



 CUPACLAD

INSTALLATION MANUAL

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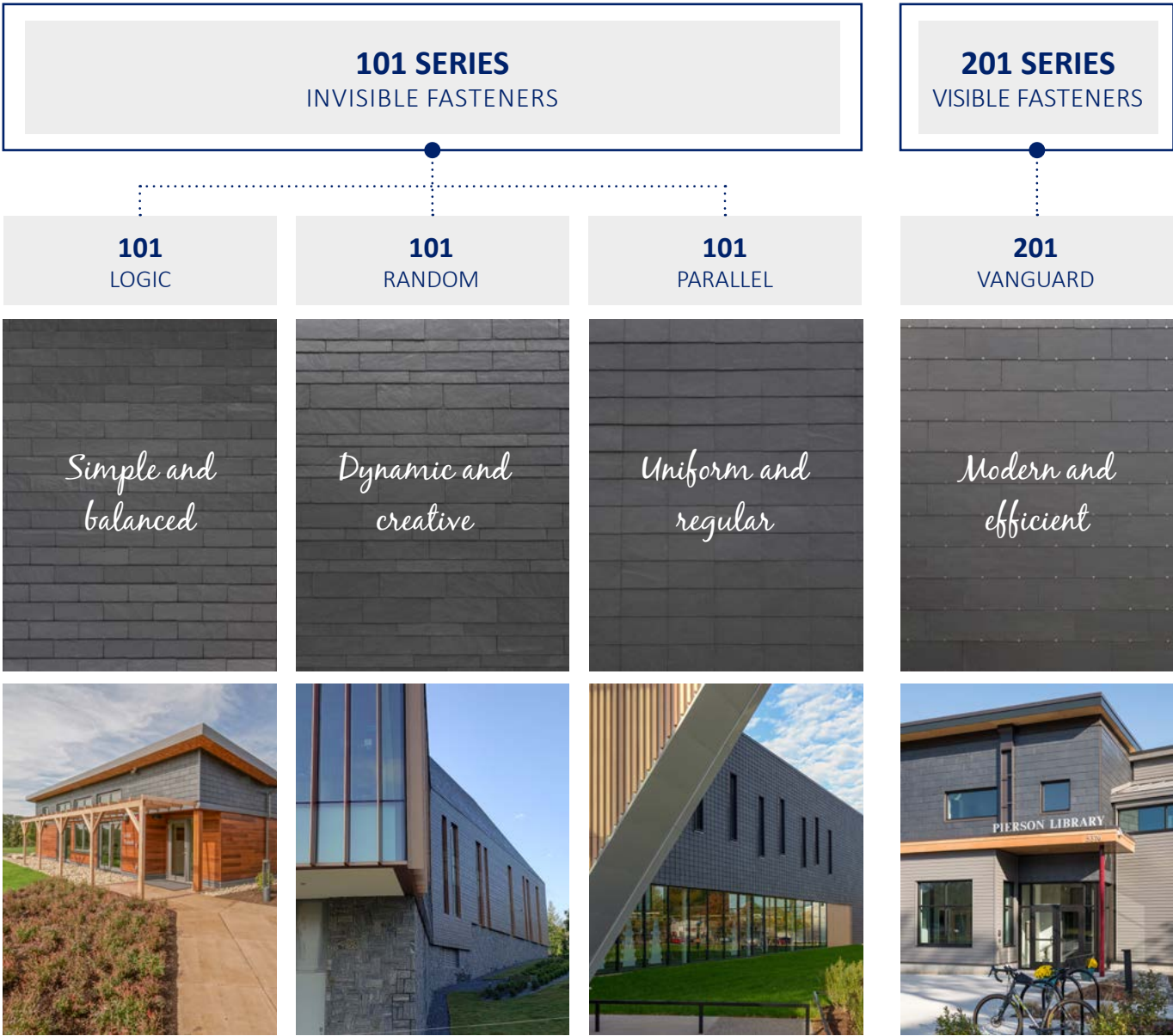
CUPACLAD® construction details 20

If you purchase our products you agree, as a condition to the applicability of any CUPA PIZARRAS warranty, to install them in accordance with the CUPACLAD Installation Guideline (available in our website www.cupapizarras.com, as amended from time to time), CUPA PIZARRA's recommendations, and any applicable building codes, laws, rules, regulations and ordinances.

/ CUPACLAD SYSTEMS

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 adaptable to a variety of projects and styles. 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 slate.



/ VENTILATED FACADE

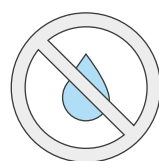
Ventilated facades are now considered the most efficient system for building envelopes or building envelope construction. The combination of a ventilated system together with an insulation system gives numerous advantages in terms of thermal and acoustic properties. It avoids thermal bridges and condensation issues.

Rainscreen cladding systems consist 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.

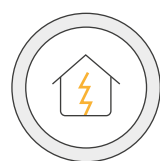


MAIN ADVANTAGES_



ELIMINATION OF HUMIDITY

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



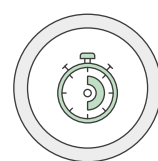
STRUCTURAL MOVEMENT REDUCTION

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



SAVING

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



DURABILITY

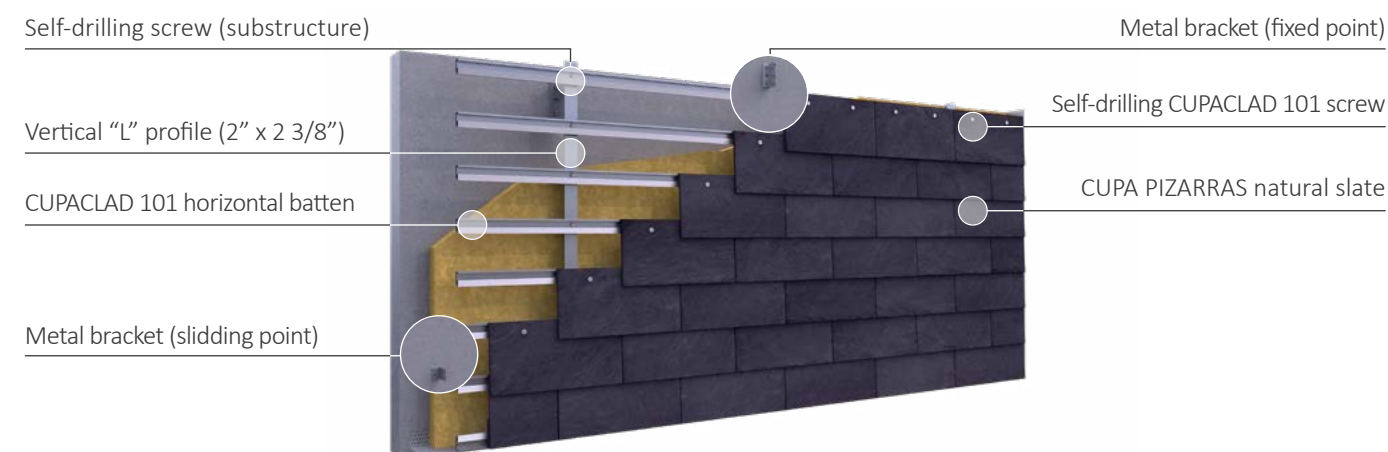
The cladding material is kept dry due to continuous ventilation. Many issues related to humidity (efflorescence etc...) are reduced resulting in a longer life span of the installation.

