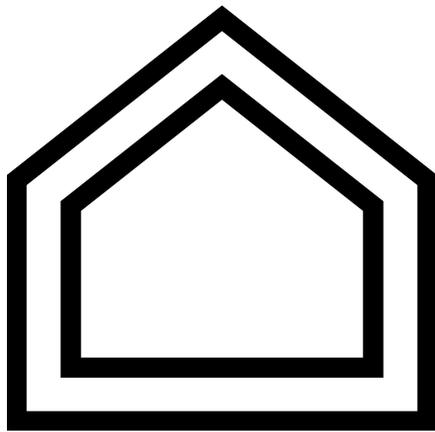




**CELENIT**

NATURAL INSULATORS

**BUILDING | CONSTRUCTION**



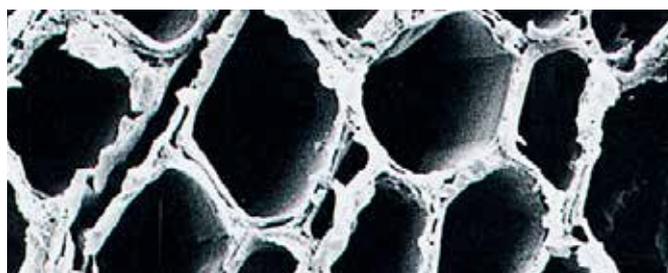


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**BUILDING|CONSTRUCTION**  
products provide excellent thermal and acoustic insulation. Thanks to the wood-cement agglomeration and the production process, they guarantee particular solidity and resistance, giving the buildings features that protect against atmospheric agents, fire, noise, temperature fluctuations and molds, for a sustainable design.





## CELENIT. Natural by nature

Eco-friendly solutions for thermal and acoustic insulation

The CELENIT mission is to provide the best thermal and sound insulation solutions with natural panels that respect human health and the environment. In order to be deemed natural, ecofriendly and sustainable, a thermal acoustic insulation product must comply with many conditions and certifications that concern:

- Raw materials and the distance between their sources
- No danger to human health and the environment
- The production process from the energy standpoint
- Emissions and health
- Any work scrap recycling and disposal

For all these reasons, CELENIT panels can be used in projects that require building sustainability certificates such as Leed, SBtool, SB100, and Breeam.

The designer, builder, retailer or final customer who choose CELENIT products makes the right choice and can count on the support of a company that has been committed to combining technical research with the well-being of people and nature for more than 50 years.

## What is CELENIT

Mineralized fir wood wool bound with Portland cement

CELENIT is a natural and sustainable insulating material, made only with natural materials: wood, Portland cement, marble dust and water. In fact, it uses fir wood from sustainably managed forests (PEFC™ or FSC® certificate). CELENIT products are not harmful for human health and the environment and the low energy production process creates limited emissions into the atmosphere (ANAB-ICEA and natureplus certificate). It uses recycled materials such as calcium carbonate, which is the residual dust of marble processing (ICEA certificate). Finally, the raw materials are close to the production establishment (regional material).

CELENIT boards are made up of wood wool and mineral binders, mainly Portland cement and marble dust. Fibers are mineralized, a treatment, which, while retaining the mechanical properties of wood, blocks the process of biological deterioration, making the fibers perfectly inert and increasing the level of resistance. Fibers are then coated with Portland cement and bound together under pressure to form a stable, resistant, compact and durable structure.



# Natural products for energy efficient buildings

CELENIT panels have provided insulation solutions for the construction industry for over 50 years, ensuring an eco-compatible and thermal-acoustic insulation by improving interior conditions in our buildings. Wood and cement panels were the first industrial insulation materials used in buildings and their versatility lends them to several applications.

Born as panels for the insulation of concrete castings and the correction of thermal bridges, over the years they have proved excellent for insulating the casing with high performance up to becoming indispensable in the field of bioconstruction and design according to sustainability protocols.

## INSULATION IN TRADITIONAL BUILDING

For CELENIT, building insulation means designing our “third skin”. Sensitivity is a key factor in the designer’s choice of the best product for end users.

Thanks to the myriad advantages and technical features, CELENIT is used in all insulation solutions, both in newly built traditional buildings and the recovery of existing ones, as well as in innovative building products. There are multiple applications: vertical partitions, roofs, the upper surface and the soffit of floors and internal partitions.

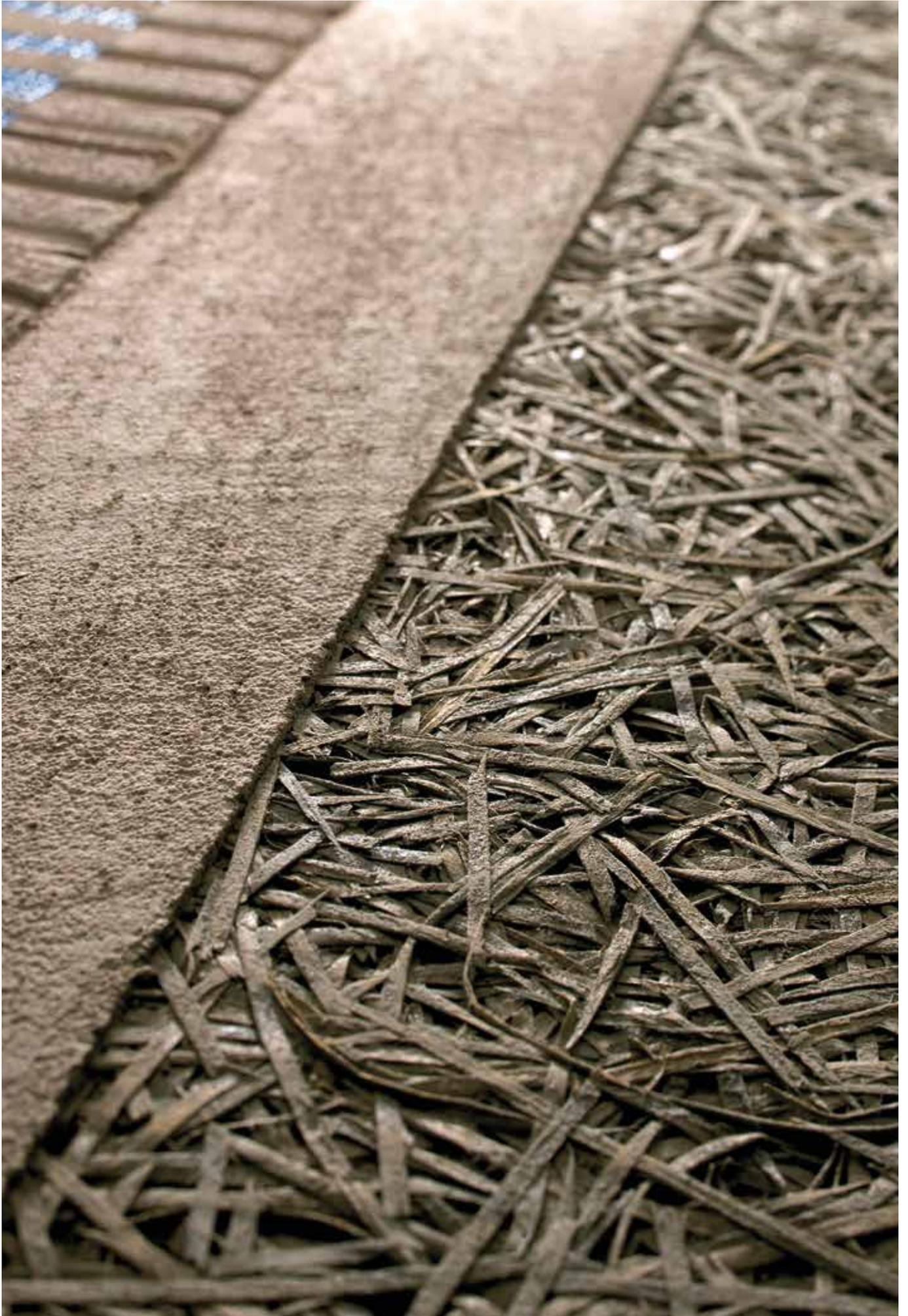
## EXISTING BUILDING RENOVATION

Increasing building energy efficiency is a great way to reduce CO<sub>2</sub> emissions in the air and is thus essential for the health of our environment. An investment that must be made not only for us, but also for future generations. Furthermore, it is an opportunity for market growth, considering that existent buildings are obsolete from the energy standpoint. CELENIT has created specific solutions to improve energy efficiency that concern roofing, perimeter walls, partitions and floors. CELENIT solutions are not only technically reliable but also reduce the annoyances of traditional renovation to a minimum.

## INNOVATIVE BUILDING

Prefabricated timber and metal frame houses offer great advantages in terms of insulation, breathability, construction speed and low environmental impact. However, as they are light structures, they have problems of summer thermal insulation, sound insulation, fire and humidity protection that must be carefully taken into account during the design phase and opportunely dealt with. CELENIT panels are ideal insulators for these types of structures, ensuring total protection over time and greatly increasing their efficiency and durability.







# **BUILDING|CONSTRUCTION products are excellent thermal and acoustic insulation for building enclosure and partitions, in order to obtain maximum living comfort.**



### **Thermal inertia**

Mass and specific heat define CELENIT as the best insulation for the summer.

Buildings are subject to temperature excursions, therefore their thermal inertia and insulation properties are important. CELENIT, thanks to its mass and specific heat, can accumulate heat 20 times more than other common insulating materials. In fact, it guarantees optimal thermal lag and heat attenuation, in particular to light structures.



### **Thermal insulation**

Universal combinations with wood wool for excellent insulation performance.

The good thermal insulation performance of wood wool boards combined with the excellent thermal conductivity of laminated wood fiber and rock wool ensure compliance with any thermal insulation requirements in all climatic zones.



### **Acoustic insulation**

Nature, porosity and elasticity characterize CELENIT for soundproofing.

The characteristics of CELENIT panels, such as mass, porous structure, alveolar with open cells, low elastic modulus and internal absorption effect make the product very suitable to reduce background noise (sound absorption) and to shield sound transmissions (sound insulation).



### **Humidity protection**

CELENIT, completely insensitive to water and frost, for the protection of the insulation package.

This characteristic is due to the Portland cement that entirely coats the wood fibres, making them resistant to water and avoiding any separation in case of frost. The boards do not swell or disintegrate in case of humidity. CELENIT panels also act as hygrometric regulators: they absorb excessive humidity and give it back when normal conditions are restored, without undergoing any deformations.





**Breathability**

CELENIT is totally breathable and allows natural vapor migration.

Its natural porous open cell composition, allows total permeability to water vapor diffusion: they ensure pleasurable dry conditions, allowing the excessive water vapor in the rooms or in the building structure to migrate outwards, avoiding the accumulation of humidity and the formation of mold, thus keeping the building dry and healthy.



**Fire protection**

Planning that ensures the safety of users in case of fire is crucial.

In crowded public places, fire safety must be designed very carefully in order to avoid risk to people's lives and damage to the goods. Wood wool panels are classified in fire reaction A2-s1,d0 and B-s1,d0. Furthermore, the fire resistance values of false ceilings can reach 60 minutes of fire resistance (EI60 certificate), maintaining its aesthetic appearance and acoustic qualities.



**Sustainability and eco-compatibility**

Panels certified by ANAB-ICEA and natureplus for product and production process sustainability.

