



# TAKING SLATE *SIDEWAYS*

An innovative approach to using  
a long-trusted building material  
in a brand new way





**S**late has been used as a roofing material in this country since before it was a country, and even among the many options for roofing today, it is revered as one of the most durable and attractive choices. Fewer people know slate as siding, though a new approachable installation method, the CUPACLAD rainscreen system, may soon change that.

Using slate on a home checks a lot of boxes. It's low maintenance and handsome. It suits several architectural styles, and it's just about the toughest material around. So, it's no surprise architects and builders are warming to the European idea of employing it as siding, using options from manufacturers like Cupa Pizarra—maker of roughly half of all building slate used in the world.

Along with slate's many performance benefits, the uniform, geometric tiles enable a range of styles, from familiar and traditional to eye-catching and modern, which can wrap a house, enhance an addition or add drama to an entryway.

Because of its weight and the generous overlap measuring about one-third of the

tile's length, a typical slate roof requires additional engineering and sometimes a more robust structure to carry the load. But on a wall, the stone, fabricated to the same thickness as the roofing slate, only needs about two inches of overlap to keep the weather out. That means less weight per square foot of wall. Slate siding at around six pounds per square foot can typically be added to a standard wall without additional framing.

Any competent contractor can install slate siding using Cupa Pizarra's CUPACLAD system, which simplifies fastening and creates a rainscreen gap behind the siding. And it only requires a minimal tool investment. Let's take a look at the system.



# Slate makes sense

When choosing siding, there's a lot to consider—from its lifespan and maintenance requirements to its cost. While natural slate has the perception of being expensive, it installs for less than many commonly used cladding materials and outperforms most siding in many ways. Here are a few reasons to consider slate for your next project.

## / DURABLE:

Slate's life expectancy is 100 years. On roofs, this means the material is often salvaged and reused after the materials underneath the slate fail. Slate is also more sustainable than competitive materials like fiber cement, zinc and terracotta. Manufacturing zinc, for example, produces eight times the CO<sub>2</sub> emissions of slate. Compared to making terracotta tiles, slate uses nine times less energy.

## / LOW MAINTENANCE:

Unlike wood or synthetic siding, the good looks slate offers after installation will not fade or discolor for over 100 years based on testing. A garden hose can usually wash away any dirt or grime. For more stubborn stains, a pressure washer works too. For organisms looking to make a home on slate, like lichens, fungi and mosses, all you'll need is a stiff brush and vinegar.

## / STRUCTURALLY SOUND:

Natural slate is inherently fire-resistant and waterproof—fiber cement, by contrast, absorbs 18 times more water than slate. Also, slate isn't bothered by intense cold or heat,


and the materials freezes and thaws without damage. When used as siding, only extreme catastrophic weather or malicious acts of vandalism might damage the tiles.





# From mine to manufactured

Slate is a broad term that describes a range of products, all made from the same type of rock.

A wide-angle photograph of a slate mine. In the foreground, a yellow CAT excavator is positioned on a dirt path, working on a large, dark gray slate block. The background shows a steep, rocky hillside with exposed slate layers and scattered debris. The overall scene is industrial and rugged.

Cupa Pizarras' slate comes from northern Spain's Galicia and Castile and León regions, where it has been mined for more than 125 years.

Slate is a fine-grained, durable rock formed from shale and clay, known for its smooth surface and its structure that allows it to be split into thin, flat sheets. True slate is primarily composed of minerals like quartz, mica and chlorite, and it forms as temperature and pressure conditions alter the mineral structure of the original rock. In the building industry, the term “slate” is sometimes loosely used to describe other fine-grained metamorphic rocks like phyllite or quartzite, though they differ in composition and splitting characteristics. With this varying geological composition, slate offers a range of color from a consistent dark gray to greens to purple-red. The most prized slate for building is true slate, which is dark gray with a homogeneous, fine-grained texture. This is what Cupa Pizarras specializes in.

