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201

Vanguard

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CUPA PIZARRAS, THE WORLD LEADER IN NATURAL SLATE

The CUPACLAD® rainscreen cladding systems have been developed from the necessity of adapting natural slate to new architectural trends and styles that demand a more sustainable approach. The slate used in our systems is a natural product carefully selected for its durability and characteristics from our 16 quarries. The CUPACLAD® systems combine the efficiency of ventilated cladding and the properties of natural slate offering a competitive and sustainable alternative for all cladding requirements.

Developed alongside
Danish architects and
contractors CUPACLAD®
systems offer a revolution
in cladding applications for
natural slate. The systems
offer a new durable,
sustainable and easy to fix
alternative with a unique
character.

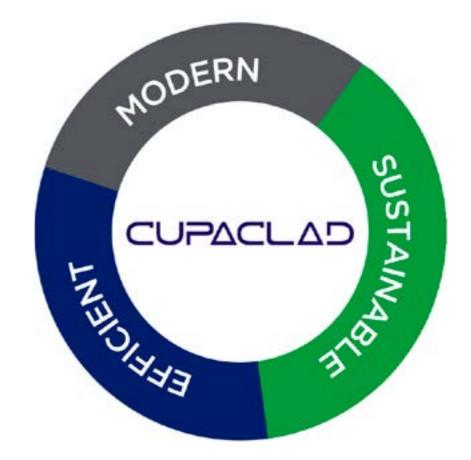
The CUPACLAD® range offers a number of alternatives guaranteeing a perfect adaptation for a variety of projects.

The fasteners used for the CUPACLAD® systems have been developed following an in-depth design process to ensure a quick and easy installation.

CUPACLAD® offers a new world of design possibilities using natural sla-







**(** 

Highly durable.



Maintenance free.



Quick and easy to



Environmentally friendly and sustainable.



Efficient as a rainscreen cladding.







# Durability

Used since roman times, natural slate is long-lived, remarkably durable, fire resistant and naturally waterproof. remain unaltered, keeping the elethan any man made alternatives.



# Environmentally friendly

Each slate is handcrafted by our skilled "splitters", with no additional treatment required. Natural slate is Its aesthetic and technical properties only subject to extraction and mechanical transformation; there are no gance and character for much longer chemical or heating processes involved as with alternative materials. This and its unparalleled durability result in natural slate being a material with an extremely low carbon footprint.



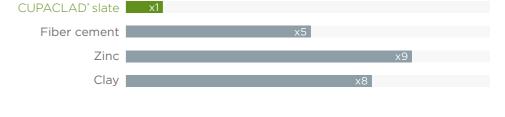
Characterized by its natural color and individual texture, natural slate is a material that can enhance the value and beauty of any property. Every slate is unique giving an unparalleled character to any project remaining unaltered for many years.

# CUPACLAD®, THE SUSTAINABLE CLADDING

CUPACLAD® natural slate systems are the perfect alternative for an efficient and sustainable cladding.

Due to the nature of the slate production process, our CUPACLAD cladding has a lower environmental impact than other man made alternatives. 5 times less CO2 emissions than fiber cement, 324 times less water absorption than zinc cladding and 10 times less energy consumption than clay.

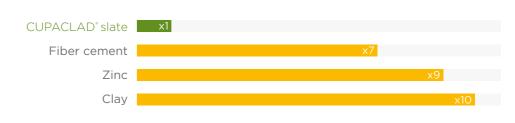












\*Life-cycle assessment, studies all the stages of a product's life from production to recycling. Data calculated for 1 square meter in a year. Sources: CUPACLAD® slate (http://goo.gl/K5lLx8); Fibre cement (http://goo.gl/OSjeV5); Zinc (http://goo.gl/EgWh6g); Terracotta (http://goo.gl/Y03c9U)

### **EXCLUSIVE SELECTION**

of Natural Slate for The CUPACLAD® systems

natural product carefully selected for their technical properties and charac- and weight, is designed for ease and ter from our 16 quarries. We carry out to shorten the installation process. stringent quality control processes to quirement.

res a quick and easy installation due to our selection process for regularity and flatness (against other standard roofing selections). They are also ho- Cladding Range meets and exled in a specific position depending on ceeds the highest European quality The slates used for our systems are a the CUPACLAD® system of choice. Even the packaging, smaller in size

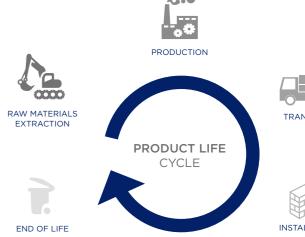
guarantee its exceptional performan- CUPA PIZARRAS have been quarrying ce for all types of cladding design re- natural slate for more than 120 years. Our quality control experts choose the Our Exclusive Cladding Range ensu- perfect slate for each system based on

wind load and impact criteria to guarantee its performance as a cladding material. Our Exclusive



### LIFE-CYCLE **ASSESSMENT**

Life-cycle assessments allow measurement of the environmental footprint from a cradle to grave perspective. They confirm CUPACLAD° as a sustainable option for cladding due to the use of natural slate versus man-made products.