To know more about the advantages of the ventilated façade: 'What is a rainscreen cladding system and what are the advantages?' Blog CUPA PIZARRAS: <https://www.cupapizarras.com/uk/news/what-is-rainscreen-cladding-advantages/>

/ CUPACLAD SYSTEM COMPONENTS

1 CLADDING AND PRIMARY SUBSTRUCTURE

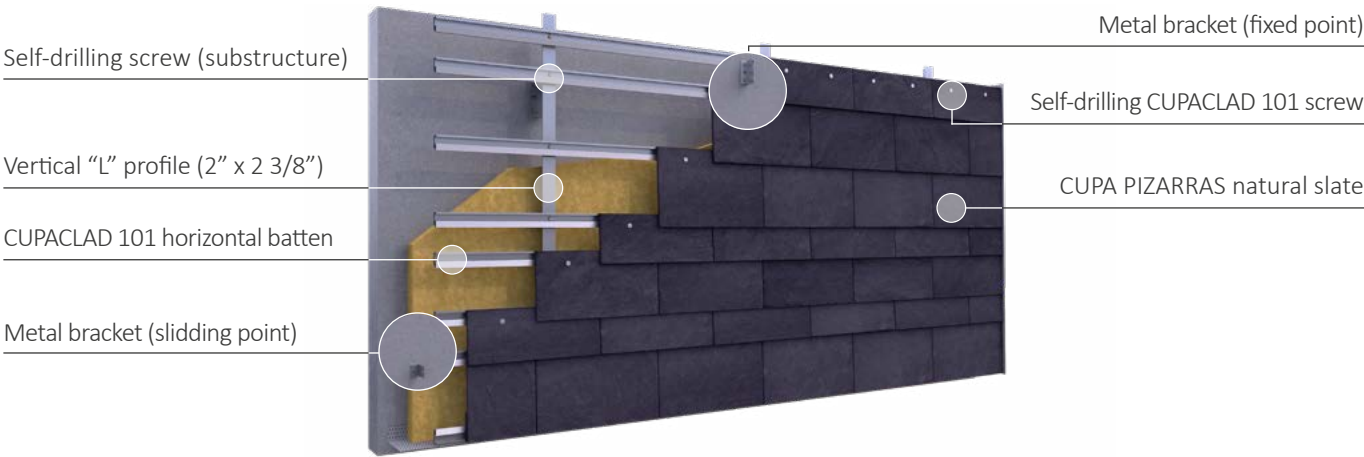
CUPACLAD® 101 LOGIC SYSTEM_



COMPONENT		CHARACTERISTIC
SLATE		<p>Slate size : 16" x 8" / 20" x 10"</p> <p>Nominal thickness : 1/4- 3/8</p> <p>Slates per ft² : 1,5</p> <p>Weight per ft² (slate) : 6 lb/ft²</p> <p>Overlap (vertical) : 2"</p>
CUPACLAD®101 HORIZONTAL BATTEN		<p>Length : 12'</p> <p>Height : 1 5/8"</p> <p>Width : 1"</p> <p>Thickness : 1/16"</p> <p>Material : 6060-T6</p>
CUPACLAD®101 SCREW		<p>Length : 1"</p> <p>Diameter : 1/4"</p> <p>Material : Stainless steel A2</p> <p>Head diameter : 9/16"</p>

/ CUPACLAD SYSTEM COMPONENTS

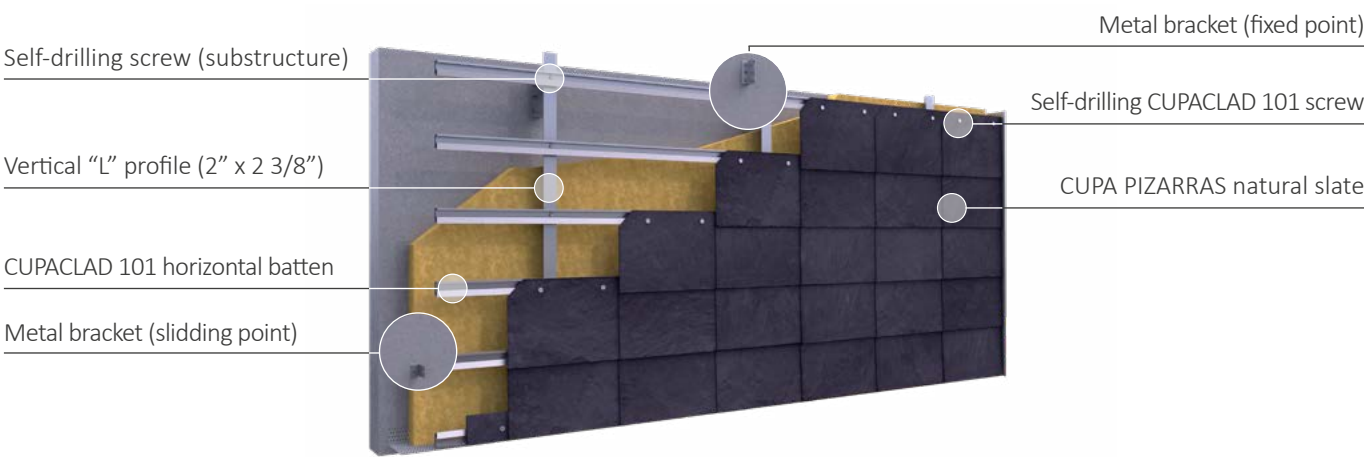
CUPACLAD® 101 RANDOM SYSTEM_



COMPONENT		CHARACTERISTIC
SLATE		<p>Slate size : 20"x 10"</p> <p>20"x 8"</p> <p>20"x 6"</p> <p>Nominal thickness : 1/4- 3/8</p> <p>Slates per ft²: 1.25</p> <p>Weight per ft² (slate) : 6lb/ft²</p> <p>Overlap (vertical) : 2"</p>
CUPACLAD®101 HORIZONTAL BATTEN		<p>Length : 12'</p> <p>Height : 1 5/8"</p> <p>Width : 1"</p> <p>Thickness : 1/16"</p> <p>Material : 6060-T6</p>
CUPACLAD®101 SCREW		<p>Length : 1"</p> <p>Diameter : 1/4"</p> <p>Material : Stainless steel A2</p> <p>Head diameter : 9/16"</p>

/ CUPACLAD SYSTEM COMPONENTS

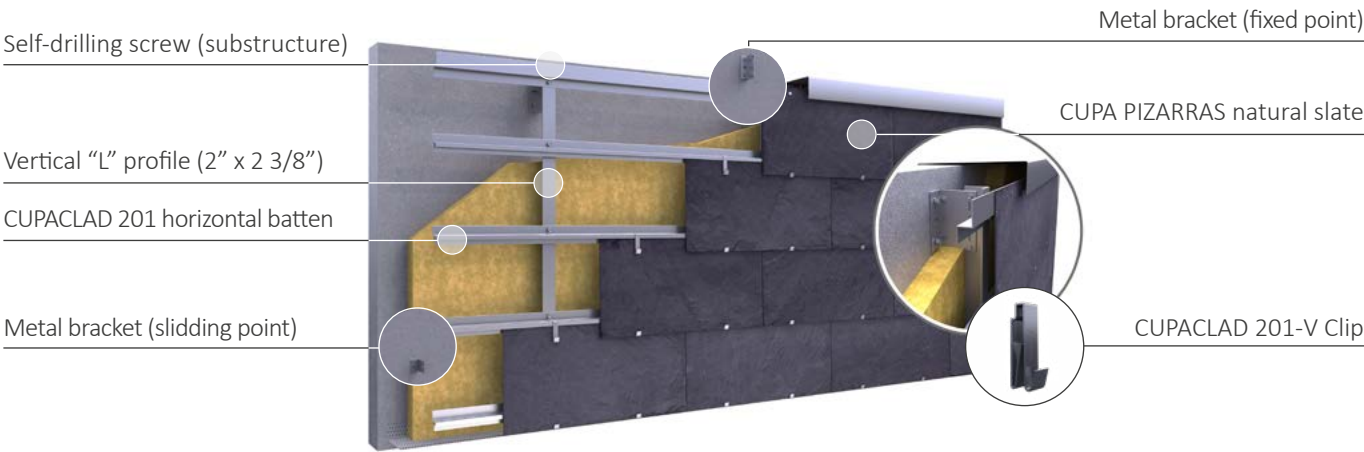
CUPACLAD® 101 PARALLEL SYSTEM_


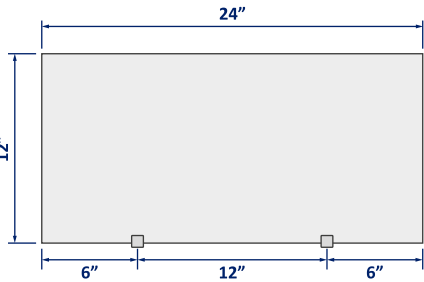
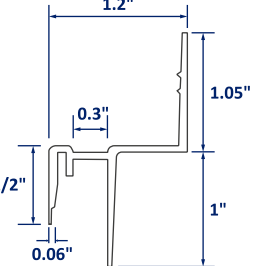
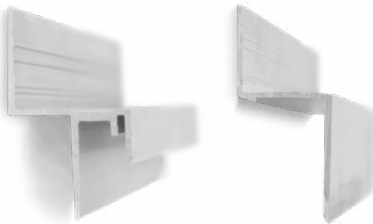
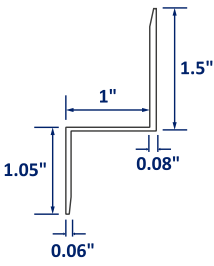

