



therm  slate  
by CUPA GROUP

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INVISIBLE SOLAR THERMAL  
NATURAL SLATE ROOFING









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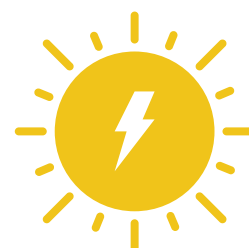
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# WHAT IS THERMOSLATE®?

THERMOSLATE® is natural slate roofing that makes use of the properties of natural slate to **convert sunlight into energy to produce heating, hot water, or pool heating.**

Our innovative solar thermal collector system adapts to all types of construction requirements and is **imperceptible once installed.**

The evolution towards **sustainable architecture** reaffirms the need to implement solutions such as THERMOSLATE®, which, as well as improving the energy efficiency of your home, offers aesthetics that suit any architectural design.



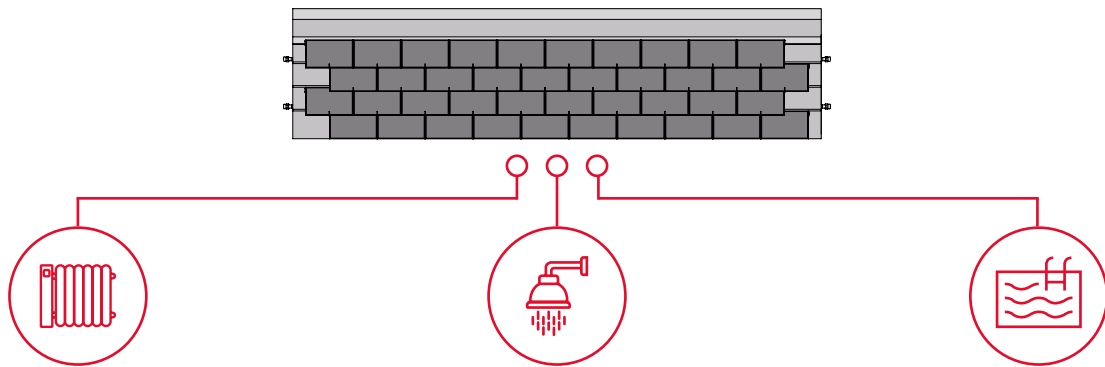
Start saving  
energy with the  
**THERMOSLATE®** solar  
thermal collector



# THERMOSLATE® ADVANTAGES

## 1 PERFORMANCE AND SAVINGS

THERMOSLATE® thermal panels convert sunlight to energy to produce heating, hot water, or pool heating.



This system is capable of generating up to 2/3 of normal annual domestic hot water consumption, which means **a significant energy savings reflected in your bills and that will allow you to amortize your roof from the first day.**



### GENERATE UP TO 70% ENERGY SAVINGS

This energy requirement coverage rate meets the minimum requirements established by the Technical Building Code for a home of 4 people, in any climate zone.



### AMORTIZE YOUR ROOF FROM THE FIRST DAY

THERMOSLATE®, applied to a normal home and depending on its energy requirements has roughly the same amortization as most other manufactures but, its lifespan is longer than other panels.



### FORGET ABOUT MAINTENANCE

THERMOSLATE® requires no maintenance thanks to the natural properties of slate: it does not degrade or overheat and avoids all inconvenience of covering and uncovering panels.



# THERMOSLATE® ADVANTAGES

## 2 NATURAL SLATE

- AESTHETIC

*A system that does not show!*

THERMOSLATE® solar collectors are integrated into the slate roof so they are completely imperceptible once properly installed.

THERMOSLATE® does not affect the aesthetics of the home, so you can take advantage of the efficiency of renewable energies without sacrificing the elegant and sophisticated design of a natural slate roof, a unique material of unparalleled natural beauty.



- INCOMPARABLE

Slate is a 100% natural product with incomparable technical properties that adapts to any project providing considerable added value.

### DURABILITY



Natural slate is a longevity, high strength, weatherproof and fire resistant natural material which holds natural beauty and remains unchanged over time in terms of both aesthetics and performance.

Furthermore, it is resistant to extreme temperatures and weather conditions.

### ECOLOGY



Our 100% natural slate is split by hand and uses no additional chemicals. Unlike fabricated products, natural slate is only subjected to extraction and working processes which combined with its unmatched durability, makes it a sustainable material with low environmental impact.

### PERSONALITY



Characterized by its natural sheen and incomparable texture, natural slate is a noble, elegant, personality-packed material, bringing prestige to the surfaces where it is used. Each natural slate extracted is unique, it gives projects an incomparable appearance of which doesn't change over time.



