ISOLCORE™

The best insulation in the world

## Installation manual (INTERNAL WALLS)

### (Total processing thickness, starting from 2.6 cm)

# CZ - Insulation panel (VIP)

## Description

**ISOLCORE** is the Italian brand that has invented the best performing insulation in the world.

The VIP (Vacuum Insulated Panels) are products, usually composed of a pressed mineral component, vacuum-packed by a special casing. The CZ panel is composed of a core (core) mainly in fiberglass and a

special jacket in fiberglass fabric, and aluminum which makes it much more resistant to cutting and erosion, compared to all other vacuum panels. (VIP) currently on the market.
This special film makes it impermeable to gas and vapor, preserving performance for a period three times higher than that of traditional insulating panels.
The panels are deprived of the air inside them until very low pressures are obtained: this process greatly reduces the mobility of the few remaining air molecules, decreasing the thermal conductivity, which reaches values even lower than 0.002 W / mK.
This high insulating capacity, obtained by subtracting air from inside the panels themselves, leads to a reduction in the transmission of energy by thermal conduction, radiation and convection.
This process suppresses the thermal conductivity of the air and heat transfer, obtaining a highly insulating material.

## Fields of use

The vacuum panels are particularly suitable in construction for the insulation of:
a) external facades (laid behind the false wall - total thickness of the 3 cm cycle)
b) paving of terraces
c) flat roofs that can be walked on
d) roof insulation under tile
e) insulation of internal walls and ceilings (laid behind the false wall - total thickness of the cycle from 2.6 cm)
Furthermore, they are used in many other fields, from domestic refrigerators and freezers to refrigerated transport.

# ADVANTAGES

The main advantages are:

• high insulating performance (1 cm of CZ = about 22 cm of EPS insulation)

• lower energy consumption

• reduced thicknesses

• duration of thermal performance 3 times higher than that of traditional insulation

• also applicable to buildings subject to landscape, historical, environmental constraints, etc.

• the problem of cleaning the building site and disposing of all the scraps that would otherwise occur with traditional insulation is eliminated, eg. EPS, or others.

• the storage of goods requires 10-15 times less space than what is required with traditional panels.

## INSTRUCTIONS FOR A CORRECT LAYING

The CZ - (ISOLCORE) panel in the case of internal walls and / or false ceilings must be applied behind a classic plasterboard false wall or false ceiling. Minimum thickness of the complete cycle, approximately 2.6 cm in total (equivalent to insulation equal to 25 cm of rock wool).

First check the condition of the substrate (wall or ceiling) and apply a primer / fixative.

1st Phase: Tracing and laying of the warp.

The profiles are of two types: - "U" guides, to be positioned on the floor and ceiling - "C" uprights, (usually with a depth of only 15 mm for minimum thickness), to be inserted into the guides. The construction of a plasterboard wall begins by tracing the position of the "U" guides on the floor. Once the final wall thickness has been determined, trace the position of the floor guide and then bring it back, with a plumb line or laser, to the ceiling to position the upper guide.

Also immediately report the position of openings, doors and sanitary fixtures in order to correctly position the uprights in the guides. Apply the mono / double-sided tape of the expanded polyethylene insulating gasket on the guide core, to contain the lateral acoustic transmissions. Fix the lower guide with fixings at a distance of 50 cm.

## 1st Solution

## **Advantage:** minimum thickness (2.6 -3 cm)

Apply the upper guide to the ceiling, with suitable fixings for the support, placed at a maximum distance of 50 cm.

Once the U-shaped guides have been fixed, proceed with fixing the riders (spacers) on the wall, preferably with a thickness of only about 0.5 cm, fixed every 60 cm horizontally and 90 cm vertically;

(It is recommended to apply a strip of NANOFELT nanotechnological insulating felt under the frame profile to isolate the potential thermal bridge)

**Notes: In the case of thickness problems where it is not possible to apply the total 3 cm, it is possible, if the wall is straight and the height not exceeding 3 meters, to apply the structure without the rider, thus recovering 5 mm of thickness and arriving to a total thickness of about 2.6 cm.**

We then move on to the positioning of the uprights. Cut the "C" -shaped upright profiles to the length equal to the distance between the guides, decreased by 15 mm to facilitate their insertion into the guides.

*Note: if ducts are to be passed, use appropriate uprights of the necessary thickness to pass any systems. . If the wall is high and it is necessary to join the profiles, make an overlap.*

Insert the "C" ISOLCORE uprights, snap-in, with a 60 cm center distance (or according to any

static parameters and / or pre-established fire, acoustic or impact resistance certification parameters). In the case of gluing ceramic coverings, the center distance of the uprights must be no more than 40 cm.

Note: To make corners and T-junctions of walls, it is necessary to interrupt the “U” guides leaving space also for the covering with the sheets, which must be continuous.

