Deck-VQ

Installation instructions

Date: 29/01/2026

recticel

1 General

Read these installation instructions carefully before installing Deck-VQ panels. Incorrect installation and/or the use of unsuitable tools can have undesirable effects on the characteristics of the panels or on the entire system.

If the panels show obvious visual defects, stop the installation and contact Recticel Insulation. Recticel Insulation accepts no liability for panels with obvious visual defects which have been installed anyway.

2 Safety

When handling and installing the panels, the appropriate safety measures must be set in place. It is the responsibility of the installer to make sure that site safety regulations are respected and personal protection equipment is available for and used by all people involved in the works.

3 Application

Deck-VQ is used as thermal insulation for **terraces and flat roofs** that are subject to light foot traffic. If higher loads or frequent foot traffic (e.g. regular maintenance) is to be expected, adequate protection must be foreseen.

4 Storage and protection

To protect and optimise the premium thermal performance the panels must be handled with care. Please take into account the following guidelines:

- Deck-VQ panels must be stored in a sheltered location or completely covered (e.g. by a plastic cover) in a dry, well-ventilated area. We advise a minimum distance of 100 mm between ground level and the lowest panel. If there are indications that this distance is not sufficient, take appropriate measures.
- The pallets (ca. 1200 mm x 1200 mm) should be supported by at least three supporting blocks. The pallets can be stacked one on top of the other, but for safety reasons we recommend to limit the stack height to two pallets.
- The packaging must remain intact until the time of installation. The packaging itself is not considered to be a sufficiently protective or watertight covering.
- Do not store any flammable objects on or next to the panels. It is also forbidden to store the panels next to a heat source (for example radiators, heaters, a naked flame etc.).
- No (sharp) objects can be placed on top of the insulation boards in order to avoid damage.
- The insulation boards have to be kept **dry at all times**! This applies to both **storage** and **installation of the boards**. At the end of the working day or when the works have to be stopped, the installed boards have to be covered and protected from rain, snow and ice (e.g. by applying a temporary waterproofing membrane).
- Damaged boards cannot be used in the roof build-up.

5 Characterisation of the product: Deck-VQ

Deck-VQ is a vacuum insulation panel (VIP) encased in high density PIR boards. The VIP consists of a core of fumed silica, inserted into a high barrier multilayer foil envelope. The high density PIR boards are faced with a mineral coated glass fleece on both sides.

	Thickness	R_D (m²K/W)	λ_D(W/mK)
Thermal Resistance and thermal conductivity (can vary with the dimensions of the boards)	40 mm 45 mm 50 mm 60 mm 70 mm	4,00 - 4,40 5,00 5,55 - 6,25 7,50 8,75 - 10,00	0,010 – 0,009 0,009 0,009 – 0,008 0,008 0,008 – 0,007
Compressive strength		CS(10\Y)150	
Reaction to fire (product as such)		Euroclass E	
Dimensions (standard)		1200 x 600 mm 1200 x 300 mm 600 x 600 mm 600x 300 mm	
Thickness range		40 – 70 mm	
Edge finishing		Straight edges	
Production plant		Šoštanj (Slovenia)	

The full technical datasheet and the DoP are available on the Recticel website: https://www.recticelinsulation.com/en-gb/deck-vq & https://www.recticelinsulation.com/en-gb/declarations-performance