- **QUALITY**

CUPA PIZARRAS, is the world leader in natural slate and has 20 quarries and 24 processing plants in Northern Spain. One in three natural slate roofs installed worldwide holds our brand. We are the only manufacturer that guarantees full traceability from extraction to on-site, using our exclusive bar code system.

Slate is a 100% natural product, extracted directly from the quarry. Furthermore, it is resistant to extreme temperatures and weather conditions.

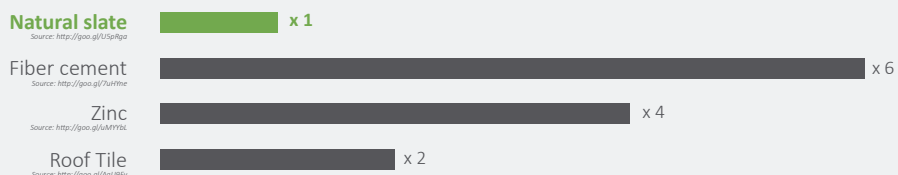
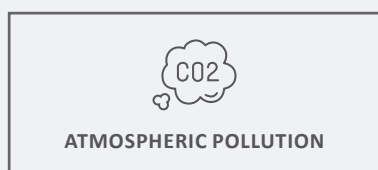
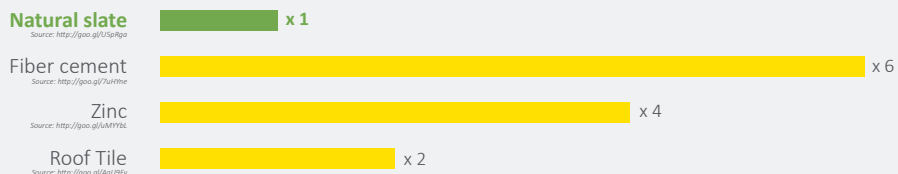
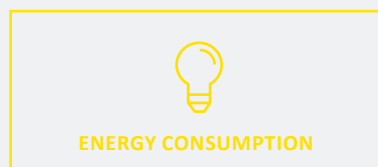
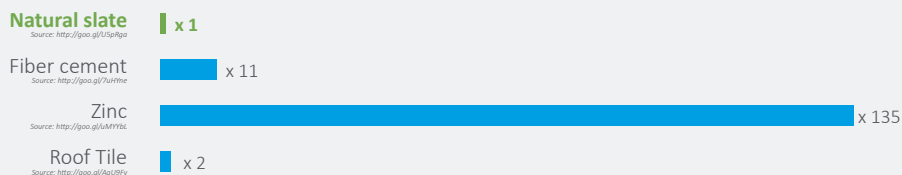
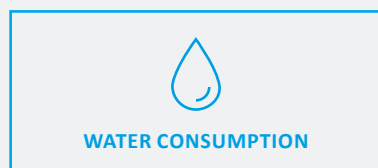
**Our system of traceability enables tracking from the quarry to the end user, guaranteeing our differentiating value: quality.**

# THERMOSLATE® ADVANTAGES

## 3 SUSTAINABILITY

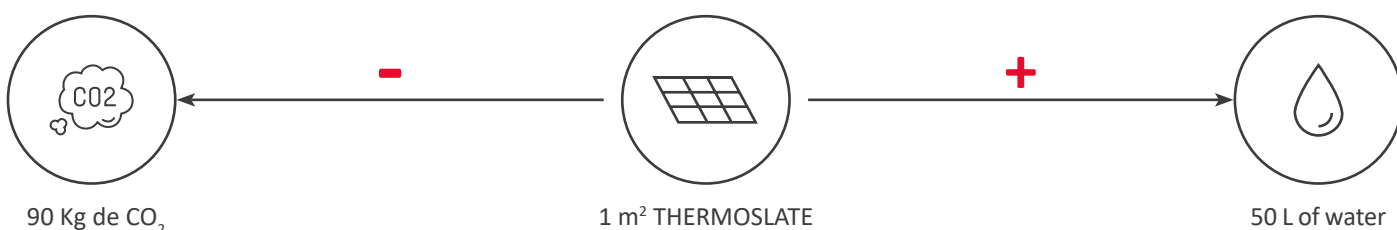
### • THERMOSLATE, NATURAL ENERGY

THERMOSLATE® solar thermal collectors **generate renewable, environmentally-friendly energy.**



