INVISIBLE SOLAR THERMAL
NATURAL SLATE ROOFING
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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.

THERMOSLATE® ADVANTAGES

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.

Start saving energy with the THERMOSLATE® solar thermal collector
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.

<table>
<thead>
<tr>
<th>DURABILITY</th>
<th>ECOLOGY</th>
<th>PERSONALITY</th>
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<tbody>
<tr>
<td>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.</td>
<td>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 an sustainable material with low environmental impact.</td>
<td>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.</td>
</tr>
</tbody>
</table>

• QUALITY

CUPA PIZARRAS, is the world leader in natural slate and has 17 quarries and 22 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

## SUSTAINABILITY

- **THERMOSLATE, NATURAL ENERGY**

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

The THERMOSLATE® solar system enables generation of renewable, environmentally-friendly energy. 1 m² prevents an average of 90 Kg of CO₂ emissions and automatically heats 50 liters of water per day.

![Energy Consumption Chart](http://goo.gl/AgU9Fy)

![Water Consumption Chart](http://goo.gl/AgU9Fy)

![Atmospheric Pollution Chart](http://goo.gl/AgU9Fy)

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.

## 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.

### LIGHT AND STURDY

Although it only weighs 20 Kg/m², 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.

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

**VERSATILITY**

There are two types of systems: flat or pitched collectors; panels are adapted to any type of project, both new construction and rehabilitation, including heritage buildings and protected areas.

With a range adapted to all construction systems, our panels are manufactured in various formats. Can be installed with hooks or nails.

**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.
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 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 CO₂.

“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 HOOKS

THERMOSLATE® solar thermal collectors installed with hooks are perfectly integrated into the roof, using formats with a width of 22 cm and variable length.

The result is the combination of a traditional roof with an innovative solar energy collection system completely integrated under the slate.

DETAIL OF COLLECTOR WITH HOOKS

Slate dimensions 32x22 - 35x22 - 40x22 cm
Collector nominal thickness 37 mm
Weight/m² (empty) 24,5 Kg
Quantity of fluid/m² 0,45 l

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/m² (empty) 30 Kg
Quantity of fluid/m² 0,56 l
INSTALLATION PROCESS
PITCHED COLLECTOR

1. Installation of vertical and horizontal wooden strips
2. Placement of lower installation piece and start of slate application
3. Installation of first battery sensor
4. Installation of second and subsequent sensors
5. Connection kit between sensors
6. Weatherproofing kit (side pieces and between panels)
7. Placement of upper installation piece
8. Roof completion
The solar thermal collector has been developed to adapt to any outdoor surface and requires no special waterproofing. Our flat collector is perfect for all types of flat roofs, terraces and facades and offers an exclusive, elegant natural slate finish.

THERMOSLATE® maintains the aesthetics and strength of natural slate, whilst being an active feature in the construction which adds significant value.

This solar thermal solution is ideal for any domestic trafficable outdoor surface (suitable to walk on) and offers the sophisticated, contemporary style characteristic of natural slate.

### DETAIL OF FLAT COLLECTOR

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
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</thead>
<tbody>
<tr>
<td>Slate dimensions</td>
<td>40x20 cm</td>
</tr>
<tr>
<td>Collector nominal thickness</td>
<td>35 mm</td>
</tr>
<tr>
<td>Weight/m² (empty)</td>
<td>21 Kg</td>
</tr>
<tr>
<td>Quantity of fluid/m²</td>
<td>0.44 l</td>
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</tbody>
</table>

### INSTALLATION PROCESS

1. Installation of support profiles for panels
2. Installation of support profiles for installation pieces
3. Installation of insulation plates
4. Installation of first battery sensors
5. Installation of second battery sensors
6. Placement of installation pieces
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 16 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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