Cupa Pizarras' slate comes from northern Spain's Galicia and Castile and León regions, where it has been mined for more than 125 years. About half the world's building slate comes from this area. To make the most of this high-quality stone, Cupa Pizarras developed the CUPACLAD system, which adapts traditional slate for use as modern rainscreen cladding.

The slate used for siding and roofing are very similar, with a thickness between 1/4 inch to 3/8 inch in tiles that can measure up to 20x10 inches, with a hand-split texture and naturally matte finish. By combining carefully sourced slate with innovative fastening methods, CUPACLAD makes it easier for contractors to create durable, ventilated facades without the heavy engineering usually associated with stone siding.



# Standard styles for slate siding

The CUPACLAD system allows for quick installation of consistently shaped tiles. The three popular options below require minimal cuts to each row with some basic slate-cutting tools.

## / LOGIC

### Organized for a standard pattern

In this familiar pattern seen in bricks, roofing and cedar siding, 16x8-inch slate tiles butt together. Unlike a slate roof, where about two-thirds of the course below is covered, here only about two inches overlap—enough to cover the fasteners from the course below.







## / RANDOM

### Weaving in mixed heights

Similar to the ribbon course you might see with cedar shakes, CUPACLAD's Random pattern weaves together three contrasting heights to add visual interest to the building. The style relies on 20-inch-wide slate tiles that are six, eight, and ten inches tall.

## / PARALLEL

### Stacked tiles for consistency

These 16x10-inch slate tiles are installed in a pattern of parallel lines, adding uniformity to the siding. The sleek layout creates a crisp, contemporary look with continuous visual flow. The vertical lines of this pattern can add drama to a bump-out or addition.





# Going beyond basic coursing

Cupa Pizarras fabricates slate tiles up to 20x10 inches, but that doesn't mean rectangles are the only option. CUPACLAD natural slate cladding comes in a range of profiles that architects and designers can use to configure subtle and bold patterns, some of which are shown below.



## / OFFSET

The image shows a close-up of a wall or roof surface covered in light-colored, rectangular slate tiles. The tiles are arranged in an offset pattern, with each row of tiles shifted horizontally relative to the row above and below it. This creates a staggered, interlocking appearance. A dark blue text box is overlaid on the lower left portion of the image.

### One of the few asymmetric styles available, this pattern uses two sizes of tapered slate that slide together, long end to short end. When the roughly 20x10-inch and 20x7-inch tiles butt together, the look replicates a modern twist on rustic cedar shakes or a slate roof.



## / ARROW

The image shows a close-up of a wall or roof surface covered in dark grey, rectangular slate tiles. The tiles are arranged in a pattern that creates a series of 'V' shapes or arrows pointing in different directions. A dark blue text box is overlaid on the right side of the image.

### Depending on its orientation, these 15¾x10-inch rhomboid slate tiles can form at least two different patterns. Hung from the long edge, they can point in one direction, like an arrow, and can return in the opposite direction on the next course. Installed with the narrow ends facing vertically, the same shape can depict a wave-like movement using juxtaposed rows.



## / HONEYCOMB

The image shows a close-up of a wall or roof surface covered in dark blue, rectangular slate tiles. The tiles are arranged in a pattern that creates a series of hexagonal shapes, resembling a honeycomb. A dark blue text box is overlaid on the lower left portion of the image.

### Clip two edges off a roughly 15¾x8-inch rectangular slate tile, forming a point, and it becomes an easy way to add the hexagon shape you'd find in a honeycomb, turtle shell or snowflake. This simple tweak adds texture to an entryway where the pattern looks natural to the human eye.



## / SHIELD

The image shows a close-up of a wall or roof surface covered in light-colored, rectangular slate tiles. The tiles are arranged in a pattern that creates a series of large, irregular hexagonal shapes. Each tile has a visible stainless-steel fastener in the center. A dark blue text box is overlaid on the lower right portion of the image.