The raw materials that compose eco-friendly CELENIT boards are: wood from sustainably managed forests (PEFC™ or FSC® certified); Portland cement and calcium carbonate residue of marble to form the percentage of recycled material (ICEA certified). The production process involves low resource consumption and low emissions. CELENIT panels can therefore contribute to the evaluation of the sustainability of buildings through certification protocols.



**Technical reliability**

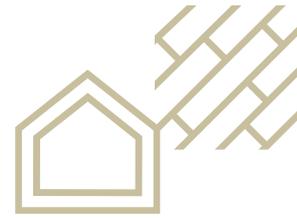
Mineralization is the secret for total protection of unlimited durability.

The fiber is impregnated with mineralizing and fireproofing substances, which together with the action of Portland cement silicates, protect the wood fibres from any biological, chemical or rain/moisture action. The carbonation of the lime in the cement improves the life span of the product. CELENIT is a material that guarantees total protection and an unlimited life span.





# Solutions



## Thermal insulation

From the external or internal insulation, on a traditional or prefabricated structure (wood houses, steel structures) to bio-ecological coverings for wood and reinforced concrete roofs, in order to guarantee maximum insulation performance.



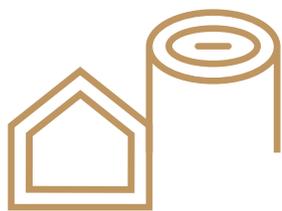
## Acoustic insulation

The acoustic design of the building can be easily realized with the adoption of technical solutions that are certified by manufacturers.



## Concrete insulation

The perfect adhesion between CELENIT boards and concrete permits applying the boards as permanent formwork for concrete casting, in order to guarantee maximum insulation performance and fast installation.



## Wood buildings

Building with wood paying particular attention to the housing design means building energy-efficient, durable, fast-moving and environmentally friendly buildings.



## Metal frame buildings

Dry technology with steel structures is an interesting opportunity to achieve high-performance buildings in very short time.



# Thermal insulation

When designing thermal insulation, thermal resistance should not be the only consideration. Other correlated insulation characteristics must be taken into account for great living comfort.

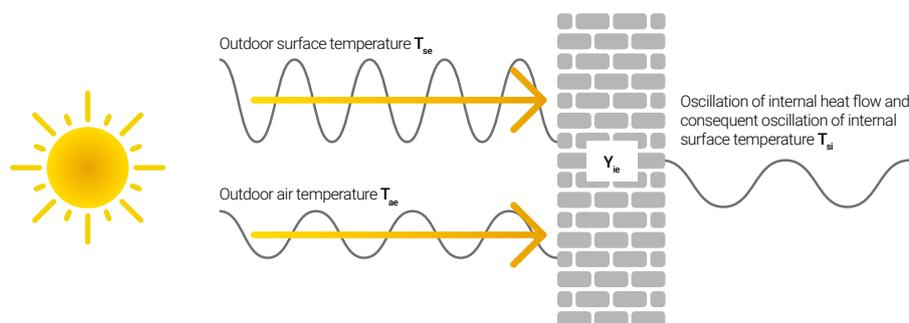
From the external or internal insulation, on a traditional or prefabricated structure (wood houses, steel structures) to bio-ecological coverings for wood and reinforced concrete roofs, CELENIT offers high-performance solutions with eco-friendly materials that have very good thermal conductivity and thermal inertia for excellent winter insulation and above all summer heat protection.

A good insulation of the casing must adequately meet the different thermal variations between winter and summer regimes, guaranteeing users thermal comfort. At the same time, sound insulation parameters must be respected, in order to not be disturbed by outside noise or adjacent units. CELENIT panels have high specific heat and high density thanks to the wood and Portland cement agglomerate.

Therefore, they reach excellent thermal inertia values, which provide excellent attenuation and phase shift performance, lowering and delaying temperature swings inside the rooms during summer.

CELENIT panels, thanks to the high breathability of the materials, allow the correct outward migration of steam. This avoids any form of condensation and mold, ensuring excellent health conditions and indoor air quality. Using natural insulating panels, with excellent breathability, and carefully studying the stratigraphy will ensure the structure a longer life and users a healthy indoor environment.

The enclosure must also satisfy safety requirements, have high mechanical strength, protect the structure against fire hazards and possible damages due to excessive humidity or accidental damage. Finally, considering the economic investment, it is appropriate to guarantee the durability and maintenance of performance over time.



## Temperatures oscillation of opaque structures

A structure with adequate periodic thermal transmittance, phase lag and attenuation values, can withstand the effects of external surface temperature oscillations due to solar radiation and external air temperature.

To obtain opaque structures that have a good inertia during the summer, the

parameters to be considered for each layer of the structure and for the insulating layers are:

- DENSITY  $\rho$  [kg/m<sup>3</sup>]
- SPECIFIC HEAT  $c_p$  [J/kgK]
- THICKNESS  $th$  [m]
- CONDUCTIVITY  $\lambda$  [W/mK]





# Acoustic insulation

CELENIT offers a wide range of acoustic insulation certified solutions, fruit of an extensive experimental research campaign carried out at the acoustic laboratories.

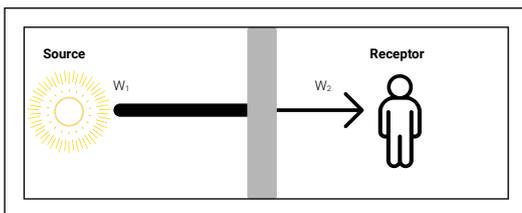
The acoustic design of the building can be easily realized with the adoption of technical solutions that are certified by manufacturers in order to deal with the acoustic problems of the partitions between habitable rooms, technical rooms and residential units.

Certified Celenit solutions give a definitive response to the acoustic insulation problems of internal and external walls. Noise coming from outside, adjacent homes or even from different areas in the same home can cause discomfort and bother the occupants. In particular, it can disrupt sleep or privacy. Therefore, critical points must be analyzed in order to try to eliminate noise by using certified materials and solutions. CELENIT offers certified insulating solutions for partitions between apartments with a **sound insulation index**

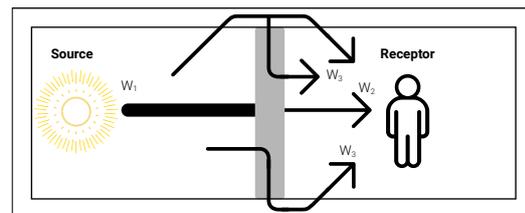
**( $R_w$ ) up to 70 dB.** The tests cover different construction technologies: traditional brick partitions, Poroton blocks, aerated concrete blocks, wooden and steel framing partitions. With regard to the sound insulation of the perimeter wall or roofs, the sound insulation index of the different elements composing the building must be evaluated, in particular the walls, roof, windows and doors, and then a calculation must be made that also takes the building geometry into account. CELENIT provides certified stratigraphy for perimeter walls and roofs, which guarantees excellent sound-insulating performance.

In the download area of the website [www.celenit.com](http://www.celenit.com) you can download the abacus and the certificates of the stratigraphies tested at the acoustic laboratories of the University of Padua. It's a good support for designers to have the choice of suitable certified solutions to achieve acoustic requirements, tested in the acoustic laboratories according to European standards.

## SOUNDPROOFING POWER (R)



## APPARENT SOUNDPROOFING POWER (R')



$W_1$  - Sound power level affecting the wall  
 $W_2$  - Sound power level transmitted by the wall  
 $W_3$  - Sound power level transmitted laterally through the structures





# Concrete insulation

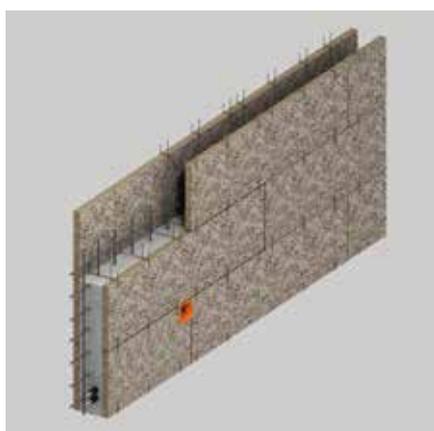
Building with concrete castings during the work is a rationalization of building yard works that has been known for a long time thanks to the unquestionable advantages it can offer.

The elements manufactured in this way are simultaneously structures and closures, they can incorporate plants and they can directly receive the finish. The perfect adhesion between CELENIT boards and concrete permits applying the boards as permanent formwork for concrete casting. In this way, reinforced concrete, slabs, pillars and beams can be casted directly on CELENIT panels.

The combination of the construction system with concrete castings and wood wool panels as permanent formwork makes it possible to realize structures with thermal insulation, thermal inertia, acoustic insulation, and fire protection, therefore able to guarantee living comfort, energy savings, economy for construction costs and site management. Once the concrete has hardened, the boards will form a single monolithic block together with the concrete. The wood wool panels are suitable for the fire protection of structural elements in reinforced concrete. In fact, they act as a heat shield, substantially increasing the fire resistance of the structures due to the insulating properties of the material. Classified in Euroclass A2-s1, d0 and B-s1, d0, they remain unchanged for a long time under the direct action of flames due to the protective effect of the mineral component.



## STEEL BRACKETS SYSTEM



## STRUTS AND SPACERS



## MODULAR FORMWORK





# Wood buildings

Light buildings with high living comfort: wood buildings are characterized by their excellent energy efficiency, with reduced external wall thickness.

The two main building typologies are structures in plywood boards and framed structures. Both require a thermal-acoustic insulation that increases their durability, protecting the building from biological decay.

CELENIT technical solution for plywood walls is an external insulation made with CELENIT F2/C or CELENIT L2/C panels that combine wood wool and cement with wood fibre or rock wool, and subsequent plaster finish. In timber frame structures the insulation is a combination of a low density and low conductivity wood fibres panel, protected by the external insulation made up of CELENIT N/C panels that are an excellent plaster background and increase the inertia of the entire building.

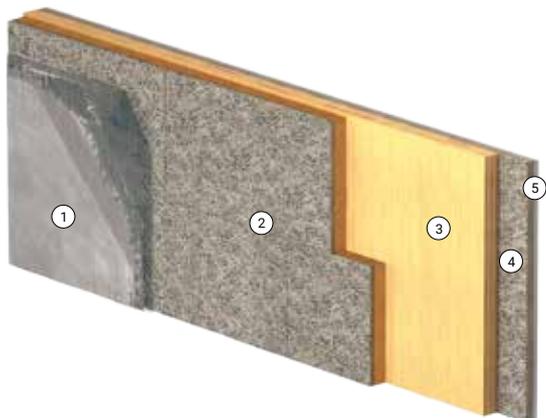
It should be remembered that the efficacy of CELENIT external insulation also extends to the summer.

In fact, thanks to the high density and specific heat of the mineralised wood wool, the heat wave is attenuated, limiting internal heating. Thermal inertia can be increased by adding an internal layer of CELENIT N panels with the additional advantage of being able to carve the panels to place power lines. CELENIT N panels offer better mechanical resistance than classic plasterboard finish. Wall, floor and facing elements can be totally or partially prefabricated in the factory and installed on-site.