## 2nd step : Installation of the CZ panel in the cavity.

After the metal frames have been laid, the CZ insulating panel (available thicknesses 10-15-20-30 mm) must be inserted between the uprights.

Glue the CZ panel (already sized for the exact width of the spacing of the frame) to the wall between the vertical profiles of the plasterboard structure in one of the following ways:

a) **with the non-expanding polyurethane foam glue**, placed on the edges and centrally in a zigzag pattern on the back of the CZ panel;

b) (with a notched trowel) **using its specific RASOCORE glue** with the addition of ISOL-LATEX (1 tank of 6.5 liters of ISOL-LATEX for each 25 kg bag of RASOCORE) to give maximum bonding to the panel. After being mixed with ISOL-LATEX, the RASOCORE glue can be applied directly to the wall with a notched trowel, as is done with tiles;

c) **(in strips and dots)** using its specific RASOCORE glue with the addition of ISOL-LATEX (1 tank of 6.5 liters of ISOL-LATEX for each 25 kg bag of RASOCORE), to give maximum gluing to the

panel. The RASOCORE glue will be applied on the entire perimeter of the panel and in central points, covering at least 50% of the surface of the panel itself.


CZ panels are available in different formats (see technical data sheet), it will be the responsibility of the designer / technician or installer to check the size of the panels to optimize the insulation on the wall or ceiling. CZ panels can be laid both horizontally and vertically, in this way it is like having double the sizes, thus managing to isolate 95-97% of the surface (in this case the wall or ceiling). If there are still small spaces / cracks to be insulated where it is not possible to do it with the panel, the NANOFELT nanotechnological insulating felt always 1 cm thick will be used, easy to cut, drill, shape even with a simple cutter.

**Attention**: press lightly between the panel and the panel to eliminate any gaps. It is possible to seal the joints by taping them with the silver "American" type ISOL-TAPE adhesive tape.

## 3rd step: Laying and fixing the slabs to the framework.

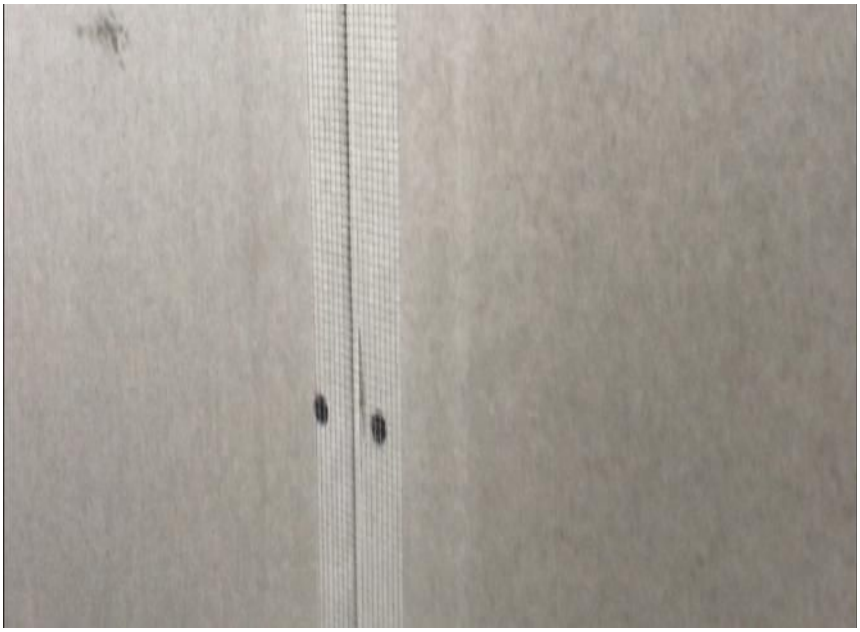
The metal frames are covered with plates of a size equal to the height of the room minus 1 cm and are arranged vertically: the side of greatest development is along the vertical. Keep the plates raised approx. 1 cm from the floor and place them on the ceiling. (If necessary, use a mechanical plate lifter or pedal plate lifter).

Start screwing the slabs to the frame from top to bottom (approximately every 25 cm), making sure that the covering remains perfectly adherent to the load-bearing frame. The longitudinal edges of the sheets must be in the center of the upright wings.

Adjust the tip of the screwdriver so that the screws are at the right depth, with the head perfectly flush with the coating of the plate. The screws should be placed approx. 1 cm from the longitudinal edge of the slab and approx. 1.5 cm from the leading edge.

## 4th step: Grouting with self-adhesive mesh.

Perfectly adhere the adhesive net centered on the joint between the slabs. Distribute the filler of the first coat along the edge until it reaches the level of the surface of the slab, so as to allow the filler to penetrate well between the meshes of the adhesive mesh and into the joint. Before proceeding with the second and third coat, it is advisable to make sure that the previous layer has set and is completely dry, so that any shrinkage phenomenon is over.