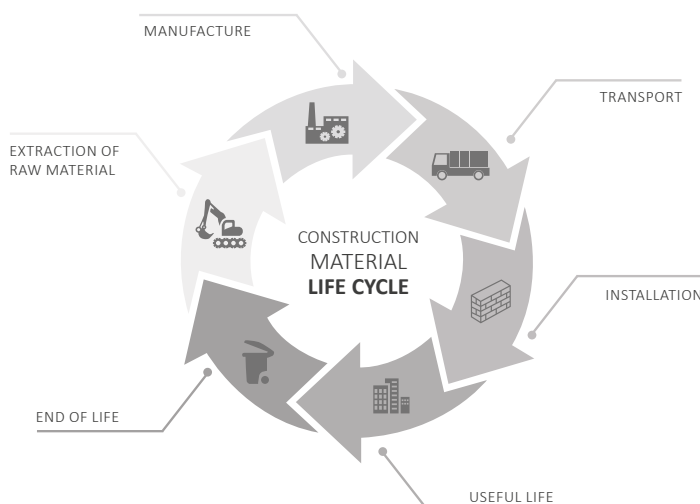
Comparison carried out based on the information published in September 2014 by the French database INIES: <http://www.base-inies.fr/Inies/Consultation.aspx>

The THERMOSLATE® solar system enables generation of renewable, environmentally-friendly energy. **1 m² prevents an average of 90 Kg of CO<sub>2</sub> emissions and automatically heats 50 liters of water per day.**



Additionally, its main component is slate, whose manufacturing process is completely natural, since it does not require the use of blast furnaces or chemical products.

The complete life cycle analyses confirm **natural slate as the most ecological option for roofing.**





# THERMOSLATE® ADVANTAGES

## 4 RELIABILITY AND MAINTENANCE

### • CUTTING-EDGE NATURAL SLATE ROOFING TECHNOLOGY

THERMOSLATE® solar collectors have been designed by our specialized team with a focus on maximum efficiency and minimum aesthetic impact to the roof.



#### REQUIRES NO MAINTENANCE

Slate is the main component of Thermoslate, and thanks to its natural properties **it does not degrade or overheat.**

This avoids the inconvenience of constantly covering and uncovering panels. In addition, it requires no cleaning to prevent loss of performance.



#### RELIABILITY

**The natural energy is transmitted directly from the sun to the natural slate and solar system.** The simplicity of this system is one of its main virtues, compared with other thermal or photovoltaic panels systems requiring heavy maintenance due to the presence of cells, batteries, and other fragile elements and electrical connections.



#### LIGHT AND STURDY

Although it only weighs 20 Kg/m<sup>2</sup>, THERMOSLATE® offers excellent strength and integration in all construction systems.

Natural slate is characterized by its great strength and durability, which guarantees perfect performance even in extreme climates.



#### 100% WEATHERPROOF

The special weatherproofing kit certified by SOLAR KEYMARK makes it a completely weatherproof system on any slope greater than 22°.

Additionally, the natural slate itself is weatherproof, as well as fireproof, and hinders the formation of ice.



#### EFFICIENCY AND SAFETY

Maximum energy efficiency with an operating temperature lower than 95°C, **thanks to the properties of natural slate.**

THERMOSLATE® is able to cover up to two thirds of annual domestic hot water consumption, which means a great energy saving.



#### USEFUL LIFE

THERMOSLATE® is not affected by degradation which occurs with conventional solar panels.

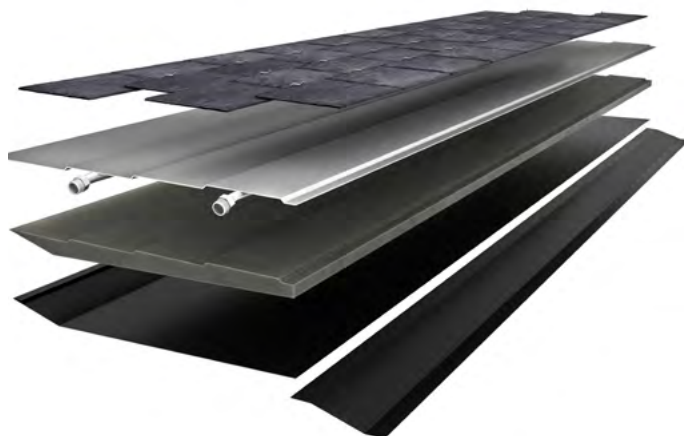
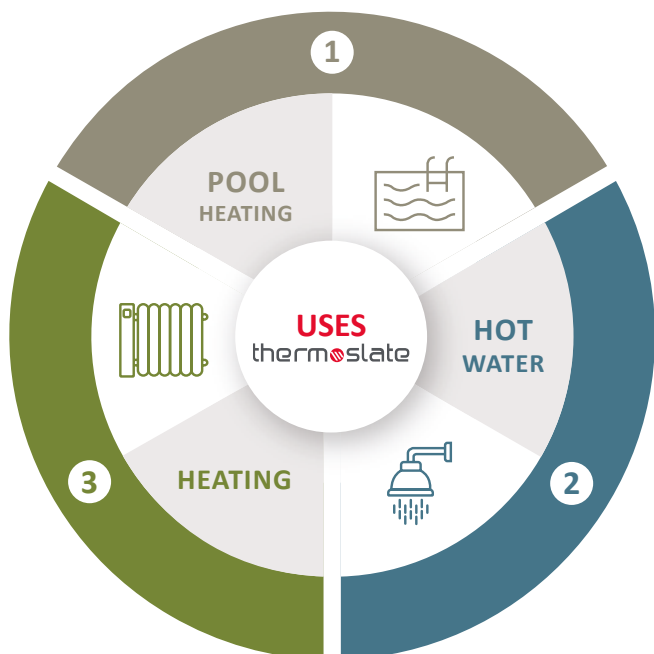
By using the properties of natural slate to transmit energy, **these panels do not degrade or lose performance over time.**