**CROSS LAMINATED TIMBER WALL**

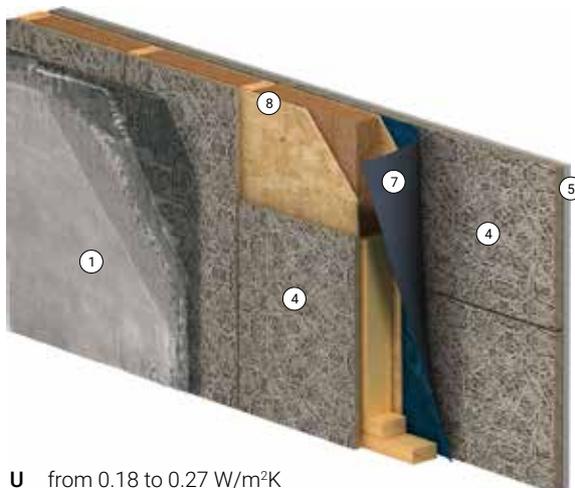
external wall



**U** from 0.19 to 0.33 W/m<sup>2</sup>K  
**Y<sub>ie</sub>** from 0.02 to 0.08 W/m<sup>2</sup>K  
**Φ** from 16h 00' to 11h 44'

**TIMBER FRAME WALL**

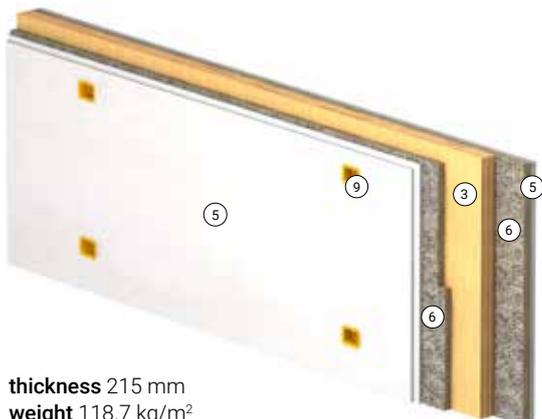
external wall



**U** from 0.18 to 0.27 W/m<sup>2</sup>K  
**Y<sub>ie</sub>** from 0.05 to 0.10 W/m<sup>2</sup>K  
**Φ** from 12h 29' to 9h 56'

**CROSS LAMINATED TIMBER WALL**

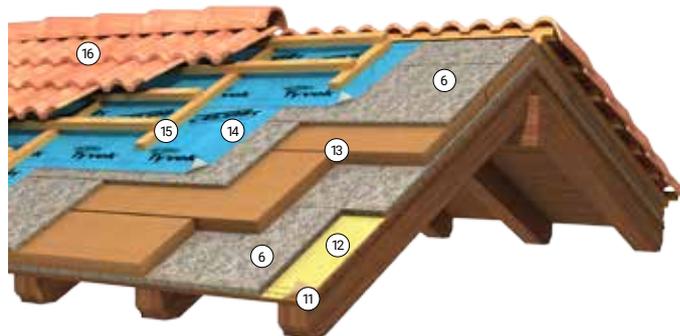
partition wall 56 dB



**thickness** 215 mm  
**weight** 118.7 kg/m<sup>2</sup>  
**R<sub>w</sub>** = 56 dB  
 certificate nr. 468 del 18/08/2008

**WOODEN PITCHED ROOF**

with external insulation



**U** from 0.18 to 0.30 W/m<sup>2</sup>K  
**Y<sub>ie</sub>** from 0.03 to 0.12 W/m<sup>2</sup>K  
**Φ** from 15h 57' to 10h 27'

**PLYWOOD BOARDS**

partition wall 61 dB



**thickness** 265 mm  
**weight** 146.2 kg/m<sup>2</sup>  
**R<sub>w</sub>** = 61 dB  
 certificate nr. 460 of 18/08/2008

**Key**

- U** thermal transmittance
- Y<sub>ie</sub>** periodic thermal transmittance
- Φ** phase lag
- R<sub>w</sub>** evaluation index of the soundproofing power

- 1.** Plaster, th. 15 mm
- 2.** CELENIT F2/C or CELENIT L2/C
- 3.** Cross laminated timber, th. 85 mm
- 4.** CELENIT N/C
- 5.** Plasterboards, th. 12.5+12.5 mm
- 6.** CELENIT N
- 7.** Vapour barrier  
KLÖBER SEPA® FORTE
- 8.** Framed structure:  
OSB th. 15 mm, wood fibers  
or rock wool 50 kg/m<sup>3</sup>,  
OSB th. 15 mm
- 9.** Electrical boxes
- 10.** Cross laminated timber, th. 135 mm
- 11.** Matchboard
- 12.** Vapour barrier  
KLÖBER WALLINT® T3
- 13.** Wood fibers, 160 kg/m<sup>3</sup>
- 14.** Breathable roof membranes  
DUPONT™ TYVEK® PRO o  
DUPONT™ TYVEK® ENERCOR o  
KLÖBER PERMO EASY H
- 15.** Ventilation, th. 50 mm
- 16.** Roof covering, th. 20 mm





# Metal frame buildings

Dry technology for high energy efficiency: prefabricated lightweight structures with high performance and quick to install.

The building has the aspect of a typical brick home with the difference that the material used permits significant savings and higher comfort, without neglecting traditional technical qualities. The dry construction system has many advantages over the traditional building technique. Normally, the building is made up of a steel frame that offers light and speedy assembly.

As for the perimeter walls, the external casing is made up of a fibre-cement slab and, moving inwards, a series of layers of metal frames filled and covered with insulation and waterproof membranes. The internal casing is made up of additionally layered insulation material such as rock wool or wood fibres, a vapour control membrane and plasterboard finishing.

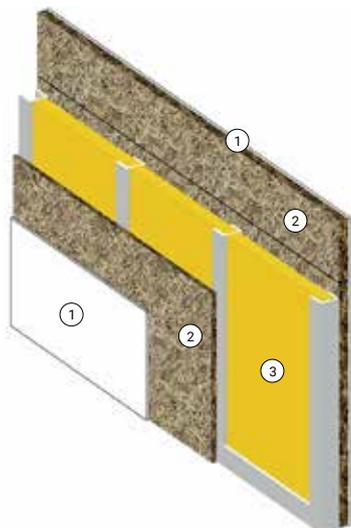
Wood wool panels like CELENIT N are inserted between the metal frames to provide sound insulation and thermal lag to the lightweight structure.

The same concept is applicable to the roof system where the frame is filled with light insulation material while, both the extrados and intrados is insulated with CELENIT N high density boards in continuity to prevent the roof overheating which, in addition to discomfort, generates considerable air conditioning costs.

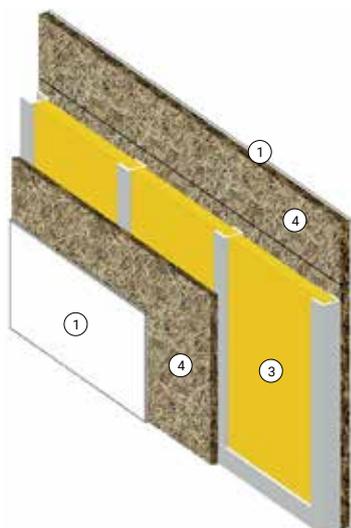


**METAL STRUCTURE**

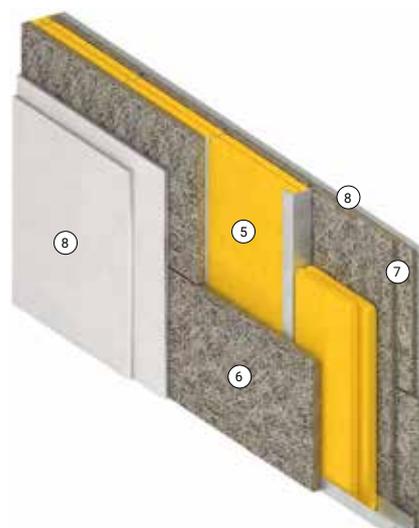
partition walls



**thickness** 155 mm  
**weight** 54.3 kg/m<sup>2</sup>  
**R<sub>w</sub>** = 59 dB  
 certificate nr. 91 of 03/12/2001



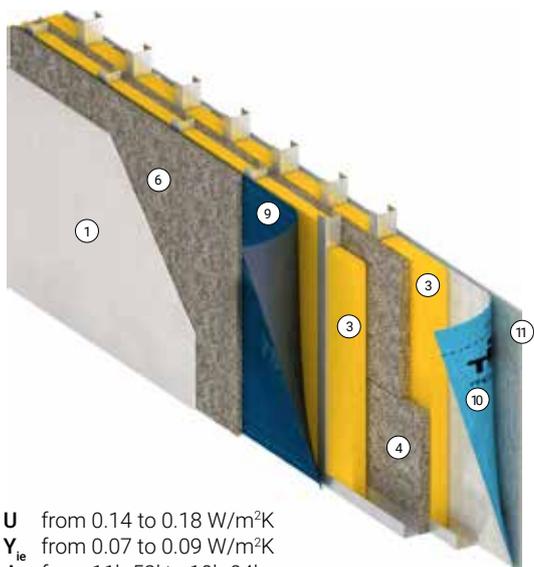
**thickness** 205 mm  
**weight** 65 kg/m<sup>2</sup>  
**R<sub>w</sub>** = 61 dB  
 certificate nr. 93 of 03/12/2001



**thickness** 235 mm  
**weight** 87.4 kg/m<sup>2</sup>  
**R<sub>w</sub>** = 65 dB  
 certificate nr. 331 of 20/11/2006

**METAL STRUCTURE**

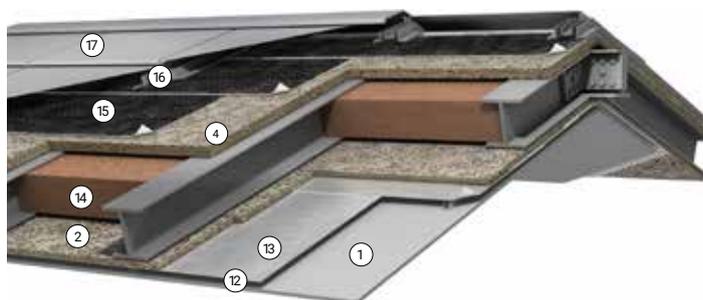
external wall



**U** from 0.14 to 0.18 W/m<sup>2</sup>K  
**Y<sub>ie</sub>** from 0.07 to 0.09 W/m<sup>2</sup>K  
**Φ** from 11h 52' to 10h 04'

**METAL STRUCTURE ROOF**

with insulation between the beams



**U** from 0.18 to 0.23 W/m<sup>2</sup>K  
**Y<sub>ie</sub>** from 0.07 to 0.12 W/m<sup>2</sup>K  
**Φ** from 10h 05' to 8h 04'

1. Plasterboards, th. 12,5 mm
2. CELENIT N, th. 25 mm
3. Rock wool, th. 70 mm
4. CELENIT N, th. 50 mm
5. Rock wool, th. 40+40 mm
6. CELENIT N, sp. 35 mm

7. CELENIT N, th. 20+20 mm
8. Plasterboards, th. 12.5+12.5
9. mm KLÖBER SEPA® FORTE
10. Breathable roof membranes  
DUPONT™ TYVEK® PRO o  
KLÖBER PERMO EASY

11. Fibro-cement board
12. Air-gap, th. 27 mm
13. Vapour barrier  
DUPONT™ AIRGUARD®  
REFLECTIVE

14. Wood fibres or  
rock wool, 50 kg/m<sup>3</sup>  
Breathable roof membranes
15. DUPONT™ TYVEK® METAL
16. Ventilation, th. 50 mm
17. Metallic roof covering

