

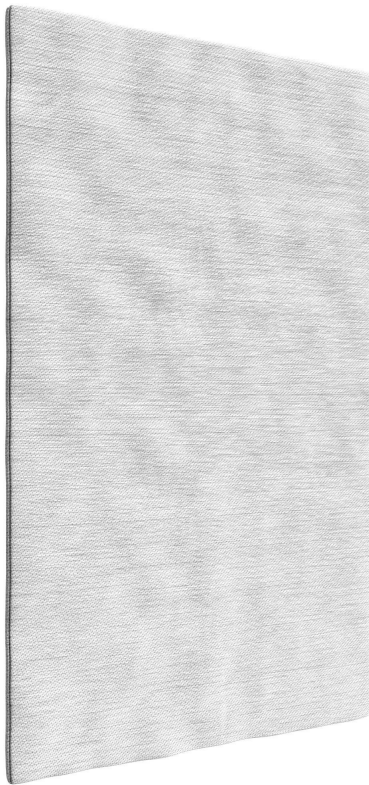
ISOLCORE[®]

The world's thinnest and best performing insulation

Installation manual for EXTERNAL WALLS

(Total depth starting from 3,5 cm)

CZ - VACUUM PANEL



Description

ISOLCORE is the Italian brand that invented the best insulation products in the world Vacuum panels usually consist of a pressed mineral component which is vacuum-packed by a special casing. The CZ panel is composed of a core mainly made of glass fiber and a special casing made of glass fiber fabric and aluminum, which makes it much more resistant to cut and erosion, compared to all other vacuum panels currently on the market. This special cover makes the panel impermeable to gas and steam and 3 times longer over time than a traditional insulation panel. Panels are deprived of the air inside them to obtain very low pressures: this process greatly reduces the mobility of the few air molecules remaining. In this way, the thermal conductivity decrease reaching values even lower than 0.002 W/mK

Reducing the air inside the panels the result is a reduction in energy transmission by thermal conduction, radiation and convection which is due to the high insulation standard of the product.

This process removes the air's thermal conductivity and the warm transfer obtaining a highly insulating product.

Main applications

Cz panel is highly recommended in the construction field to insulate:

- External walls (behind a false wall - total figure of thickness 3-3.5 cm)
- Interior walls (behind a false wall - total figure of thickness 2.5 cm)
- Terraces floors
- Pedestrian rooves
- Ceiling/garage

Besides, CZ panel can be used in many different sectors as the refrigeration ones.

Advantages

The main advantages are the following:

- its high insulating performances (20 times higher than those of traditional insulation products) - its low energy costs
- its low depth
- its thermal performance are 3 times longer over the time than traditional insulation products
- it can be placed also on those buildings that must follow some restrictions related to the

landscape they are located in, their history or to the environment laws of their Country

INSTALLATION INSTRUCTIONS

In the case of exterior walls (or ceilings of garages or porches), the CZ panel must be applied behind a classic fibre cement panel wall or false ceiling. The minimum depth is approximately 3-3,5 cm in total (equivalent to 20 cm of rock wool insulation).

Method n. 1

Advantages: small depth (3 - 3,6 cm)

Step 1: Tracing and placing the warping.

The first thing to do is to check the condition of the walls (or ceiling) and apply a primer /fixative . Fasten the snap-on clamps (from 5 mm thick) on the outer wall by placing them at a distance of 40 cm in width and approx. 80-100 cm in height from each other. approx. 80-100 cm in height from each other.

Notes: In case of problems with thickness (e.g. balcony niches, atrium, etc.) where it is not possible to

apply the 3.6 cm, it is possible to put the structure without the clamps. In this way you can recover 5 mm reaching a total depth of approximately 3 cm.

Nanofelt strip



Insulate the C-uprights with Nanofelt (aerogel felt), which is also available in strips of the exact width of the profile so that they do not have to be cut on site. Therefore simply press the Nanofelt into the cavity of the metal profile

Step 2: CZ panel's installation in the cavity.

After the metal frames have been installed, place the CZ panel between the uprights. **Note: the 'C' profiles will protrude about 3-4 mm from the CZ panel .**

Glue the CZ panel to the wall between the vertical profiles of the plasterboard structure using a non-expanding polyurethane foam glue, placed on the edges and zigzagged centrally on the back of the CZ panel.



Attention: it is recommended to exercise a light pressure between panel and panel to avoid any joints. It is possible to seal the joints by using a non-expanding polyurethane adhesive foam (the same glue used to glue CZ panels to the wall) CZ panels are available in different sizes (look at the data sheet), it is the designer/technician or installer's responsibility to check the size of the panels to optimize the insulation on the wall or on the ceiling. CZ panels can be installed both horizontally and vertically, so as to insulate 95-97% of the surface (wall or ceiling). In the event CZ panel couldn't cover the whole surface, those small gaps will be covered by Nanofelt which is a felt made of aerogel that can be cut, drilled and shaped.



(CZ detail under air-conditioning machine)



(CZ detail underneath pipes)

Step 3: Installation and fixing of the boards to the frame.