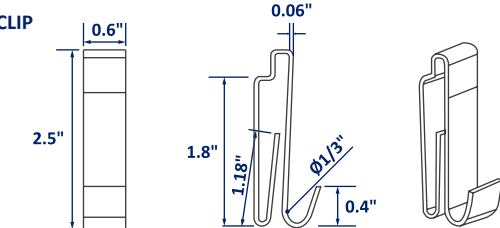


COMPONENT		CHARACTERISTIC
SLATE		<p>Slate size : 16"x 10"</p> <p>Nominal thickness : 1/4- 3/8</p> <p>Slates per ft²: 1.33</p> <p>Weight per ft² (slate) : 6 lb/ft²</p> <p>Overlap (vertical) : 2"</p> <p>Overlap (horizontal) : 2"</p>
CUPACLAD®101 HORIZONTAL BATTEN		<p>Length : 12'</p> <p>Height : 1 5/8"</p> <p>Width : 1"</p> <p>Thickness : 1/16"</p> <p>Material : 6060-T6</p>
CUPACLAD®101 SCREW		<p>Length : 1 3/8"</p> <p>Diameter : 3/16"</p> <p>Material : Stainless steel A2</p> <p>Head diameter : 1/2"</p>

/ CUPACLAD SYSTEM COMPONENTS

CUPACLAD® 201 VANGUARD SYSTEM_



COMPONENT		CHARACTERISTIC												
<div>SLATE</div> <div></div>		<div>Slate size : 24"x 12"</div> <div>Nominal thickness : 1/4- 3/8</div> <div>Slates per ft² : 0.6</div> <div>Weight per ft² (slate) : 5 lb/ft²</div> <div>Overlap (vertical) : 2"</div>												
<div>HORIZONTAL PROFILE</div> <div></div>	<div>TOP PROFILE</div> <div></div>	<table><tr><th>HORIZONTAL</th><th>TOP PROFILE</th></tr><tr><td>Length : 18'</td><td>18'</td></tr><tr><td>Height : 2"</td><td>2 1/2"</td></tr><tr><td>Width : 1 3/16"</td><td>1 1/16"</td></tr><tr><td>Thickness : 1/16"</td><td>1/16"</td></tr><tr><td>Material : 6060-T5</td><td>6060-T6</td></tr></table>	HORIZONTAL	TOP PROFILE	Length : 18'	18'	Height : 2"	2 1/2"	Width : 1 3/16"	1 1/16"	Thickness : 1/16"	1/16"	Material : 6060-T5	6060-T6
HORIZONTAL	TOP PROFILE													
Length : 18'	18'													
Height : 2"	2 1/2"													
Width : 1 3/16"	1 1/16"													
Thickness : 1/16"	1/16"													
Material : 6060-T5	6060-T6													
<div>CLIP</div> <div></div>	<div>Length : 2 7/16"</div> <div>Width : 5/8"</div> <div>Thickness : 1/16"</div> <div>Material : Stainless steel A4</div>													

/ CUPACLAD SYSTEM COMPONENTS

2 SECONDARY SUBSTRUCTURE

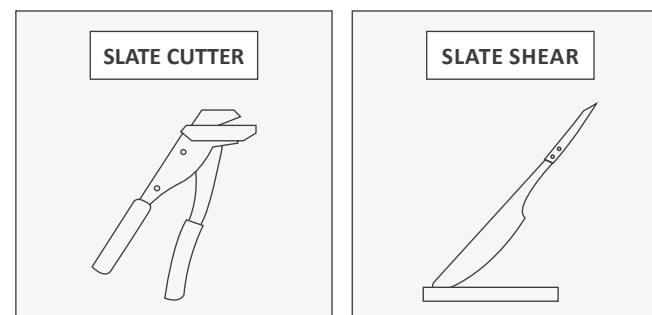
COMPONENT		CHARACTERISTIC
SLIDING POINT METAL BRACKET 		Length : 3"-10" Width : 1 9/16" Height : 2 3/8" Thickness : 1/8" Material : 6060-T6
FIXED POINT METAL BRACKET 		Length : 3"-10" Width : 1 9/16" Height : 4 3/4" Thickness : 1/8" Material : 6060-T6
VERTICAL L PROFILE 		Length : 18' Width : 2" Height : 2 3/8" Thickness : 1/16" Material : 6060-T6
SCREW (SUBSTRUCTURE) 		Length : 1" Diameter : 1/4" Material : Stainless steel A2 Head diameter : 3/8"

/ CUPACLAD TOOLS

The following tools are required to perform the CUPACLAD system installation:

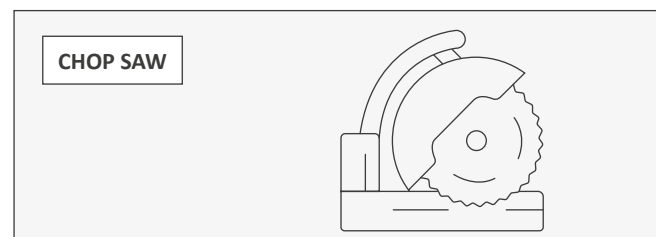
• SLATE CUTTER

The slate may be cut on site using a manual cutter to create corners and detailing. Extra care must be taken when handling the slate.



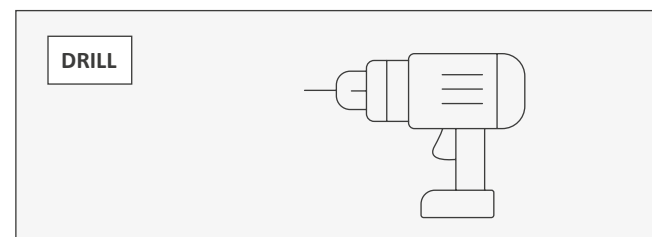
• CHOP SAW

Chop saw or circular saw to cut vertical profiles, horizontal profiles and flashings.



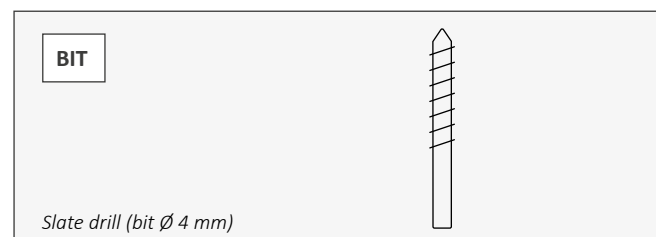
• DRILL (WITH TORQUE LIMITING COUPLING)

All fixings must be installed using a drill with torque settings.
*See next document, for further details: Machining Instructions



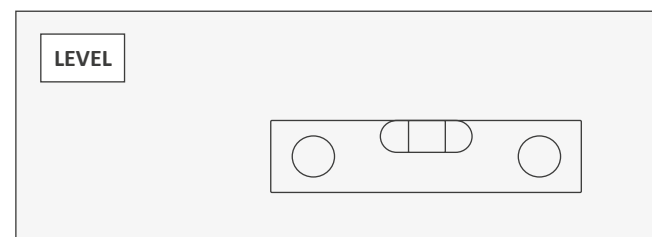
• BIT FOR DRILLING SLATE / FIXING SLATE

Slate can be drilled according to the recommendations detailed in document "Machining instructions."



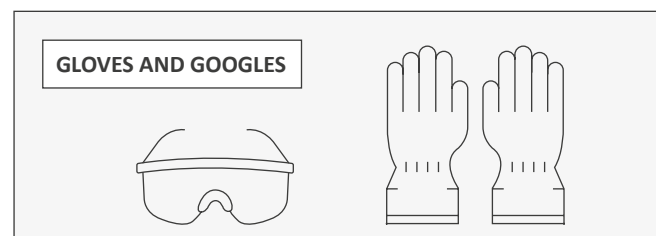
• LEVEL OR A LASER LEVEL

A level or a laser level must be used to verify that the metal substructure is correctly plumbed.