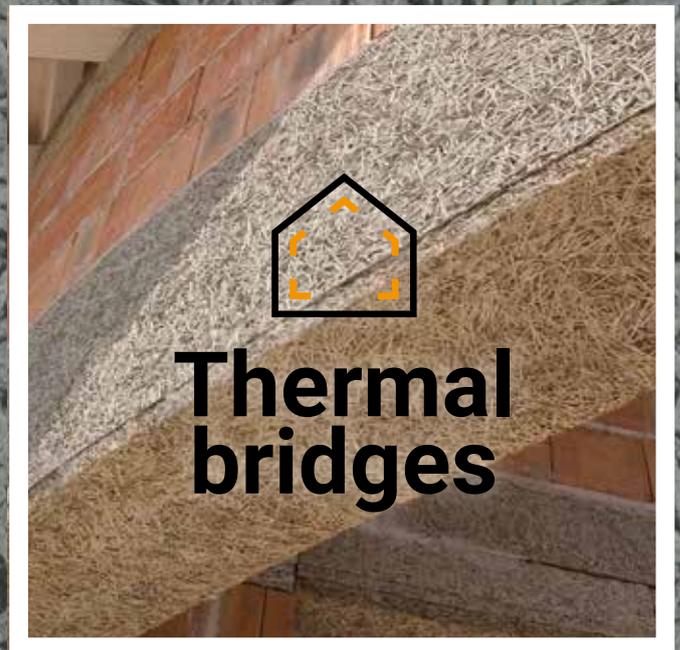
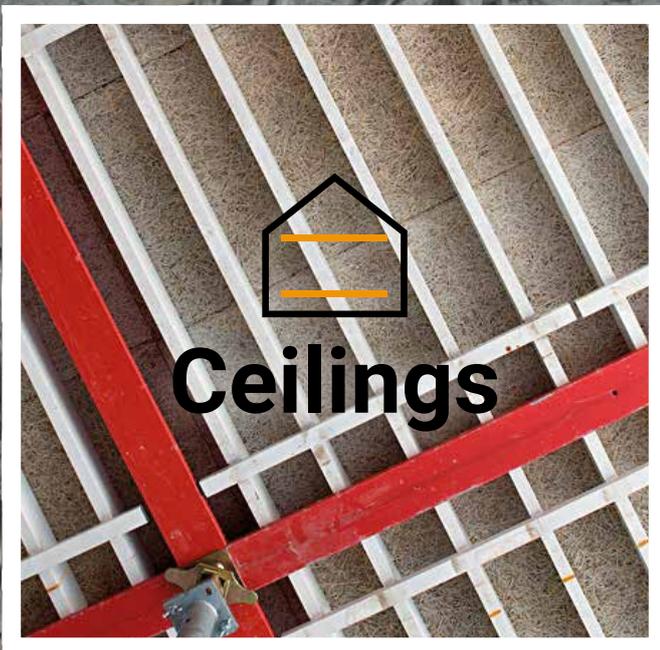
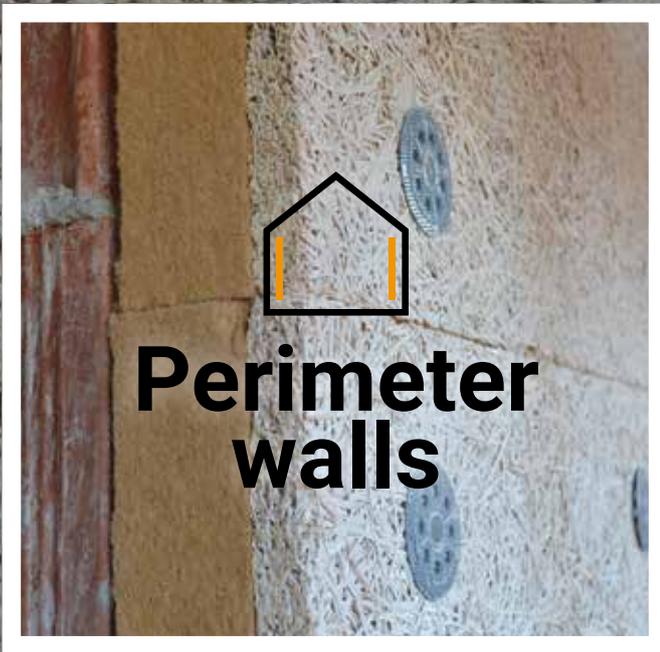
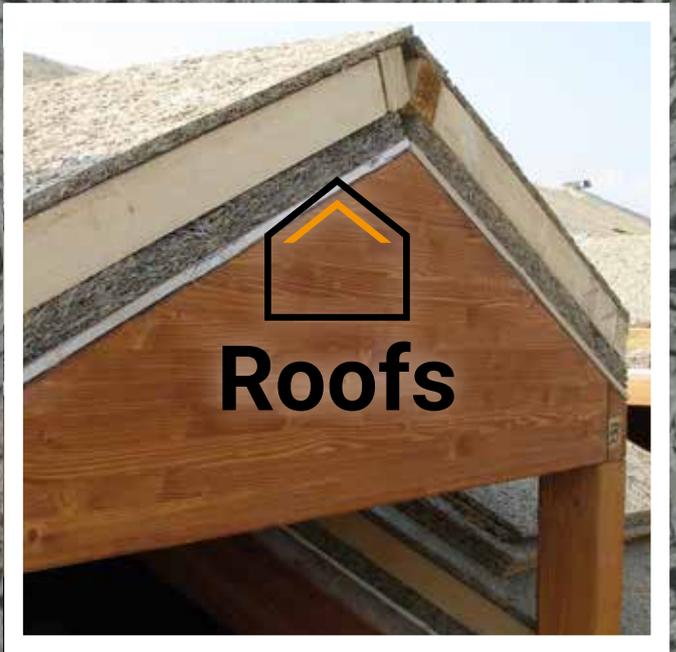
**Key**

- U** thermal transmittance
- Y<sub>ie</sub>** thermal transmittance periodica
- Φ** phase lag
- R<sub>w</sub>** evaluation index of the soundproofing power





# APPLICATIONS





# Roofs

Insulation solutions for great living comfort.

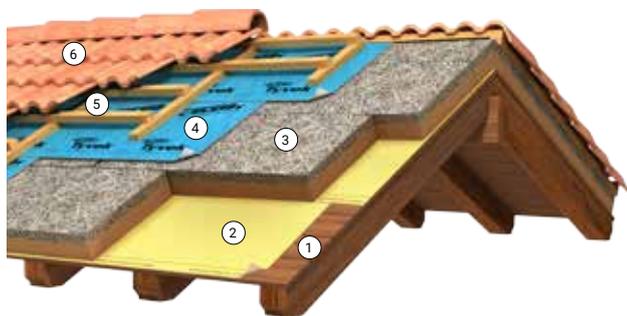
Protection from heat in summer is as important as thermal insulation in winter. Insulation that adequately mitigates and delays the entry of the thermal wave permits great energy savings. A good roof insulation must also protect from outdoor noise, the risk of fire and possible damage from water infiltrations or excessive humidity. Moreover, the insulating material must not have an impact on people's health or the environment. The materials must be long-lasting and guarantee adequate resistance to loads.

Good design and planning must consider all these requisites and identify complete insulation solutions with reliable and certified materials that provide maximum living comfort, making up for the investment over time thanks to the energy savings.

The solutions that CELENIT proposes can be used on sloped roofs, either ventilated or not, and on flat roofs, guaranteeing maximum living comfort, above all in the case of inhabited attics. If the attic is not inhabited, the floor of the top ceiling must be insulated in order to limit thermal dispersion from the heated roofs below.

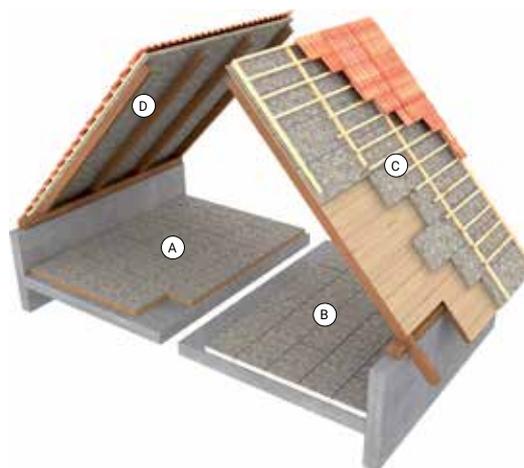
CELENIT panels, thanks to their mass and specific heat, have a considerable capacity for thermal accumulation, guaranteeing high insulation performance, with a thermal wave phase shift that can exceed 14 hours.

## WOODEN PITCHED ROOF with external insulation



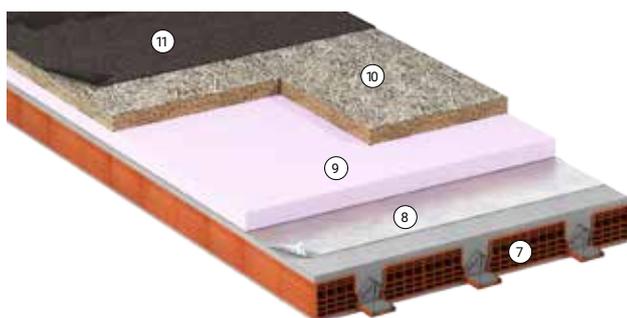
U from 0.18 to 0,30 W/m<sup>2</sup>K  
 Y<sub>ie</sub> from 0.04 to 0,15 W/m<sup>2</sup>K  
 Φ from 13h 49' to 9h 15'

## LAST FLOOR INSULATION inhabited attics



Key  
 U thermal transmittance  
 Y<sub>ie</sub> periodic thermal transmittance  
 Φ phase lag

## REINFORCED CONCRETE STRUCTURES extrados insulation for flat roofs



U from 0.17 to 0.29 W/m<sup>2</sup>K  
 Y<sub>ie</sub> from 0.01 to 0.04 W/m<sup>2</sup>K  
 Φ from 15h 48' to 13h 40'

- 1. Matchboard, th. 25 mm
  - 2. Vapour barrier  
KLÖBER WALLINT® T3
  - 3. CELENIT F2 or CELENIT L2
  - 4. Breathable roof membranes  
DUPONT™ TYVEK® PRO or  
DUPONT™ TYVEK® ENERCOR or  
KLÖBER PERMO EASY H
  - 5. Ventilation, th. 50 mm
  - 6. Roof covering, th. 20 mm
  - 7. Reinforced concrete ceiling,  
th. 220+40 mm and plaster
  - 8. Vapour barrier DUPONT™  
AIRGUARD® REFLECTIVE
  - 9. Insulation with XPS
  - 10. CELENIT N
  - 11. Waterproofing membrane, th.  
4 mm
- A. Last floor insulation with  
CELENIT F2/C, CELENIT L2/C,  
CELENIT F2 or CELENIT L2
  - B. Last floor insulation with  
CELENIT N, CELENIT P2 or  
CELENIT G2
  - C. External insulation of sloped  
roof with CELENIT N, CELENIT  
F2, CELENIT L2, CELENIT L3,  
CELENIT P3 or CELENIT G3  
with exposed matchboard
  - D. External insulation of sloped roof  
with CELENIT N, CELENIT AB,  
CELENIT R or CELENIT RAB  
in place of the matchboard

## APPLICATIONS



# Perimeter walls

High performance protection from the cold, heat, noise, impact, and the elements while respecting the environment and health.