The 'C' profiles are then covered with traditional fibre cement or fibre-reinforced gypsum boards. The boards can be cut with a simple cutter. Hold the slabs approx 1 cm above the floor .



Start tightening the slabs to the frame from top to bottom (approx. every 20 cm), paying attention that the covering remains perfectly adhered to the load-bearing frame. The longitudinal edges of the slabs must be in the center of the wings of the struts.

Once the slabs have been laid, proceed with grouting the joints using a traditional skim coat adhesive .

First, fill the horizontal joint between the slabs then shave vertically with a notched trowel to a height of 35-40 cm straddling the grouting horizontally .In the same way, proceed with the grouting of the vertical joints, paying attention not to overlap the mesh with that installed horizontally. The mesh will be embedded by laying the traditional skim coat adhesive with a flat trowel to well level the panel.



Make it rest for 48h than remove the dry parts that exceed than proceed in one of the following ways:

- a) plaster finishing touch: apply primer/pigmented base and, as preferred, white or coloured finishing with white or coloured grit plaster;
- b) painting: after the leveling coat make it rest for 48h then proceed with another one on the wall.

Then apply primer and white or coloured finishing.

Note: Special panels with a hole in the center for MVC (mechanical ventilation for air circulation) are also available.

In the event CZ panel couldn't cover the whole surface, those small gaps will be covered by Nanofelt which is a felt made of aerogel that can be cut, drilled and shaped.

Method n. 2

Advantages: fast installation and great insulation performances also using Cz panel behind the structure (total depth: 5 cm)

Step 1: CZ panel's installation in the cavity.

The first thing to do is to check the condition of the walls (or ceiling) and apply a primer /fixative . Fasten the snap-on clamps (from 30 mm thick) on the outer wall by placing them at a distance of 40 cm in width and approx. 80-100 cm in height from each other. approx. 80-100 cm in height from each other.

Glue the CZ panel to the wall using a non-expanding polyurethane foam glue, placed on the edges and zigzagged centrally on the back of the CZ panel.

The glue will be applied around the entire perimeter of the panel and in covering at least 50% of its surface.

In the event CZ panel couldn't cover the whole surface, those small gaps will be covered by Nanofelt which is a felt made of aerogel that can be cut, drilled and shaped.

CZ panels are available in different sizes (look at the data sheet), it is the designer/technician or installer's responsibility to check the size of the panels to

optimize the insulation on the wall or on the ceiling. CZ panels can be installed both horizontally and vertically, so as to insulate 95-97% of the surface (wall or ceiling). In the event CZ panel couldn't cover the whole surface, those small gaps will be covered by Nanofelt which is a felt made of aerogel that can be cut, drilled and shaped.

On request, ISOLCORE provides a CZ panel format optimisation and calculation service. Thanks to this service you will be able to know the exact quantities, for each CZ size, to be ordered and you will receive the laying scheme showing how to best position the various sizes .

Place the 15 (or 27) mm ISOLCORE "C" uprights in aluzinc or zinc magnesium zinc on the snap-on clamps

Important : there is no need to insulate the C-upright because the wall is already insulated with the CZ panel (you will need to use also the CZ with size 50x350 mm) . This process avoids Nanofelt product to be used behind the structure, making the work quicker. Furthermore, it is given greater continuity of insulation with the CZ panel over the entire wall without interruption C-pillars of the structure).

Regarding the Third and its following steps, it is convenient to keep reading about 'STEP 3' of the first method previously described.

Restrictions/conditions.

The vacuum panel must be treated with particular care and delicacy. Indeed, it is highly recommended to check the integrity of the Panel before installing it. Damages are recognisable in this respect by noticing the imperfect adhesion of the external cover to the inner core.

For the installation of CZ - ISOLCORE vacuum panels, it is essential to pay attention to the following points:

- 1) Once the vacuum panels are delivered, they shall be visually checked according to the above criteria to verify their integrity;
- 2) The panels cannot be cut or bent: usually panels are rectangular or square shaped but we can customize them in different shapes and/or sizes to suit specific applications.
- 3) It is not recommended to drill the panels
- 4) The surface on which the vacuum panels are to be placed must be smooth, flat and must not display sharp edges or other protuberances.

Our panels also have small dimensions to cover even those areas that are difficult to insulate and where larger formats cannot reach.

We recommend that you provide us with the right number of panels for each format choosing among the standard ones (see data sheet).

Note: if small parts remain uncovered they can be insulated with NANOFELT nanotechnological felt which is 1 cm thick. In this way it is possible to insulate 100% of any thermal bridges. Furthermore, this felt can be easily shaped and cut with a simple cutter.

LEGAL NOTES

The advice on how to use our products corresponds to the current state of our knowledge and does not entail the assumption of any guarantee and/or liability for the end result of the work. It is the responsibility of the user to verify the suitability of the product for his specific use, assuming all responsibility inherent in and deriving from the use of the product itself. Our technicians are at your disposal for information, clarifications and questions on the use and processing of our products. Updated information sheets are available on the website www.isolcore.com or can be requested from our offices.

EDITION

Release: 28/10/2019

Revision: 14/04/2023