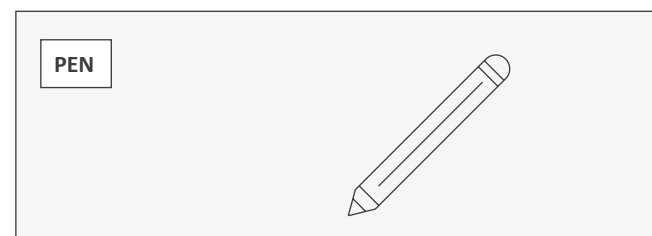
• GLOVES AND GOOGLES

Protective gloves and goggles must always be used.



• PEN

A pen can be used to mark the slate pieces



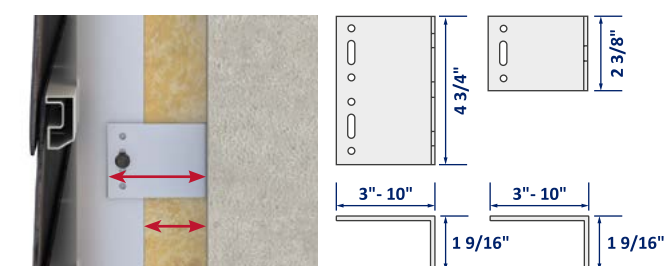
/ CUPACLAD INSTALLATION METHOD

SECONDARY SUBSTRUCTURE

The secondary substructure installation is common for all systems. That means, the installation of brackets and vertical "L" profile.

1 METAL BRACKETS

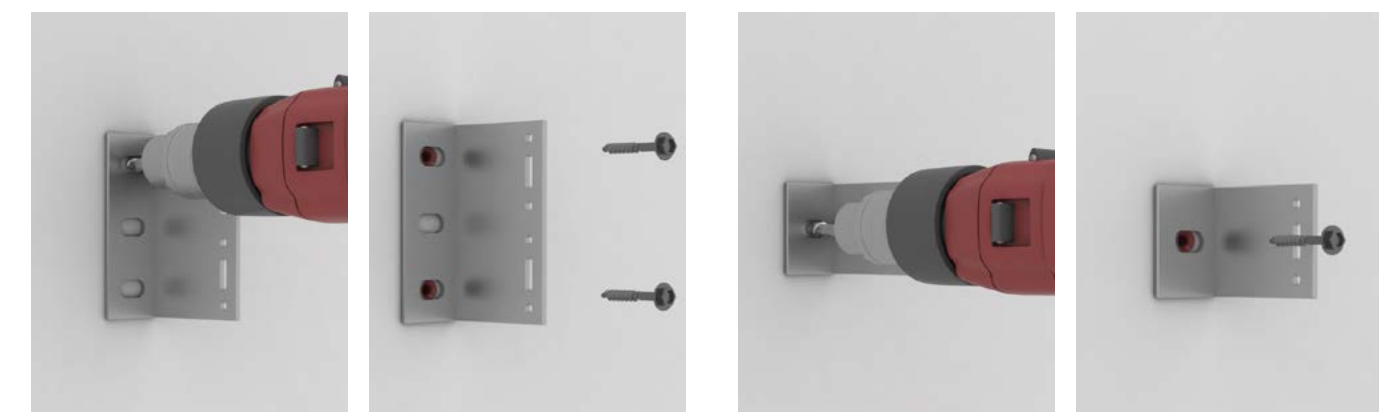
Metal brackets are required for installing the vertical profile to the supporting wall. This allows adjustment of the distance between the substructure and the supporting wall to compensate for any irregularities and allowing the use of an insulation material behind the air cavity if specified. The **dimension** of the **metal bracket** will depend on the **thickness of the insulation** material to be installed in each case.



Two kind 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 weight and horizontal wind loads.

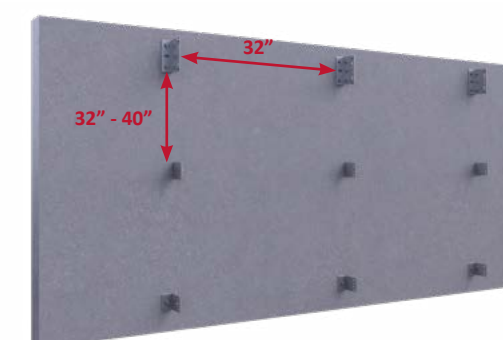
• **Sliding point bracket:** secure the remaining length of the vertical profile to the wall using elongated holes, to allow movement due do the thermal expansion of aluminum.



The metal brackets are installed in **alternate courses** on each side of the vertical profile.

The maximum distance between metal brackets in horizontal and vertical direction:

- Horizontal distance = 32"
- Vertical distance = 32" - 40"

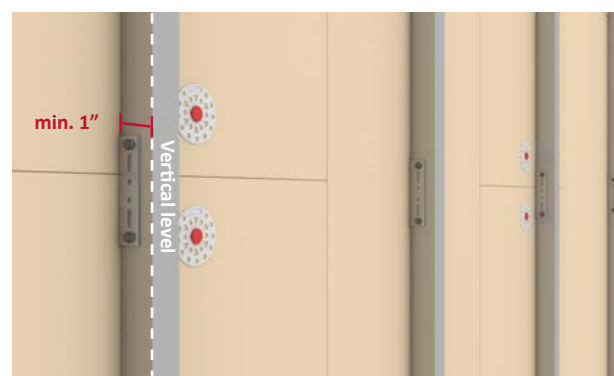
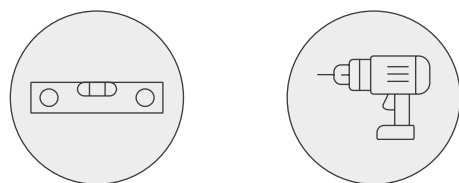


/ CUPACLAD INSTALLATION METHOD

SECONDARY SUBSTRUCTURE

2 VERTICAL PROFILE

Fix the vertical profiles to the metal brackets allowing **at least 1"** for an air cavity. The vertical profiles must be **perfectly plumb** before fitting the rest of the system components.



The vertical profile is secured to both brackets:

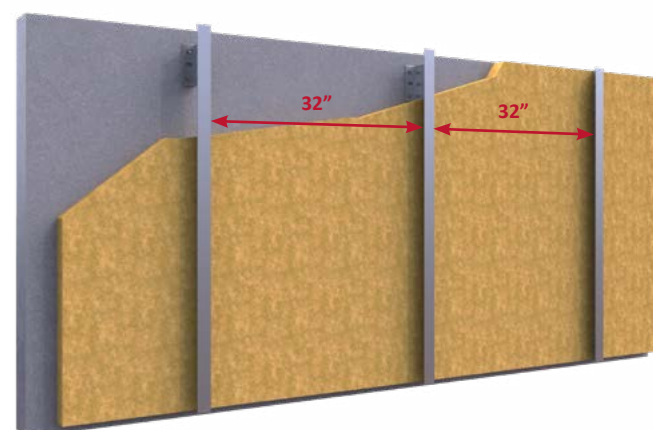
• **Fixed-point bracket** using the *round holes*



• **Sliding-point bracket** using the *elongated holes*



The **maximum distance** between vertical profile is **32"**:



Notes:

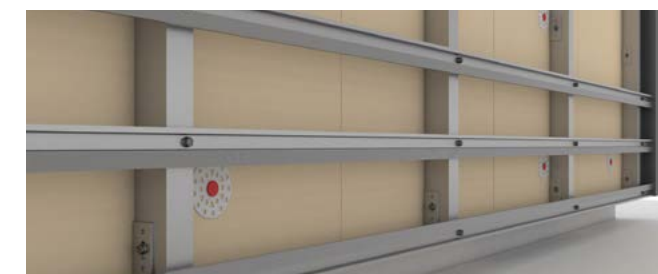
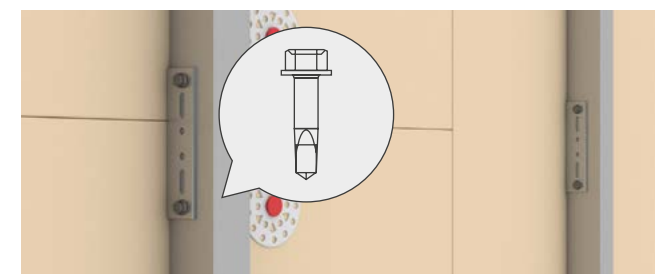
The gap between the vertical profiles must be clarified on per project basis taking into account the following variables (the exposure of the site, height of the building, location, distance from the sea....)