04

# THE EFFICIENCY OF A RAINSCREEN CLADDING

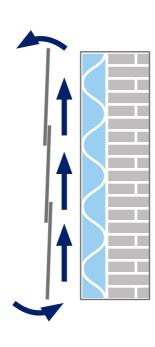
Rainscreen cladding is a construction solution widely used and popular amongst architects and developers worldwide.

system for construction envelope purposes. The combination of a ventilated system together with an insulation system gives numerous advanta- For optimum performance the sysges in terms of thermal and acoustic properties. It avoids thermal bridges lation through the cavity creating a and condensation issues.

sists of a load bearing wall, a layer of continuous ventilation cycle. This so insulation and a covering material fi- called "chimney effect" is one of the xed to the building with the help of a supporting structure. This system inscreen cladding.

Now considered the most efficient creates a gap between the insulation and covering material called an air

tem must allow constant air circunatural convection process. Warm air inside the cavity is lifted and re-The rainscreen cladding system con- leased to the exterior resulting in a advantageous characteristics of a ra-



### MAIN ADVANTAGES:



### Elimination of Humidity

Rainwater penetration is greatly reduced and any moisture is removed the constant through ventilation, reducing the risk of any condensation.



### Structural Movement Reduction

The air cavity avoids temperature variations resulting in less pronounced structural movements. This reduces the risk of cracks and other structural issues.



### Savings

Thermal efficiency is increased due to the cooling effect in summer and greater heat retention in winter.



### Durability

The cladding material is kept dry due to continuous ventilation. Many issues related to humidity (efflorescence etc...) are reduced resulting in a longer life span of the installation.



### CUPACLAD® SYSTEMS

CUPACLAD® systems have been developed to be able to adapt to any kind of project combining alternative fastening methods and slate formats.

### 101 SERIES

Invisible fastening



### 101 Logic

















P.09







P.19



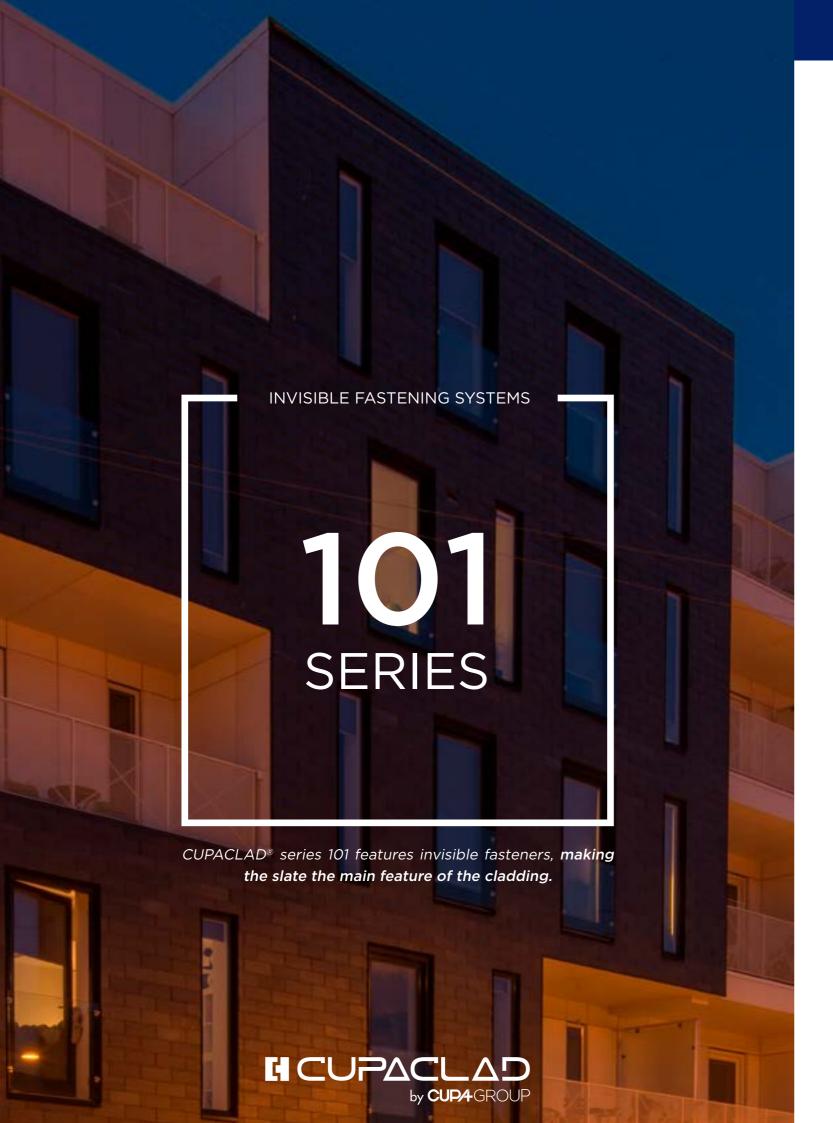
ACCURACY AND RELIABILITY OF INSTALLATION



MAXIMUM FIRE RESISTANCE



COMFORMITY WITH REQUIRED TECHNICAL STANDARDS



101 SERIES **FASTENING METHOD** 



Slates are fastened using our specially designed screws self-drilling to ensure optimal installation while remaining completely invisible to minimize design impact.

Screws are made of stainless steel with a large flat head that enables an easier and more secure fixing.

# CUPACLAD® 101 Logic .

SIMPLE AND BALANCED



CUPACLAD® **101** *Logic* features a balanced design that highlights the unique texture and looks of the natural slate.

CUPACLAD® **101** *Logic* system utilizes  $16 \times 8$  slates fitted horizontally with invisible fasteners.