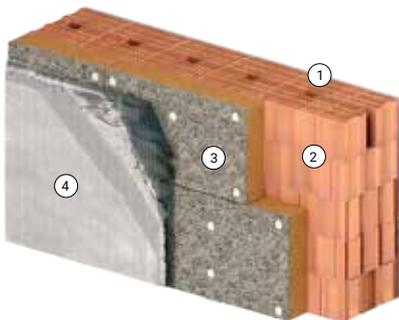
CELENIT offers high-performance insulation solutions that use natural materials with good conductivity and thermal energy accumulation, guaranteeing excellent insulation in winter and comfortable conditions in summer. In order to fit traditional structures with an exterior insulation finishing system, Celenit proposes installing composite panels in mineralized wood fiber bonded with Portland cement, combined with CELENIT F2/C wood fiber or CELENIT L2/C rock wool, glued, doweled and directly refinished. The resulting surface provides total protection: highly resistant with an almost unlimited duration, insensitive to humidity, with high thermal-acoustic, thermal lag and attenuation performance, as well as impact and fire resistant, for excellent and total comfort.

Wood houses are characterized by excellent energy efficiency, with less thick external walls, therefore a thermal-acoustic insulation that extends duration and prevents biodegradation must be used.

For both plywood boards and framed structures, CELENIT technical solutions provide for an exterior insulation system with a wet or dry finish and an internal dry lining with CELENIT N/C panels that contribute to further increasing thermal inertia, also permitting the creation of ductwork and electrical boxes directly inside the insulation and it provides greater mechanical resistance compared to the classic plating on metal structures.

### POROTON® BLOCK WALLS

external insulation



**U** from 0.19 to 0.34 W/m<sup>2</sup>K  
**Y<sub>ie</sub>** from 0.01 to 0.02 W/m<sup>2</sup>K  
**Φ** from 21h 09' to 16h 56'

### PAPOROTON® BLOCK WALLS

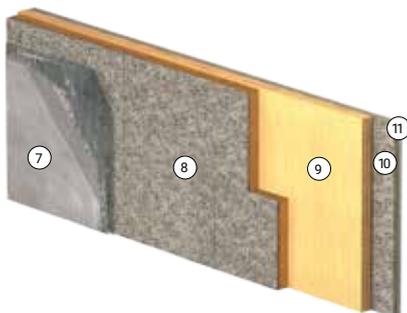
internal insulation



**U** from 0.23 to 0.40 W/m<sup>2</sup>K  
**Y<sub>ie</sub>** from 0.01 to 0.03 W/m<sup>2</sup>K  
**Φ** from 16h 57' to 15h 14'

### WOOD STRUCTURE

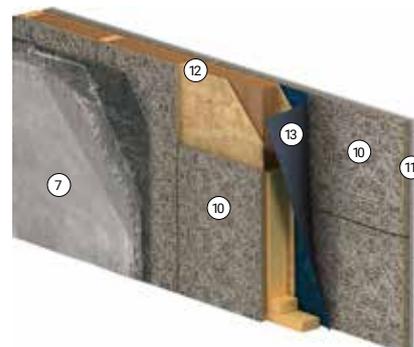
cross laminated timber



**U** from 0.19 to 0.33 W/m<sup>2</sup>K  
**Y<sub>ie</sub>** from 0.02 to 0.08 W/m<sup>2</sup>K  
**Φ** from 16h to 11h 44'

### WOOD STRUCTURE

framed structure



**U** from 0.18 to 0.27 W/m<sup>2</sup>K  
**Y<sub>ie</sub>** from 0.05 to 0.10 W/m<sup>2</sup>K  
**Φ** from 12h 29' to 9h 56'

#### Key

**U** thermal transmittance  
**Y<sub>ie</sub>** periodic thermal transmittance  
**Φ** phase lag

1. Plaster, th. 15 mm
2. Poroton®, th. 300 mm
3. CELENIT F2/C or CELENIT L2/C
4. Plaster, th. 15 mm
5. CELENIT E3
6. Plasterboards, th. 12.5 mm
7. Plaster, th. 15 mm
8. CELENIT F2/C or CELENIT L2/C
9. Cross laminated timber, th. 85 mm
10. CELENIT N/C
11. Plasterboards, th. 12.5+12.5 mm
12. Framed structure:  
 OSB th. 15 mm, wood fibres  
 or rock wool 50 kg/m<sup>3</sup>,  
 OSB th. 15 mm
13. KLÖBER SEPA® FORTE





# Partition walls

Certified Celenit solutions give a definitive response to the acoustic insulation problems of internal and external walls..

Features that make Celenit stand out from light insulators, as well as an efficacious soundproof system, are: elevated mass, open-cell structure, low resistance to bending, and high internal muffling factor.

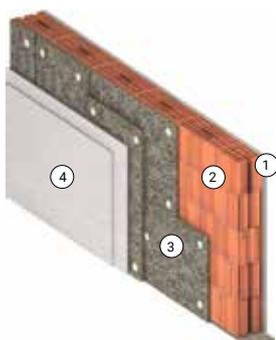
The excellent acoustic performance is reinforced by a vast database of sound tests, fruit of an extensive experimental research campaign carried out by CELENIT at the acoustic laboratories of the Department of Technical Physics at the University of Padua, which has generated a collection of thermal-acoustic insulation systems, all equipped with certifications of their soundproofing power: an easy to consult abacus, useful for comparing the various types of solutions and identifying the one that performs best in order to intervene both

in the design phase for a new construction and in renovation work. Internal walls often have great acoustic insulation problems and normally do not reach the values set by laws in force.

Using CELENIT panels can increase sound insulation, even at low and medium frequencies, which prove to be the most disturbing. In fact, they come from music and conversation, which are the most typical noises in homes. CELENIT panels permit easily meeting the requirements set forth by the regulations in force, even for the most severe conditions. They can easily be put on the wall, dry, fastened with wall plugs and covered with plasterboard sheets, in order to guarantee rapid installation, including, above all, inhabited places.

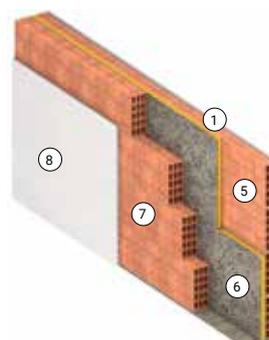
! Four examples of partitions with certified soundproofing power are illustrated here. You can download the complete database of the certified solutions at [www.celenit.com](http://www.celenit.com)

## POROTON® BLOCK WALLS



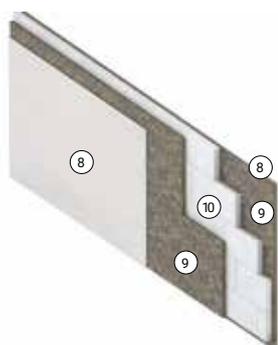
**thickness** 288  
**weight** 301.6 kg/m<sup>2</sup>  
**R<sub>w</sub> = 62 dB**  
 certificate nr. 759 del 23/12/2011

## BRICK WALL



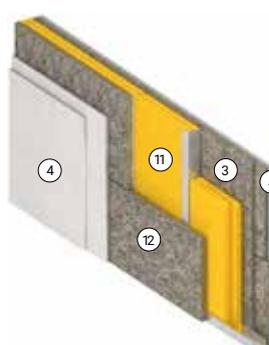
**thickness** 270 mm  
**weight** 231.1 kg/m<sup>2</sup>  
**R<sub>w</sub> = 55 dB**  
 certificate nr. 302 del 20/11/2006

## CELLULAR CONCRETE WALL



**thickness** 230 mm  
**weight** 134.9 kg/m<sup>2</sup>  
**R<sub>w</sub> = 60 dB**  
 certificate nr. 605 of 28/09/2009

## METAL STRUCTURE WALL



**thickness** 235 mm  
**weight** 87.4 kg/m<sup>2</sup>  
**R<sub>w</sub> = 65 dB**  
 certificate nr. 331 of 20/11/2006

### Key

R<sub>w</sub> evaluation index of the soundproofing power

1. Plaster, th. 15 mm
2. Poroton®, th. 200 mm
3. CELENIT N, th. 20+20
4. Plasterboards, th. 12.5+12.5 mm
5. Brick, th. 80
6. CELENIT L3, th. 35
7. Brick, th.120
8. Plasterboards, th. 12.5 mm
9. CELENIT N, th. 20+20
10. Cellular concrete, th. 80 mm
11. Rock wool, th. 40+40 mm
12. CELENIT N, th. 35





# Ceilings insulation

Thermal protection, fire protection and sound absorption quality on the lower surface of horizontal partitions.

Insulating the ceilings of cold, unheated rooms, such as garages, cellars, ancillary rooms and technical rooms, is fundamentally important, not only to ensure thermal comfort and the absence of condensation for the benefit of heated rooms, but above all because other essential characteristics that floors and horizontal partitions must have need to be considered. For example, safety when in contact with flames becomes essential to ensure the fire resistance of structures, especially when it comes to sensitive places like garages and technical rooms. Ensuring natural steam migration, especially in sensitive environments even with excessive moisture, becomes important for health, the covering appearance and the environment.

Finally, it is important to consider the aspect of acoustic comfort: a high degree of sound absorption helps avoid annoying rumbles and echoes that would reproduce the noises, creating situations of discomfort.

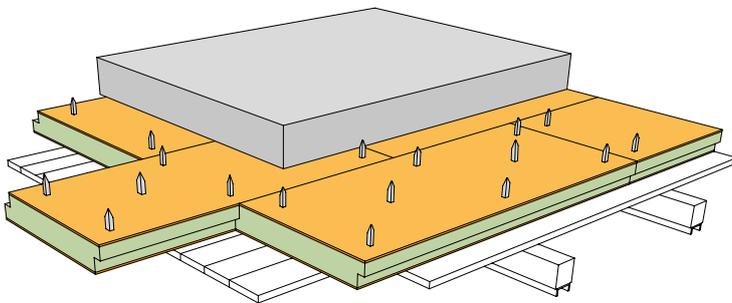
There are two main applications:

**PERMANENT FORMWORK SYSTEM** with slab casted on three-layer CELENIT composite boards. The two outer layers of wood wool allow maximum adhesion and sound absorption, while the internal layer of rock wool or polystyrene ensures thermal insulation.

**MECHANICAL FIXING SYSTEM** with two-layer CELENIT composite boards for existing floors. The outer layer of wood wool ensures sound absorption qualities and also maximum strength to protect the insulating layer.

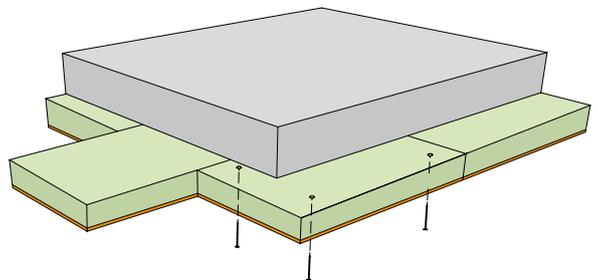
## PERMANENT FORMWORK WITH VISIBLE ANCHORS

Suitable for laying three-layer CELENIT composite boards: CELENIT L3AB - CELENIT L3AB/A2 - CELENIT G3AB



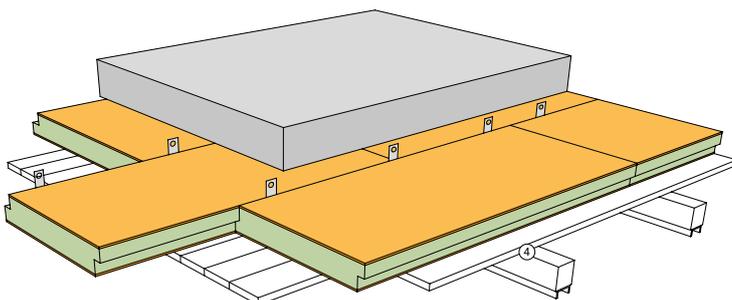
## MECHANICAL FIXING

Suitable for laying two-layer CELENIT composite boards: CELENIT L2AB - CELENIT L2AB/A2 - CELENIT G2AB



## PERMANENT FORMWORK WITH HIDDEN CLIPS

Suitable for laying three-layer CELENIT composite boards: CELENIT L3AB - CELENIT L3AB/A2 - CELENIT G3AB



## PERMANENT FORMWORK WITH FRAME SUPPORT

Suitable for laying wood wool CELENIT boards: CELENIT N - CELENIT AB - CELENIT AB/A2





# Thermal bridges

Heat loss through the structural elements of a building, known as thermal bridging, can reach and even exceed 20% of total thermal loss and causes internal condensation, stains and mold growth, which result in air quality problems and building deterioration.