### The backbone of this geometric design is an isosceles trapezoid roughly 10x24 inches that, when grouped with another, forms one large hexagon. Unlike most of CUPACLAD's patterns, this one celebrates the exposed stainless-steel fasteners, which make repairs much easier.



# Installation

CUPACLAD offers two installation methods for its slate siding: the direct apply method and a full rainscreen system. Both create a drainage gap behind the siding for improved performance. The rainscreen system allows for thicker airspace and continuous exterior insulation, while the direct apply method offers faster, more economical installation. Either is a possibility for both new homes and remodels. Whichever you choose, keep in mind that the slate is delivered to the job site in large wooden crates that can weigh nearly 2000 lb. Be prepared.

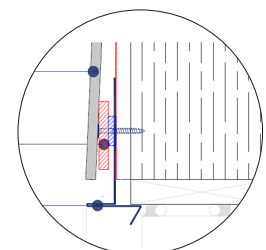
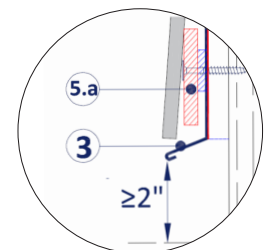
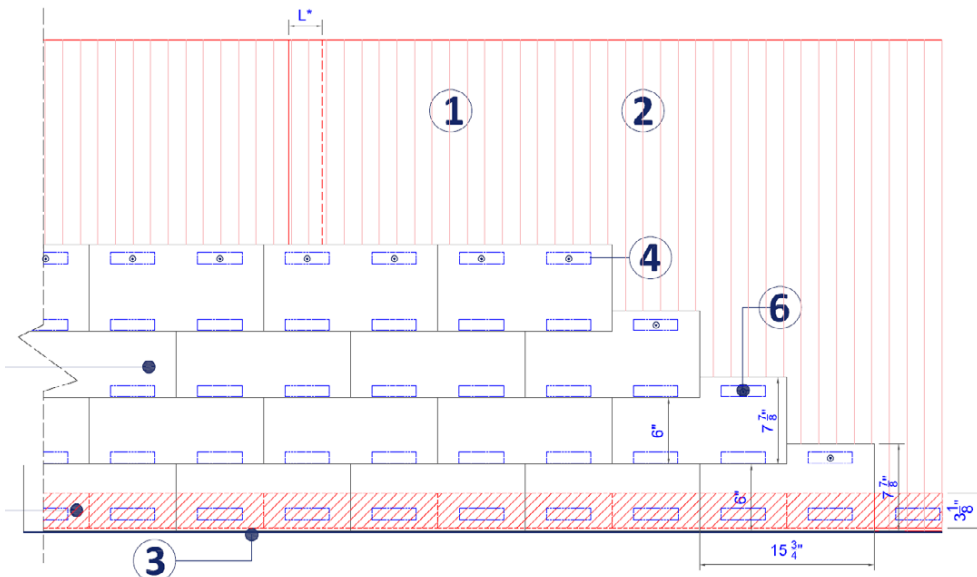
## / DIRECT APPLY

Used in about 70% of CUPACLAD's residential projects, the direct apply method will be familiar to most builders. It begins with VaproShield's Panel Shield SA, a self-adhering WRB applied over the sheathing, which must be ½-in. plywood or 5/8-in. OSB. Though the system doesn't include bottom-of-the-wall flashing, builders can install it to direct bulk water away from the building. CUPACLAD does provide a slate starter strip to be installed behind the first course. They also predrill a pair of 1/4-in.-diameter holes in each slate shingle for installation. If you have to add more holes after cutting a tile, a basic masonry bit in a drill/driver does the job.

With the starter strip installed, the

installation is consistent with wood shingles and other lap siding. Snap chalklines to lay out courses with the appropriate reveal. For each piece of slate, apply a piece of the supplied peel-and-stick 1-in. by 4-in. by ¼-in. VaproShield VaproShim over both screw holes, which spaces the slate away from the building to create a rainscreen gap. Fastened each tile through the shims with 1 ½-in.-long, self-tapping T25 wood screws. Use a drill/driver on a low clutch setting to prevent overdriving the fasteners and damaging the slate.