Slate size	16 x 8
Nominal thickness	1/4 - 3/8
Slates per ft <sup>2</sup>	1,67
Weight per ft <sup>2</sup> (slate)	≤ <b>6,14</b> lb/ft²









# CUPACLAD® 101 Random \_

### DYNAMIC AND CREATIVE

# CUPACLAD® 101 Parallel

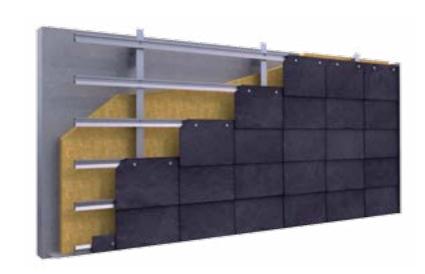
### UNIFORM AND REGULAR



CUPACLAD® **101** *Random* combines different slate sizes, creating a dynamic and unique design.

CUPACLAD® 101 Random features 20  $\times$  10, 20  $\times$  8 and 20  $\times$  6 slates fitted horizontally with invisible fasteners.

Slate size	20 x 10 20 x 8 20 x 6
Nominal thickness	1/4 - 3/8
Slates per ft <sup>2</sup>	1,50
Weight per ft <sup>2</sup> (slate)	≤ <b>6,14 lb/ft²</b>



CUPACLAD® 101 Parallel features a regular design with even joints. This results in a uniform and consistent layout that highlights the character of natural slate.

CUPACLAD® **101** Parallel features 16 x 10 horizontally aligned slates fitted with invisible screws.

Slate size	16 x 10
Nominal thickness	1/4 - 3/8
Slates per ft <sup>2</sup>	1,43
Weight per ft <sup>2</sup> (slate)	$\leq$ 6,14 lb/ft <sup>2</sup>













| 11 |



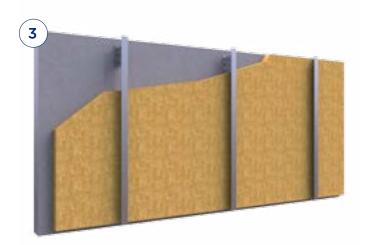


| 10 |



### Fastening the metal brackets

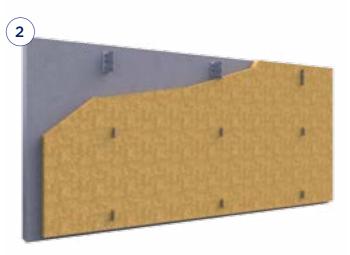
The metal brackets are installed in alternate courses on each side of the vertical profile. It is required to use both fixed point metal brackets (on the upper end of each profile) and brackets with an sliding point to allow for expansion of the profile.



### Fasten the "L" shaped profiles

Fasten the vertical profiles to the metal brackets allowing at least 3/4 for an air cavity.

The vertical profiles must be perfectly level before fitting the remainder of the system components.



### Installation of insulation

Choose the most suitable insulation material based on the project requirements.

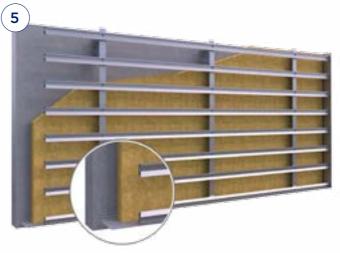
Install in accordance with the manufacturers recommendations.



### Installing the CUPACLAD® 101 horizontal profiles

Install the horizontal profiles with the vertical ones at each intersection.

The horizontal profiles must be perfectly level as their position will dictate the final position of the slates. Fit also an inverted 101 horizontal profile at the first course of the cladding to allow the fastening of the first course slate.



### Installing the flashings

Install a ventilation flashing at the first course of the cladding and the metal flashings at single points (edges, window frames, etc).



H CUPACI

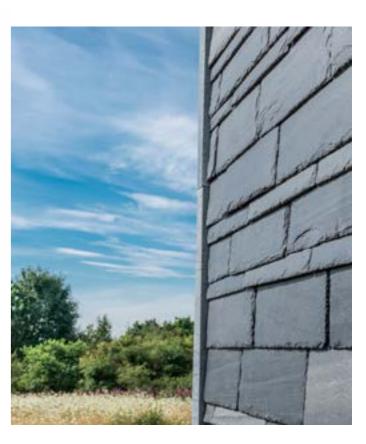
### Installing the first course slate

Cut a slate to a height of 3 1/4" approx. Fasten it inverted matching the bottom edge of the slate with the first 101 horizontal profile.



## Fastening the slates with the self-drilling CUPACLAD® 101 screw

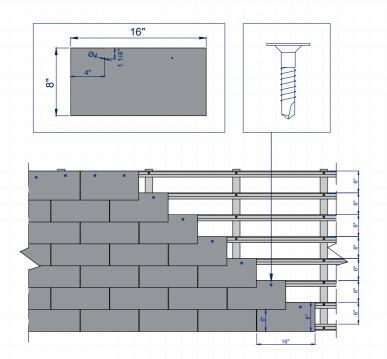
Each slate must be aligned with the upper edge of the profile and fitted with two stainless steel. CUPACLAD $^{\circ}$  101 self-drilling screws.