/ CUPACLAD INSTALLATION METHOD

SECONDARY SUBSTRUCTURE

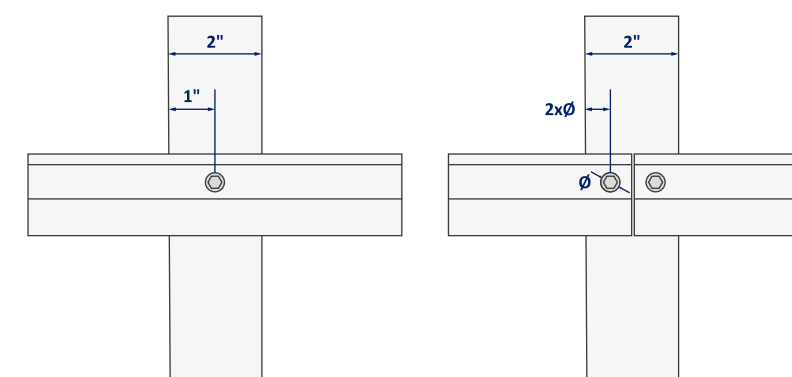
3 SCREWS

Installing vertical profiles to metal brackets and installing horizontal profiles to vertical profiles require the stainless steel screws A2 ($\varnothing 3/8"$).



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

- The end of each batten must have its own fixing.
- Leave a gap of $3/16"$ between ends of horizontal profiles. (e.g., for a profile 10' long, allow a gap of $1/8"$).



/ CUPACLAD INSTALLATION METHOD

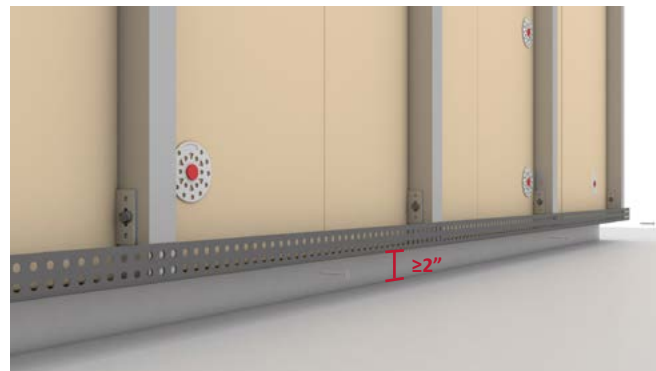
PRIMARY SUBSTRUCTURE - 101 SYSTEMS

1 FIXING OF A VENTILATED FLASHING

The installation of a perforated profile ensure ventilation.

Install a ventilated flashing at the first course of the cladding to prevent insects / small animals from penetrating.

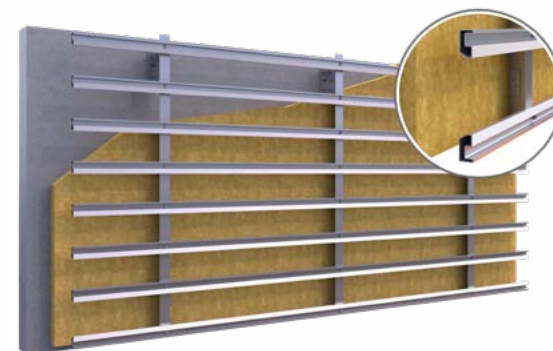
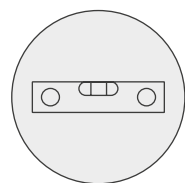
The distance between floor- substructure of the cladding should be $\geq 2"$.



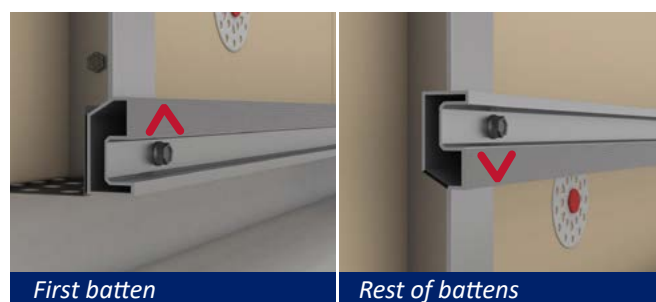
Watch here the installation video 'How to install a slate rainscreen cladding system? (CUPACLAD 101 Logic) <https://www.youtube.com/watch?v=aD6g9qPooCo>

2 CUPACLAD® 101 HORIZONTAL PROFILES

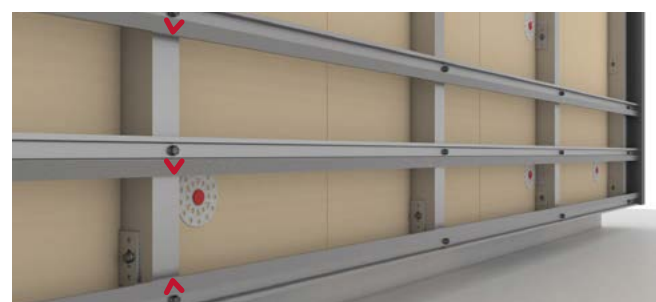
The horizontal profiles must be **perfectly level**, as their position defines the alignment of the slates.



The first horizontal batten must be inverted to allow installation of the first course of slate and the rest must go like the standard ones:



The arrows below show the horizontal batten installation and orientation:

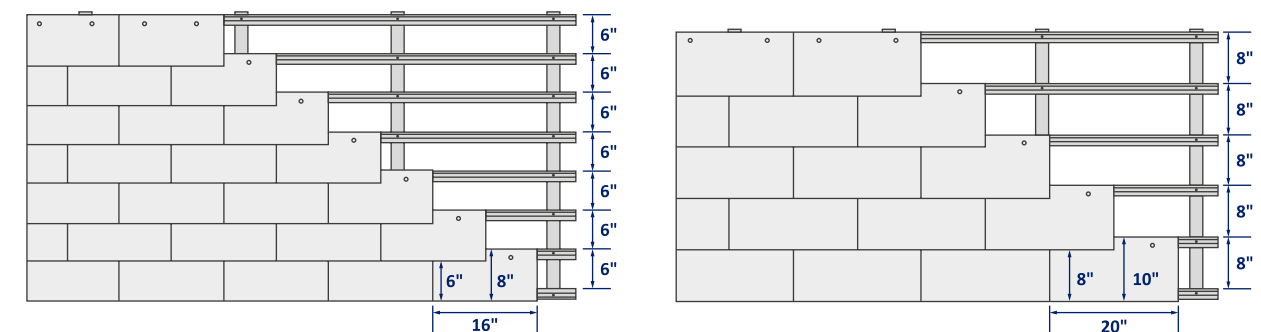


/ CUPACLAD INSTALLATION METHOD

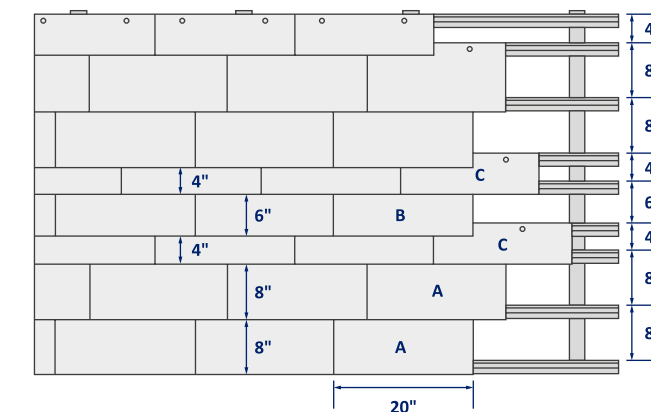
PRIMARY SUBSTRUCTURE - 101 SYSTEMS

The distance between profiles varies depending on the chosen system:

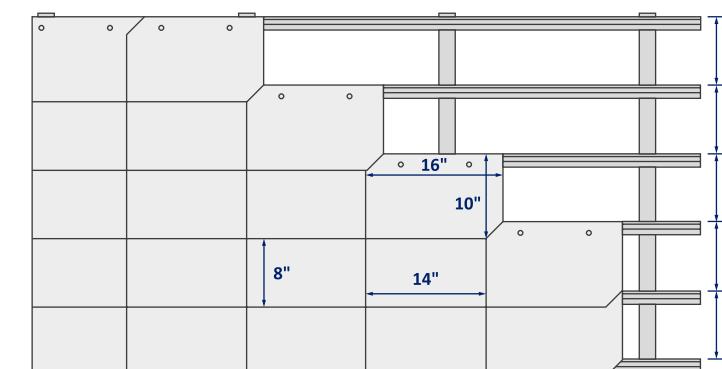
CUPACLAD 101 Logic: 6" (16"x 8" slate) or 8" (20"x 10" slate), 2" overlap.