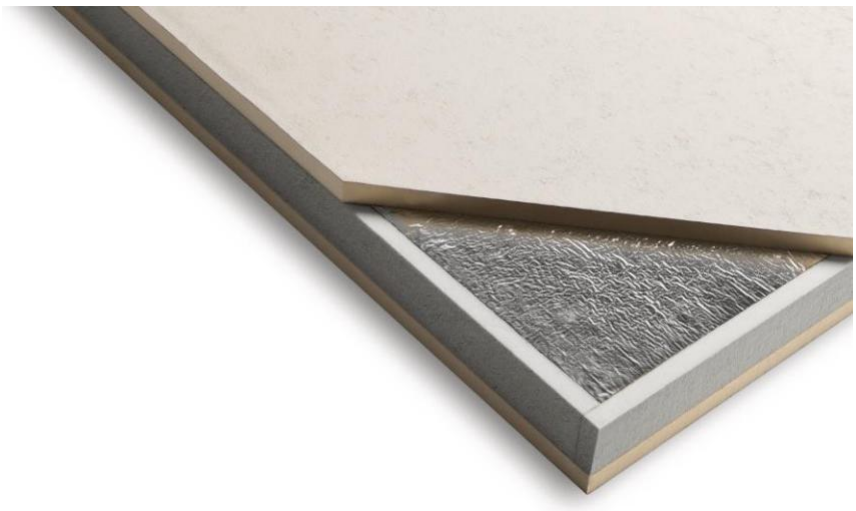

Figure 1 : Deck-VQ

6 Mounting and fixing[1]

Vacuum insulation panels are to be treated with care. The innovative concept of Deck-VQ entails the VIP inside to be protected by a high density PIR insulation board on all sides to avoid incidental damage.

6.1 General considerations

1) The insulation boards are applied on a new vapor control layer (VCL)[2] or an existing waterproofing membrane on top of concrete, wood and metal decks. The waterproofing is realized with ballasted or adhered waterproofing systems.
2) The substrate has to be flat, dry (no water, no ice, no snow) and free of waste and dust. In case of renovations, always check the condition of the existing waterproofing membrane.
3) Deck-VQ panels should **not be cut or punctured**, as this will compromise the thermal performance. Also, obstacles on the roof or terrace should be considered in an early stage to insure a correct installation. Therefore the following guidelines are to be taken into account:

   A. **Use a layout scheme to ensure and optimal panel configuration**. The configuration should take into account the location of the different obstacles and roof/terrace details, e.g. gutters, drains, roof lights, chimneys… This service is offered by the Technical department of Recticel Insulation upon request.