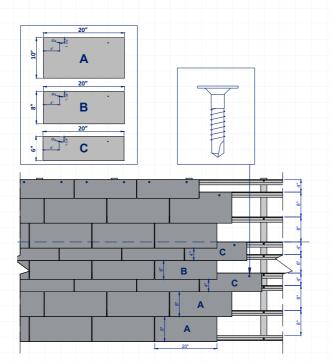
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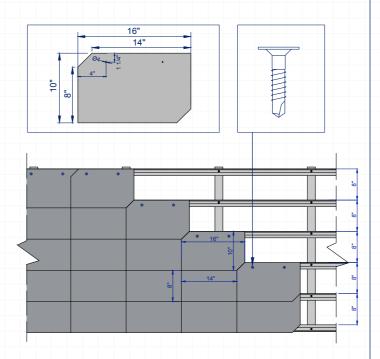
### TECHNICAL DETAIL CUPACLAD® 101 Logic



### TECHNICAL DETAIL CUPACLAD® 101 Random

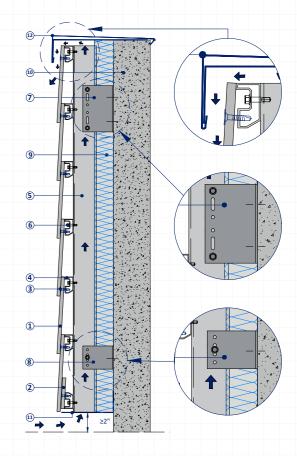


### TECHNICAL DETAIL CUPACLAD® 101 Parallel

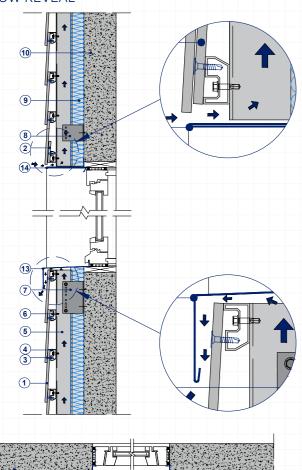


### **CONSTRUCTION DETAILS** CUPACLAD® 101 (Logic, Random y Parallel)

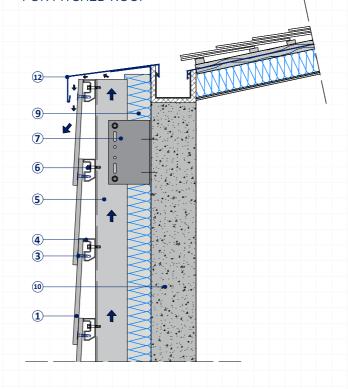
VENTILATED PROFILE AND TOP FLASHING



### **EXTERNAL** WINDOW REVEAL



### TOP FLASHING FOR PITCHED ROOF

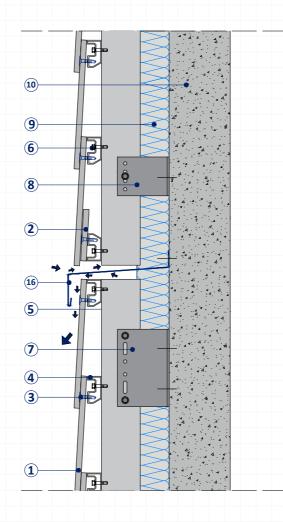


- 1. CUPA PIZARRAS natural slate
- 2. First course slate
- 3. Self-drilling
- CUPACLAD® 101 screw
- 4. Horizontal CUPACLAD® 101 profile 13. Sill metal flashing
- 5. "L" shaped vertical profile 20 x 24 14. Metal lintel flashing
- 6. Self-drilling stainless steel screw
- 7. "Fixed point" metal bracket
- 8. "Sliding point" metal bracket

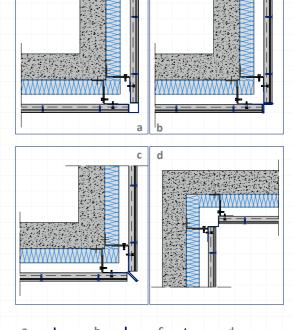
### 9. Insulation

- 10. Load bearing wall
- 11. Ventilated flashing
- 12. Top metal flashing
- 15. Metal jambs flashing
- 16. Metal flashing

### AIR CAVITY



### **CORNER FLASHINGS**



- 1. CUPA PIZARRAS natural slate
- 2. First course slate
- 3. Self-drilling CUPACLAD® 101 screw
- 4. Horizontal
- CUPACLAD® 101 profile 5. "L" shaped vertical
- profile 20 x 24
- 6. Self-drilling stainless steel screw
- 7. "Fixed point" metal
- bracket
- 8. "Sliding point" metal
- bracket
- 9. Insulation
- 10. Load bearing wall
- 11. Ventilated flashing
- 12. Top metal flashing
- 13. Sill metal flashing
- 14. Metal lintel flashing
- 15. Metal jambs
- flashing
- 16. Metal flashing

| 14 |

4 (1) (3)