# THERMOSLATE® AND YOUR PROJECT

## ADAPT YOUR HOME TO REGULATIONS

Since 2006 all new constructions using hot water (homes, hospitals, hotels, sports centers, etc.) are obligated to install solar thermal systems.





# THERMOSLATE® AND YOUR PROJECT

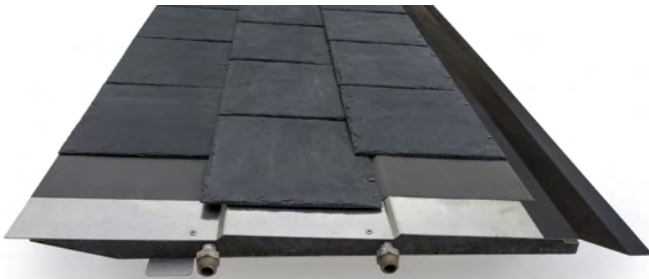
## ADD VALUE TO YOUR HOME

- **VERSATILITY**

Panels are adapted to **any type of project, both new construction and rehabilitation, including heritage buildings and protected areas.**

### PITCHED COLLECTOR

#### INSTALLATION SYSTEM WITH NAILS



Page 14

- **COMPATIBILITY**

THERMOSLATE® is compatible with any accumulator and pump brand and model on the market. Likewise, it is also compatible with radiant flooring systems or low-temperature convectors (radiators of 45°C - 60°C).

- **SAFETY**

Due to the intrinsic properties of slate the thermal solar panels do not overheat, as the slate itself dissipates the heat.

- **PEACE OF MIND**

THERMOSLATE® is synonymous with peace of mind, as it requires virtually no maintenance. The only recommendation is to check the slate roof annually to verify that there is no breakage or detachment.

Furthermore, our natural slate roofs are guaranteed up to 100 years depending on the selected product.

- **SELF-SUFFICIENCY**

Producing your own renewable energy not only has a positive impact on the planet and the environment, but also on your well-being. THERMOSLATE® can cover between 30% to 70% of your annual energy needs, which translates into a significant reduction in your hot water and heating bills.



# THERMOSLATE® CASE STUDY

## AMAZING BIOCLIMATIC HOME WITH THERMOSLATE® ROOF



Located in Bilhères in Ossau, a beautiful village in the French Pyrenees, this rustic bioclimatic house with a unique layout responds favorably to environmental requirements and blends perfectly with its surroundings.

Jean-Pierre Bourgerie, lead project architect, has successfully combined **natural materials, traditional architecture, and bioclimatic housing.**

In this project, THERMOSLATE® is installed in 10% of the roof, which enables filling of a 500 L hot water tank.

With a longevity lifespan **exceeding 25 years**, it is estimated that the owners of this house **will amortize their investment**



