1.403



M.1.102



M.1.103



M1.106



M.1.107



M.1.202



M.1.108



Available formats (mm)



Brick

490 x 40 x 115

WASSERSTRICH COLOURS (without surface sand)

M.1.109



M.1.110



M.1.111



M.1.112



M.1.113



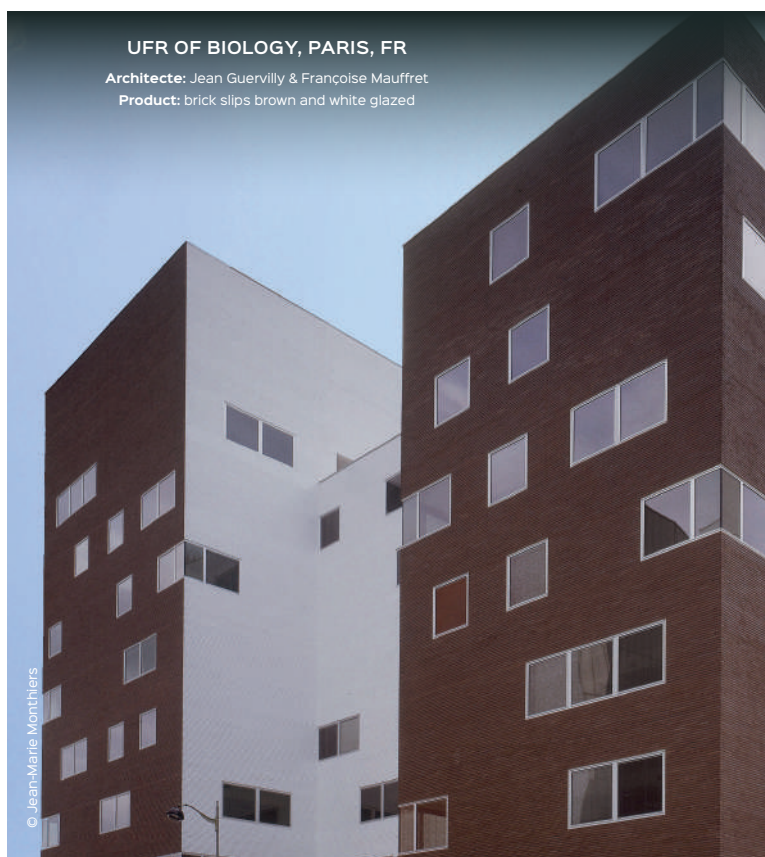
Available formats (mm)



Brick

490 x 40 x 115





TERREAL has been a key player in clay Building materials for over 150 years. Based on this unique experience, our group creates innovative solutions. For the building envelope, through 3 activities : roofing, façade decoration and structure.

TERREAL SAS au capital de 87 176 320€ · SIREN 562 110 346 RCS Nanterre · FA1050202104 · Design graphique · Agence Place Publique

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