# CUPACLAD® SERIE 101 Logic, Random y Parallel









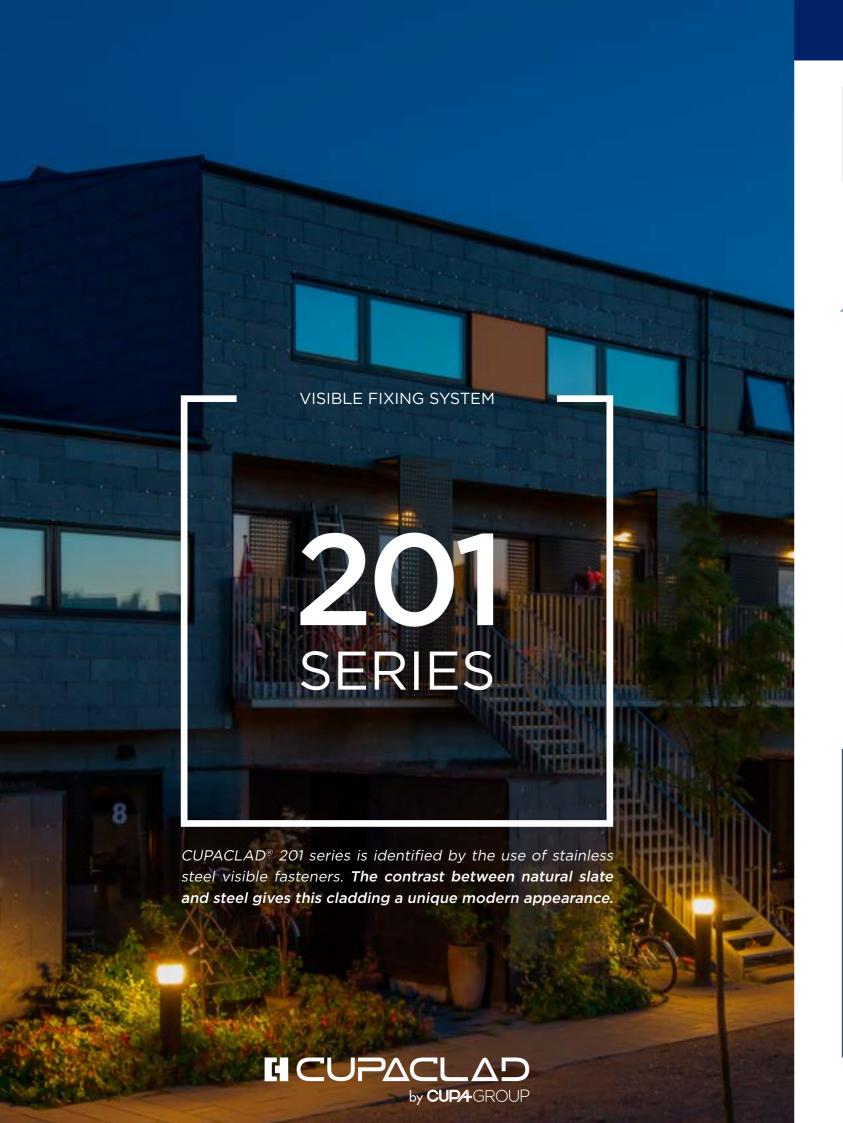








| 16 |



FASTENING SYSTEM 201 Vanguard

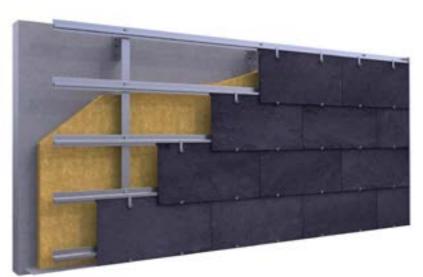


CUPACLAD® 201 Vanguard stainless steel clips have been designed by our R&D department.

Every slate is fastened to the horizontal profile using two clips that remain partially visible once the system is installed.

# CUPACLAD® 201 Vanguard

MODERN AND EFFICIENT



CUPACLAD® **201** Vanguard main feature is the combination of big slates and stainless steel brackets giving as a result a clean combination of contemporary appeal.

CUPACLAD® **201** Vanguard features 24 x 12 cm slates fitted horizontally with visible fixings.

Slate size	24 x 12
Nominal thickness	1/4 - 3/8
Slates per ft <sup>2</sup>	0.64
Weight per ft²(slate)	$\leq$ 4,10 lb/ ft <sup>2</sup>



### PATENTED SYSTEM

CUPACLAD® 201 Vanguard is a patented system developed by our R&D department that is designed to meet the highest technical requirements of the construction industry.



### **EASE OF INSTALLATION**

Our metal rails feature small holes in them to mark the exact position where the clips should be placed. This avoids the necessity of drawing vertical guidelines and individual fastening for the clips.



### PERFECT RESULT

The stainless steel clips have flanges that work just like a spring absorbing differences in the thickness of the slates resulting in a perfect leveled cladding surface.

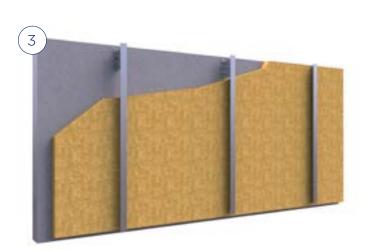
# CUPACLAD® 201 Vanguard

# FASTENING **METHOD**



### Fastening the metal brackets

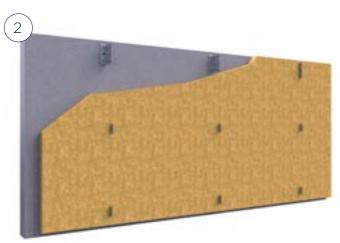
The metal brackets are installed in alternate courses on each side of the vertical profile. It is required to use both fixed point metal brackets (on the upper end of each profile) and brackets with a sliding point to allow for the profile movement.



### Fastening the "L" shaped vertical profiles

Fasten the vertical profiles to the metal brackets allowing at least 3/4" for an air cavity.