CUPACLAD 101 Random: 8", 6", and 4" vertical exposures. 2" overlap.



CUPACLAD 101 Parallel: 8" vertical exposure. 2" overlaps in both vertical and horizontal directions.

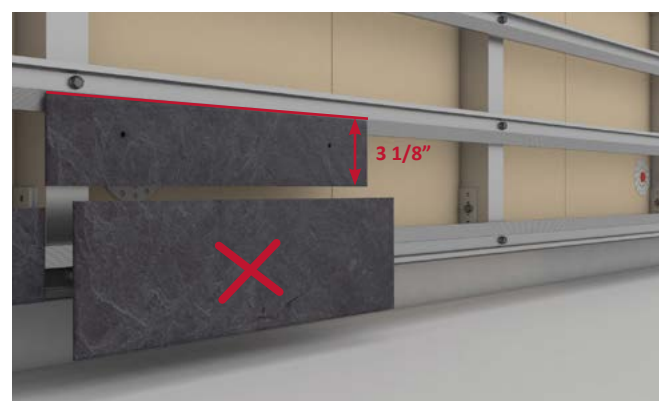
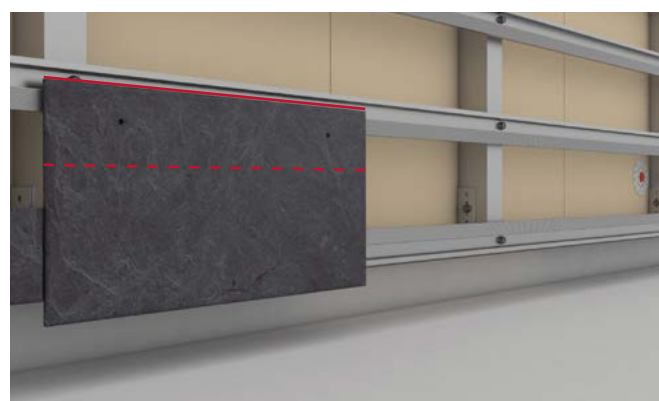


/ CUPACLAD INSTALLATION METHOD

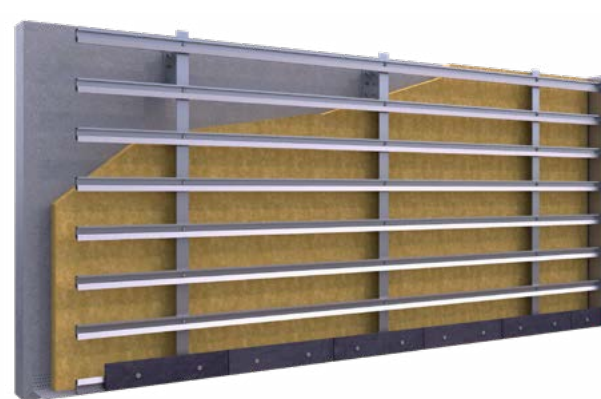
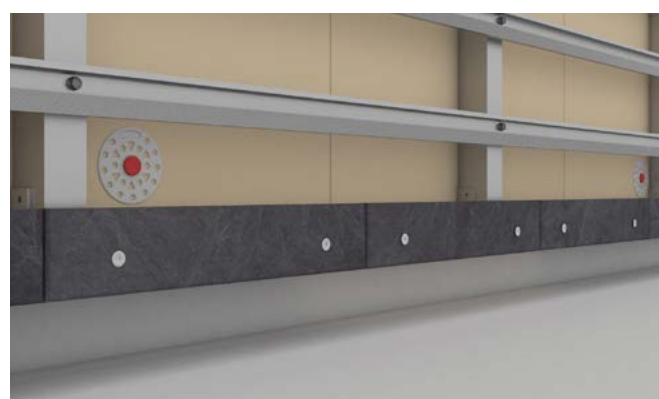
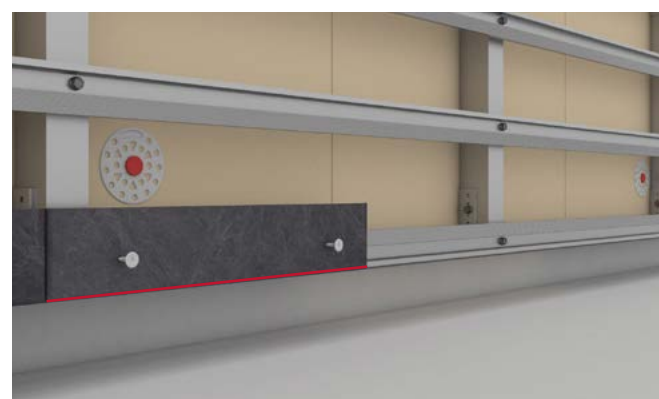
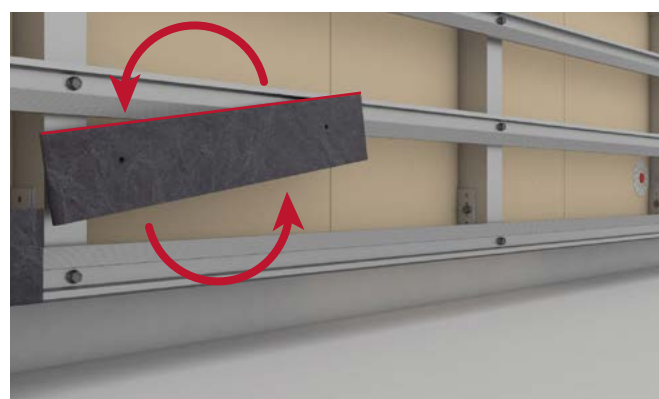
PRIMARY SUBSTRUCTURE - 101 SYSTEMS

③ THE FIRST COURSE SLATE

Cut approximately **3 1/8"**



Invert slate so that the cut side is up. Match the uncut edge of slate to the bottom of the first horizontal batten.



/ CUPACLAD INSTALLATION METHOD

PRIMARY SUBSTRUCTURE - 101 SYSTEMS

④ CUPACLAD® 101 SLATE WITH THE SELF-DRILLING CUPACLAD® 101 SCREW

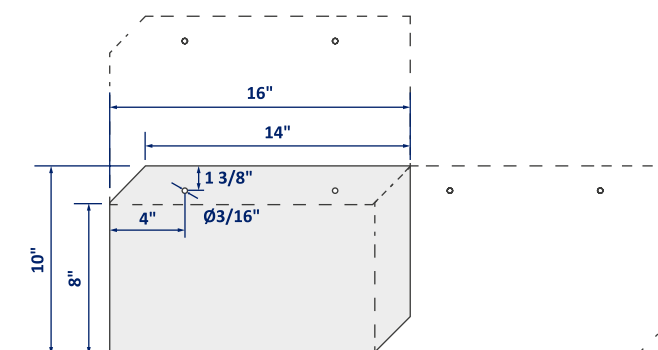
Each slate must be **aligned** with the **upper edge** of the batten, and installed with two stainless steel screws. CUPACLAD® 101 slate is **pre-drilled** at the required position, making its installation quicker and easier.

CUPACLAD® 101 self-drilling screws have a flat head to make for better connections points and overlaps. In CUPACLAD® 101 Logic and Random, slates must be installed with an offset respect to the previous row.



Notes:

CUPACLAD® 101 Parallel slate is installed with a double 2" overlap, both vertical and horizontal. The corners are chamfered to make screwing the slate easier at overlaps.