Amortization  
of investment

10 years



Total  
savings

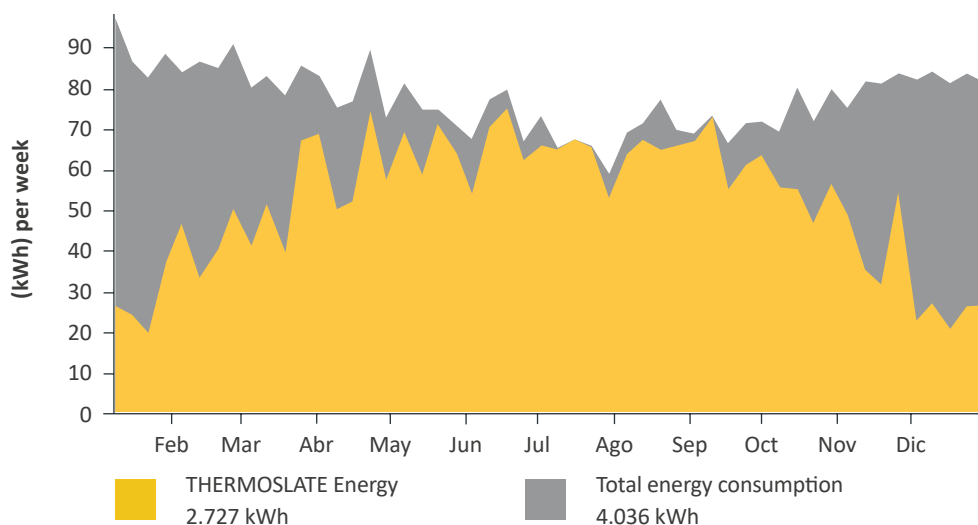
+10K €



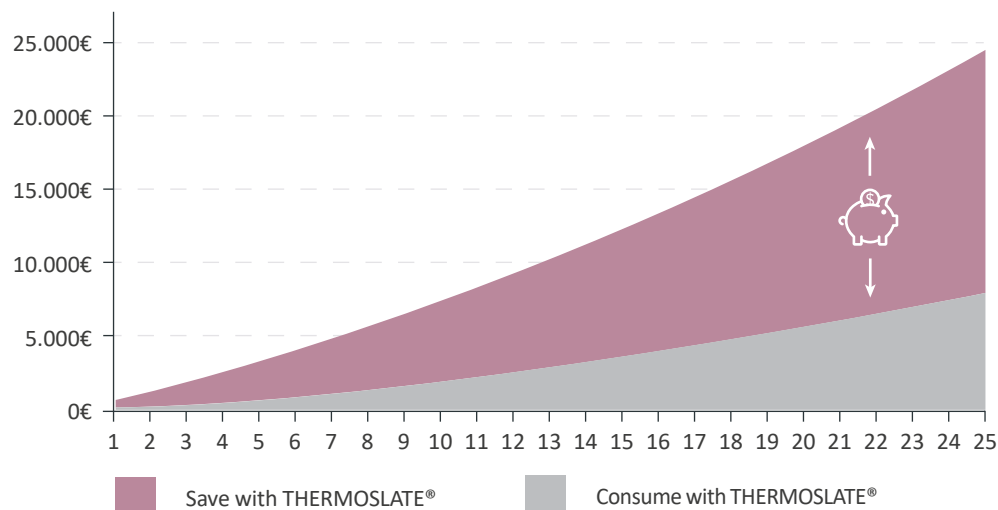
Zero  
Emissions

2 Tn CO<sub>2</sub>

### FRACTION OF SOLAR ENERGY OF TOTAL ENERGY CONSUMPTION



### TOTAL SAVINGS WITH THERMOSLATE®



in thermal panels within a 10 year period, allowing them to save a total of €11,291 whilst preventing emissions of approximately 2 tons of CO<sub>2</sub>.

*“Despite the glass surfaces and altitude of the house, the consumption is controlled which drove us to selecting THERMOSLATE® thermal panels for the home owner”, assured the architect.*









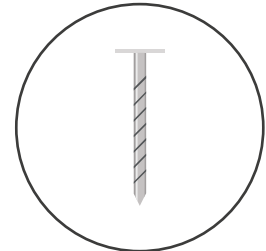
# THERMOSLATE® COLLECTORS

## PITCHED COLLECTOR

- INSTALLATION SYSTEM WITH NAILS

The THERMOSLATE® solar collection system, installed using nails, is perfectly integrated into natural slate roofs with a format of 50x25 cm.