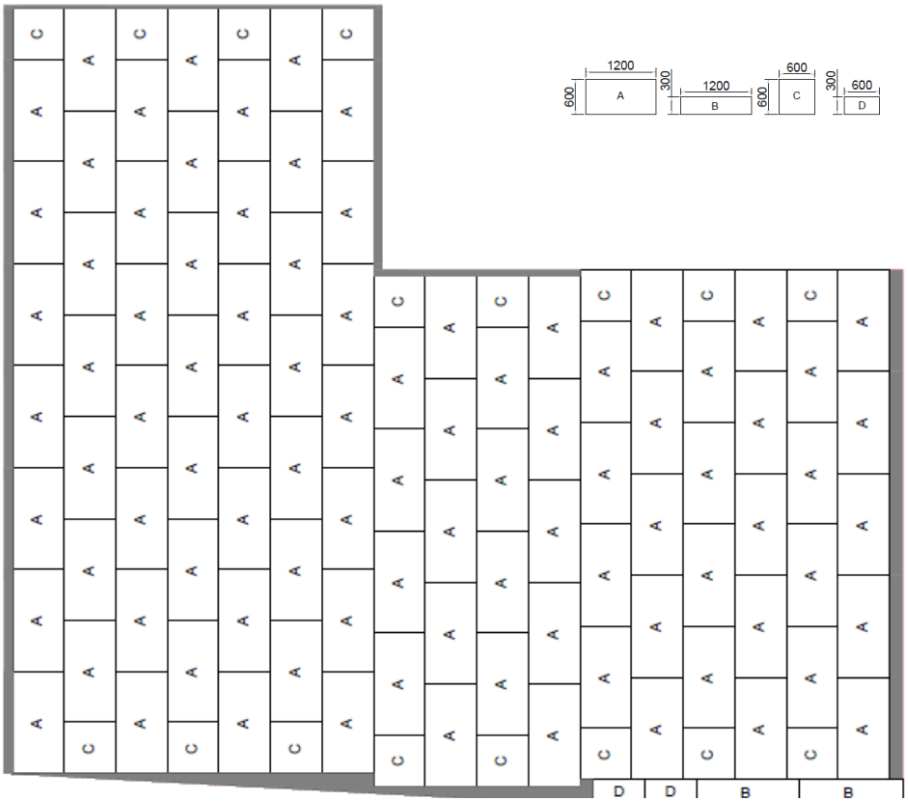

Figure 2: example of a layout scheme indicating the different panel types and the infill area (shaded area)

[1] *The client must ensure that the mounting of the boards, and by extension the complete flat roof build-up, is in conformity with all laws, regulations, directives and national/international demands which are applicable. The installation has to be done according to code of good practice.*

[2] *A U-value calculation and condensation risk analysis (CRA) are recommended to determine a correct build-up and the minimum quality of VCL to be applied. Recticel Insulation provides this service upon request, please contact the Technical department for more information.*

b) The Deck-VQ concept incorporates **'infill' PIR boards** that can be adjusted to fit construction details and to obtain a complete coverage of the surface to be insulated. Powerdeck F boards are used as infill because the facer offers a compatibility with adhesives which is similar to the facer of the protective high density PIR boards that encapsulate the VIP.

Figure 3: Powerdeck F to be used as infill boards

c) If additional **mechanical fixings** are necessary in highly solicited areas around the perimeter of the roof (e.g. after a wind uplift calculation), this information **must be communicated clearly**. As the Deck-VQ panels are not to be punctured, the panel configuration in the layout scheme will have to account for additional infill areas which allow mechanical fixing of the waterproofing membrane.

d) The same applies for structures that need to be mechanically fixed to the substrate, through the insulation layer (e.g. fixed fall protection). If known beforehand, **designated areas can be foreseen in the layout scheme**. Recticel Insulation cannot be held accountable for not including these areas in the scheme if not clearly communicated by the requestor (customer/installer).

e) Please note that existing roofs might require wider infill areas around the perimeter of the roof to take into account the sloped roof finishing towards the roof edge.

4) The insulation boards are placed in a continuous, tight fitting way (without any gaps) in order to avoid thermal bridges and thus to create a continuous insulation shield.

5) Single and multi-layered insulation build-ups can be applied, always respecting the staggered pattern within and between layers. Every subsequent layer has to be staggered referring to the previous layer.

a) Ideally the joints are staggered by half a board
b) If not possible, the boards should be staggered for at least 200 mm