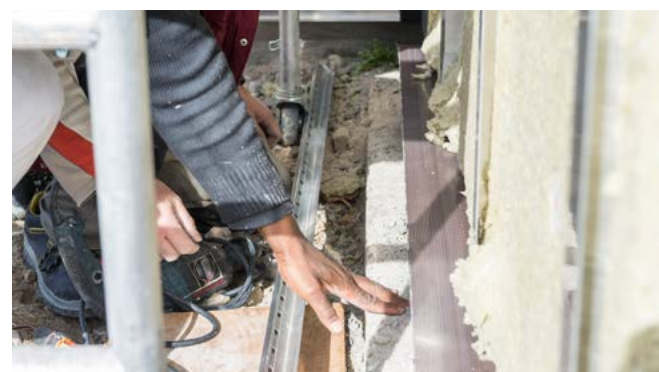
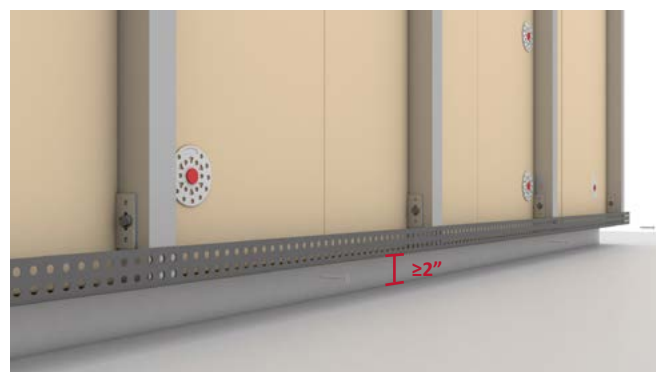


/ CUPACLAD INSTALLATION METHOD

PRIMARY SUBSTRUCTURE - 201 SYSTEM

1 VENTILATED FLASHING

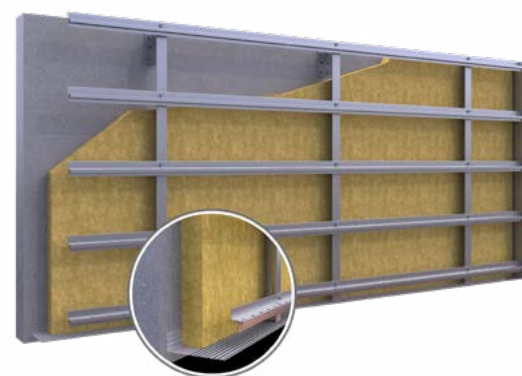
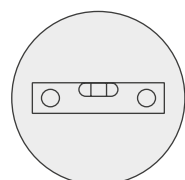
Attach a ventilated flashing at the first course of the cladding to prevent insects/ small animals from penetrating. The distance between floor- substructure of the cladding $\geq 2"$ and the installation of a perforated profile ensure ventilation.



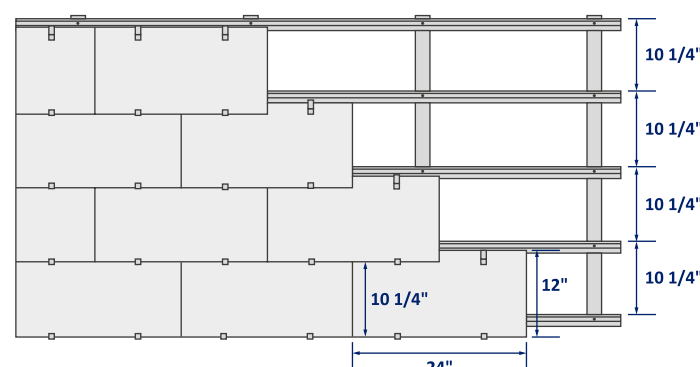
Watch here the installation video 'Installation of a rainscreen cladding with visible fixing (CUPACLAD 201 Vanguard) <https://www.youtube.com/watch?v=F1M6PwAMGnc>

2 CUPACLAD® 201 HORIZONTAL PROFILES

The horizontal battens must be perfectly level, as their position defines the alignment of the slates.



The distance between battens is $10 \frac{1}{4}"$ leaving an overlap between slates of $1 \frac{1}{2}"$:



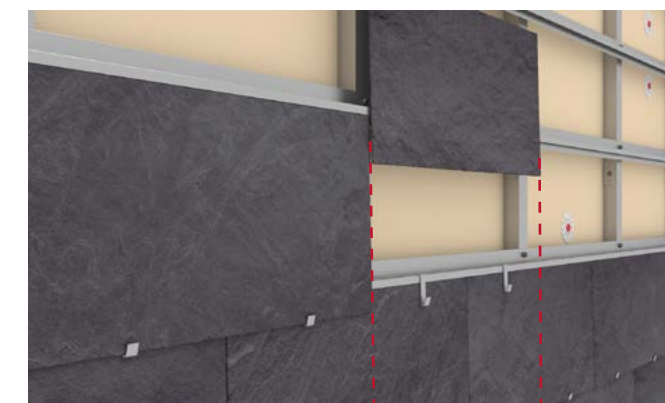
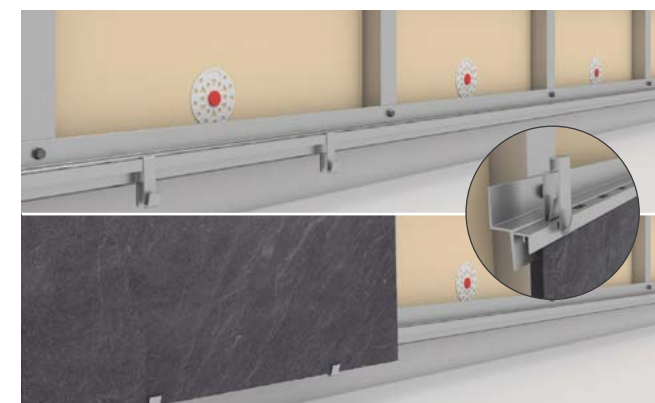
/ CUPACLAD INSTALLATION METHOD

PRIMARY SUBSTRUCTURE - 201 SYSTEM

3 INSTALLING SLATE WITH THE SPECIAL CUPACLAD® 201 VANGUARD CLIPS

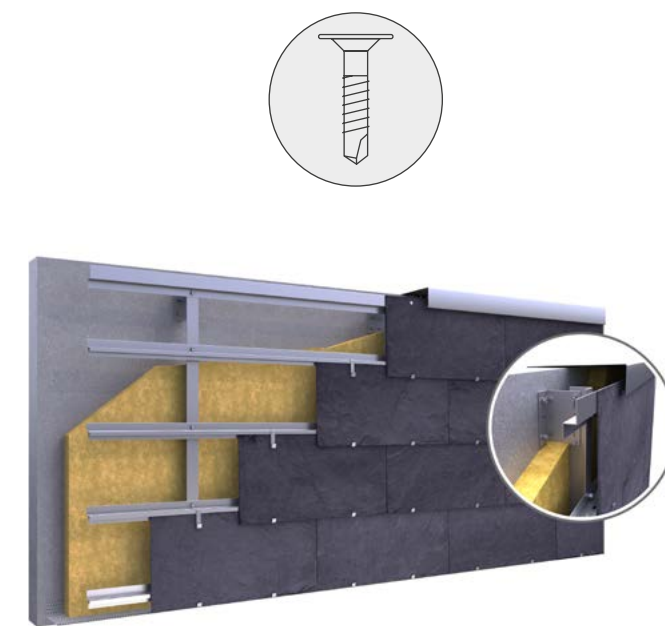
The clips are fitted to the holes in the horizontal profiles. Each slate is supported by two clips on the lower edge and fitted with another two on the top.

Slate must be installed with an offset respect to the previous row. This offset will be half of the length of the slate.



4 FIXING THE SLATE TO THE TOP OF THE CLADDING

When installing the top course of slate and joining to 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.

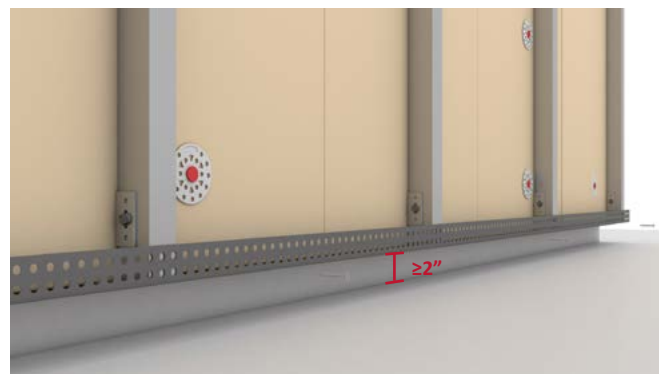


/ CONSTRUCTION DETAILS

CUPACLAD 101 - LOGIC, RANDOM AND PARALLEL

1 CUPACLAD BASE

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 and small animals.