The company does not supply flashing and drip edge for transitions at windows and doors, but does offer technical details for how to incorporate them. **They also offer trim pieces for inside and outside corners.**

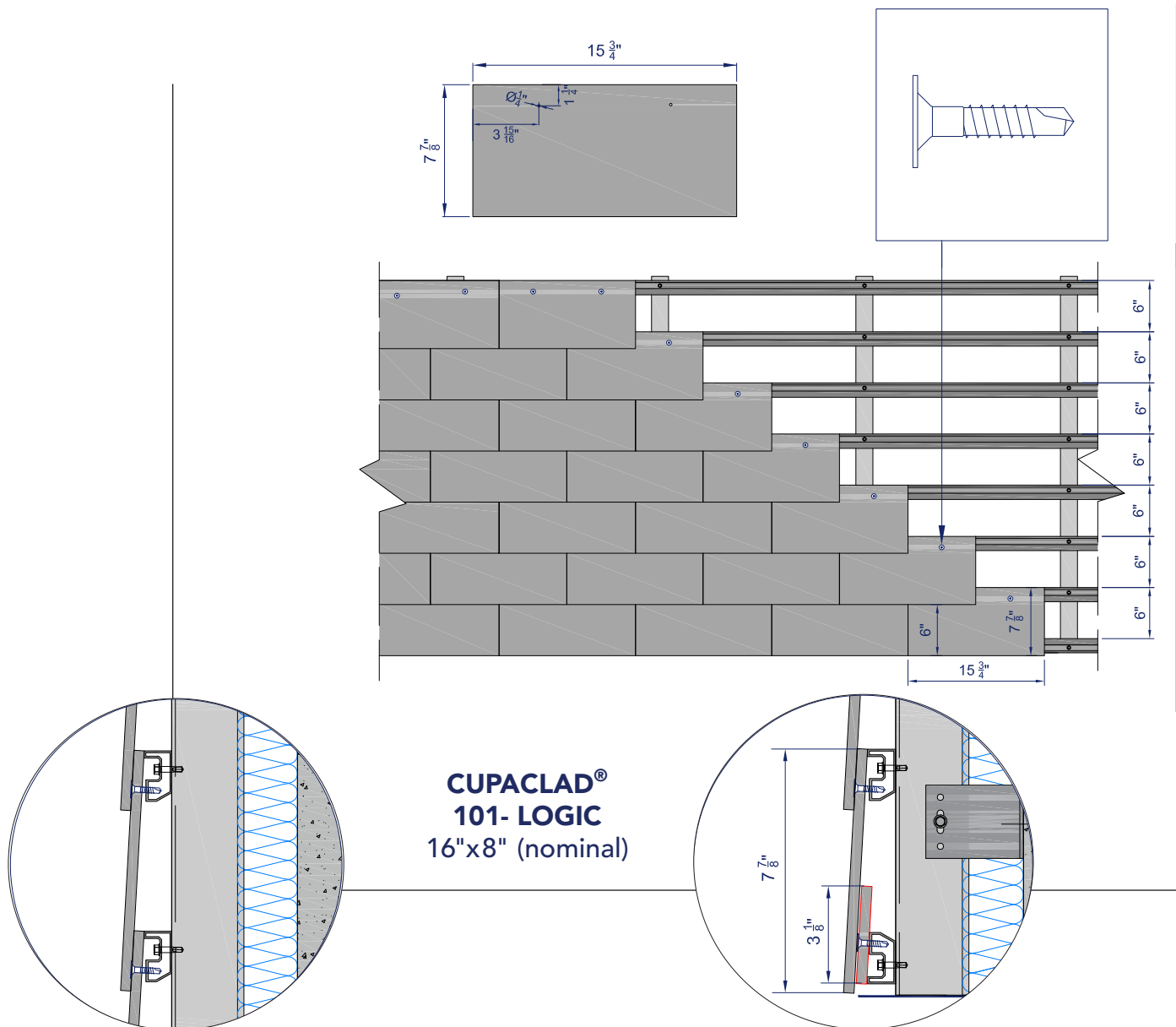




## / RAINSCREEN SYSTEM

Not only does CUPACLAD's rainscreen attachment system create a robust, 1-in. ventilated rainscreen gap to promote drainage behind the slate, but it also creates enough space to include continuous exterior insulation. The installation starts with aluminum brackets that are fastened to the wall framing. The brackets have pads that prevent thermal bridging. They should be specified 1 in. longer than the planned continuous exterior insulation thickness to maintain a 1-in. rainscreen gap.

Once these brackets are installed, L-shape vertical rails are fastened to the brackets and horizontal battens are installed with spacing that matches the slate pattern. For most patterns, the slate is fastened directly to the aluminum rails with hidden or exposed screws, depending on the design. This installation method, the 101 system, can be used to create a number of slate patterns. For a faster installation, CUPACLAD also offers the 201 VANGUARD system with V-clips—two visible clips that hold the bottom of each slate tile, adding a unique detail to the pattern.





## Tools you will need

Since the slate arrives predrilled for screws, there isn't much you have to do to start installing other than putting up your WRB and cutting your starter strip. But if you end up having to cut slate to fit, the tools are easy to find and master.



### SLATE SHEAR

The business end of this trimmer is a 4-inch-long, beveled blade that slices cleanly through the slate, making straight cuts. For longer tiles, feed the slate through after each chomp, following your cutline.



### SLATE CUTTER

Similar to the shear, but with a shorter cutter around 1 inch long, this handheld version of the shear takes nibbles out of slate to quickly lop off corners or make tight circles around HVAC penetrations or dry vents.



### SAWBLADES

For clean, consistent cuts with the traditional chamfered edge, use a specialty slate sawblade. On scaffolding, opt for slate shears, scissors, or slate cutters for better control and safety.