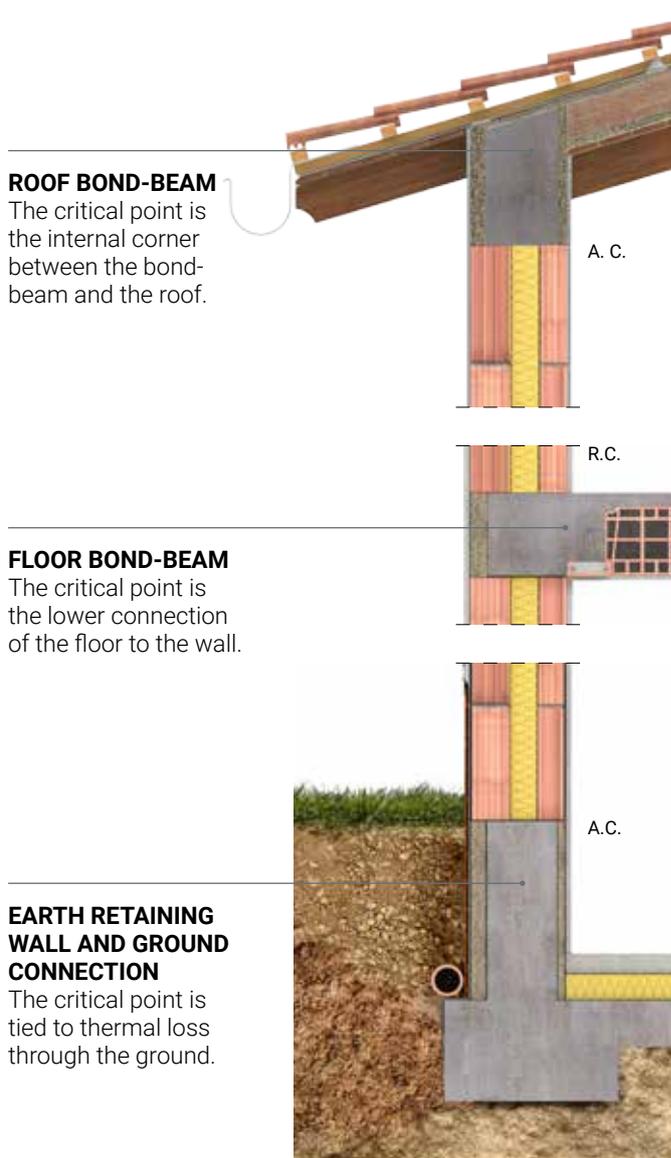
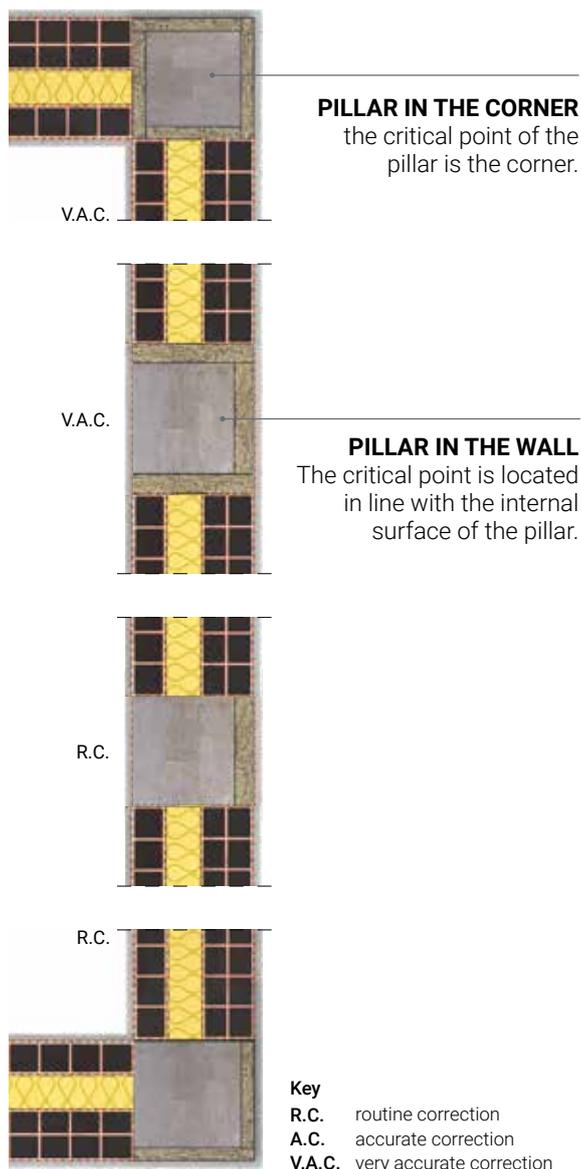
Thermal bridges are mainly found in structures with materials that transmit energy in different ways, through materials with higher thermal conductivity values. For example, in the cases of columns or edge beams in reinforced concrete in contact with insulated walls or roofs.

Thermal bridging generally leads to two types of problems:

- **HYGIENIC-HEALTH** problems because it can allow surface condensation and mold to form inside homes;

- **ENERGY-ENVIRONMENTAL** problems since a thermal bridge causes greater thermal loss and therefore greater energy consumption.

Thermal bridges are therefore junctions that must always be analyzed and corrected.



# Our ranges



## CELENIT

Boards made of mineralized fir wood wool bound with grey Portland cement.

Products: **N - N/C - S - R - RAB**



## CELENIT FIBRE

Boards made of mineralized wood wool bound with grey Portland cement coupled to a layer of wood fibres.

Products: **F2 - F2/C**



## CELENIT STYR

Boards made of one or two layers of mineralized wood wool bound with grey or white Portland cement coupled to a layer of polystyrene.

Products: **G2AB - G3AB - G2 - P2  
G3 - P3 - E3**



## CELENIT MINERAL

Boards made of two or three layers of mineralized fir wood wool and bound with white or grey Portland cement couple to a layer of rock wool.

Products: **L2 - L2/C - L3 - L3/C  
L2AB - L3AB**



## CELENIT MINERAL A2

Boards made of one or two layers of mineralized wood wool bound with grey or white Portland cement coupled to a layer of rock wool.

Products: **L2AB/A2 - L2ABE/A2  
L3AB/A2**

Range

# CELENIT

Boards made of mineralized fir wood wool bound with grey Portland cement.



## CELENIT N

Insulation board, consisting of mineralized fir wood wool (3 mm wide) bound with grey Portland cement. Euroclass B-s1, d0. It complies with EN 13168 and EN 13964 standards.

**Thickness**

15 - 20 - 25 - 30 - 35 - 40 - 50 - 75 mm

**Dimensions**

2400x600 - 2000x600 - 1200x600 mm

**Declared thermal resistance**

0.20 - 0.30 - 0.35 - 0.45 - 0.50 - 0.60 - 0.75 - 1.15 m<sup>2</sup>K/W

**Declared thermal conductivity**

0.065 W/mK

**Specific heat**

1.81 kJ/kgK

**Water vapour transmission**

5

**Compressive stress at 10% deformation**

≥200 kPa (15-40 mm)

≥150 kPa (50-75 mm)

**Weight**

8.0 - 10.0 - 11.5 - 13.0 - 14.0 - 16.0 - 18.0 - 26.0 kg/m<sup>2</sup>

**Density**

533 - 500 - 460 - 433 - 400 - 400 - 360 - 346 kg/m<sup>3</sup>

**Chloride content**

≤ 0.35%



**APPLICATIONS**

Roofs, external walls, partitions, ceilings, thermal bridges



## CELENIT N/C

Insulation board, specific for external insulation, consisting of mineralized fir wood wool (3 mm wide) bound with grey Portland cement. Euroclass B-s1, d0. It complies with EN 13168 standard.

**Thickness**

25 - 35 - 50 - 75 mm

**Dimensions**

1200x600 - 1000x600 mm

**Declared thermal resistance**

0.35 - 0.50 - 0.75 - 1.15 m<sup>2</sup>K/W



**APPLICATIONS**

External walls insulation



## PRODUCTS

Range

# CELENIT

Boards made of mineralized fir wood wool bound with grey Portland cement.



## CELENIT R

Insulation board, specific for roofing insulation, consisting of mineralized fir wood wool (3 mm wide) bound with grey Portland cement, reinforced with three wooden strips. Euroclass B-s1, d0. It complies with EN 13168 standard.

### Thickness

50 - 75 mm

### Dimensions

2400x600 - 2000x600 mm

### Declared thermal resistance

0.75 - 1.10 m<sup>2</sup>K/W



### APPLICATIONS

Roofs with exposed finish



## CELENIT RAB

Insulation board, specific for roofing insulation, consisting of mineralized thin fir wood wool (2 mm wide) bound with white Portland cement, reinforced with three wooden strips. Euroclass B-s1, d0. It complies with EN 13168 standard.

### Thickness

50 mm

### Dimensions

2400x600 - 2000x600 mm

### Declared thermal resistance

0.70 m<sup>2</sup>K/W



### APPLICATIONS

Roofs with exposed finish



Range

# CELENIT FIBRE

Boards made of mineralized wood wool bound with grey Portland cement coupled to a layer of wood fibres.



## CELENIT F2

Composite board, consisting of a layer of mineralized fir wood wool bound with grey Portland cement, thickness 50 mm, coupled to a layer of wood fibres. Euroclass B-s1, d0. It complies with EN 13168 standard.

**Thickness**

110 - 130 - 150 - 170 - 190 - 210 mm

**Dimensions**

1200x600 mm

**Declared thermal resistance**

2.35 - 2.90 - 3.45 - 4.00 - 4.55 - 5.05 m<sup>2</sup>K/W



**APPLICATIONS**

Sloped roofs



## CELENIT F2/C

Composite board, specific for external insulation covering, consisting of a layer of mineralized fir wood wool bound with grey Portland cement, thickness 25 mm, coupled to a layer of wood fibres. Euroclass E. It complies with EN 13168 standard.

**Thickness**

65 - 85 - 105 - 125 - 145 - 165 - 185 - 205 mm

**Dimensions**

2000x600 mm

**Declared thermal resistance**

1.45 - 2.00 - 2.55 - 3.05 - 3.60 - 4.15 - 4.70 - 5.25 m<sup>2</sup>K/W



**APPLICATIONS**

External walls insulation



## PRODUCTS

Range

# CELENIT STYR

Boards made of one or two layers of mineralized wood wool bound with grey or white Portland cement coupled to a layer of polystyrene.



## CELENIT P2

Composite board, consisting of a layer (thickness 10 mm) of mineralized fir wood wool bound with grey Portland cement coupled to a layer of expanded polystyrene. Euroclass E. It complies with EN 13168 standard.