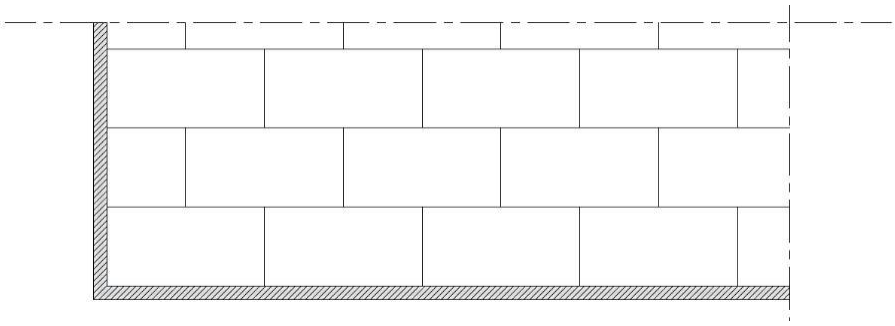

Figure 4: Staggered pattern within one single insulation layer

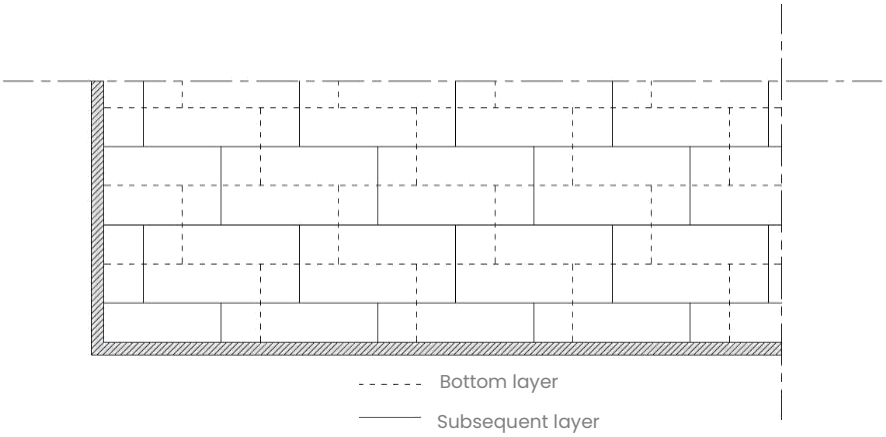

Figure 5: Staggered pattern in multi-layered build-ups

6) Remark: The VCL has to be put up at e.g. roof upstands, in order to make a connection with the waterproofing layer, creating a complete and closed envelope around the insulation boards.
7) To provide adequate water drainage, the roof/terrace build up must incorporate a fall towards gutters and outlets. To achieve this, either the substrate must provide the fall, or Deck-VQ can be combined with the tapered insulation solutions of Recticel Insulation. For more information on our tapered solutions, please see our website or contact Recticel Insulation.

6.2 Installation of the flat roof system

In what follows, it is assumed that a VCL has been installed correctly and is suitable for installation of the other components of the flat roof system.

6.2.1 Adhered application

6.2.1.1 General

- The gluing in a flat roof system build-up is two-fold:
    - Gluing of the insulation boards to the substrate (i.e. supporting deck, VCL, existing roof covering, other insulation boards).
    - Gluing of the waterproofing membrane to the insulation board (see "Gluing – waterproofing membrane to insulation" on p.8).
- Following types of glue are usually compatible with the Deck-VQ insulation boards:
    - PU-glue (1 component moisture-cured, 2 components), liquid or foam
    - Bituminous cold

    glue o Remarks :
        (1) Compatibility of the glue with the insulation boards has to be confirmed by the manufacturer of the glue and/or Recticel Insulation. In case of doubt, please contact the technical service team of Recticel Insulation at technicalservices@recticel.com
        (2) Solvent based glues which might damage the facer or the foam of the insulation boards, cannot be used!
        (3) The glue has to be compatible with the substrate and/or waterproofing membrane as well. In case of renovation, always check the condition of the existing waterproofing membrane which will be covered. Make sure this is a substrate which allows for adhered applications.
        (4) In case of unevenness in the substrate (e.g. old bituminous waterproofing membrane with thick overlaps) it's recommended to use a foaming type of glue to level out these imperfections.
- The installation instructions of the glue manufacturer are to be respected at all times! This concerns the required amount of glue, glue pattern, the minimal application temperature, storage temperature, opening time, curing time, etc.
- Gluing of boards is anyhow not allowed in case of cold temperatures (< 5°C) or in case of humid substrates.
- It's not allowed to walk over the boards immediately after they are glued to the deck. The instructions of the manufacturer need to be respected.