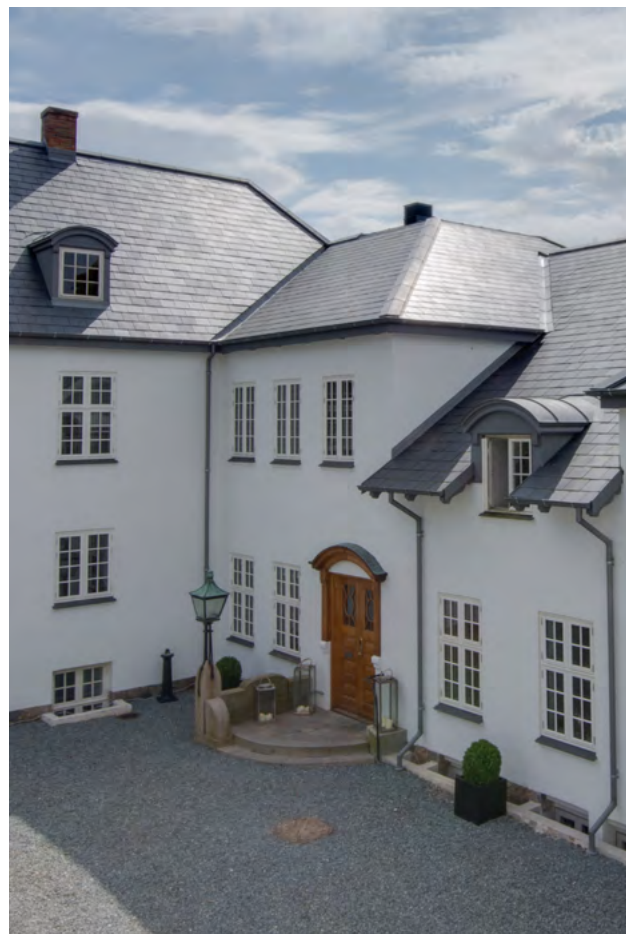
THERMOSLATE® not only maintains the aesthetics and strength of 4 mm thick natural slate, it also becomes an **active element in the building with significant added value.**



### DETAIL OF COLLECTOR WITH NAILS



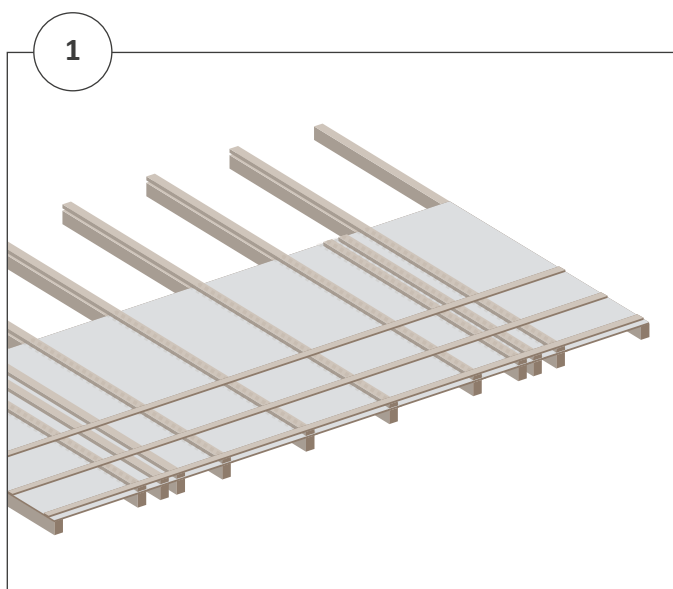
Slate dimensions	50X25 cm
Collector nominal thickness	37 mm
Weight/m <sup>2</sup> (empty)	30 Kg
Quantity of fluid/m <sup>2</sup>	0,56 l