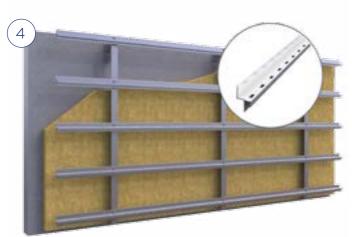
The vertical profiles must be perfectly level before fitting the rest of the system components.



### Installing of insulation

Choose the most suitable insulation material based on the project requirements.

Installing in accordance with the manufacturers recommendations.

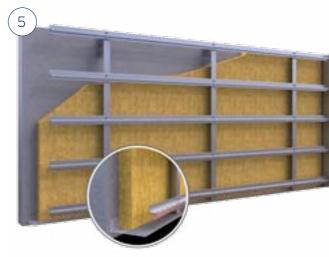


# Fastening the CUPACLAD® 201 Vanguard horizontal profiles

Install the horizontal profiles with the vertical ones at each intersection.

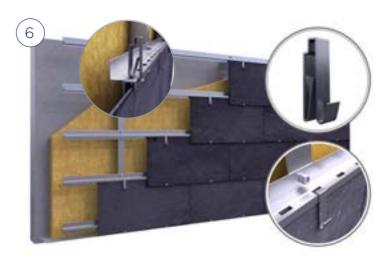
The gap between horizontal profiles when fitting a  $24 \times 12$  slate must be 10".

The horizontal profiles must be perfectly level as their position will dictate the final position of the slates.



### Installing the flashings

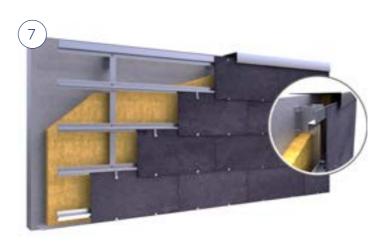
Fasten a ventilated flashing at the first course of the cladding and the metal flashings on "singular" points (edges, window frames, etc).



HCUPACLAD

## Installing the slates with the special CUPACLAD® 201 Vanguard clips

The clips are fitted to the holes in the horizontal profiles. Each slate is supported by two clips on the lower edge while fitted with another two on the top.



### Installing the slates to the top of the cladding

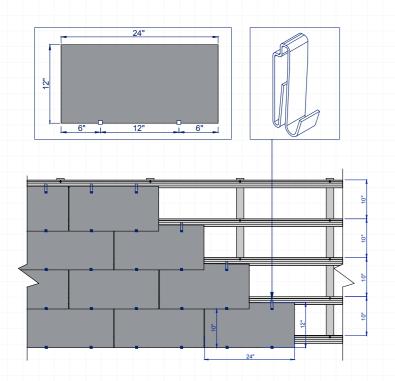
At the top of the cladding when joining the gutters or flashing it is necessary to use the 201-V top profile to which the slate must be fitted with two self-drilling screws or rivets.

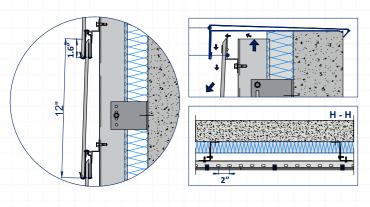


|20|

# H CUPACLAD by **cup4** GROUP

### TECHNICAL DETAIL CUPACLAD® 201 Vanguard

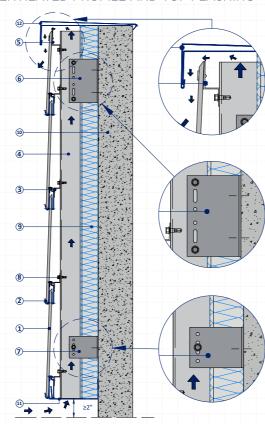




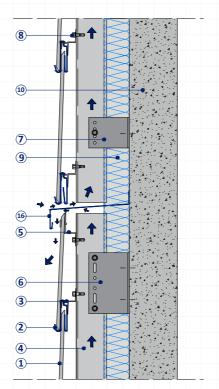
- 1. CUPA PIZARRAS natural slate
- 2. CUPACLAD® 201-V Clip
- 3. Horizontal CUPACLAD® 201-V
- 4. L shaped 50X60 vertical profile
- 5. CUPACLAD® 201-V top profile
- 6. Metal bracket, "fixed point"
- 7. Metal bracket "sliding point" 8. Self-drilling stainless stell screws
- 9. Insulation
- 10. Load bearing wall
- 11. Ventilated profile
- 12. Top metal flashing 13. Sill metal flashing
- 14. Metal lintel flashing
- 15. Metal jambs flashing
- 16. Metal flashing

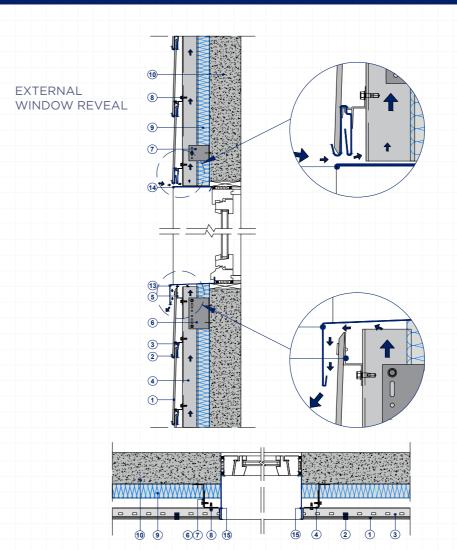
### **CONSTRUCTION DETAILS** CUPACLAD® 201 Vanguard

