NATURAL SLATE RAINSCREEN CLADDING SYSTEMS
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® 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.

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

The fixings 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 slate.

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CUPACLAD® offers a new world of design possibilities using natural slate.
NATURAL SLATE, A UNIQUE MATERIAL

Slate is a natural product of unparalleled technical properties that adds value to any project.

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 fibre cement, 324 times less water consumption 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/K5ILx8); Fibre cement (http://goo.gl/OSjeV5); Zinc (http://goo.gl/EgWh6g); Terracotta (http://goo.gl/Y03c9U). |

Durability

Slate has been used since Roman times, natural slate is long-lived, remarkably durable, fire resistant and naturally waterproof. Its aesthetic and technical properties remain unaltered, keeping the elegance and character for much longer than any man made alternatives.

Environmentally friendly

Each slate is handcrafted by our skilled “splitters”, with no additional treatment required. Natural slate is only subject to extraction and mechanical transformation; there are no 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.

Character

Characterised by its natural colour 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® natural slate systems are the perfect alternative for an efficient and sustainable cladding.

CUPACLAD® SLATE CLADDING

CUPACLAD® natural slate is specially selected from among our 16 quarries for its technical properties and is subjected to specific quality controls to guarantee exceptional performance in any facade. CUPACLAD® ensures quick and easy installation thanks to the greater regularity and flatness of the slates, which are delivered with the holes made to match the selected CUPACLAD® system. Even its packaging, which is smaller and lighter, has been designed to facilitate and shorten installation times. CUPA PIZARRAS have been quarrying natural slate for more than 120 years. Our quality control experts choose the perfect slate for each system based on wind load and impact criteria to guarantee its performance as a cladding material. Our CUPACLAD® slate cladding meets and exceeds the highest European quality standards.

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.
THE EFFICIENCY OF A RAINDSCREEN CLADDING

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

Now considered the most efficient system for construction envelope purposes. The combination of a ventilated system together with an insulation system gives numerous advantages in terms of thermal and acoustic properties. It avoids thermal bridges and condensation issues.

The rainscreen cladding system consists of a load bearing wall, a layer of insulation and a covering material fixed to the building with the help of a supporting structure. This system creates a gap between the insulation and covering material called an air cavity.

For optimum performance the system must allow constant air circulation through the cavity creating a natural convection process. Warm air inside the cavity is lifted and released to the exterior resulting in a continuous ventilation cycle. This so-called “chimney effect” is one of the advantageous characteristics of a rainscreen cladding.

MAIN ADVANTAGES:

- Elimination of Humidity
  Rainwater penetration is greatly reduced and any moisture is removed through the constant 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.

- Energy 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 fixing methods and slate formats.

101 SERIES
Invisible fixing

- Logic
  Simple and balanced

- Random
  Dynamic and creative

- Parallel
  Uniform and regular

201 SERIES
Visible fixing

- Vanguard
  Modern and efficient

Accuracy and Reliability of Installation
Maximum Fire Resistance
Conformity with Required Technical Standards
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 40x20cm slates fitted horizontally with invisible fixings.

<table>
<thead>
<tr>
<th>Slate size</th>
<th>40x20 cm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal thickness</td>
<td>7.65 mm</td>
</tr>
<tr>
<td>Slates per m²</td>
<td>16.7</td>
</tr>
<tr>
<td>Weight per m² (slate)</td>
<td>≤30 kg/m²</td>
</tr>
</tbody>
</table>
CUPACLAD® 101 Random

DYNAMIC AND CREATIVE

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

CUPACLAD® 101 Random features 50x25, 50x20 and 50x15 slates fitted horizontally with invisible fixings.

<table>
<thead>
<tr>
<th>Slate size</th>
<th>50x25 cm</th>
<th>50x20 cm</th>
<th>50x15 cm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal thickness</td>
<td>7.5 mm</td>
<td>7.5 mm</td>
<td>7.5 mm</td>
</tr>
<tr>
<td>Slates per m²</td>
<td>±15</td>
<td>±15</td>
<td>±15</td>
</tr>
<tr>
<td>Weight per m² (slate)</td>
<td>≤30 kg/m²</td>
<td>≤30 kg/m²</td>
<td>≤30 kg/m²</td>
</tr>
</tbody>
</table>

CUPACLAD® 101 Parallel

UNIFORM AND REGULAR

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 40x25 horizontally aligned slates fitted with invisible screws.

<table>
<thead>
<tr>
<th>Slate size</th>
<th>40x25 cm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal thickness</td>
<td>7.5 mm</td>
</tr>
<tr>
<td>Slates per m²</td>
<td>14.3</td>
</tr>
<tr>
<td>Weight per m² (slate)</td>
<td>≤30 kg/m²</td>
</tr>
</tbody>
</table>
Fixing 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.