2 CUPACLAD COPING



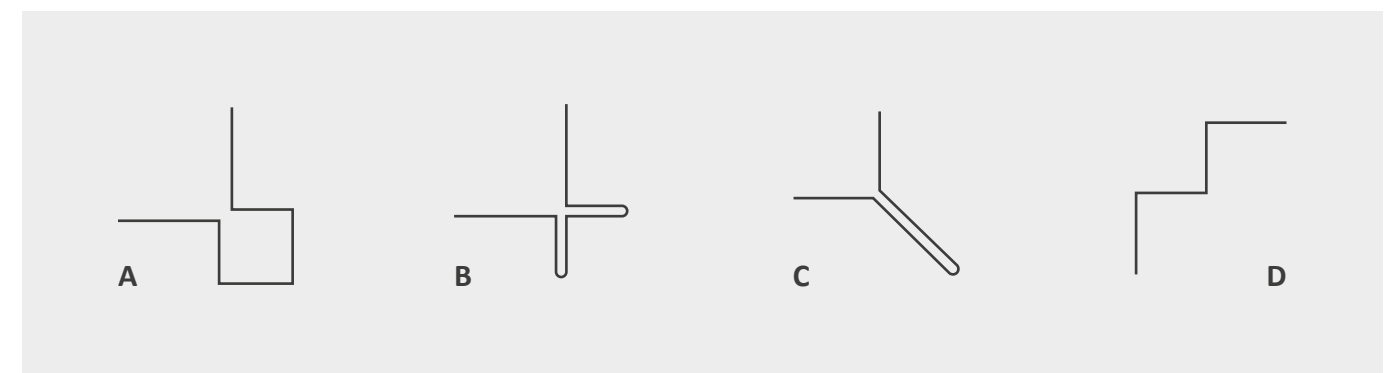
3 CUPACLAD WINDOW REVEAL



/ CONSTRUCTION DETAILS

CUPACLAD 101 - LOGIC, RANDOM AND PARALLEL

4 CUPACLAD CORNER FLASHINGS



A



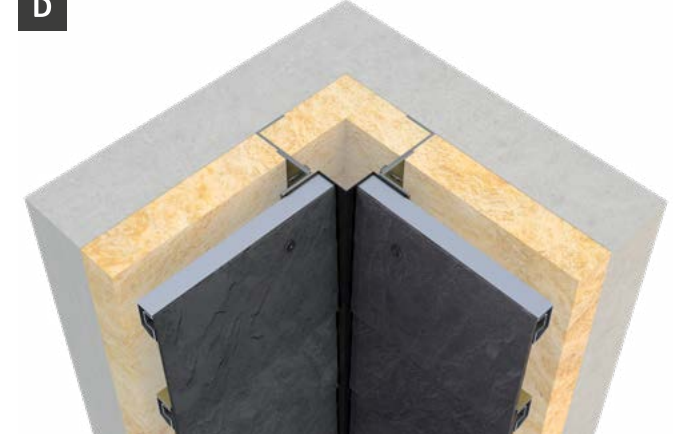
B



C



D

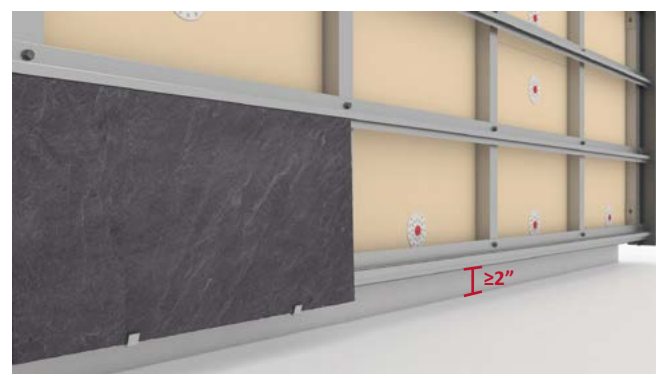
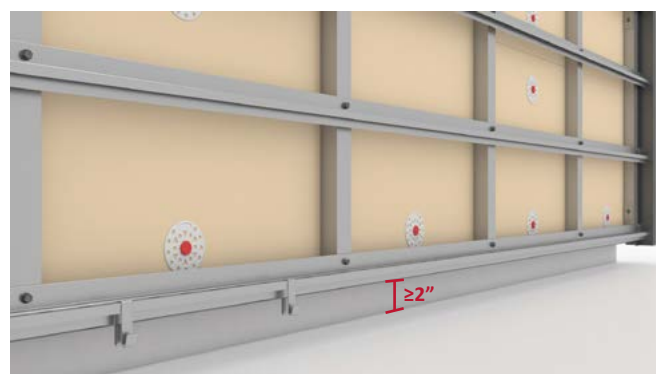


/ CONSTRUCTION DETAILS

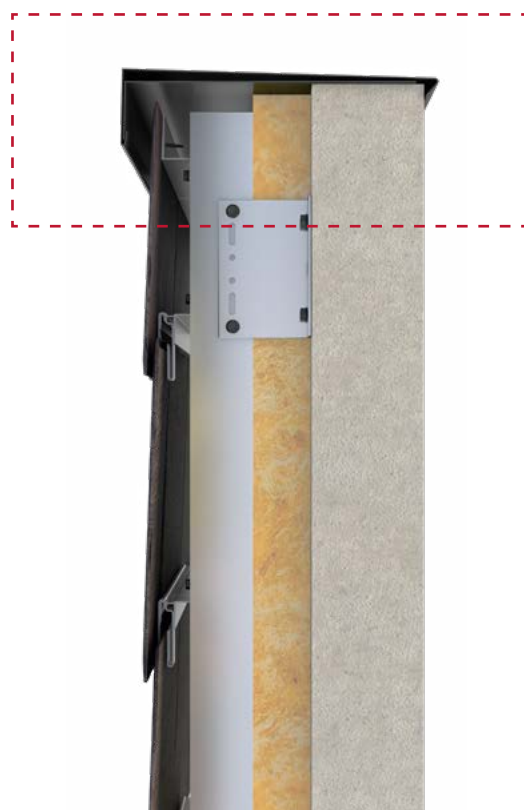
CUPACLAD 201 VANGUARD

1 CUPACLAD BASE

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 and small animals.



2 CUPACLAD COPING



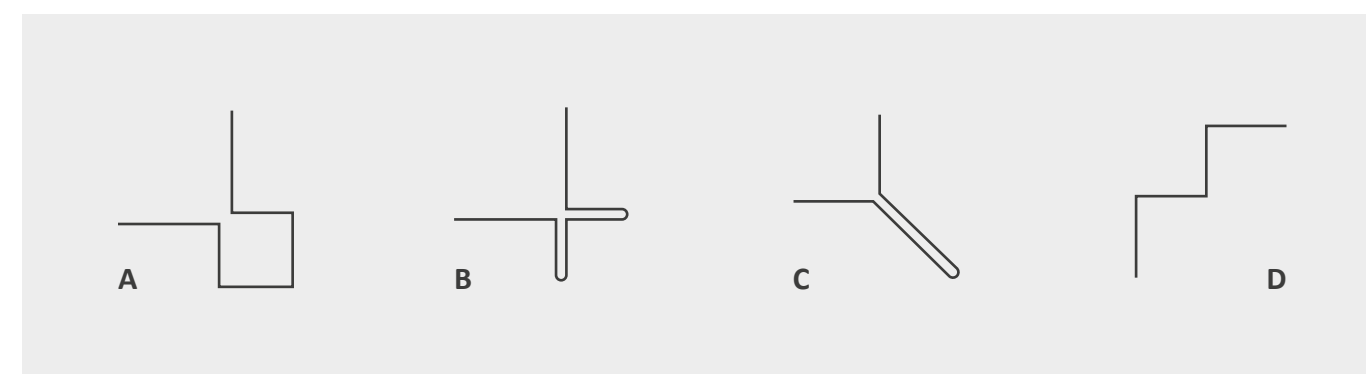
3 CUPACLAD WINDOW REVEAL



/ CONSTRUCTION DETAILS

CUPACLAD 201 VANGUARD

4 CUPACLAD CORNER FLASHINGS





CUPACLAD

Ph. 866-421-1171
cupaclad@cupapizarras.com
www.cupaclad.com

DISTRIBUTED BY:



VERMONT SLATE COMPANY

2600 Louisville Rd,
Savannah, GA
31415 - United States
info@vermontslateco.com
Ph. 866-339-2038
www.vermontslateco.com