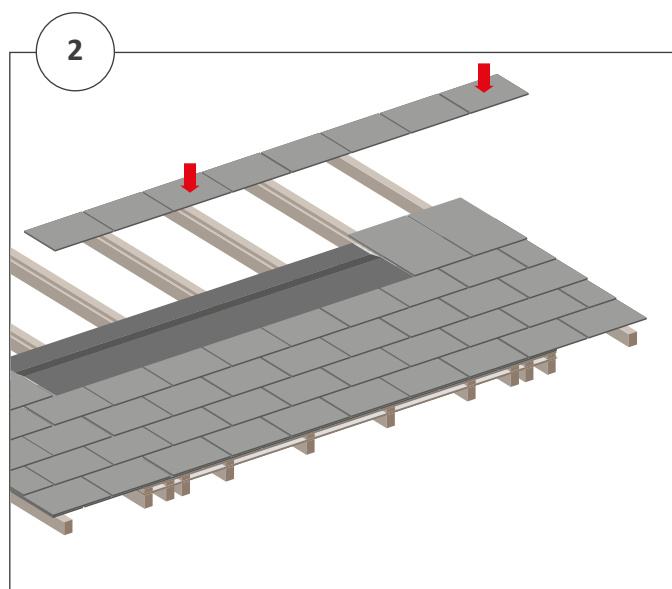


# INSTALLATION PROCESS

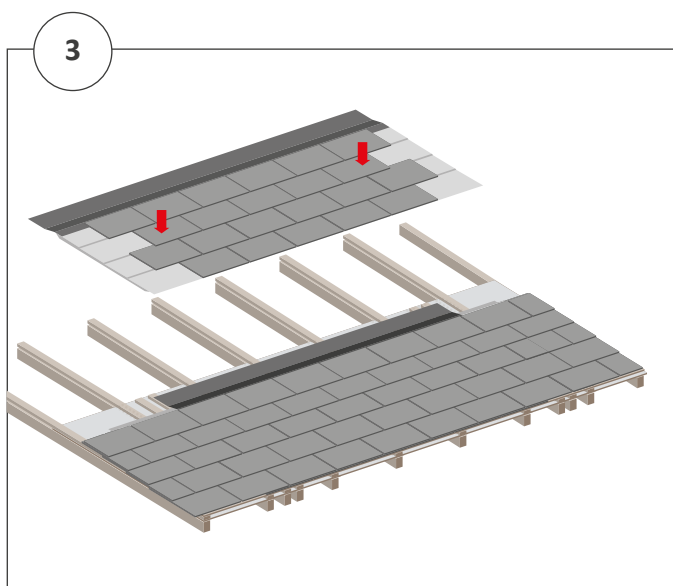
## PITCHED COLLECTOR



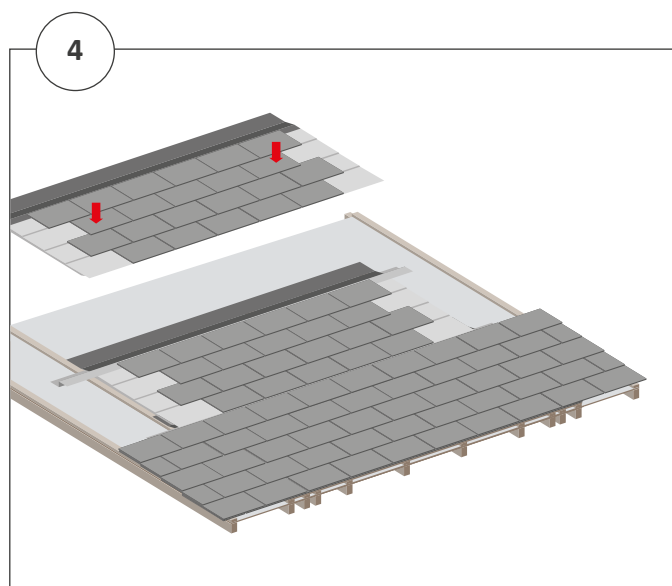
Installation of vertical and horizontal wooden strips



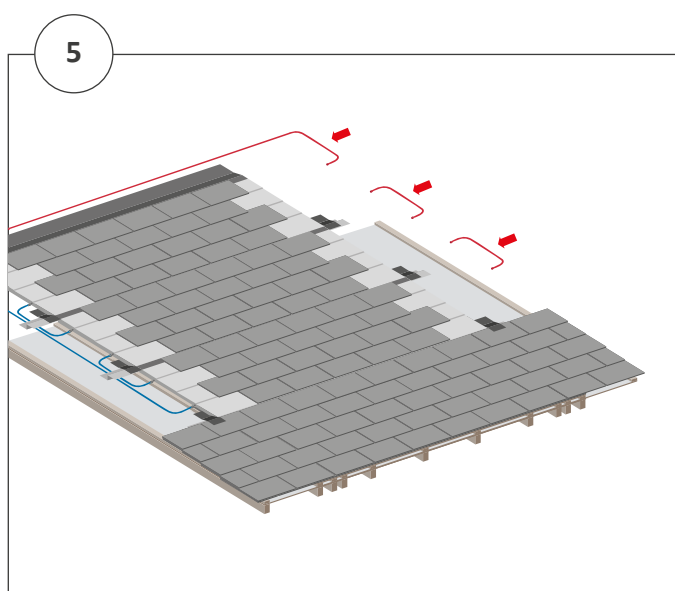
Placement of lower installation piece and start of slate application