6.2.1.2 Gluing - Insulation to deck

- The glue needs to be applied according to the glue manufacturer's instructions. PU-glues are applied in an S-shape pattern or in straight lines (see Figure 6).
- Bituminous cold glues can be applied by means of dabs or straight lines as shown in the drawing below (see Figure 7). In case of dabs, make sure that for a 1200 x 600 mm and 1200 x 300 mm board there are at least 5 sufficiently large dabs, spread over the insulation board (1 in each corner + 1 in the middle of the board). For the 600 x 600 and 600 x 300 mm boards, four dabs can be sufficient. Always respect the coverage prescribed by the manufacturer of the adhesive.
- Glue needs to be foreseen in such a way that all edge- and corner zones of the insulation boards are covered. Do not only put glue in the middle of the boards!
- The amount of glue and the corresponding glue pattern is prescribed by the manufacturer of the glue. The amount and pattern need to be densified in the parts of the roof where the wind load is increased (e.g. edges and corners). In case the wind load is too high, additional mechanical fixings or ballast can be required. This information has to be communicated clearly, so it can be taken into account in the layout scheme (see "General considerations" on p.3).
- In case of multi-layered build-ups, all layers need to be sufficiently adhered to the substrate/underlying insulation layer, as if these layers would be the only layers in the build-up.

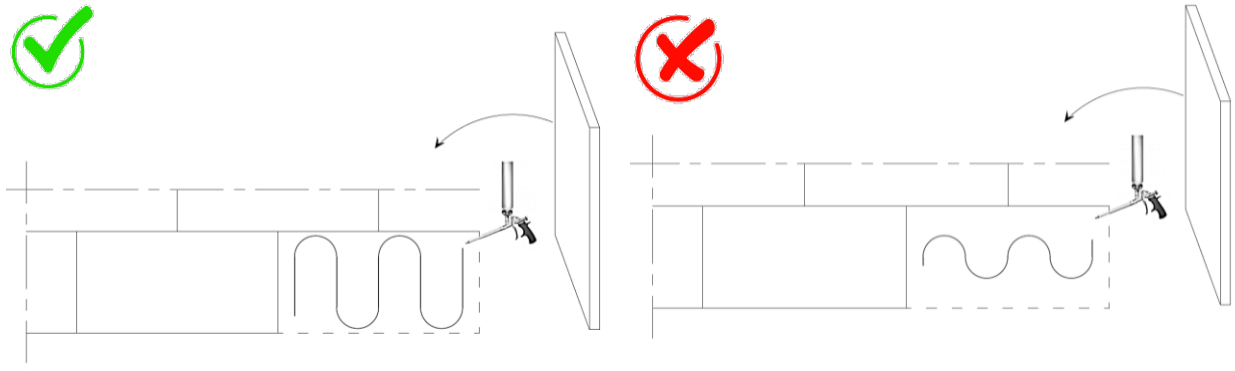

Figure 6: Adhered build-up - Gluing pattern – PU foam glue (principle drawings[3])

[3] *Correct amount of glue and glue pattern need to be in accordance to instructions of glue manufacturer*