### Thickness

30 - 40 - 50 - 75 - 100 - 125 - 150 - 175 mm

### Dimensions

2000x600 mm

### Declared thermal resistance

0.65 - 0.90 - 1.15 - 1.85 - 2.50 - 3.15 - 3.80 - 4.45 m<sup>2</sup>K/W



### APPLICATIONS

Inhabited attics insulation (top floor attic)

## CELENIT G2

Composite board, consisting of a layer (thickness 10 mm) of mineralized fir wood wool bound with grey Portland cement coupled to a layer of silver-grey expanded polystyrene. Euroclass E. It complies with EN 13168 standard.

### Thickness

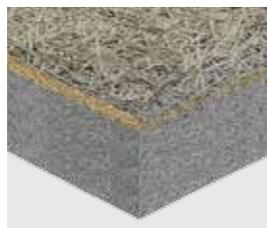
35 - 50 - 75 - 100 - 125 - 150 - 175 mm

### Dimensions

2000x600 mm

### Declared thermal resistance

0.95 - 1.40 - 2.20 - 3.00 - 3.85 - 4.65 - 5.45 m<sup>2</sup>K/W



### APPLICATIONS

Inhabited attics insulation (top floor attic)

## CELENIT P3

Composite board, consisting of two layers (thickness 5 mm each) of mineralized fir wood wool bound with grey Portland cement coupled to an internal layer of expanded polystyrene. Euroclass E. It complies with EN 13168 standard.

### Thickness

20 - 25 - 35 - 50 - 75 - 100 - 125 mm

### Dimensions

2000x600 mm

### Declared thermal resistance

0.40 - 0.50 - 0.80 - 1.15 - 1.85 - 2.50 - 3.15 m<sup>2</sup>K/W



### APPLICATIONS

Thermal bridges correction with permanent formwork system or mechanical fixing, sloped roofs

## CELENIT G3

Composite board, consisting of two layers (thickness 5 mm each) of mineralized fir wood wool bound with grey Portland cement coupled to an internal layer of silver-grey expanded polystyrene. Euroclass E. It complies with EN 13168 standard.

### Thickness

25 - 35 - 50 - 75 - 100 - 125 - 150 - 175 mm

### Dimensions

2000x600 mm

### Declared thermal resistance

0.60 - 0.95 - 1.40 - 2.20 - 3.00 - 3.85 - 4.65 - 5.45 m<sup>2</sup>K/W



### APPLICATIONS

Thermal bridges correction with permanent formwork system or mechanical fixing, sloped roofs



Range

# CELENIT STYR

Boards made of one or two layers of mineralized wood wool bound with grey or white Portland cement coupled to a layer of polystyrene.



## CELENIT G2AB

Composite board, consisting of a layer (thickness 10 mm) of mineralized thin fir wood wool (2 mm wide) bound with white Portland cement coupled to a layer of silver-grey expanded polystyrene. Euroclass E. It complies with EN 13168 standard.

**Thickness**

35 - 50 - 75 - 100 - 125 - 150 - 175 mm

**Dimensions**

2000x600 - 1000x600 mm

**Declared thermal resistance**

0.95 - 1.40 - 2.20 - 3.00 - 3.85 - 4.65 - 5.45 m<sup>2</sup>K/W



**APPLICATIONS**

Ceiling insulation with mechanical fixing

## CELENIT G3AB

Composite board, consisting of two layers (thickness 5 mm each) of mineralized thin fir wood wool (2 mm wide) bound with grey Portland cement coupled to an internal layer of silver-grey expanded polystyrene. Euroclass E. It complies with EN 13168 standard.

**Thickness**

35 - 50 - 75 - 100 - 125 - 150 - 175 mm

**Dimensions**

2000x600 mm

**Declared thermal resistance**

0.95 - 1.40 - 2.20 - 3.00 - 3.85 - 4.65 - 5.45 m<sup>2</sup>K/W



**APPLICATIONS**

Ceiling insulation with permanent formwork system

## CELENIT E3

Composite board, consisting of two layers (thickness 5 mm each) of mineralized fir wood wool bound with grey Portland cement coupled to an internal layer of extruded polystyrene. Euroclass E. It complies with EN 13168 standard.

**Thickness**

35 - 50 - 75 - 100 mm

**Dimensions**

2000x600 mm

**Declared thermal resistance**

0.90 - 1.35 - 2.05 - 2.70 m<sup>2</sup>K/W



**APPLICATIONS**

Perimeter walls, partition walls



## PRODUCTS

Range

# CELENIT MINERAL

Boards made of one or two layers of mineralized wood wool bound with grey or white Portland cement coupled to a layer of rock wool.



## CELENIT L2

Composite board consisting of a layer of mineralized fir wood wool bound with grey Portland cement, thickness 50 mm, coupled to a layer of mineral wool. Euroclass B-s1, d0. It complies with EN 13168 standard.

### Thickness

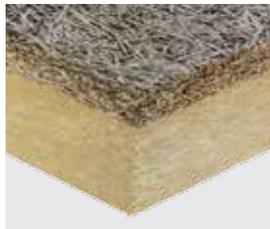
110 - 130 - 150 - 170 - 190 - 210 mm

### Dimensions

1200x600 mm

### Declared thermal resistance

2.35 - 2.85 - 3.40 - 3.90 - 4.45 - 4.95 m<sup>2</sup>K/W



**APPLICATIONS**  
Sloped roofs

## CELENIT L2/C

Composite board, specific for external insulation covering, consisting of a layer of mineralized fir wood wool bound with grey Portland cement, thickness 25 mm, coupled to a layer of mineral wool. Euroclass B-s1, d0. It complies with EN 13168 standard.

### Thickness

65 - 85 - 105 - 125 - 145 - 165 - 185 - 205 mm

### Dimensions

1200x600 mm

### Declared thermal resistance

1.40 - 1.95 - 2.45 - 3.00 - 3.50 - 4.05 - 4.60 - 5.10 m<sup>2</sup>K/W



**APPLICATIONS**  
External walls

## CELENIT L3

Composite board, consisting of two layers (thickness 5 mm each) of mineralized fir wood wool bound with grey Portland cement coupled to an internal layer of high density mineral wool. Euroclass B-s1, d0. It complies with EN 13168 standard.

### Thickness

35 - 50 - 75 - 100 - 125 - 150 - 175 - 200 mm

### Dimensions

2000x600 - 1000x600 mm

### Declared thermal resistance

0.75 - 1.15 - 1.80 - 2.45 - 3.05 - 3.70 - 4.35 - 5.00 m<sup>2</sup>K/W



**APPLICATIONS**  
Sloped roofs, partition walls, ceiling insulation with permanent formwork system

## CELENIT L3/C

Composite board, specific for external insulation covering, consisting of two layers (thickness 5 mm each) of mineralized fir wood wool bound with grey Portland cement coupled to an internal layer of high density mineral wool. Euroclass B-s1, d0. It complies with EN 13168 standard.

### Thickness

50 - 75 - 100 - 125 mm

### Dimensions

1000x600 mm

### Declared thermal resistance

1.15 - 1.80 - 2.45 - 3.05 m<sup>2</sup>K/W



**APPLICATIONS**  
External walls



Range

# CELENIT MINERAL

Boards made of one or two layers of mineralized wood wool bound with grey or white Portland cement coupled to a layer of rock wool.



## CELENIT L2AB

Composite board, consisting of a layer (thickness 10 mm) of mineralized thin fir wood wool (2 mm wide) bound with white Portland cement, coupled to a layer of mineral wool. Euroclass B-s1, d0. It complies with EN 13168 standard.

**Thickness**

50 - 75 - 100 - 125 - 150 - 175 mm

**Dimensions**

1000x600 mm

**Declared thermal resistance**

1.25 - 2.00 - 2.70 - 3.40 - 4.10 - 4.85 m<sup>2</sup>K/W



**APPLICATIONS**

Ceiling insulation with mechanical fixing

## CELENIT L3AB

Composite board, consisting of two layers (thickness 5 mm each) of mineralized thin fir wood wool (2 mm wide) bound with white Portland cement, coupled to an internal layer of high density mineral wool. Euroclass B-s1, d0. It complies with EN 13168 standard.

**Thickness**

35 - 50 - 75 - 100 - 125 - 150 - 175 - 200 mm

**Dimensions**

2000x600 mm

**Declared thermal resistance**

0.75 - 1.15 - 1.80 - 2.45 - 3.05 - 3.70 - 4.35 - 5.00 m<sup>2</sup>K/W



**APPLICATIONS**

Ceiling insulation with permanent formwork system



## PRODUCTS

Range

# CELENIT MINERAL A2

Boards, in Euroclass A2-s1, d0, made of one or two layers of mineralized wood wool bound with white Portland cement and mineral powder coupled to a layer of rock wool.



## CELENIT L2AB/A2

Composite board, consisting of a layer (thickness 10 mm) of mineralized thin fir wood wool (2 mm wide) bound with white Portland cement and mineral powder, coupled to a layer of mineral wool. Euroclass A2-s1, d0. It complies with EN 13168 standard.

### Thickness

50 - 75 - 100 - 125 - 150 - 175 mm

### Dimensions

1000x600 mm

### Declared thermal resistance

1.25 - 1.95 - 2.65 - 3.40 - 4.10 - 4.80 m<sup>2</sup>K/W



#### APPLICATIONS

Ceiling insulation with mechanical fixing

## CELENIT L3AB/A2

Composite board, consisting of two layers (thickness 5 mm each) of mineralized thin fir wood wool (2 mm wide) bound with white Portland cement and mineral powder, coupled to an internal layer of high density mineral wool. Euroclass A2-s1, d0. It complies with EN 13168 standard.

### Thickness

35 - 50 - 75 - 100 - 125 - 150 - 175 - 200 mm

### Dimensions

2000x600 mm

### Declared thermal resistance

0.75 - 1.10 - 1.75 - 2.40 - 3.05 - 3.70 - 4.30 - 4.95 m<sup>2</sup>K/W



#### APPLICATIONS

Ceiling insulation with permanent formwork system

## CELENIT L2ABE/A2

Composite board, consisting of a layer (thickness 10 mm) of mineralized extra-thin fir wood wool (1 mm wide) bound with white Portland cement and mineral powder, coupled to a layer of mineral wool. Euroclass A2-s1, d0. It complies with EN 13168 standard.