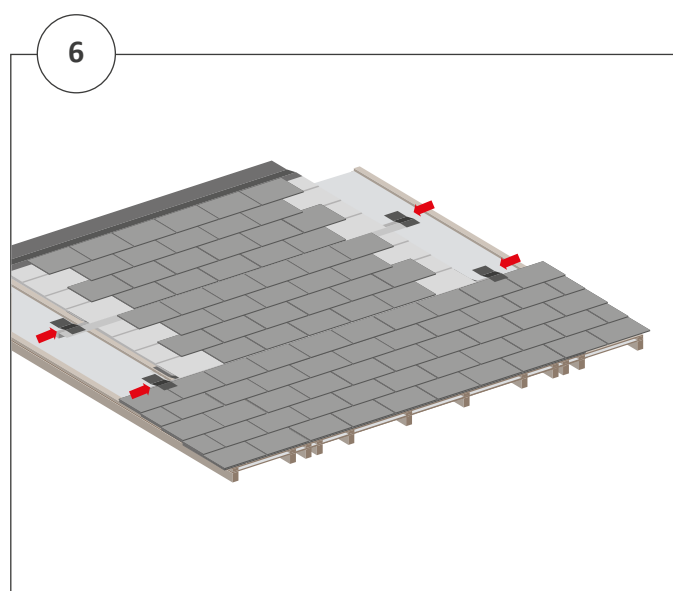
Installation of first battery sensor



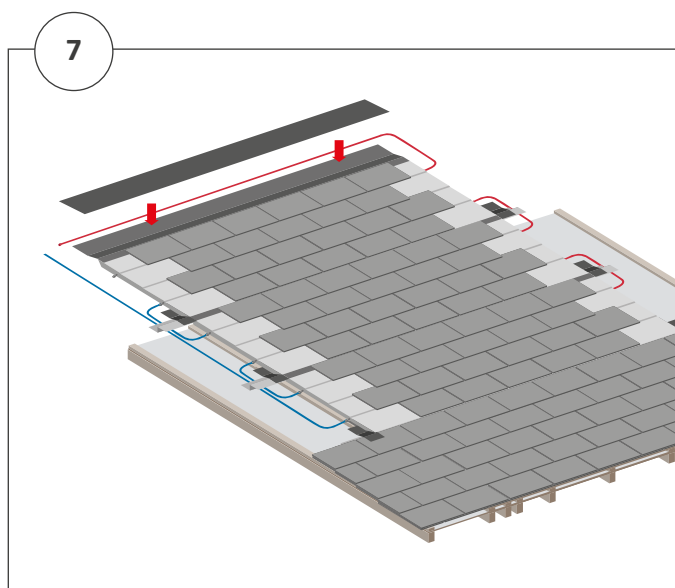
Installation of second and subsequent sensors



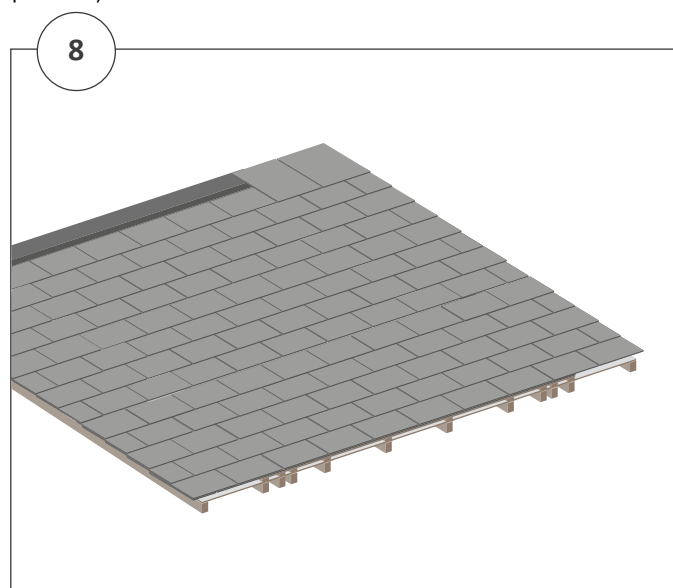
Connection kit between sensors



Weatherproofing kit (side pieces and between panels)



Placement of upper installation piece



Roof completion



# PROJETS THERMOSLATE®

















# THERMOSLATE®, CERTIFIED QUALITY







# CUPA PIZARRAS

The world leader in natural slate

With more than a century of history, CUPA PIZARRAS has become the world leader in the manufacture and marketing of natural slate. A supremacy that is maintained and promoted through our quality policy, constant investment in innovation, and our commitment to sustainable development.

One of every three slate roofs installed around the world is from CUPA PIZARRAS. In our 17 quarries and 22 processing plants, our traditional know-how coexists with the most modern technology.

Our meticulous control of the entire productive process, from extraction to development in warehouses, enables us to produce unique natural slate, recognized globally for its quality.

Currently, we export 98% of our production to more than 60 countries on five continents.

CUPA PIZARRAS is part of CUPA GROUP, comprised of 65 companies engaged in the development of innovative constructive solutions using natural materials.





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