### DRILL BITS

Each piece of slate needs to hang from two screws. If you cut one off while cutting a slate piece to fit, always add a new hole at least 2 inches in from the side of the slate and 1.3 inches down from the top edge. Make holes with a 5mm masonry drill bit.



# Care and maintenance

Slate is a low-maintenance siding option, but it still benefits from an annual inspection to find any broken tiles and keep the material looking its best. Cleaning with a garden hose will handle most surface dust and debris, though a pressure washer fitted with a green 40° tip can help speed the job along. Vinegar, a stiff brush and some elbow grease are all you should need to take care of organic matter that might form on the north side of the house. If paint gets on the slate, acetone can help remove it. If a piece of slate cracks, the repair is relatively easy with tools a seasoned carpenter might have in the truck. Here's the step by step for the repair:



## / BREAK IT UP

Start by using a hammer to gently break away the remainder of the tile so only the material held in by the fasteners remains along the top edge.

## / SEVER THE SCREWS

Using a grinder fitted with a cutting wheel, slip the blade on top of the remaining broken tile and under the course above. Slice the screws in half so the remaining slate drops down. Make sure to



grind down the remainder of the screw's shank, which would prevent you from slipping in a replacement tile.

## / MARK THE REPLACEMENT

To repair a custom-sized piece of slate, measure the opening and transfer those marks to a new tile. After you cut the tile to height and width, measure the



locations for the two new screw holes you need to add on the edge opposite from the predrilled ones. Mark the holes 3/4 inches away from the bottom edge and 3 inches from the left and right edges of the tile. Use a 1/4-inch masonry bit to drill two holes.

## / SLIDE IT HOME

Using a hammer, gently tap the slate into position until its bottom edge aligns with the course. Then use the screw holes you drilled as a guide to add two more into the slate overlapped below. Finally, secure the slate with a pair of black-painted stainless-steel screws.