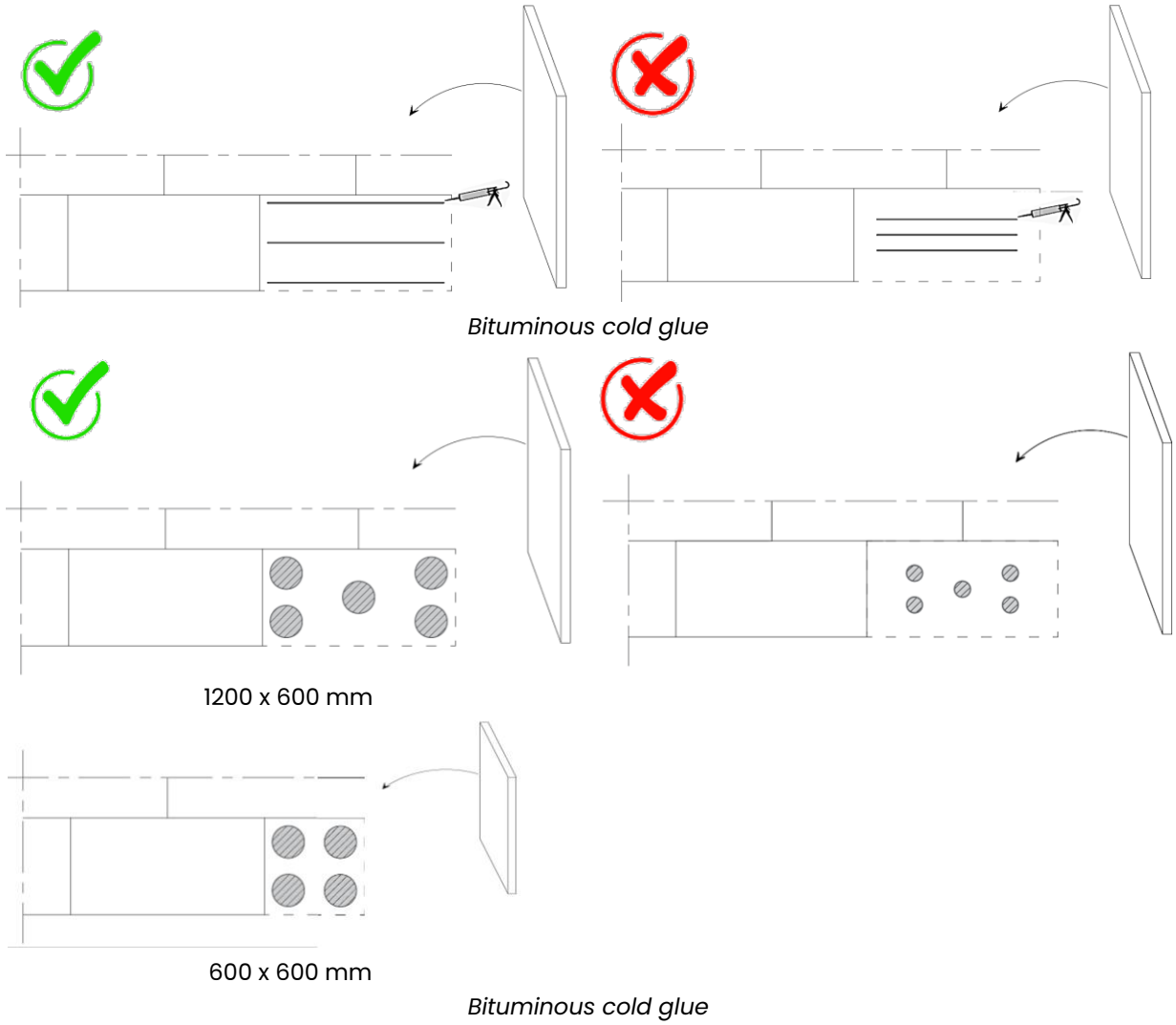

Figure 7: Adhered build-up - Gluing pattern – bituminous cold glue (principle drawings[4])

6.2.1.3 Gluing – waterproofing membrane to insulation

- Recticel Insulation recommends partially adhered single-ply membranes (cold adhered or self-adhesive) or multi-ply systems (partially self-adhesive base sheet and torch-on cap sheet).
- Fully self-adhesive membranes are not allowed in combination with Deck-

VQ. Remarks:

- The instructions of the waterproofing membrane producer need to be followed and the glue needs to be compatible with both the insulation board and the waterproofing membrane.
- When solvent based glues are used, make sure the solvents are evaporated sufficiently before the waterproofing membrane is folded onto the insulation boards.

[4] *Correct amount of glue and glue pattern need to be in accordance to instructions of glue manufacturer*

- In case of non-fleece backed / naked synthetic membranes, Recticel recommends to only apply them partially adhered to the insulation board to avoid blistering. Fleece backed synthetic membranes can also be used as the fleece is considered as a vapor diffusion layer.

6.2.2 Torch-on waterproofing membranes

6.2.2.1 Installation of the insulation

The Deck-VQ boards are installed according to the guidelines in "Adhered application" on p.6.