After drying, check that there are no imperfections or micro irregularities along the grouted joint; for this purpose, drag the spatula across the joint, placed transversely to the axis, and remove any roughness with the same spatula or a special pad with fine-grained sandpaper.

Then apply the second coat of stucco which will extend for a width of about 30 cm, necessary to bring the stuccoed surface to the same level as the cardboard surface. Wait for complete drying again before proceeding with sanding, if necessary, and then with the third finishing coat which will be wide and very thin. The grouting of the screw heads is carried out at the same time as the grouting of the joints between the slabs, after replacing the incorrectly positioned screws, by applying at least two coats of putty on each screw, pressing with the spatula to level the grout to the surface of the slab. Between one coat and the other, wait for the grout to dry.

Finally, apply primer / fixative and white or colored finish as desired.


***Note:*** *if you want to add even better sound insulation to the thermal insulation, use the special plasterboard plates already coupled with rubber sheaths that block noise.*

*The panel, thanks to its special casing that makes the panel vacuum, and very impermeable to vapor, thus also acts as a vapor barrier, eliminating the problem of interstitial condensation.*

## 2nd Method

**Advantage:** greater installation speed and continuity of insulation with the CZ panel even behind the structure **(Total thickness 5 cm)**

**1st step: installation of the "U" guide and fixing the riders**

The cycle includes checking the base and applying a solvent -based primer.

Apply the upper guide to the ceiling, with suitable fixings for the support, placed at a maximum distance of 50 cm.
Once the U-shaped guides have been fixed, proceed with fixing the riders (spacers) on the wall, preferably 3 cm thick, fixed every 60 cm horizontally and 90 cm vertically;
Then proceed with the installation of the 1 cm thick CZ panels over the entire wall, in one of the following ways:
a) with the non-expanding polyurethane foam glue, placed on the edges and centrally in a zig zag pattern on the back of the CZ panel;
b) (with a notched trowel) using its specific RASOCORE glue with the addition of ISOL-LATEX (1 tank of 6.5 liters of ISOL-LATEX for each 25 kg bag of RASOCORE) to give maximum bonding to the panel. After being mixed with ISOL-LATEX, the RASOCORE glue can be applied directly to the wall with a notched trowel, as is done with tiles;
c) (in strips and dots) using its specific RASOCORE glue with the addition of ISOL-LATEX (1 can of 6.5 liters of ISOL-LATEX for each 25 kg bag of RASOCORE), to give maximum gluing to the panel. The RASOCORE glue will be applied on the entire perimeter of the panel and in central points, covering at least 50% of the surface of the panel itself.

Where it is not possible to insulate with the CZ panel, or where mechanical fixing on the wall is foreseen, use the NANOFELT nanotechnological felt.

## 2nd step: installation of the "C" uprights

Lay the 15 mm “C” uprights indicated above (or if you have to pass pipes, cables etc, you can use wider uprights).

(Notes: it is not necessary to isolate the "C" upright because the wall is already insulated with the CZ panel which also passes under the upright itself. This process avoids having to cut the Nanofelt strips to be applied behind the structure, thus making the work more fast; moreover, greater insulation continuity is given with the CZ panel over the entire wall without being interrupted by the C-uprights of the structure).

**Phase 3 and following:** continue reading from point “3” of the 1st installation method previously described.

## Restrictions / precautions.

The vacuum panel must be treated with particular attention and delicacy, before laying it is necessary to check that the vacuum is not damaged. Damage in this sense can be recognized by noting the imperfect adhesion of the external film to the internal core. For the installation of the CZ - ISOLCORE vacuum panels it is essential to pay attention to the following points:

1) Upon delivery of the vacuum panels, they must be checked visually according to the aforementioned criteria to verify their integrity;

2) The panels cannot be cut and folded: usually rectangular or square shaped panels are marketed, but potentially different shapes and / or dimensions of production may be possible to better adapt to specific applications.

3) It is not recommended to drill the panels in order not to cause a decrease in the performance of the panel itself.

4) The surface on which the vacuum panels will be installed must be regular, smooth, flat and must not show edges or other sharp protuberances.

The paneling, on request, can be made to measure on project and supplied in modules to be laid on site. The panels also have reduced dimensions to cover in this way even the most difficult points to isolate and / or where you cannot get there with the largest formats.
We recommend that you possibly supply us with the quantities of panels for each standard format (see technical data sheet) in order to optimize their consumption during the installation phase.

**Notes**: if small parts remain uncovered, these can be insulated with the NANOFELT nanotechnological felt with high thermal performance, thickness 1cm (or multiples) so as to optimally isolate 100% of any thermal bridges. This panel can be easily shaped and cut even with a simple cutter.



EDITION

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