VENTILATED PROFILE AND TOP FLASHING

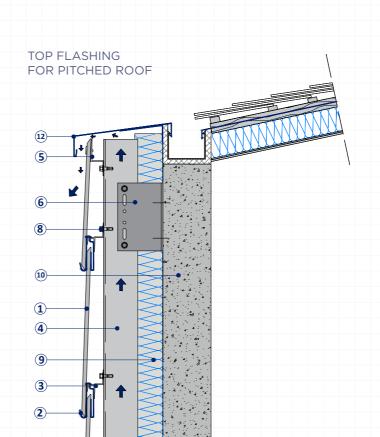




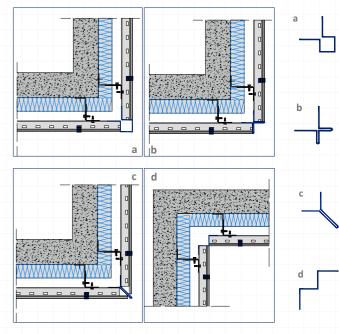




- 1. CUPA PIZARRAS natural slate
- 2. CUPACLAD® 201-V Clip
- 3. Horizontal CUPACLAD® 201-V profile
- 4. L shaped 50X60 vertical profile 5. CUPACLAD® 201-V top profile
- 6. Metal bracket, "fixed point"
- 7. Metal bracket "sliding point"
- 8. Self-drilling stainless stell screws
- 9. Insulation
- 10. Load bearing wall
- 11. Ventilated profile 12. Top metal flashing
- 13. Sill metal flashing
- 14. Metal lintel flashing
- 15. Metal jambs flashing
- 16. Metal flashing



### **CORNER FLASHINGS**



| 22 | | 23 |



# CUPACLAD® 201 Vanguard















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### **CUPACLAD® SYSTEMS** COMPONENTS

- a. Exclusive Cladding range, the
- b. Primary substructure
- Logic, Random and Parallel
  - ||| CUPACLAD® 101 screw
  - III CUPACLAD® 101 horizontal profile
- b.2. CUPACLAD® 201 system

  - ||| 201 Vanguard horizontal
  - ||| 201 Vanguard flashings
- ||| Metal bracket
  - . Fixed point
  - . Sliding point
- d. Screws

### a. Exclusive Cladding range, the slate for CUPACLAD® systems

The CUPA PIZARRAS slate used for the CUPACLAD® systems has a 1/4" - 3/8 "nominal thickness and a textured surface. It has been carefully selected for its technical properties to offer a flawless installation and performance.

The slate supplied for the invisible fastening systems is always pre-holed at the required position, making its installation quicker and problem free.

### b. Primary substructure

### b.1. CUPACLAD 101 systems Logic, Random and Parallel

### CUPACLAD® 101 screw

CUPACLAD® 101 series screws self-drilling have been developed to ensure optimal installation to the metallic structure. Produced in AISI 316 (A4) stainless steel they feature a flat head that guarantees flawless fastening.

### CUPACLAD® 101 horizontal profile

The CUPACLAD® 101 horizontal profile was designed by our R&D department to ease the installation of the slates with invisible fasteners. It is made in 6060-T6 aluminium alloy.

The horizontal profiles must be perfectly level as their position defines the alignment of the slates. Taking the top edge of the profile as the reference.

The distance between profiles is defined for each system based on the slate size used (see page 14 and 15).

### b.2. CUPACLAD 201 System Vanguard

### 201 Vanguard Special clip

CUPACLAD® 201 metal clips are produced in AISI 316 (A4) .05" thick stainless steel.

The stainless steel clips have flanges that work just like a spring absorbing differences in the thickness of the slates resulting in a perfect level surface.

### 201 Vanguard horizontal profile

The horizontal profile for CUPACLAD® 201 Vanguard is a patented system for ease of installation of our slates, manufactured from 6060-T6 aluminium. The horizontal rails must be perfectly level as their positioning will define the final alignment of the slates.

The upper side of the profile features rectangular fixing slots positioned every 2" to house the clips (screws are not required). With this method the use of chalk marks to position the clips is no longer required.

### CUPACLAD 201-V top profile

For circumstances that require the use of a top section with concealed fastening, a special top profile is needed. Made of aluminium alloy 6060-T6, natural slate is then fastened by a rivet or self-drilling screw.

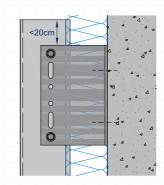
### c. Secondary Substructure

### Metal brackets

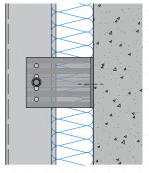
Metal brackets are required for fastening the metal profile to the supporting wall. This allows adjustment of the distance between the substructure and the supporting wall to compensate for any irregularities and allowing the use of an insulation material behind the air cavity if

Two different types of brackets must be used in order to achieve optimal installation:

- Fixed point bracket: Should be secured to the solid structure of the building in order to resist vertical weigh and horizontal wind loads. Ther vertical profile is secured to the fixed-point bracket using the round holes.
- Sliding point brackets: Sliding point brackets secure the remaining length of the vertical profile to the wall using elongated holes, to allow movement due to the thermal expansion of aluminium.