6.2.2.2 Installation of the waterproofing membrane

Bituminous waterproofing membranes cannot be torched directly onto the Deck-VQ panels, a (self-adhesive) base sheet has to be applied before applying the torch-on cap sheet.

- The first layer which is applied to the board has to be partially adhered (allowing vapor pressure diffusion). The second layer can be fully torched onto this first layer.
- Never point the tip of the torch directly to the insulation boards, but always point it to the roll of waterproofing membrane!
- Torching is not allowed on insulation boards which are fixed to the substrate by means of bituminous cold glue due to the extended curing time of the glue.

Figure 8: Torched application on a PIR insulation board to indicate good practice (left: partially adhered base layer with torching on roll; right: torching on insulation board)

6.2.3 Ballasted application

Deck-VQ boards can be loosely laid in a ballasted flat roof system. Please note that the installation of the insulation, the waterproofing membrane and the ballast have to follow each other quickly to ensure a good performance.

6.2.3.1 Installation of the insulation

Please take into account the guidelines under "General considerations" on p.3.

6.2.3.2 Installation of the waterproofing membrane

The waterproofing membrane must be applied according to the instructions from the supplier/manufacturer. Please refer to the documentation of the supplier for more information and make sure the waterproofing membrane is suitable for ballasted application.

6.2.3.3 Ballast

The total characteristics (e.g. type, weight, diameter…) of the ballast have to be in accordance with the required wind uplift resistance. It needs to be applied as soon as possible after installation of the waterproofing membrane.

Generally we distinguish the following two types of ballast to be applied on Deck-VQ:

- Gravel: depending on the type of gravel it can be necessary to apply a protective layer between the waterproofing membrane and the gravel to avoid damaging the waterproofing membrane.
- Tiles: when combined with tile supports (spacers), the minimum support area on top of the waterproofing membrane needs be larger than 100 cm². For heavy loads, please contact our Technical Department for assistance.

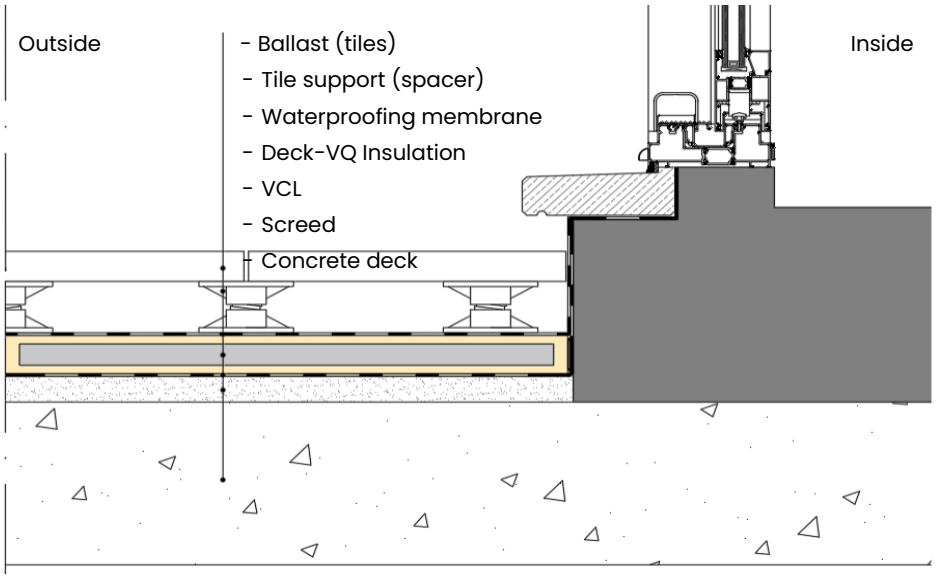

Figure 9: Example of a ballasted build-up

7 Disposal

The product is considered as normal waste. It can be destroyed on a registered and controlled waste dump.
The plastic films and the wood used as packaging can be handles by registered sorting centres.

8 Disclaimer

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