Fixing of insulation
Choose the most suitable insulation material based on the project requirements. Fixing in accordance with the manufacturers recommendations.

Fixing the "L" shaped profiles
Fix the vertical profiles to the metal brackets allowing at least 2 cm for an air cavity. The vertical profiles must be perfectly level before fitting the remainder of the system components.

Fixing the CUPACLAD® 101 horizontal profiles
Fix 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 fixing of the first course slate.

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

Fixing the first course slate
Cut a slate to a height of 80 mm approx. Fix it inverted matching the bottom edge of the slate with the first 101 horizontal profile.

Fixing 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® 101 self-drilling screws.
1. Pizarra natural CUPA PIZARRAS
2. Pizarra de arranque
3. Tornillo autotaladrante CUPACLAD
4. Perfil horizontal CUPACLAD

CUPACLAD® 101

TECHNICAL DETAIL CUPACLAD® 101 Random

TECHNICAL DETAIL CUPACLAD® 101 Parallel

CONSTRUCTION DETAILS CUPACLAD® 101 (Logic, Random | Parallel)

VENTILATED PROFILE AND TOP FLASHING

EXTERNAL WINDOW REVEAL

TOP FLASHING FOR PITCHED ROOF

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 50x60
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 jamb flashing
16. Metal flashing

CHAPA metálica
16.
Remate metálico en jambas
14.
Remate metálico en dintel
13.
Remate metálico en vierteaguas
12.
Remate metálico de coronación
11.
Rejilla de ventilación

Fraccionamiento de la cámara de aire

Recercado de ventanas

Detalles del sistema
CUPACLAD®
SERIE 101
Logic, Random y Parallel
CUPACLAD® 201 Vanguard

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 fixings for the clips.

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.

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 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 60x30 cm slates fitted horizontally with visible fixings.

<table>
<thead>
<tr>
<th>Slate size</th>
<th>60x30 cm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal thickness</td>
<td>7.5 mm</td>
</tr>
<tr>
<td>Slates per m²</td>
<td>6.4</td>
</tr>
<tr>
<td>Weight per m² (slate)</td>
<td>≤25 kg/m²</td>
</tr>
</tbody>
</table>
**Fixing 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.

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

**Fixing 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.

**Fixing the "L" shaped vertical profiles**
Fix the vertical profiles to the metal brackets allowing at least 2cm for an air cavity. The vertical profiles must be perfectly level before fitting the rest of the system components.

**Fixing of insulation**
Choose the most suitable insulation material based on the project requirements. Fixing in accordance with the manufacturers recommendations.

**Fixing the CUPACLAD® 201 Vanguard horizontal profiles**
Fix the horizontal profiles with the vertical ones at each intersection. The gap between horizontal profiles when fitting a 60x30 slate must be 260 mm. The horizontal profiles must be perfectly level as their position will dictate the final position of the slates.

**Fixing the 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.

**Fixing the slates with the special CUPACLAD® 201 Vanguard clips**
Fix a ventilated flashing at the first course of the cladding and the metal flashings on "singular" points (edges, window frames, etc...).
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 steel 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
CUPACLAD®
201 Vanguard
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 fixings 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 60x50x2 vertical rails manufactured from 6060-T6 profile aluminium alloy supplied in 6m 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, distance from the sea…).

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 (Ø5,5 mm).
Horizontal profiles must be fixed 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 3mm between both profiles.

- Allow minimum of 2cm 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 (measured in cm² per lineal meter of cladding). They should be at least:

<table>
<thead>
<tr>
<th>Building height (m)</th>
<th>Minimum surface for ventilation(cm²/m)</th>
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</thead>
<tbody>
<tr>
<td>≤ 3</td>
<td>30</td>
</tr>
<tr>
<td>3 a 6</td>
<td>45</td>
</tr>
<tr>
<td>6 a 10</td>
<td>60</td>
</tr>
<tr>
<td>10 a 18</td>
<td>80</td>
</tr>
<tr>
<td>&gt; 18 a 24</td>
<td>100</td>
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</table>

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 mammals.

e. Air cavity
The substructure must allow for an air cavity between the insulation and cladding material. For optimal air circulation the cavity must:
- Allow minimum of 2cm 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 (measured in cm² per lineal meter of cladding). They should be at least:

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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 mammals.

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 water-proof membrane. It is important to ensure the membrane is perfectly fixed 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.

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.

CUPACLAD® stands for personalized attention
You can contact our technical department on CUPACLAD.com or cupaclad@cupagroup.com
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.

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.