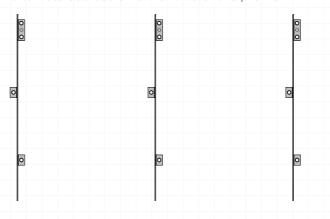


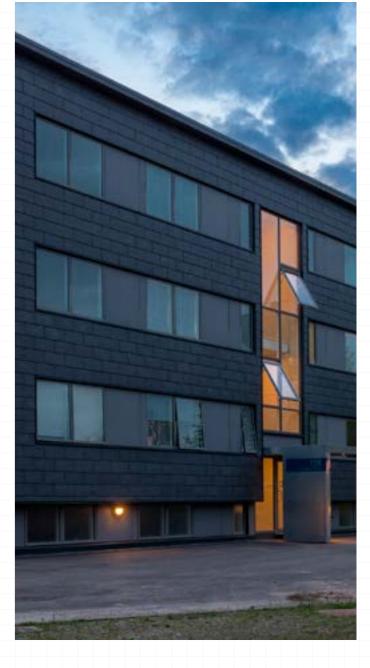
**FIXED POINT** 



### SLIDING POINT

The metal brackets, made of aluminum alloy are installed in alternate courses on either side of the profile.





The dimension of the metal bracket will depend on the thickness of the insulating material to be installed in each case and the spacing between should be specified for each project.

The fasteners used for the wall brackets must be specified on a project basis by the manufacturer who will take into consideration the characteristics and detail of the supporting wall and the exposure on site.

### Vertical L profile

The "L" shaped 24 x 20 x 3/4" vertical rails manufactured from 6060-T6 profile aluminium alloy supplied in 1/4" lengths The gap between the vertical rails must be clarified on a project basis taking into account the following variables (the exposure of the site: height of the building, location).

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### TECHNICAL GLOSSARY | CUPACLAD®

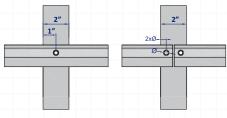
The vertical rails must be perfectly level before they support all the other components of the system.

### d. Screws

The joints between the vertical profiles, the metal brackets and between the horizontal and vertical profiles, will be secured with rivets or stainless steel screws A2 (Ø2 1/4").

Horizontal profiles must be fastened to the vertical profiles in each intersection. In areas where two consecutive horizontal profiles meet, the following must be taken into consideration:

- The end of each batten must have its own fixing.
- Allow a gap of .11" between both profiles.



### e. Air cavity

The substructure must allow for an air cavity between the insulation and

cladding material.

For optimal air circulation the cavity

- Allow minimum of 3/4" width in the narrow areas.
- Both ventilation inlet and outlet must allow enough air circulation. In order to calculate it we must take into consideration the dimensions of the ventilation openings at the top and bottom of the cladding (measurements in cm² per lineal meter of cladding). They should be at least:

Building height (ft)	Minimum surface for ventilation (in²/ft)
≤ 10'	20"
10' a 20'	25"
20' a 33'	32"
33' a 59'	40"
59' a 79'	45"

At the first course of the cladding, the opening at the inner channel must include a ventilated profile that also incorporates a mesh to prevent the entry of insects & small animals.

### f. Insulation material

There are various types of insulation

on the market suitable for ventilated claddings. The nature and thickness of the insulation must be carefully calculated on an individual project basis taking into account the varying factors (type of building, location and exposure).

### g. Waterproof Membrane

For timber buildings it is advisable to cover the supporting wall with a waterproof membrane. It is important to ensure the membrane is perfectly installed and will not cause any obstruction for correct ventilation.

### h. Flashings

Flashings can be produced in galvanized steel, aluminum or zinc, and are used for edges, window frames and other sections of the cladding.

### i. Load bearing wall

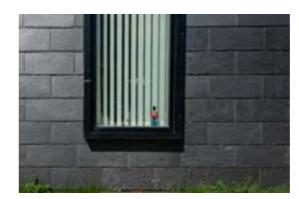
The supporting wall must ensure the stability of the building. The wall must be sufficiently stable to support not only the weight of the cladding but also take into account the wind loads transmitted through the substructure.















# CUPACLAD® TECHNICAL ADVICE

CUPA PIZARRAS has a technical department dedicated to CUPACLAD®, offering its customers a consultancy service to help specify the project, ensuring the highest quality and commitment to provide the most appropriate solutions for every requirement.

We inspect the plans to produce a detailed specification and recommend the most suitable system for any individual project. Not only that, we go one step further by offering tailor made solutions for every requirement a certain project may have

Our technical department is also responsible for the coordination of the sales, marketing and production activities to ensure the maximum quality of the material to be supplied.







The quality of our product lies in our total control of the entire production process (from extraction to shipment) and by putting in place the highest quality and environmental policy requirements demanded by ISO 9001 Quality and ISO 14001 Environmental certifications.





Our strength of commitment to quality has earned us the confidence of thousands of architects, contractors and clients worldwide.

# CUP/4PIZARRAS

The world leader in natural slate

With more than a century of experience CUPA PIZARRAS has become the world leader in natural slate production sales and marketing. We strive to keep ourselves in this privileged position by focusing on quality, investing in innovation and our commitment to sustainable growth.

One in every three slates used throughout the world is a CUPA PIZARRAS natural slate. Our 16 quarries and 22 processing facilities combine the latest technology with our traditional know-how and craftsmanship.

Our thorough inspection during the entire production process, from extraction to processing prior to shipment, allows us to produce unique natural slates, recognized worldwide for their quality.

Today we export over 98% of our production to 60 countries on 5 continents.

CUPA PIZARRAS is part of the CUPA GROUP, 65 companies whose mission is to offer innovative building solutions with natural materials.