### Thickness

50 - 75 - 100 - 125 - 150 - 175 mm

### Dimensions

1000x600 mm

### Declared thermal resistance

1.25 - 1.95 - 2.65 - 3.40 - 4.10 - 4.80 m<sup>2</sup>K/W

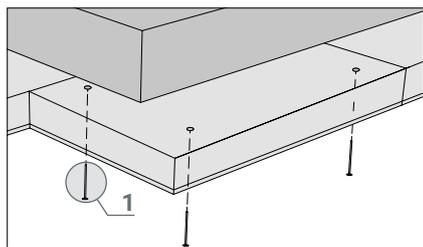


#### APPLICATIONS

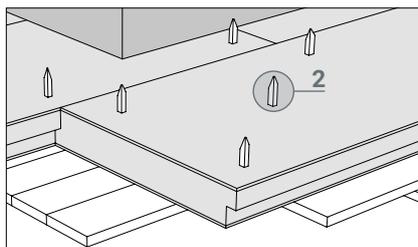
Ceiling insulation with mechanical fixing

# FIXING ACCESSORIES

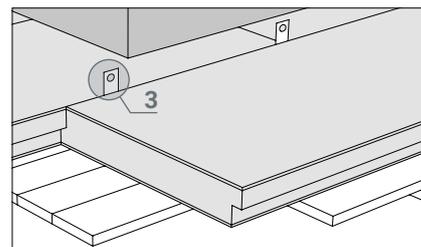
## Concrete structures



Mechanical fixing



Permanent formwork with visible anchors



Permanent formwork with hidden clips



### EJOT DDS-Z

Galvanized steel screw for a fixing of insulating boards to concrete ceilings. **Corrosion resistance classification C1-C3.** Flat head with **white RAL 9002** powder coated.  
Hole diameter 6 mm - Head diameter 24 mm  
Metal insert for fixing the screw: TORX T30



### EJOT DDS

Galvanized steel screw for a fixing of insulating boards to concrete ceilings. Plastic injection molded head with **wood wool structure simulation** (white or beige color)  
Hole diameter 6 mm - Head diameter 25 mm  
Metal insert for fixing the screw: TORX T30



### PLASTIC ANCHORS

Fixing element suitable for **CELENIT G3AB, CELENIT G3, CELENIT P3** and **CELENIT E3** composite boards applied with permanent formwork system.



### METAL ANCHORS

Fixing element suitable for **CELENIT L3, CELENIT L3AB, CELENIT L3AB/A2** and **CELENIT G3AB** composite boards applied with permanent formwork system.



### METAL CLIPS

Fixing element suitable for **CELENIT L3, CELENIT L3AB, CELENIT L3AB/A2** and **CELENIT G3AB** composite boards, with shiplap edges, applied with permanent formwork system.



## REFERENCES



Ceilings insulation



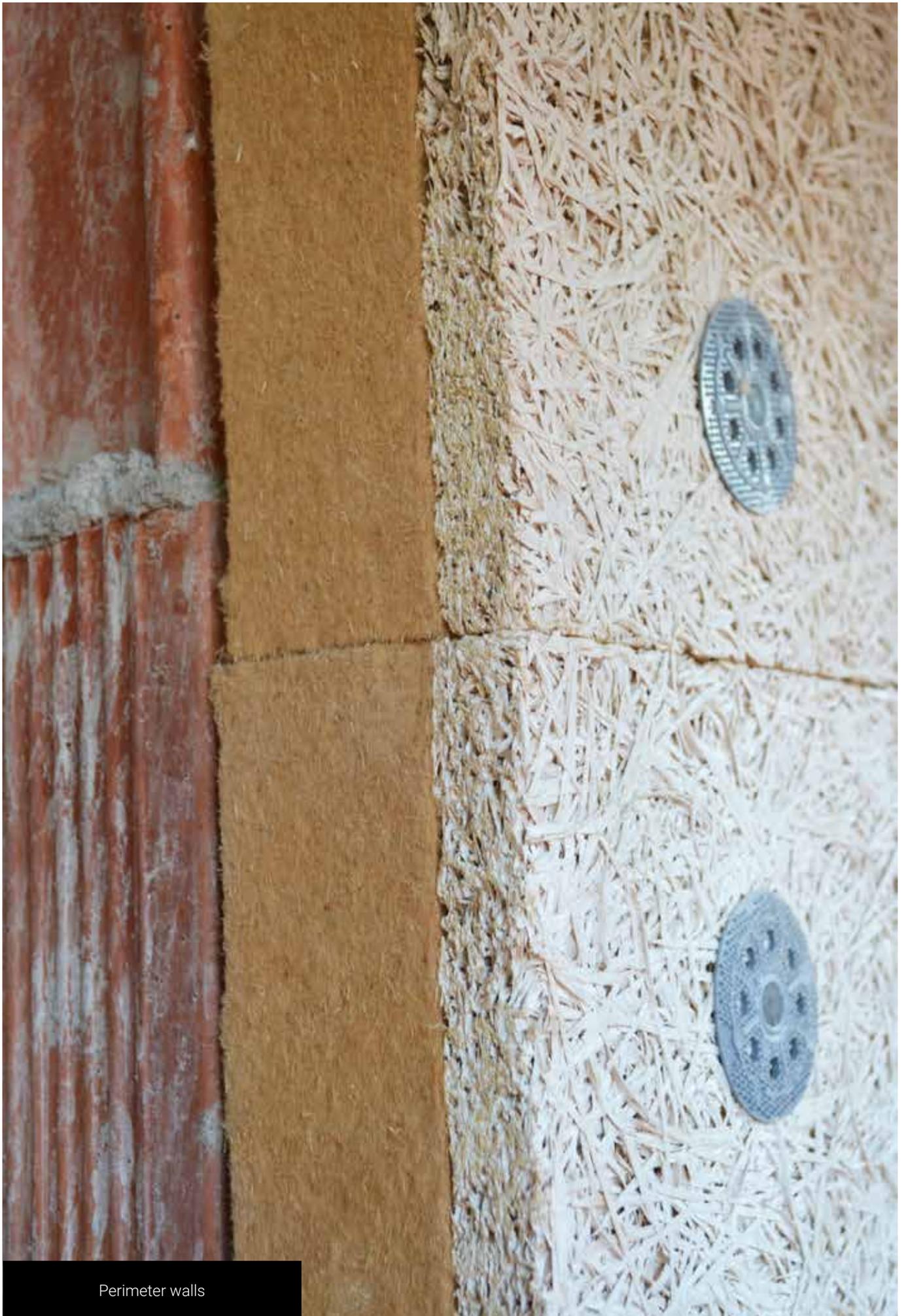
Roofs





Partition walls

## REFERENCES



Perimeter walls





Wood buildings



Thermal bridges

## CREDITS



### CE

CELENIT products are CE marked according to the EN 13168 standard, which specifies requirements for wood wool products used in thermal insulation, and according to the EN 13964 standard, which is the reference for false ceilings.

The Commission Regulation (EU) No. 305/2011 concerning the CE marking of construction states that the manufacturer must draft the Declaration of Performance (DoP) for products falling within the scope of a harmonized standard or if they comply with a European technical evaluation.

CELENIT makes the DoP of each product available in the "download" area at [www.celenit.com](http://www.celenit.com).



THE INTERNATIONAL EPD® SYSTEM  
S-P-00477 [www.environdec.com](http://www.environdec.com)

### EPD®

Environmental Product Declaration which quantifies the environmental performance of a product through appropriate categories of parameters calculated using the Life Cycle Assessment (LCA) method and following the ISO 14040 standard.

Registration No: S-P-00477

Registration date: 2017-05-05

CPC: 314 "Boards and panels"



### ANAB-ICEA

ANAB (National Association of Bio-ecological Architecture) is the most important Italian association in the field of sustainable buildings and it involves professionals and operators around the Italy. The ANAB - CERTIFIED PRODUCT FOR GREEN BUILDING logo identifies monolayer products made by wood wool with a limited environmental impact. CELENIT wood wool panels comply with building material requirements of the most important certification and building evaluation systems and provides a guarantee of the respect for human health and the safety of end-users and workers.

ANAB provides product standards, while ICEA carries out certification activities and tests on materials/production processes.



### NATUREPLUS

The international association for Future-Oriented Building and Accommodation natureplus, has the mission of promoting products for sustainable construction and interior design, assigning a mark of quality that can perfectly meet the sustainability targets in the economic and social sectors. In this way, natureplus contributes to the development of a sustainable building culture throughout Europe.

The natureplus logo identifies products suitable for sustainable building. A natureplus certificate can be downloaded from the CELENIT web site. The certificate indicates all the CELENIT products that are natureplus certified.



The mark of  
responsible forestry  
FSC® C122980

### FSC®

The Association promotes the conservation and the improvement of forest resources all over the world, through the economically sustainable and socially helpful management of the forest, in harmony with the international mission of the Forest Stewardship Council®, FSC®.

In our manufacturing process, all wood wool boards can be made with FSC® certified wood.



### PEFC™

PEFC is one of the main organizations of forestry certifications in the world, and it is an international non-profit, non-governmental organization, dedicated to promoting sustainable forest management. CELENIT complies with all PEFC standards for the production of its wood wool panels. When you see the PEFC certification logo next to a CELENIT product, you know that the wood used in the production process of that product is part of the chain of custody for the preservation of the raw wood material.

All the wood wool panels are manufactured in our production process with PEFC™ certified wood.



### ICEA - RECYCLED MATERIALS

The Ethical and Environmental Certification Institute (ICEA), recognizing the core importance of materials recycling for the growth of a sustainable production and consumption model, developed the "Standards for the certification of products made from recycled materials" meant to reduce the consumption of resources (virgin raw materials, water and energy), increase the quality of recycled materials, minimize emission in the atmosphere, in waters and in the soils, also minimizing any impact on human health.

CELENIT products are certified in accordance with the ICEA standard (ISO 14024). The certificates is available in the download area at [www.celenit.com](http://www.celenit.com) and indicates which products have this attestation.



### SUSTAINABILITY PROTOCOLS

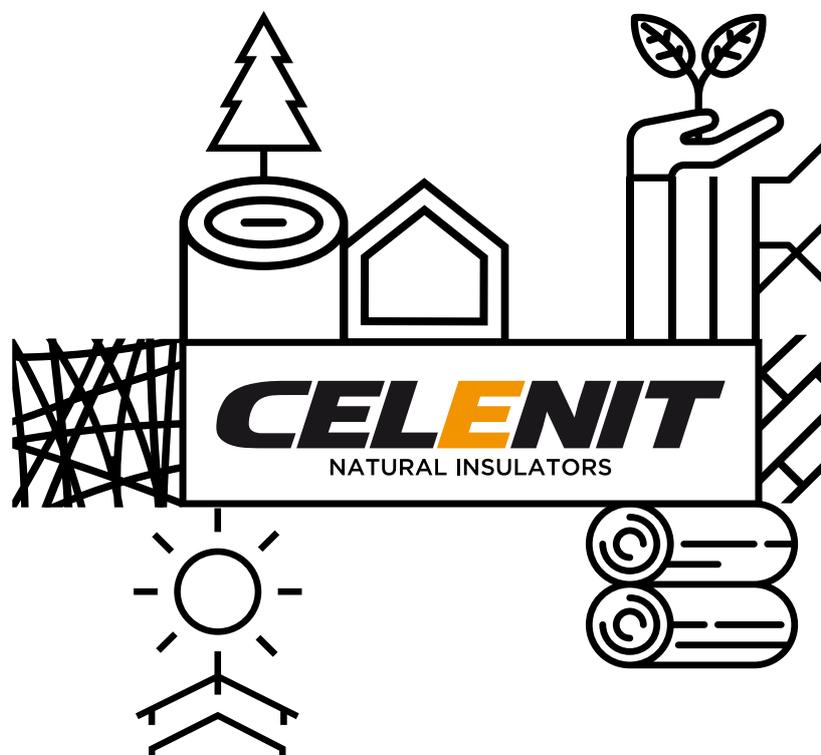
Product Sustainability Certificates are a useful tool for designers when designing buildings according to sustainability protocols.

CELENIT products can contribute to the acquisition of LEED credits (acronym for The Leadership in Energy and Environmental Design) in order to obtain certification under this protocol in a wider perspective of eco-sustainable construction.



ed. 06/2017

This information is to be considered correct at the time of release. Technical documentation is delivered updated, therefore, when possible, request the most recent version from our technical office. CELENIT S.p.A. reserves the right to make changes of any nature to improve the product range at any time without prior notice.



**CELENIT**  
NATURAL INSULATORS

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